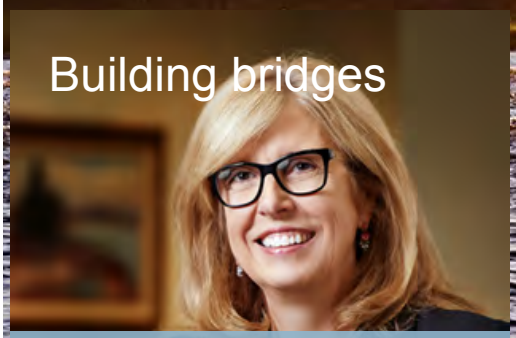
The path forward

Read CEO message

Energy for a better world

Leading the way to deliver economic prosperity, improved social well-being and a healthy environment for today and tomorrow.

Read our guiding principles



Building bridges

Check out the Q&A

Climate change

More on climate change

Aboriginal Relations

More on how we engage with Canada's Aboriginal Peoples

Sustainability goals

More on our environmental performance goals

Report highlights

Video gallery

View featured videos

Materiality review

See the key environmental, economic, social and governance issues

Charts library

View all of our data charts

Performance data

See our progress for the 2016 reporting year

Vision and strategy

On this page:

> Energy is delivered to and used by people in every country across the globe. It is vital to the world we live in and the quality of life we enjoy.

As Canada's leading integrated energy company, we know that, together with our stakeholders, we need to look beyond the energy needs of today and understand what is required for the future. Sustainability is about seeing the big picture and working together towards better, more sustainable solutions.

Our mission

We create energy for a better world.
This is our core purpose, and what we aspire to every day.

Our vision

Suncor's vision is to be trusted stewards of valuable natural resources. Guided by our values, we will lead the way to deliver economic prosperity, improved social well-being and a healthy environment for today and tomorrow.

This is where we see ourselves and our company in the future. In other words, it's our view of Suncor's place in the world.

Our values

Our values are our guiding principles – our constant set of beliefs. They define the way we do business each and every day.

Safety above all else
Do it safely or don't do it.

Respect
Being our best. Giving our best. Showing we care.

Do the right thing
The right way, with integrity.

Raise the bar
Pursue with passion. Always add value.

Commitments matter
We are all connected and part of something bigger.

Strategy and competitive differentiators

Our significant asset base, strong balance sheet and integrated model set us apart from our peers. We strive to be the low-cost competitor in our sector, without compromising environmental performance. Capitalizing and executing on these differentiators have contributed to our industry-leading position and provide the foundation for delivering long-term value for shareholders.

Reserves and resources base

We are committed to getting the most value from our resources, which include a significant position in the oil sands. Our operational excellence focus is to unlock the full value of these resources.

Industry expertise

We pioneered commercial oil sands development and continue to advance by developing and collaborating on innovative technologies that improve efficiency, lower costs and enhance environmental performance.

Our people are among the most experienced and knowledgeable in the industry. They bring their passion and expertise to work every day.

Sustainable development

We are focused on delivering triple bottom line sustainability. That means leadership in:

- environmental performance
- social responsibility
- creating a strong economy

A proven integrated model

From the ground to the gas station and offshore platform to wind turbine, we're focused on creating value for our shareholders. The integration of our business, both financially and physically, creates the conditions for our success.

Financial strength

We aim to achieve the highest returns possible from our operations. Our focus is on keeping costs down and increasing reliability. Our strong balance sheet and ongoing focus on capital discipline continue to highlight our commitment to delivering value for shareholders.

Commitment to sustainable development

A commitment to continuously improve performance is what makes us unique. Not only is continuous sustainability improvement a pillar of our business strategy, it is also a company value driver, effectively weaving a sustainability focus into the very fabric of the organization.

Actions speak louder than words. Here are a few concrete initiatives where we have put the principles of sustainable development into practice:

Expand all | Collapse all

Climate change

- We adopted a seven-point climate change action plan aimed at increasing energy efficiency and reducing corporate-wide greenhouse gas emissions (GHG).
- This has contributed to a 45% reduction in carbon dioxide (CO_2) intensity per barrel at our oil sands operations since 1990.

Renewable energy

- We have a long history of investments in renewable energy.
- Our interests include five operational wind power facilities.
- We also operate Canada's largest ethanol plant with a capacity of 400 million litres per year.

Partnering with Aboriginal businesses

Through our Petro-Canada brand, we've partnered with various First Nations, including the Peter Ballantyne Cree Nation (PBCN) in northern Saskatchewan, and most recently, the Long Plain First Nation and Fort McMurray First Nation 468 to manage Petro-Canada retail stations.

These stations employ many First Nation members and bring tremendous value to the Petro-Canada retail model.

We have also announced the signing of participation agreements with the Fort McKay First Nation and Mikisew Cree First Nation for 34.3% and 14.7% equity interests in Suncor's East Tank Farm Development. Together, these agreements recognize the value of relationships, building mutual trust and respect, and strengthening the participation of Aboriginal Peoples in energy development.

Learn more about our partnerships with Aboriginal businesses

Innovation in bitumen recovery

Suncor is advancing a portfolio of in situ technologies as a means of improving the cost competitiveness and lowering the carbon intensity of producing bitumen. In 2016, we set a new goal to reduce the emissions intensity of our operations by 30% by 2030 – to meet that goal, we need to go beyond today's capabilities and technologies.

To accomplish this, we are pursuing a number of approaches and technologies – some that can be implemented immediately and some that will take five or more years to develop. We see solvent and surfactant assisted oil recovery as a promising potential solution to reduce energy and water use at our in situ facilities, both for existing operations and for future growth. We are currently evaluating and advancing a number of technologies that use less or no steam, and a combination of solvents, surfactants, and radio frequency heating. In our view, a likely solution will be a hybrid of the many innovative approaches and technologies we're testing.

Learn more about our in situ technologies

Social prosperity

We invest in change and social progress in the communities where we operate to ensure sustainable and resilient communities. To further support the new skills and thinking needed to make progress on complex community challenges, the Suncor Energy Foundation, in partnership with the Banff Centre, supports an annual four-week *Getting to Maybe* social innovation residency program. It brings together approximately 30 leaders from diverse corporate,

government and community roles to explore ways to make communities better.

Read more about:

- *Getting to Maybe* social innovation residency
- Our community investment strategy

Reclamation

Since Suncor opened Canada's first oil sands mine in 1967, our oil sands operations have disturbed approximately 22,179 hectares of land. Land reclamation takes place once the disturbed land is no longer part of active operations. As of the end of 2016, the company had reclaimed about 10%* of the total land disturbance to date.

Water use

We work to continuously reduce our use of fresh water. At Oil Sands, our gross freshwater withdrawal from the Athabasca River has declined by 56% since 2007.

- Approximately 85% of the water used by our mining and extraction operations is recycled tailings water
- Approximately 96.5% of the water used at our Firebag in situ site is recycled

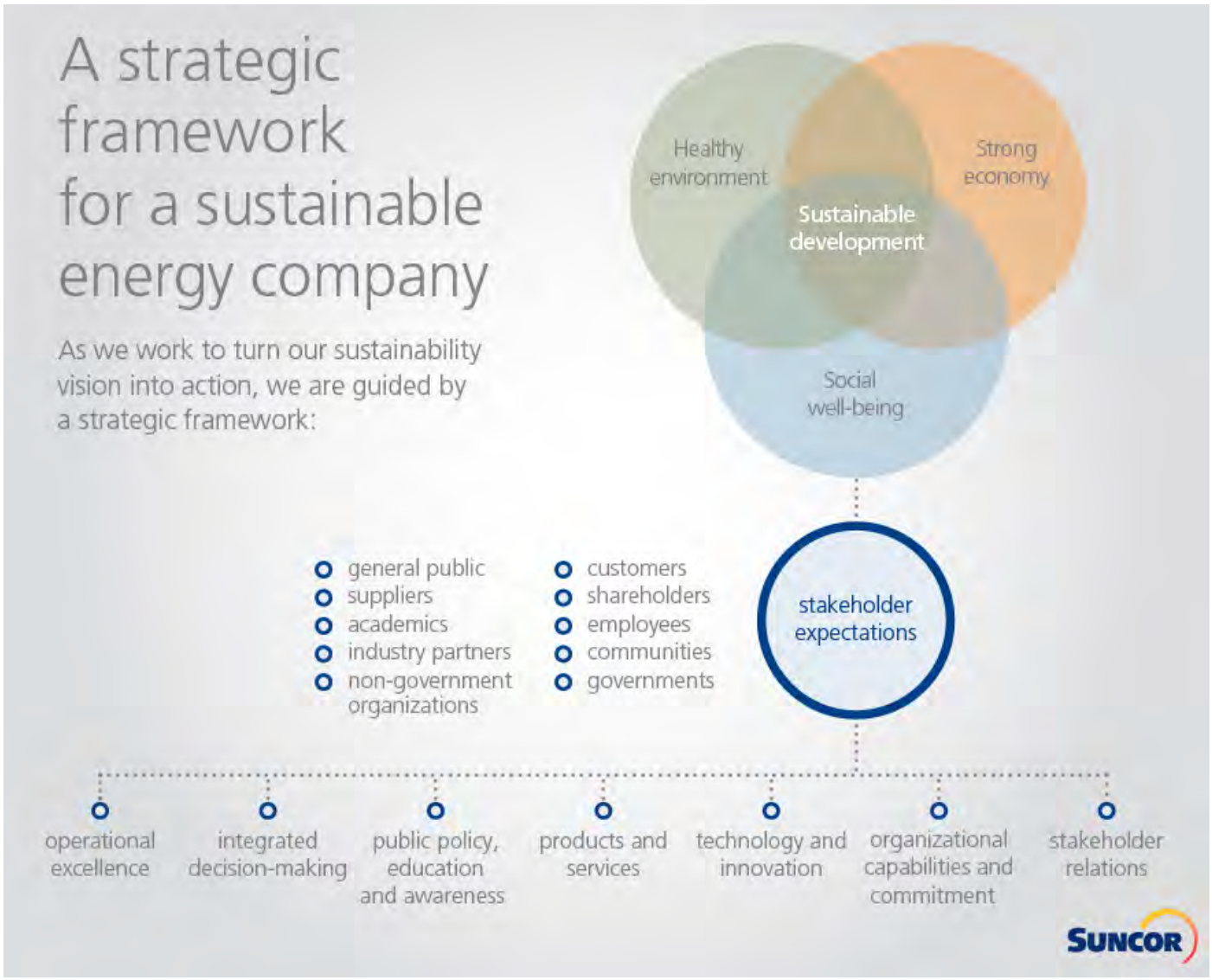
Over the last few years, we have executed a water management strategy at our oil sands base plant facilities to reduce the amount of water stored on site in tailings ponds and manage water quality in the system. The strategy contains three phases and more than 15 projects that:

- conserve or eliminate water use
- reuse water where possible
- return clean water to the watershed

Learn more about our water stewardship

Operational excellence

Operational excellence, operating in a way that is safe, reliable, cost-efficient and environmentally responsible, helps us mitigate business risks and focus on achieving industry-leading performance.



Download

* Reclaimed lands have not been certified by government regulators. For further details, see Advisories – Reclamation.

CEO's message

Perhaps the biggest challenge facing a company like Suncor is: how do we continue to be a profitable, growing business in a world that demands a much stronger focus on environmental performance and social responsibility?

There's no single answer to that question, but there is, I believe, a clear path forward. We need to leave the era of fixed and polarizing positions behind and move boldly into the solution space.

Doing so requires a degree of compromise to ensure the perfect does not become the enemy of the good. And it requires a bias to action.

A bit of discomfort shouldn't deter us from acting in pursuit of a shared ambition to develop Canada's energy resources in ways that foster economic growth while protecting a healthy environment and advancing social well-being.

Tackling climate change

As a company, as an industry and as a larger society, we have already made some progress in moving into the solution space.

Consider the global challenge of tackling climate change. We know climate change is happening. Clearly, we all have a shared interest in finding solutions.

At Suncor, we've moved on several fronts – internally and externally – to reduce our greenhouse gas (GHG) emissions intensity while providing the energy the world needs.

We came very close to meeting our 2015 energy efficiency improvement target (first set in 2009) and, in 2016, we announced an ambitious new sustainability goal: to reduce the total GHG emissions intensity of our oil and petroleum products by 30% by 2030. It's a target we believe puts us on the path to ultimately bending the curve on our absolute GHG emissions as well.

Along with other oil sands producers, we've collaborated with our peers, with environmental leaders, with Aboriginal Peoples and with other governments, to help advance climate change policy that has made Alberta a global leader in this area.

We did so by collectively recognizing we can't, at this point, affix a permanent solution to a long-term challenge like climate change. But we can lead in a way that moves us in the right direction. That collaboration helped inform a policy plan that couples a broad-based carbon-pricing regime with an overall emissions limit for the oil sands.

Why would we, as energy producers, support public policy that imposes a first of its kind, emissions limit on our resource basin? And why would Suncor, as a company, commit to an ambitious program to reduce its own GHG emissions?

The answer to both questions is rooted in two interrelated convictions.

The first is our belief that bold, ambitious action will be required by all of us to effectively tackle the climate change challenge. The second is our conviction that technology will continue to transform our industry to a place of global cost and carbon competitiveness.

Transitioning to a low carbon economy

Some look ahead and predict fossil fuels have no place in a sustainable energy future. I respectfully disagree.

Whether it's about providing food, heat or transport, modern society draws on reliable and affordable oil and gas as its primary energy source. And despite the advancement of alternative and renewable energy sources, fossil fuels will continue to provide a concentrated and efficient source of energy for the foreseeable future. It's also evident that to remain a central part of the energy equation, oil and gas producers need to be carbon-competitive and cost-competitive.

We are moving aggressively towards the goal of harnessing new technology that transforms the GHG footprint of our operations and our impact on the life-cycle of our product. Technology and innovation are taking us there.

Technology has always been key to the oil sands industry, which Suncor pioneered exactly a half-century ago. It's allowed us to develop this vast resource on a commercially viable basis while continually improving our environmental performance.

Today, Suncor invests in a range of strategic technologies, including next-generation in situ extraction processes that could dramatically reduce energy costs and GHG emissions. In fact, we're currently evaluating the potential to advance these in situ technologies at commercial scale through the development of an in situ demonstration facility (ISDF) at our MacKay River lease.

We also collaborate with peer companies and external partners through organizations like Canada's Oil Sands Innovation Alliance (COSIA) and Evok Innovations on clean technology solutions that will help us thrive in tomorrow's lower carbon economy.

On the policy side, we continue to collaborate with the Ecofiscal Commission, where I serve as a member of the Advisory Board. The commission brings together economists who provide a perspective on efficient economic policy to tackle environmental challenges. The Advisory Board brings together diverse actors – including from across the political spectrum, from industry, and the environmental community – to provide a practical perspective and advocate for policy that most efficiently helps trigger practical environmental solutions and grow the economy.

I believe our investment in step-change technologies and commitment to progressive ecofiscal policies puts Suncor in a very strong position going forward. As long as the world needs fossil fuels, we intend to be a cost-competitive and carbon-competitive supplier of choice.

That's why we're comfortable operating within the boundaries of an emissions limit and an economy-wide carbon price. With certainty on price and emissions, we can plan, innovate and invest in ways that will allow us to grow our business and successfully compete in the global marketplace as a low carbon source of oil.

As we make this transition to a low-carbon economy, Suncor is committed to the principle of transparency. That's why, in response to a shareholder resolution by NEI Investments, we recently produced our first stand-alone report on the resilience of our strategy on this path to a low-carbon future. We intend to update this disclosure practice annually as part of our Report on Sustainability.

Social innovation and collaboration

Innovation is not limited to technology or environmental performance. The way the world views energy development has changed and part of responding to that is through social innovation and collaboration. Suncor's recognition of this evolving dynamic is reflected in the strong emphasis we place on sustainability and embedding it throughout our organization.

In 2016, we launched our first long-term sustainability goal to address our social performance. That goal, to be pursued over the next 10 years, sets us on a new path toward strengthening our relationships with Canada's Aboriginal Peoples and increasing the participation of Aboriginal Peoples in resource development.

We took a good first step on that path by signing two historic partnership agreements with the Fort McKay First Nation and the Mikisew Cree First Nation that will see them become equity partners in the East Tank Farm synthetic crude terminal when the agreements are finalized in 2017. Both First Nations will share in the benefits as the terminal receives bitumen from the Fort Hills oil sands mine and ships product to market.

Another key social collaboration for Suncor is the work we do, along with several other companies, as members of the United Nations Global Compact (UNGC) Local Network in Canada. This is part of our support for the UNGC and its 10 Principles, which guide our approach to human rights, labour, environment and anti-corruption – wherever in the world we operate.

In everything we do, one value stands above the rest: safety above all else. And as we learned again in our response to the 2016 Fort McMurray forest fires, ensuring safety sometimes requires collaboration of the first order.

The fires forced more than 85,000 people, including our employees, to leave their homes. For the first time in our history, we shut down and then restarted our oil sands base and in situ operations – and did so safely and without incident. Our facilities were also the first point of refuge for community members fleeing northward for safety. We sheltered, fed and moved more than 10,000 people.

I've never been prouder of a collaborative effort than the one undertaken by the community, first responders, aid organizations, government and industry. Observing kindness, perseverance and optimism in the face of an extremely difficult situation was a powerful experience for me.

Succeeding in the solution space

Leadership starts with knowing where we want to go over the long term. It's about making courageous decisions that will stand the test of time. At Suncor, we have the track record, the economic strength, and the commitment to execute on that vision and collaborate across diverse interests to find solutions to shared challenges.

As we've taken some critical first steps into the solution space, I've had the chance to reflect on what we've learned so far. What works and what doesn't?

I believe the road to success begins with setting ambitious goals. It's a good thing if your reach exceeds your grasp; it means you always aspire to something more.

Focus on the possible. It's easy to find reasons why something won't work; it's much more difficult to imagine ways that it could.

Listen more than you speak – and avoid the trap of trying to sell each other on pre-conceived solutions. Making progress on complex issues requires setting egos aside. Arrogance is the enemy of collaboration.

The path forward will be challenging, but this journey is worth the effort. I urge you to join us in ensuring we shape a positive and sustainable shared energy future.

Steve Williams
president and chief executive officer

Materiality review

On this page:

Our reporting framework

Our 2017 Report on Sustainability outlines performance in 2016 and provides a five-year performance trend wherever possible.

We have prepared our report in accordance with the Global Reporting Initiative (GRI) G4 Core Guidelines and Oil and Gas Sector Disclosures (PDF, 69 pp., 2.06 MB).

Ernst & Young LLP, an independent third party, has reviewed selected performance indicators for the 2016 reporting year using the GRI G4 guidelines and the sector disclosures.

Review the independent assurance statement (PDF, 3 pp., 255 KB).

Materiality review

For the purposes of this report, materiality, in a sustainability context, is defined as the relative significance of an issue's environmental, social, governance and economic impacts (both positive and negative) to our business and our stakeholders.

Our materiality review process ensures the content we include in our annual Report on Sustainability reflects the key environmental, economic, social and governance issues considered most critical to our company and our stakeholders.

Our last extensive materiality review was conducted in late 2014 for our 2015 Report on Sustainability, in accordance with GRI's G4 guidelines. For this 2017 report, we conducted a materiality reaffirmation process to test the validity of our previous extensive assessment and allow for any necessary updates to be made. Although different in scale, both materiality review processes followed the same two-step procedure described below.

Expand all | Collapse all

Materiality assessment process

Step 1 – Review of materials and issues identification

In addition to using the framework provided by Account Ability's Five-Part test, we also conducted a thorough review and analyses of the following:

- social media and website analytics
- corporate objectives, programs and risks
- traditional news releases and media coverage
- internal communication publications
- multi-sector sustainability and corporate social responsibility reports
- topics identified through our internal strategic issues management process
- input from across our business areas

We also reviewed information from our ongoing stakeholder dialogues, in addition to feedback from our annual multi-stakeholder forum. This forum is important for providing us a venue to highlight, discuss and address complex issues with a wide range of key stakeholders and document their feedback. During this forum, we talk about our challenges and how we can work to address them.

Our extensive review resulted in a number of material sustainability issues for both external and internal evaluation for inclusion in this year's report.

Step 2 – External and internal issue evaluation

External evaluation

We incorporated direct stakeholder feedback into our materiality review process to improve on past materiality assessments as well as provide a more comprehensive evaluation of our most material sustainability issues.

Internal evaluation

Using feedback learned from our on-going stakeholder dialogues, we evaluated our sustainability issues with a cross functional employee team.

For each candidate material issue, team members determined the degree of impact and importance to the company and our stakeholders.

The aggregated data collected from both our internal and external reviews resulted in a list of our most material sustainability issues, which are plotted on the materiality matrix below. This diagram displays a sampling of the pertinent issues identified during the materiality review. Issues increase in material importance to both the company and our stakeholders from the lower-left corner up to the right corner of the matrix. While these are all important issues, we've prioritized the content of this report around our most material issues.

In some instances we chose to report above and beyond the issues identified in our materiality review because although they don't meet the GRI G4 materiality threshold, they remain important to our stakeholders.

Materiality matrix

Select a letter in the chart below to identify and learn more about an issue. You can filter categories below by selecting communities, economic, environment or our employees. Click the category again to turn the filter off. We not only identified our most material issues, we also mapped where the most material positive or negative impacts of those relevant issues occur within our value chain, both within and outside of our organizational boundary. Our upstream, refining and marketing and corporate offices exist within this boundary while our suppliers, some joint venture relationships, product transportation, customers and broader society exist outside of this boundary.

Download

Communities

Continuously earning and maintaining our social licence to operate is crucial to our business. If not managed well, these issues could potentially result in increased project delays and costs, legal proceedings, stakeholder outrage and an erosion of community resilience. Managed well, these issues present a vital shared value opportunity to build relationships and provide economic and social benefit.		Impact across Suncor value chain	
		Inside of Suncor	Outside of Suncor
F	**Aboriginal engagement in energy development** • Enhanced engagement with Aboriginal communities • Partnering with Aboriginal businesses • Partnering with Aboriginal youth • Improving Aboriginal workforce development	X	X
H	**Responsible community partnerships** • Community investment • Social responsibility	X	X

Economic

The following issues are material to Suncor s performance and growth. Managed poorly, these issues could result in unplanned legal, financial, operational or reputational impacts. Managed well, these issues help to support business continuity and maximize shareholder value.		Impact across Suncor value chain	
		Inside of Suncor	Outside of Suncor
A	**Economic conditions and performance** • Capital spending and discipline • Production costs and production mix • Royalties, taxes and competitiveness	X	X
C	**Market access** • Pipeline and rail safety		

	• Value of all potential options		
M	**Operational reliability and performance** • Facility, asset and joint venture reliability • Operational excellence and business continuity	X	X
P	**Corporate governance** • Board composition and diversity • Enterprise risk management • Executive compensation	X	
Q	**Business ethics** • Ethical business conduct • Prevention of improper payments	X	X

Environment

Our environmental performance represents a key strategic risk and opportunity. The **management** of these issues are subject to strict scrutiny from both government regulators and stakeholders. Poor management of these issues could result in regulatory fines, stakeholder outrage, capital divestment and project costs and delays. Managed well, these issues contribute to a case for innovation, new technology and collaboration with our stakeholders and industry peers to create more value and improved environmental performance.		Impact across Suncor value chain	
		Inside of Suncor	Outside of Suncor
B	**Climate change** • Policy and regulation • Greenhouse gas (GHG) emissions reduction strategies • Growth in a carbon-constrained environment	X	X
D	**Water management** • Water quality and quantity • Water use and return • Water stewardship	X	X
E	**Tailings management** • Progressive reclamation and fluid tailings management • Aquatic closure • Legacy tailings	X	X
G	**Technology and Innovation** • Collaboration and sourcing from other industries • Replication strategy • Enablers of lower carbon and competitiveness	X	X
I	**Land management and biodiversity** • Caribou • Wetlands • Land reclamation • Offsetting strategies	X	X
K	**Air quality** • Air quality monitoring and emissions • Flaring • Odours	X	X
L	**Cumulative impacts** • Regional impacts and environmental thresholds	X	X
O	**Environmental protection and compliance**		

	• Spills and releases • Operational issues	X	X

Our people

	Our people are our most valuable asset and key to our success. If managed poorly, these issues could result in labour shortages, talent depletion, process and personal safety incidents or even worse, fatalities. Managed well these issues could result in improved productivity, lower costs, innovation and a strong and thriving work culture.	Impact across Suncor value chain	
		Inside of Suncor	Outside of Suncor
J	**Our employees** • Building talent, competency and knowledge retention • Skilled labour • Engagement, productivity and diversity • Labour relations	X	
N	**Health and safety (employees and contractors)** • Occupational health and wellness • Personal safety • Process and operational safety	X	

Our operations

> We are Canada's leading integrated energy company with operations in all stages of the oil and gas industry – upstream, midstream and downstream.

Our operations include:

- Oil Sands
- Exploration and Production
- Supply and Trading
- Refining and Marketing

Our operating areas

Expand all | Collapse all

Oil Sands

Our Oil Sands business is focused on the responsible development of one of the world's largest petroleum resource basins — the Athabasca oil sands — through both mining and in situ technologies.

Read about Oil Sands on suncor.com

Exploration and Production

Our Exploration and Production business is focused on delivering value and growth through the development and operation of lower cost crude oil assets, which includes:

- offshore operations off the east coast of Canada and in the North Sea
- onshore assets in North America, Libya and Syria (Note: Operations in Syria have been suspended indefinitely due to political unrest in the country. Production in Libya has been substantially shut in due to political unrest, with the timing of a return to normal operations remaining uncertain.)

Read about Exploration and Production on suncor.com

Supply and Trading

Our Supply and Trading business provides midstream services, including crude oil marketing, and logistics activities to optimize our value chain. It is part of the Corporate, Energy Trading and Eliminations grouping, which also includes the company's investments in renewable energy projects. Our renewables business includes investments in five operating wind farms and Canada's largest ethanol production facility which feeds into our retail gasoline network.

Read more about Supply and Trading on suncor.com

Read more about our wind power business on suncor.com

Refining and Marketing

Our Refining and Marketing operations further unlock the value of the upstream barrel through our strong refining and marketing network, which includes more than 1,450 Petro-Canada retail stations.

Operations Map

Below is a map of our operations around the globe. Click the image to view larger.

Technology development

On this page:

> Suncor pioneered oil sands development. Our early investments in technology helped unlock the potential of the oil sands by improving reliability and performance, expanding productivity and driving down costs while reducing our environmental footprint.

Today, new technology and innovative thinking remains fundamental to how we do business. We take a balanced approach to technology development, focusing on both continuous improvement technology (step-change improvements in existing processes) and strategic technology (game-changing, disruptive). Our technology development efforts largely focus on four areas:

- in situ
- mining and tailings
- upgrading and refining
- closure

Additionally, we target specific outcome areas:

- regional environmental impact (tailings, water and land)
- global environment footprint
- cost management/enhanced profitability

In 2017, we plan to invest more than $200 million in technology development as part of a robust technology strategy to optimize current assets and develop next generation facilities.

In some cases, we aggressively lead development and deployment of new technologies on our own. In most areas, however, we collaborate through consortiums or with third parties. Collaboration is a key enabler to the oil sands industry's efforts to develop and deploy new technologies.

COSIA

Suncor leads or participates in a number of technology studies and projects under Canada's Oil Sands Innovation Alliance (COSIA), an alliance of companies representing 90% of oil sands production. COSIA has world recognized processes that allow participating companies to share effort, and share the resulting technologies and innovations focused on environmental improvements. To date COSIA has been instrumental in:

- 936 contributed technologies (113 obtained in 2016)
- $1.33 billion spent to develop technologies ($111 million in 2016)
- 276 current, active projects (76 obtained for 2016)
- $680 million cost for current projects in progress ($219 million in 2016)
- 347 completed projects (119 completed in 2016)
- $818 million cost for completed technologies ($111 million in 2016)
- Suncor is the lead for several projects, including the Water Technology Development Centre
- Suncor is also a participating COSIA member company in the NRG COSIA Carbon XPRIZE
- In 2016, Suncor led 43 COSIA studies and Joint Industry Projects

Read more about COSIA's environmental priority areas

EVOK Innovations

Suncor is a co-founder of Evok Innovations, along with the BC Cleantech CEO Alliance and Cenovus Energy to accelerate early-stage technologies. Evok brings together British Columbia's cleantech industry and Alberta's oil and gas sector to advance new technologies directed at environmental and economic improvements for the oil and gas value chain. Launched in 2016, Evok is a fund that offers innovators mentorship and access to capital to progress development of pre-commercial technologies. An important feature of Evok is the access provided to the end customers (Suncor and Cenovus) at an early stage in the life of the start-up companies.

Through 2016 and in early 2017, six technology companies were funded:

- **DarkVision:** high resolution ultrasound-based imaging technology that can be used within the wellbore
- **Kelvin:** industrial 3D motion intelligence and asset relationship management
- **Metabolik Technologies:** bioremediation platform that enables microbes to reduce the concentration of naphthenic acids and other components found in oil sands tailings ponds
- **Mosaic Materials:** removing carbon dioxide and other impurities from gases through high-efficiency metal-organic framework (MOF) adsorbents
- **Opus 12:** developing a device that recycles CO_2 into cost-competitive chemicals and fuels
- **Rotoliptic Technologies:** downhole pump technology as a high efficiency alternative to existing electric submersible pumps

Read more about Evok Innovations

Decarbonization

Suncor is committed to developing technologies that will allow us to produce crude oil from our oil sands resources at a supply cost and with an environmental footprint (production through refining and consumption) at or below that of conventional oil. This could be achieved in part through the selective decarbonization of our oil sands products.

What does this mean?

Bitumen is a complex mixture of chemical compounds, including heavy hydrocarbon components that require significant upgrading and refining before they can be used as gasoline, diesel, or other fuels. Upgrading refers to processes that increase the ratio of hydrogen to carbon in these heavy components; one way to achieve this is by rejecting a portion of the carbon from the bitumen. This 'decarbonization' could result in higher value bitumen-derived crude oil while simultaneously permanently removing carbon, sulphur, and impurities from the global fuel system. This approach is also expected to reduce diluent required for transportation and lower the downstream processing hydrogen and energy requirements, resulting in lower greenhouse gas emissions from the overall extraction and processing of bitumen. Our Paraffinic Froth Treatment process at Fort Hills is an example of decarbonization technology.

Decarbonization is a strategic focus area for technology development in Suncor – reliable, less energy intensive processes will be needed to realize the benefits. The result could be a higher value crude oil delivered at a lower cost and with a lower environmental impact from wells to wheels.

Pursuing external technology collaborations

Suncor also monitors technologies being developed by external parties to determine if, and when, an investment by us could make sense to advance the technology and adapt them for our business. This involves funding outside companies whose technology ideas align with the needs of our operations or businesses. Examples include:

- **LanzaTech**: a biofuels firm based in the USA that is advancing a proprietary gas phase fermentation technology to recycle waste gas and greenhouse gas emissions into low carbon fuels and chemicals.
- **Benefuel**: a technology commercialization company focused on building biodiesel production capacity using cost advantaged feedstock.

This type of technology development is carefully managed to ensure it provides economic and environmental benefits to Suncor. It is a key strategy in a world of fast changing products and services.

Advancing in situ technologies

In 2016, we set a new goal to reduce the emissions intensity of our operations by 30% by 2030 – to meet that goal, we need to go beyond today's capabilities and technologies.

We are advancing a portfolio of in situ technologies as a means of improving the cost competitiveness and lowering the carbon intensity of producing bitumen. We are using what we have learned implementing steam-assisted gravity drainage (SAGD) over the past 15 years to advance a portfolio of technologies that offer the potential to deliver significant improvements in the following areas:

- Production rates and resource recovery
- Energy and greenhouse gas (GHG) emissions
- Water management
- Capital and operating costs
- Product quality and value

We think the greatest potential for improvement in these areas is in steam, solvent, electromagnetic energy and surfactants, and we are actively pursuing multiple technologies in this space.

Watch a video about the in situ technologies we're advancing

To accomplish this, we are pursuing a number of approaches and technologies – some that can be implemented immediately at existing sites and some that will take five or more years to successfully commercialize and may only be used in new field developments.

In the near term, our focus is on a simpler SAGD design that uses less metal, is more efficient and creates a smaller footprint. Through what we call our Next Generation SAGD platform, we expect to see a reduction in:

- emissions
- water usage
- costs

Additionally, we are working on a remote monitoring, control and support system through an Integrated Operating Centre (IOC) from Calgary for our Firebag asset. This approach has the potential to reduce operating and capital costs through a more predictive model and increased cross-functional collaboration using near real-time data to make better operating decisions. This is an example of deploying the latest in innovations in information technology with a new application.

We also see solvent and surfactant assisted SAGD oil recovery as a promising potential solution to reduce energy and water use at our in situ facilities, both for existing operations and for future growth.

In the longer term, we are evaluating and advancing a number of technologies that use less or no steam, through a combination of solvents, solvent steam processes, surfactants, and radio frequency heating techniques. In our view, a likely solution will be a hybrid of the many innovative approaches and technologies we're testing.

In Situ Demonstration Facility: the next step to commercialize step change technologies

Suncor is currently evaluating the potential to advance our in situ technologies at commercial scale through the development of an in situ demonstration facility (ISDF) at our MacKay River lease. The concept we are exploring is a flexible facility that would be able to support the development of one or more

well pads (5-12 well pairs) and the demonstration of multiple in situ technologies using solvent, electromagnetic heating and/or steam.

Expand all | Collapse all

Electromagnetically Assisted Solvent Extraction (EASE)

Instead of using steam to heat the bitumen, electromagnetically assisted solvent extraction uses electromagnetic energy in conjunction with a light solvent (like butane or propane) to gently heat and mobilize the bitumen for production. The electromagnetic heating works much like your microwave does; the use of a light solvent significantly reduces the required operating temperatures, offering the potential to eliminate the need for process water and treatment, as well as reduce energy usage and GHG emissions by 50-75% while producing a lighter, less GHG intensive oil at production rates similar to SAGD.

While EASE is a general technology platform, we have done specific work for over four years to advance this technology as part of the Enhanced Solvent Extraction Incorporating Electromagnetic Heating (ESEIEH) field pilot at our Dover site. We anticipate having results from the pilot in 2018 that will allow us to more fully evaluate the commercial potential of the technology.

Enhanced Solvent Extraction Incorporating Electromagnetic Heating Pilot (ESEIEH)

We are part of a technology consortium that is moving forward with a field demonstration at our Dover Site – home of the original steam assisted gravity drainage (SAGD) demonstration facility – to demonstrate the viability of an innovative in situ production technology.

The field pilot, known as ESEIEH (pronounced “easy”), is a project supported by a consortium of Suncor, Devon Canada, Nexen Energy ULC, Harris Corporation, and Emissions Reduction Alberta (formerly Alberta’s Climate Change and Emissions Management Corporation (CCEMC)).

ESEIEH uses wells configured in horizontal pairs much like a SAGD operation. The electromagnetic heating and solvent is introduced to the reservoir in the upper well. Bitumen and residual solvent are produced from the lower well.

If commercially successful, ESEIEH offers a number of potential benefits over conventional SAGD technology, including:

- reducing energy requirements by up to 75%, which reduces costs and GHG emissions
- eliminating process water needs, including water treatment and handling equipment
- significantly reducing the size and complexity of the surface facility, reducing both capital costs and land footprint

The project is currently in the second phase which initially began operations in 2015. Preliminary results are anticipated in 2018.

In parallel with the operation of the pilot, Suncor and Harris have entered into a collaborative technology development initiative to advance the design of the commercial equipment. This is being done in anticipation that the next stage for the technology should the ESEIEH pilot be successful will be the optimization and deployment of a commercial scale demonstration facility.

Nsolv: toward waterless extraction

Starting in 2013, a pilot plant at our Dover lease began field-testing a condensing solvent extraction technology, with the objective of proving the technology for commercial deployment. The Nsolv^{TM} process uses the horizontal well technology developed for SAGD, but does not use any water. Instead, Nsolv uses vapourized propane or butane to provide heat the same way steam does. But because this solvent also dilutes and mobilizes the bitumen, reservoir temperatures do not need to be raised above 60°C, requiring up to 80% less energy. This potential energy reduction could have a significant impact on GHG emissions.

The Nsolv technology offers potential economic and environmental benefits. A key feature is that, like ESEIEH, the process produces lighter, de-asphalted, and higher-value oil. In short, leaving some of the higher carbon components behind in the reservoir to lower the GHG intensity of the product. Capital and operating costs could be reduced by removing the water treatment plant and steam boilers; instead, a relatively smaller solvent recovery and solvent vapourization plant is required, which will also reduce the land footprint of the facility. Due to the low temperature and low pressure required for its operation,

Nsolv may also allow us to efficiently extract shallow in situ resources which are currently inaccessible.

The Nsolv pilot is the result of collaboration between Nsolv Corporation and Suncor, with support from Sustainable Development Technology Canada and Emissions Reduction Alberta (formerly Alberta's Climate Change and Emissions Management Corporation).

The Nsolv pilot completed operations, having entered the solvent blowdown phase in the first quarter 2017. Suncor is working collaboratively with Nsolv to evaluate the results from this pilot and to understand how the technology can be optimized in order to advance to the next stage which would be to deploy at a commercial scale demonstration facility.

Visit these websites for more details:

- Nsolv Corporation
- Sustainable Development Technology Canada
- Emissions Reduction Alberta

'SAGD LITE' Surfactants program: small technology, big benefits

Our SAGD LITE (Less Intensive Technically Enhanced) program refers to technology development where we aim to lower our steam-to-oil ratio (SOR) through the use of surfactants, solvents or non-condensable gas co-injection.

The advantage of our surfactants and solvents program is that it holds the promise of immediate benefits – more efficient oil recovery while using less energy and water – with minimal associated costs or environmental footprint at our existing facilities.

During the producing life of an oil sands reservoir, different techniques can be applied to optimize oil production and recovery. A good example of an incremental technology with the potential to make a big difference is the addition of slight amounts of soap-like additives – surfactants – in the steam for SAGD production. Potentially, a reduction of SOR in excess of 15% will enable more oil production with less steam generation and fluid handling requirements lowering costs and GHG intensity. And unlike other ideas that are more suited to installation at new facilities, SAGD LITE can be deployed at existing operations to reduce our current environmental footprint more quickly.

In 2015, we successfully executed pilot projects testing surfactant technology – one at MacKay River and one at Firebag. One program at MacKay River has been extended to a larger technology demonstration in 2017.

Non-condensable gas co-injection technology

Later in life, mature SAGD reservoirs exhibit declining production and increasing steam-to-oil ratio (SOR). Suncor piloted non-condensable gas co-injection to divert steam from aging wells to newer wells with lower SOR. Methane is co-injected with steam to reduce the SOR while maintaining production and pressure. This technique reduces environmental impact by optimizing steam demand at our facilities while reducing energy intensity and CO_2 emissions.

The pilot projects at Firebag and MacKay River have shown encouraging results prompting larger technology demonstrations that are expected to commence operation later in 2017.

Suncor is also examining the use of NCG injection to improve reservoir extraction. By increasing gas cap pressure, SAGD may be able to maintain SOR longer, reducing CO_2 emissions. Finally, Suncor is reviewing the opportunity to replace methane with CO_2, with the goal of saving costs and sequestering emissions.

Direct Contact Steam Generation (DCSG)

We continue to lead a project investigating the potential benefits of using Direct Contact Steam Generation (DCSG) as an alternative to the existing once-through steam generators (OTSGs) used in steam assisted gravity drainage (SAGD). This technology, if proven viable, will lower GHG emissions, water and land intensity while improving the economics of in situ projects.

In current SAGD operations, a well is drilled and steam produced in large OTSGs is injected down the well to heat the bitumen until it becomes warm enough to flow. The bitumen and steam (now cooled and turned back into water), are brought to the surface through a second well, and then separated so the water can be used again. CO_2 from combustion is released from the OTSGs' exhaust stacks.

In the DCSG process, the direct contact between water and hot combustion products produces a steam and CO_2 mixture that is then pumped underground. The process has the potential to reduce GHG emissions because thermal efficiency is higher than OTSGs and a significant portion of the CO_2 may be sequestered underground in the SAGD reservoir rather than emitted to the atmosphere as a greenhouse gas. The CO_2 can also act as a replacement for valuable methane in late life non-condensable gas co-injection or lean zone mitigation.

DCSG technology also has potential water and land management benefits. The system captures the water from combustion, augmenting conventional recycling of about 90% of the water, and reduces additional water required to replenish the system. If taken from existing tailings water, tailings pond water could be consumed with this technology. Further, DCSGs produce the same amount of steam as a large OTSG, but in a vessel that would fit in a typical office meeting room, opening up the potential for distributed steam generation with a far smaller land footprint than our current large central OTSG facilities and much less heat lost in distribution of the steam.

Suncor is progressing two areas of DCSG technology development. A six-12 month pilot project at MacKay River is currently co-injecting CO_2 with steam into one well pair to assess the potential impacts to reservoir performance, determine if production is maintained, achieve a lower SOR and confirm CO_2 sequestration potential. Start-up of the field pilot began in the fourth quarter of 2016 and is scheduled to last until the middle of 2017. Results will be available in late 2017.

A second project in collaboration with CanmetEnergy, which began in 2015, will construct a lab pilot in Ottawa. Testing is scheduled to being in 2017 and focus on potential corrosion and its mitigation, fuel efficiency, and optimization of burner design. The lab will enable a long-term controlled testing environment in support of the field demonstration and commercial implementation.

Suncor is also working with CanmetEnergy and other vendors to design the field demonstration of Direct Contact Steam Generation scheduled to begin at Firebag in late 2019 or early 2020. Using produced water from Firebag operations and existing power and fuel sources, this demonstration is intended to determine the commercial viability of DCSG, while injecting CO_2 and steam, sequestering most of the CO_2 underground and potentially resulting in less GHG emissions, less water use and reduction in land footprint with a vessel smaller than current OTSGs.

Steam Assisted Gravity Drainage (SAGD) Produced Water Treatment pilot project

During 2014-2015, through a Joint Industry Project under Canada's Oil Sands Innovation Alliance, Suncor hosted a pilot project with GE Canada, Alberta Innovates, ConocoPhillips Canada and Devon to test new technologies to reduce greenhouse gas (GHG) emissions and water use in the oil sands.

SAGD operators reuse water as much as possible to create steam, but the water pumped to the surface in the extraction process must be separated from the bitumen and cleaned prior to being recycled through a steam-generator. In 2014, the project tested de-oiling technologies, while in 2015 water treatment membranes were tested at our MacKay River facility. Phase 2 development work progressed throughout 2016, and the final phase of pilot testing onsite is anticipated to occur in late 2017.

These technologies could enable treating and reusing the water more consistently which means being more operationally efficient and requiring less energy.

CO_2 capture from hydrogen plants

Capturing, transporting and storing CO_2 underground are already being used at various locations as a key long-term tool for reducing large-scale industrial emissions. But current technology remains too expensive to implement on a broad scale.

COSIA's Greenhouse Gas Environmental Priority Area conducted a carbon capture technology scan to identify early-stage promising technologies with the potential to capture carbon at significantly lower costs compared to the current state-of-the-art technologies.

Several promising technologies have been identified for carbon capture from hydrogen plants (located at upgraders and refineries) through a Suncor-led COSIA Joint Industry Project with Canadian Natural Resources Limited. Further development is underway on a short list of the most promising opportunities. If successful, the technologies could result in significant GHG emission reductions at a much lower cost and environmental footprint.

Advancing surface mining technologies

Our oil sands mining projects are projected to produce a reliable, long-term energy supply while using technology to minimize environmental and social impacts of resource development in the Athabasca Basin region.

Expand all | Collapse all

Paraffinic Froth Treatment (PFT)

Our Fort Hills mine will be using Paraffinic Froth Treatment (PFT) to convert bitumen froth generated in the extraction circuit into an upgrader feedstock. In PFT, we selectively reject part of the asphaltenes (a low-value, heavy fraction of the mined bitumen) to create a lighter, higher quality bitumen that requires less diluent to transport by pipeline. PFT also removes the remaining solids and water, leaving us more flexibility for downstream processing. As a result of this partial decarbonization process, we expect to see lower life-cycle GHGs and energy intensity to get our refined products to the market.

Less aqueous extraction

Through partnerships with equipment suppliers and research organizations such as Innotech Alberta (formerly Alberta Innovates), we are pursuing new technologies in surface mining and bitumen extraction that could reduce or eliminate the need for water in bitumen extraction. Currently, hot water is used to separate the bitumen from the sands. If we could reduce the need for water and replace it with an alternative solvent, we may be able to reduce water usage, the need for tailings ponds and potentially our greenhouse gas footprint by reducing operating temperatures and simplifying our overall process.

Froth treatment tails

Froth treatment tailings (FTT) is the smaller of the two waste streams that are generated during processing mined oil sands. The stream is a mixture of sand, water, various minerals and residual hydrocarbons. Some of the components require extra consideration with respect to environmental effects, while some constituents like Rare Earth Elements (REEs) or variations could be potential revenue streams. Suncor is working on technologies to manage both aspects of FTT.

Through COSIA, Suncor is actively collaborating with industry partners to assess long term environmental performance of froth treatment tailings. Of specific interest is the observation that certain microbes are capable of bio-degrading some of the residual hydrocarbons in FTT. If this biological activity can be used commercially, then this would open up new, natural ways to tackle environmental side effects of FTT materials.

In addition, Suncor has recognized that the presence of REEs in froth treatment tailings could mean that these materials could be considered a strategic resource for the 21st century rather than a ‘waste’ stream. Many things we use on a daily basis (from rechargeable batteries and magnets to welding goggles) make use of REEs like vanadium and titanium. Research is ongoing to determine if technologies can be developed that would commercially unlock the value of these elements, while at the same time improving the long term environmental performance of the oil sands deposit.

Autonomous haulage systems

Suncor is the first company to pilot Autonomous Haulage System (AHS) technology in open-pit mines in Canada. Using a combination of GPS, Wi-Fi, laser and radar technologies, and proprietary software, the autonomous trucks work reliably and safely around other mining equipment, light vehicles and mine site employees. Suncor's fleet of AHS-capable heavy haul trucks can also be operated in a driver-operated manual mode, if required.

Suncor has partnered with equipment manufacturer Komatsu for this work. Preliminary field trials were completed using a single autonomous truck at Suncor’s base mine in 2013 and 2014. Positive results from the field trials supported the decision to carry out a six truck commercial scale evaluation in Suncor’s North Steepbank Extension mine. The objective of the evaluation, which ran from 2014 to mid-year 2017, was to verify the operational parameters required for broader implementation of AHS technology in Suncor’s oil sands mining operations. Contingent on final project reviews and approvals, AHS

technology would be implemented over a three-to-five-year period commencing in the North Steepbank Extension in late 2017. We are also exploring AHS technology for the Fort Hills mine in collaboration with our partners.

Potential benefits of AHS technology include:

- enhanced safety performance
- improved operating efficiency
- reduced fuel consumption resulting in lower GHG emissions
- lower operating costs

With new technologies like AHS, comes the need for new skills and opportunities to learn. Our training plan will continue to build AHS competency and knowledge. As always, we will work with our employees, partners and stakeholders to develop those opportunities as we adopt technologies to improve our business.

Watch a video about the AHS technology

Permanent Aquatic Storage Solution (PASS)

The Permanent Aquatic Storage Structure (PASS) technology is a Suncor-led research and development project focused on treatment of fluid fine tailings prior to deposition in-pit. The treatment process is intended to accelerate the dewatering and settlement of fluid tailings, and reduce mobility of constituents of concern such that the deposit is ready for aquatic reclamation into a lake capable of supporting a freshwater ecosystem, shortly after the end of mine life.

As we progress this technology, we are using our knowledge from our Tailings Reduction Operation (TRO), consolidated tailings (CT), waste water treatment, and through shared knowledge at COSIA. Several elements are progressing in 2017 with an aim to deploy a commercially-ready technology in the field by 2018 and to share the research results with COSIA member companies.

Watch a video about the PASS technology

Read more about oil sands tailings technology

Advancing land reclamation

We're aggressively working to accelerate the pace of progressive reclamation of disturbed land at our mining and in situ locations.

Nikanotee fen

In 2013, Suncor became one of the first companies in the world to complete reconstruction of this type of wetland in co-operation with numerous university researchers and consultants across the continent. Research is showing that the fen (a form of wetland area that is a highly productive and diverse ecosystem) is remaining wet through the seasonal weather cycles, water quality is good and plants are growing and spreading naturally.

Read more about the Nikanotee fen and other reclamation activities

Safety and technology

At Suncor, technology and innovative thinking isn't limited to improving our environmental impact or reducing costs. Our unwavering commitment to safety is embedded in our approach to operational excellence which means operating in a way that is safe, reliable, cost-efficient and environmentally responsible.

Expand all | Collapse all

Wireless badge program

Suncor's safety-first thinking has initiated the implementation of a program which aims to enhance worker safety and improve efficiency. These wireless badges are equipped with Radio Frequency ID technology that transmits to a site wireless network, similar to a wireless network at home. The site wireless network provides near real-time location information; detailing accuracy within 30-50 feet of the actual location. Each badge has a panic button that can be used in the event of an emergency (where radio or phones are not an option) for workers to receive emergency response to their location. Data from the badges, such as near real time location, is used at an aggregate level to better understand mass movements of workers to identify improvements.

We began piloting the wireless badges in 2015 at planned maintenance events at Base Plant, and following successful implementation, the badges are now mandatory personal protective equipment during a maintenance event at that facility. In May 2016, we undertook a major planned maintenance at one of our upgraders which required additional personnel on site.

The wireless badges proved to be very beneficial during our response to the wildfires in the Regional Municipality of Wood Buffalo in spring 2016. We were able to confirm through the badge dashboard that more than 1,000 individuals were evacuated from the Upgrader within 30 minutes, helping to ensure our workers were safe.

In 2017, we assisted Syncrude in implementing the same technology for selective areas. Based on our successful implementations, we will continue to look for opportunities to implement this technology in other parts of our business.

Wireless gas detection monitors

In our continued efforts to drive strong safety performance, we introduced more sophisticated gas detection monitors with enhanced detection features as part of employees' personal protective equipment in 2015.

These monitors have since been worn by employees and contractors in selective areas of our upgrading facilities. The monitors are equipped with a tracking device and can detect hazardous levels of certain gases or solvent vapours in the air. Elevated levels of these gases or vapors or unusual periods of employee inactivity trigger an alarm which alerts emergency management services staff and operations personnel in our control room enabling us to locate the employees immediately and ensure their safety. The monitors also feature a 'panic' button which employees can activate any time if they require emergency assistance. Feedback from our employees indicates these monitors provide them with some comfort, knowing someone would be notified and respond immediately if needed.

Since first introducing the monitors in 2015, we have continued to work with the service provider to improve the technology to account for such factors as the harsh weather conditions in northern Alberta. Based on the positive results we have seen to date, we plan to expand the use of the gas detection monitors to the rest of the upgrading complex later this year and consider further implementation in other areas of the company.

Technology in our lubricants business

Our technology story isn't all about oil sands exploration and production.

Expand all | Collapse all

Lubricants technology: the CIVITAS^{TM} example

We develop and license a range of patent-protected plant health products in global markets. Among them are the CIVITAS line of products which are marketed under the Intelligro brand, the lawn and agriculture product brand of Suncor**. CIVITAS TURF DEFENSE is a cutting-edge protection product for use on golf courses and sports fields. This environmentally responsible product works to improve plant health by enabling the plant to better withstand the impacts of stress, including the ability to tolerate limited water conditions, and provide a more durable playing surface while controlling disease.

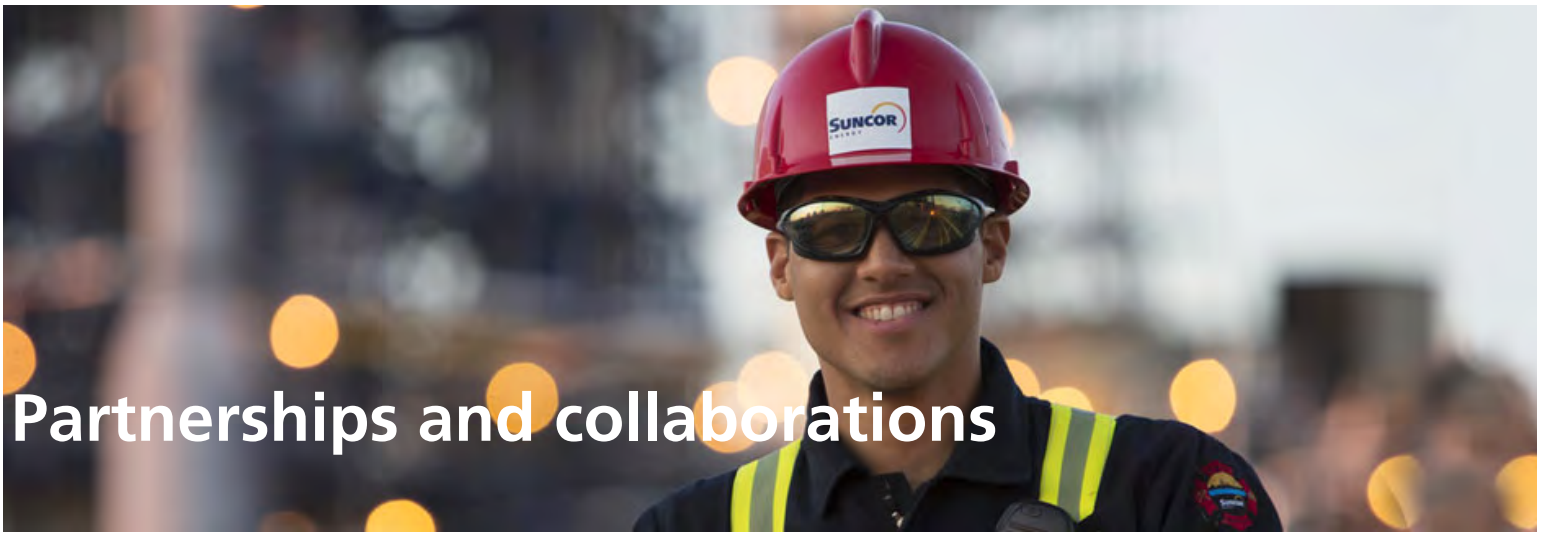
We will continue to research and develop these environmentally responsible products to ensure we maximize potential value.

CIVITAS WEEDfree BRAND Concentrate

CIVITAS WEEDfree BRAND Concentrate** is a revolutionary approach to broadleaf weed control. The innovative microtechnology enables the product to penetrate more effectively into broadleaf weeds, resulting in no offensive odour and significantly less active ingredients (less than 70% compared to other leading herbicide products) required to control weeds right down to the root. This hybrid selective herbicide provides effective, resourceful weed control.

CIVITAS WEEDfree BRAND Concentrate selective herbicide is available to professional lawn and landscape companies across the U.S. and Western Canada. It's also available to golf courses across Canada (pending municipal restrictions).

**In early 2017, Suncor sold Petro-Canada Lubricants Inc. (PCLI) to HollyFrontier. While PCLI will continue to market the CIVITAS line of products under license, Suncor remains the owner of the intellectual property of the products marketed under the Intelligro brand.



Partnerships and collaborations

On this page:

> Conversations that will lead us to better, more responsible solutions means working with stakeholders, governments and industry partners. And while we might not always agree on everything, we do have a common goal – create energy to improve quality of life and do so in a sustainable way.

Environmental non-government organizations (ENGO) partnerships

It strikes some observers as curious that we seek out relationships with groups and individuals who are openly critical of oil sands development. We do it because we think it's important to listen and understand other perspectives. We find value in thinking about things differently and this often leads to new ideas, joint problem solving or different ways of working with our stakeholders.

Finding common ground

ENGOs are involved in a variety of activities on a wide range of issues. We may have disagreements on some issues and find common ground and mutual benefit by working together on other issues.

We work hard to understand and learn from ENGOs because we value their knowledge, insights and diverse perspectives.

Environment of mutual respect

We seek to engage with ENGOs in an atmosphere of mutual respect, although this does not mean either side is co-opted by the other. Our ENGO partners

are free to publicly criticize our company or industry as they see fit except on specific initiatives in which we've agreed to co-operate. We, in turn, are free to counter statements and research by ENGO partners if we know it to be contrary to established facts. Simply put, both sides can agree to disagree, while continuing to work together for the greater good.

We have entered into several successful partnerships with ENGOs in recent years. These organizations include:

Expand all | Collapse all

Joint Problem Solving Forum (JPSF)

The Joint Problem Solving Forum (JPSF) is an informal group of oil sands industry and environmental organization executives who meet several times a year to problem solve, explore solutions and look for common ground on the critical issues of climate change and energy development.

Participating companies include:

- Canadian Natural Resources
- Cenovus Energy
- ConocoPhillips Canada
- Shell
- Suncor

The environmental organizations involved include:

- Environmental Defence
- Pembina Institute
- Clean Energy Canada
- Stand (formerly Forest Ethics)

The JPSF first met in late 2014 to see if there was a way to get past the conflict and polarized debate that existed between the oil sands industry and the environmental community. Neither side was making the progress they wanted, so they met to explore whether there was a way through the impasse.

The first thing the JPSF worked on was a carbon pricing framework that included GHG performance standards for oil sands operators, a 100 MT cap on oil sands emissions and a methane emissions reduction plan. These components became part of the Alberta Climate Leadership Plan. The JPSF continues to meet and work through carbon policy issues including methane reduction and low carbon fuel standards.

Ceres

Ceres mobilizes a network of investors, companies and public interest groups to accelerate and expand adoption of sustainable business practices and solutions to build a healthy global economy. Suncor has been a Ceres member company since 2007. We have worked closely with a diverse stakeholder group assembled by Ceres to discuss our overall sustainability strategy, including reporting, risk analysis and issues management. This Ceres stakeholder panel encouraged us to develop our first set of environmental performance goals. In 2015, Ceres reviewed our draft sustainability goals and provided feedback. Mostly recently, Ceres reviewed and provided feedback for Suncor's Climate Report: *Resilience Through Strategy*.

Learn more at Ceres

Boreal Leadership Council (BLC)

BLC is composed of leading conservation groups, First Nations, resource companies and financial institutions, all of which have a stake in the future of Canada's boreal forest. As a member of the BLC, we are a signatory to the Boreal Forest Conservation Framework. We are committed to implementing this national vision through our own sphere of activity and have submitted an action plan to council members outlining our priorities and focus areas.

Suncor sponsored a BLC project to look at how Aboriginal Peoples are working to protect the woodland caribou. The review looked at:

- tools
- data
- practices
- governance structures used by Aboriginal Peoples, including:
    - Indigenous knowledge
    - identifying habitat
    - monitoring populations
    - other aspects of caribou conservation

Suncor also participated in a working group looking at understanding and implementing Free, Prior and Informed Consent (FPIC) in Canada. We continue to work closely with the BLC on this important issue.

Learn more at the Boreal Leadership Council

Energy Futures Lab

Meeting society's energy challenges today and tomorrow is all about making informed choices. That's why Suncor and the Suncor Energy Foundation (SEF) are investing in an evolving set of initiatives to collaborate on the energy future we'll all share. Our goal is to leverage our strengths as an energy company and be a catalyst for an inclusive, national dialogue that will enable Canada to use our energy resources wisely and pave the way for a sustainable energy future.

Launched in 2015 with 40 Fellows, the Energy Futures Lab is an Alberta-based, multi-sector collaboration designed to help shape Alberta's energy future and strengthen its position and reputation as a global energy leader. Led by The Natural Step (TNS) Canada, it's supported by four convening organizations:

- The Suncor Energy Foundation (SEF)
- Banff Centre
- Pembina Institute
- Government of Alberta

The Fellows are exploring the question: **How can Alberta's leadership position in today's energy system serve as a platform for transitioning to the energy system the future needs?**

In 2016, the Fellows identified nine innovation pathways, including radical carbon efficiency in energy production, deployment of distributed renewables and smart energy communities, to focus their work in the coming years.

Learn more about Energy Futures Lab

Student Energy

Another initiative supported in the energy space is Student Energy (SE) and their interactive energy literacy platform. SE is a global not-for-profit that is helping post-secondary students to become the next generation of leaders committed to transitioning the world to a sustainable energy future. Their approach of engaging all perspectives for a balanced understanding aligns with how we want to have the conversation about our energy future.

Pollution Probe

Pollution Probe is a national, not-for-profit organization that defines environmental problems through research, promotes understanding through education and presses for practical solutions through advocacy.

Through the Suncor Energy Foundation, we have been partners with Pollution Probe since 1998, most recently supporting Energy Exchange – an entity

aimed at advancing the national dialogue on Canada's energy future. Pollution Probe publishes the Energy Exchange Magazine twice per year which promotes a systems-based understanding of energy issues among its readers.

- Learn more at Pollution Probe
- Learn more at Energy Exchange

Environmental multi-stakeholder working groups

We believe working with stakeholders to understand their environmental concerns is the best way to develop programs to monitor the environment and to develop a better understanding of environmental limits. We are a member of:

Expand all | Collapse all

Wood Buffalo Environmental Association (WBEA)

The Wood Buffalo Environmental Association (WBEA) is a collaboration of communities, environmental groups, industry, governments and Aboriginal representatives that has developed and implemented an integrated and intensive program on air and terrestrial monitoring in the region. Through the Environmental Science and Monitoring Division of Alberta Environment & Parks, the WBEA monitors air quality in the Regional Municipality of Wood Buffalo, 24 hours a day, 365 days a year and shares the information collected with stakeholders and the public.

Read more about Wood Buffalo Environmental Association

Oil Sands Advisory Group (OSAG)

As a member of the OSAG, a Suncor representative provides input to the provincial government on the oil sands aspects of the Alberta Climate Leadership Plan. The OSAG is composed of members from industry, environmental organizations and Indigenous and non-indigenous communities and helps ensure initiatives under the Climate Leadership Plan are effective and widely supported.

Alberta Association of Conservation Offsets (AACO)

Suncor is on the Board of the Alberta Association of Conservation Offsets (AACO), which is a non-governmental collaboration among a number of diverse entities and interests sharing an interest or expertise in the field of conservation and biodiversity. This group is working on a provincial offsetting policy.

Athabasca Watershed Council (AWC)

The Athabasca Watershed Council is a multi-stakeholder, not-for-profit Watershed Planning and Advisory Council (WPAC) that was formed in August 2009. To provide timely credible information about the Athabasca Watershed, the council works with:

- academia
- industry
- environmental and stewardship groups
- various levels of government
- communities and citizens

The AWC-WPAC actively promotes, fosters respect, and plans for an ecologically healthy watershed by demonstrating leadership and facilitating informed decision-making to ensure environmental, economic and social sustainability.

Industry collaborations

We also participate in industry organizations that work to improve the industry's environmental, social and economic performance. These organizations include:

Expand all | Collapse all

Canada's Oil Sands Innovation Alliance (COSIA)

COSIA is an alliance of oil sands producers focused on accelerating the pace of improvement in environmental performance in Canada's oil sands through collaborative action and innovation. Through COSIA, participating companies capture, develop and share innovative approaches and best thinking to improve environmental performance in the oil sands. COSIA represents 90% of oil sands production in Canada, focusing on five environmental priority areas:

- tailings
- water
- land
- greenhouse gases
- monitoring

COSIA is taking innovation and environmental performance to the next level through a continued focus on collaboration and transparent exchange.

Learn more at COSIA

Oil Sands Community Alliance (OSCA)

Building on the work of the predecessor Oil Sands Developers Group, the Oil Sands Community Alliance (OSCA) aims to help oil sands region communities thrive economically and socially. OSCA's collaborative approach facilitates engagement, builds relationships and creates measurable socio-economic benefits in focus areas of Aboriginal communities, community well-being, infrastructure and workforce planning.

Learn more at OSCA

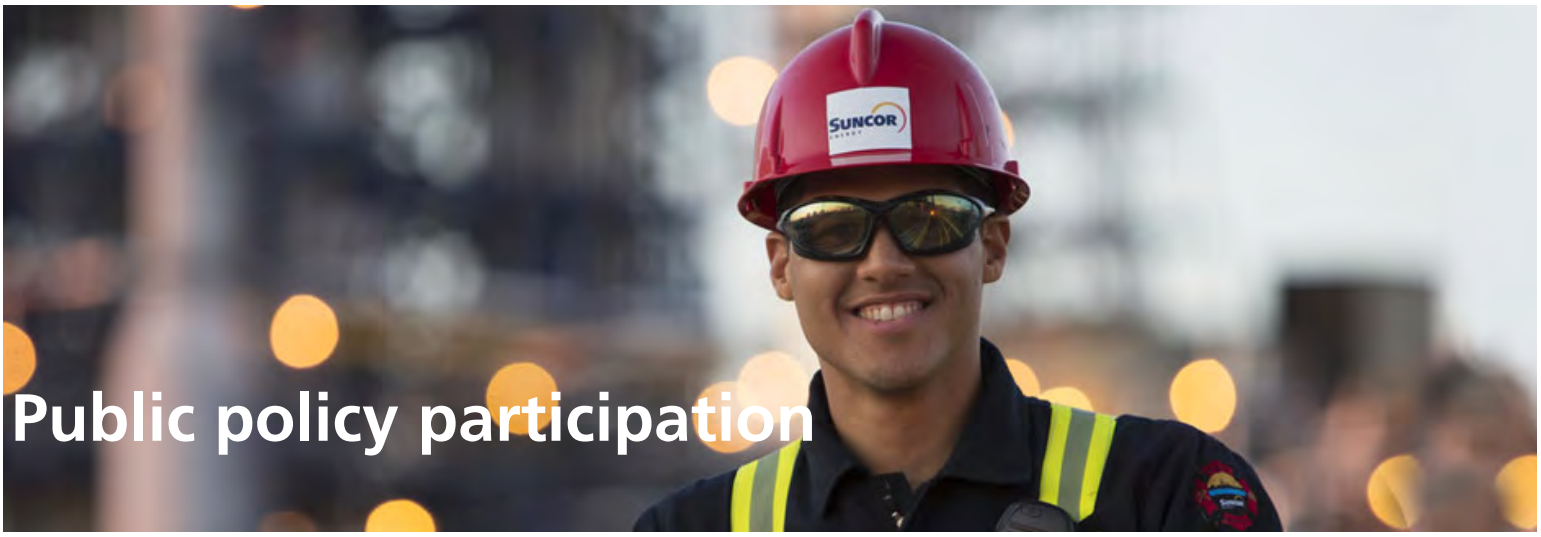
Industry associations

We are a member of several industry associations. There is strength in having forums for creating alignment and discussing issues. For a list of certain industry associations, please refer to Lobbying and Disclosure.

Advocacy coalitions

We value and advocate reaching out to diverse stakeholders to generate constructive dialogue about energy development. In 2013, we joined the Resource Works multi-stakeholder coalition to encourage broad dialogue on energy and resource development in Canada. Through this partnership, we hope to encourage Canadians to learn more about the value the resource sector brings to their daily lives and the Canadian economy.

Learn more at Resource Works



Public policy participation

On this page:

We participate in public policy discussions on energy and the environment, and regularly communicate with governments in jurisdictions where we operate. In doing so, we ensure that we comply with all political contributions and lobbying regulations, and report government interactions consistent with the law and company policies. Increasingly in Canada, public policy is developed through open and transparent processes, incorporating the expertise and perspective of a broad range of stakeholders. Suncor participates in these forums, bringing our industry perspective and a solutions-based mindset to advance responsible development.

We support governments taking a reasoned approach to policy development. We believe policy should be built on evidence-based information and perspectives. Constructive dialogue and sharing of information are critical in guiding our interaction with governments and stakeholders towards the development of practical policy solutions. These activities promote responsible development of existing and new energy sources. We aim to decrease the probability of reactive policy development by working to reduce polarized dialogue.

Our policy position with governments includes:

- applying a broad-based economy-wide carbon price
- encouraging a healthy debate about energy solutions
- understanding the role of advancements in research, technology and innovation
- considering energy development and distribution costs and benefits
- encouraging Aboriginal economic collaboration and capacity building
- developing vibrant, sustainable communities
- supporting Canada's long-term prosperity

A snapshot of some of our thoughts and opinions follows:

Expand all | Collapse all

Economic policy

Royalties and taxes

Royalties and taxes should deliver a fair return to government, while providing industry with a competitive, stable and predictable fiscal framework on which to base long-term investment decisions. Policies should recognize market factors, such as challenges faced by corporations competing in a global economy. Levies added over and above current royalties and taxes need to be holistically considered and understood in terms of costs, outcomes and competitiveness against other jurisdictions in which Canada's natural resources compete.

Transparency

We support regulations that promote transparency and advocate for rules that are consistently applied and respect agreements with First Nations.

Cumulative impact of policy changes

We continually study expected cost increases resulting from existing and proposed policy changes. The study findings are used to inform our approach to the energy systems dialogue. They help us reflect on opportunities holistically and provide context for policy-makers and regulators so that we can fully consider policy benefits and focus on how to incent constructive outcomes.

Market access

There are several proposals for new or expanded pipelines across the country and into the United States to take oil sands supply to markets. They face significant public scrutiny with concerns being raised about pipeline and marine safety, First Nations rights and their strong relationships to local ecosystems, and broader objections about enabling the North American economy's reliance on fossil fuels. Pipelines continue to be the safest, most efficient means of transportation for crude oil and other petroleum products, and we are working with stakeholders to address many of these concerns from a producer's perspective and are engaged with governments to the same extent.

In addition to the existing comprehensive and robust regulatory framework in place that governs development and operation of pipelines and other large infrastructure projects, we support Environment and Climate Change Canada's (ECCC) approach to assessing the upstream greenhouse gas (GHG) emissions from projects undergoing federal environmental assessment. We believe that efficient, effective and transparent regulatory oversight is the responsible thing to do and will be valuable to accurately inform Canadians, decision-makers and other stakeholders.

Read more about market access on Suncor.com

Social policy

Local community capacity

In co-operation with industry partners and local business associations, we have been working with the Regional Municipality of Wood Buffalo in northeast Alberta to better forecast future population growth and infrastructure needs. Building non-profit capacity and supporting key community initiatives continue to be an important component of our work in the region. We also participate in the Athabasca Oil Sands Area Transportation Coordinating Committee, where infrastructure needs, funding and financing options are discussed and prioritized.

Read more about community investment

Read more about Aboriginal relations

Environment policy

Federal Environmental Act Reviews

In May of 2016 the Federal Government initiated a review of Canada's environmental assessment processes to regain public trust. These reviews include the Canadian Environmental Assessment Act (CEAA), the modernization of the National Energy Board, the Fisheries Act, and the Navigable Waters Protection Act.

Environmental assessment informs government decision-making and supports sustainability development by identifying opportunities to avoid, eliminate or

reduce a project's potential adverse impact on the environment and ensure mitigation measures are in place when a project is constructed, operated and decommissioned.

Suncor's response to the review processes to date has reinforced that environmental assessment is critical to project development and must be transparent, and effectively and efficiently managed to ensure public and investor confidence. The process needs to appropriately balance the economy, the environment and social impact while at the same time incent innovation.

Lower Athabasca Regional Plan (LARP)

In 2008, the Alberta Government introduced the Land Use Framework. The purpose of the Land Use Framework was to manage growth in Alberta by balancing economic, social and environmental goals. The first regional plan, the Lower Regional Athabasca Plan (LARP), was completed in 2012.

The LARP includes management frameworks for:

- air (SO_2 and NO_x)
- surface water quality
- surface water quantity
- tailings management
- regional groundwater management

Each of these frameworks includes interim triggers to allow early indications of change. A Biodiversity Management Framework and Landscape Management Plan continue to be under development.

On an ongoing basis, we also participate in technical discussions that lay a foundation for future policy and regulation on aspects of tailings management, water return, biodiversity and wetlands.

Read more about water quality monitoring

Greenhouse gas (GHG) emissions

Climate change regulation

We are engaged with all levels of government to establish a credible carbon policy regulatory framework for the oil and gas sector in Canada. Our position is that Canada's oil sands are a world-class responsibly developed resource that is needed to meet growing global energy demand.

We are a strong voice in the call for effective policy to address the Canadian oil and gas industry's GHG emissions. In our view, this includes a carbon price signal that incents the right behaviour and a practical regulatory architecture. Since 2008, we have advocated publicly in support of a broad-based, economy-wide carbon price. Our continued collaboration with Canada's Ecofiscal Commission has generated numerous reports focused on two themes:

- the importance of implementing carbon pricing
- considerations needed for policy design

We support regulatory design that:

- drives best achievable performance from existing facilities
- provides clear support for innovation and technology development that enables game-changing solutions
- positions Canada as a leader in energy innovation
- sets challenging but achievable reduction goals with a process that allows for an increase in ambition as technology develops
- is flexible and provides for multi-jurisdictional compliance pathways
- avoids duplication

Read more about our GHG performance

Alberta's Climate Leadership Plan

The Government of Alberta's Climate Leadership Plan (CLP) includes a broad-based, economy-wide carbon price with a legislated limit on oil sands emissions of 100 mega tonnes (MT) per year. Alberta is one of the first jurisdictions in the world to set a limit on the emissions of a key resource sector. The new Carbon Competitiveness Regulation (CCR) will replace the current Specified Gas Emitters Regulation (SGER) on Jan. 1, 2018. Under the CCR, an

economy-wide price of $30 per tonne is expected to cover an estimated 78-90% of the province's carbon emissions. To protect the competitiveness of trade-exposed industrial sectors, an Output Based Allocation will determine the number of emissions allowances a facility receives and the carbon price will be paid on emissions above that level.

Suncor is proud to have worked with leading environmental organizations to better understand each other's views and recommend solutions for the oil and natural gas industry that helped inform the CLP. We believe that the CLP will provide predictability and certainty to help ensure that producers can responsibly develop and grow Canada's oil sands resource while also addressing global concerns about climate change.

Quebec/Ontario – Cap and Trade

Both Quebec and Ontario are members of the Western Climate Initiative (WCI) cap and trade economy-wide emissions trading system. The WCI partners (which also include Ontario, Manitoba, British Columbia and California) have agreed to cut GHG emissions by at least 15% below 2005 levels by 2020.

Our Montreal and Sarnia refineries are required to purchase carbon allowances to cover their respective stationary emissions, as well as cover the tailpipe emissions associated with the fuel sold in those provinces. The WCI cap and trade system imposes a limit on the emissions allowed in each sector of the economy. This provides certainty for industries and creates investment opportunities.

Low carbon fuel standards

We continue to monitor and consult on numerous policy initiatives such as the Federal Government's proposed Clean Fuel Standards (CFS) to reduce Canada's GHG emissions through the increased use of lower carbon fuels.

Suncor's position is that a well-designed carbon price is the most economically efficient and inclusive way to drive responsible emission reductions right across the energy system, including fuel carbon intensity.

There are specific circumstances where carbon pricing is not enough and the transportation sector is generally regarded as an example. In these cases, additional policies can play a role supporting carbon pricing and achieving emissions reductions at lowest cost. The challenge is to design a system without adding duplicative layers of cost and administrative burden, while truly complementing GHG policies that can support a carbon price and drive more emissions reductions at a lower economic cost. Where complementary policies are added to carbon pricing, the objectives of the complementary policy should be clear and the interaction with other policies, and carbon pricing in particular, should be well understood.

Renewable energy

Renewable and Low Carbon power policy

In Alberta, the CLP will accelerate the transition from coal to renewable electricity and natural gas generation by 2030. The government is committed to replacing two-thirds of coal generated electricity with renewables, primarily wind power, and with natural gas – such as power exported to the grid from Suncor's cogeneration facilities. Renewable energy sources are proposed to comprise of up to 5,000 MW of renewable capacity which is estimated to be approximately 30% of Alberta's total electricity.

Suncor is an active proponent of increased cogeneration as a key part of the power mix in Alberta, particularly as the province transitions away from coal. Cogeneration provides reliable, base-load power to intermittent renewable power at the lowest GHG intensity of any hydrocarbon fuel.

Collaboration between government and industry is the only way to accelerate the step changes needed for Alberta to transition from an "energy only" market design to a "capacity" market design. As the sixth largest electricity generator in Alberta and an industry player keenly focused on reducing its carbon footprint, Suncor works with policy makers, industry partners and other stakeholders to increase investment in low-carbon power generation.

Biofuel policy advocacy

Canada's renewable biofuels industry is quickly maturing, and Suncor is working to improve its long-term viability as current government support programs directed at first-generation biofuels decline. As opportunities arise, we invest in advanced renewable energy technologies to complement the existing biofuel industry. This involves funding outside companies whose technology ideas align with the strategic needs of our operations or businesses.

Suncor supports a flexible performance standard for transportation fuel intensity over more narrowly constructed mandates.

In Canada, there exists a "patchwork quilt" of carbon pricing policies across the provinces, as well as differences in complementary policies across provinces. Over time, this will mean higher costs than necessary. We advocate for both levels of government to ensure that policies work together.

[Read more about our renewable energy projects]

Canada’s energy industry has a responsibility to navigate between the aspirational and the realistic, which for the oil sector specifically means continuing to keep the Canadian economy moving, through continued investment in existing energy supply and maintaining critical infrastructure. Policies should provide the certainty required to make necessary investment decisions and not lead to leakage of investment capital. There remains much work to be done to define a unified Canadian energy vision for 2050. The need exists for collaborative policy solutions that can advance our nation’s economic ambitions while preserving environmental integrity.

Lobbying and disclosure

On this page:

> Suncor participates in public policy discussions on a wide range of issues relevant to the company's business and regularly communicates with governments in jurisdictions where it operates.

Suncor believes that open dialogue between government, stakeholders and industry leads to improved government decision making, thereby benefiting shareholders, as well as all other stakeholders. Through the company's engagement activities, Suncor aims to decrease the probability of ad hoc or reactive policy development by working to achieve a balanced approach.

Suncor believes that communication with government officials (otherwise known as lobbying) improves government decision making through open dialogue among government, stakeholders and industry and better informs government officials about Suncor, the energy industry and the effects of government policies.

Governance

Suncor has a policy that applies to all employees. The policy sets out guiding principles for interacting with governments, including required training and reporting, as well as roles and responsibilities.

Membership disclosures

Suncor participates in industry groups representing the interests of both the energy industry and the broader business community and, in doing so, promotes the public policy objectives important to Suncor, its shareholders and other stakeholders. However, Suncor's participation as a member of these organizations comes with the understanding that Suncor may not always support every position taken by these organizations or their members.

Suncor also complies with all laws regarding lobbying and lobbying disclosure. As a matter of practice, Suncor does not engage third-party (consultant) lobbyists.

As part of its commitment to enhanced transparency, Suncor is expanding its disclosure by publishing its policy on lobbying and political donations, and providing a list of organizations and trade associations that may lobby government to which Suncor pays membership dues of greater than $50,000 and $100,000 per year.

Suncor has a demonstrated track record of transparent reporting. We believe additional disclosure about the resilience of our business strategy in a transition to a low-carbon future benefits shareholders and stakeholders.

Suncor's enhanced disclosure is consistent with its strong focus on sustainability, reflects its openness to engage with shareholders and stakeholders, and reflects best practice within the energy industry in Canada.

Membership disclosures proposed list

The following is a list of organizations and trade associations, of which Suncor is a member, that may engage in lobbying of governments.

$50K - $100K

1. Business Council of Canada (formerly known as the Canadian Council of Chief Executives)
2. Ceres
3. Colorado Petroleum Association
4. Industrial Gas Users Association
5. International Association of Oil and Gas Producers
6. The Sulphur Institute
7. Resource Works
8. Strathcona Industrial Association
9. Industrial Gas Consumers Association of Alberta

>$100K

1. American Fuel and Petrochemical Manufacturers
2. Canada's Oil Sands Innovation Alliance
3. Canadian Association of Petroleum Producers (CAPP)
4. Canadian Propane Association
5. Colorado Asphalt Pavement Association
6. Mining Association of Canada
7. Oil Sands Safety Association
8. Sarnia & Lambton Environmental Association
9. Oil Spill Response Limited
10. World Economic Forum
11. Canadian Fuels Association

For a listing of the groups that receive funding from the Suncor Energy Foundation, please refer to the CRA website and search for Suncor

Political contributions

In past years, Suncor has made minimal political donations in areas where we operate, where permitted by law. Contributions since 2012 can be found in the table below. In 2016, Suncor made a total of $2,892 in political contributions.

2012	2013	2014	2015	2016
$58,300	$80,100	$73,400	$14,630	$2,892

As of June 1, 2016, Suncor no longer makes political contributions as a matter of policy, except in exceptional circumstances. Any such contributions will continue to be disclosed in this report.

Market access

Canada's oil sands can make a positive contribution to meeting global energy demands and Canada's economy benefits from exports. As Canada's leading integrated energy company and a long-standing producer in Alberta's oil sands, we support the development of infrastructure that opens access to new markets and ensures global competitiveness for Canadian resources.

We have an interest in all the major pipelines that are currently proposed and/or approved (Energy East, Keystone XL, Line 3 and TransMountain), but no single pipeline will affect Suncor's ability to execute our growth plans for the future. And because pipeline projects take several years to develop, approve and construct, it also makes sense for us to tap into rail and marine networks to transport our products.

Key highlights include:

- Enbridge's Line 9 reversal was commissioned during 2015 with the first delivery of crude to Suncor's Montreal refinery in December of that year. The reversal provides us with the flexibility to supply our Montreal refinery with a full slate of inland priced crudes.
- In late 2016, the Government of Canada provided approvals for the TransMountain Expansion and Line 3 replacement, while denying the Northern Gateway project application.
- In March 2017, President Trump issued a presidential permit for the Keystone XL project.
- Suncor continues to work with governments, regulators, industry associations and stakeholders in support of market access objectives.

Learn more about market access

Building bridges

Building bridges: Suncor's engagement with Reconciliation Canada is part of a renewed effort to strengthen relations with Aboriginal Peoples and communities

A conversation with Arlene Strom, vice president, sustainability & communications, and Chief Robert Joseph, co-founder of Reconciliation Canada

Suncor has committed to a social performance goal that focuses on a new path for strengthening relationships with Aboriginal Peoples and communities. Through collaborative partnerships, Suncor seeks to increase the participation of Aboriginal Peoples in energy development over the next decade while also working to build greater understanding and trust between Aboriginal Peoples and all Canadians.

Suncor's partnership with Reconciliation Canada is an example of this commitment to a new way of thinking and acting. Co-founded by Chief Robert Joseph, Reconciliation Canada is leading the way through dialogue workshops and other outreach initiatives to bridge the differences brought about by a history of intolerance, racism and a lack of understanding.

Chief Joseph is a survivor of Canada's residential school system and a Hereditary Chief of the Gwawaenuk First Nation. He recently joined Suncor's Arlene Strom to discuss the partnership between Suncor and Reconciliation Canada – and the broader prospects for repairing the relationships between Indigenous Peoples and all Canadians.

Expand all | Collapse all

The first question is for you, Chief Joseph. As a survivor of the residential school system, can you talk about the impact that had on your life?

Chief Joseph: I was dropped into a residential school when I was six. I had never been outside of my home community. Suddenly, I found myself in a strange place, surrounded by strange people who spoke a language I didn't understand. In those early years especially, I remember how terribly, terribly lonely I was. I cried until I had no more tears. At night, I'd duck under my bedcovers and fantasize about being home and safe – loved, cared for and belonging.

I was at that school for 11 years. Even though there were some good people in those institutions who tried to do their best, the overall regime of residential schools was very destructive. There was a lot of physical, sexual and emotional abuse. It was just a broken place that no child should have ever been sent to.

Like so many others, I came out of that experience with no sense of value or purpose to my life. We were dealing with a lot of unrecognized and unresolved trauma and spiralled into dysfunction, addiction, violence, brokenness and despair. Most of us fell into that space.

As you travel the country to different Aboriginal communities, you can see the inter-generational impact of that kind of trauma, mistreatment and marginalization. So many of us grew up without being mentored in how to be parents and take on adult responsibilities. When I left school, I married and had a family because I never wanted to be lonely again. For a while, I thought I had escaped my past. But then, one day, I lost my family and everything else that was important to me. It just went from bad to worse and I spiralled until I came to a point in my life where it was totally hopeless. The despair and darkness was so deep.

Lucky for me, I had an epiphany, a vision. The Creator allowed me to see the universe and this voice said to me, "In spite of what you've done to yourself, you are part of this and I love you."

Is this when you co-founded Reconciliation Canada?

Chief Joseph: Yes. I had worked for many years with the Indian Residential School Survivors Society, trying to bring healing and hope to those who had lost their way. When the Truth and Reconciliation Commission came along, I put a lot of energy into that. The idea for Reconciliation Canada came a few years ago, after I was diagnosed with colon cancer. I called my daughter to my bedside and told her that we had to go forward with this event we had talked about – a walk in the name of reconciliation that would bring together Aboriginals and all Canadians. That walk was held in downtown Vancouver in 2013 and drew 70,000 people.

Since then, we've held other walks and conducted dialogue workshops across the country. We believe real reconciliation must involve all Canadians and that we need to get to the truth that our people weren't just born into poverty and hopelessness. There were pre-conditions like the Indian Act, our removal from traditional lands and the residential school system. To get beyond that, Aboriginal and non-Aboriginals need to recognize we are all important because we are all part of the same universe. We need to create the kinds of relationships that allow us to hold each other up with mutual respect.

Arlene, Suncor has been a partner with Reconciliation Canada for the past few years. Why did the company consider this important to do?

Arlene: Right from the beginning, we had Suncor employees who were at the Walk for Reconciliation in Vancouver and saw the power of bringing people together in that spirit. They brought that back to Suncor.

My first real engagement with Chief Joseph and his daughters, Karen and Shelley, was at a day-long Reconciliation Canada workshop in Fort McMurray in 2014. I have to tell you that day was transformational for me. I was so impressed that Chief Joseph and his daughters would put themselves in such a vulnerable position by telling their story in a personal and meaningful way – and by the fact that their commitment to reconciliation and hope came out of such brokenness and pain. I was deeply moved by their courage and their ability to then challenge us to say, "what does reconciliation mean to you?"

I left that workshop and wrote down a commitment to myself. I would take what I had learned into conversations with my family, work colleagues and leaders in government. That was a pivotal moment for me, as was the opportunity to take part in the Walk for Reconciliation in Ottawa in 2015, held just before the release of the final report of the Truth and Reconciliation Commission. What really came alive for me in that experience is this notion that we are all treaty people. The concept of literally walking side-by-side in a spirit of reconciliation is such a powerful one, and I'm so grateful to have the chance to be part of that.

I'm also grateful that Chief Joseph has been willing to speak to our senior leadership. He has inspired us in many ways and helped lead a really important conversation and learning journey for all of us at Suncor.

Chief Joseph, what do you think a large energy company like Suncor can and should be doing to encourage the reconciliation process?

Chief Joseph: Aboriginal Peoples care very much for the land, for Mother Earth and the environment. They have never been part of industry and development. And what they've learned is that development has some downside. They think Suncor and other companies ought to be more caring and much more sensitive to the environment we live in.

Suncor has been willing to engage with Reconciliation Canada and with Aboriginal Peoples generally. I see Suncor as one of the model companies in this country and I believe they can help us reach out to other large companies. We would like to see all of these companies come up with an overarching statement about their commitment to sustainability, balance and harmony.

We need to learn how we can live peaceably, side-by-side, and support each other. In this day and age, Aboriginal Peoples must share in the benefits from development that takes place in their traditional territory. We pride ourselves on being a country that is compassionate, caring and just. But unless we close the gap between Aboriginals and other Canadians, we can't truly boast about living up to those values.

Arlene, Suncor recently introduced a new social performance goal focused squarely on strengthening relationships with Aboriginal Peoples...

...over the next decade. Suncor has always had a relationship with Aboriginal communities and businesses, so what is new here?

Arlene: What's new is that it's fundamentally grounded in an acknowledgement that we need to change the way we think and act. When we see the reconciliation movement led by Chief Joseph and others, we know work is required to strengthen the participation of Aboriginal Peoples in energy development. We need to be better partners, start conversations about development earlier, listen to and learn from traditional knowledge and wisdom, and respect the unique legal and constitutional rights of Aboriginal Peoples.

We don't know exactly what the path forward looks like, but it starts with doing things differently. We want to deepen our understanding of the history, customs and beliefs of Aboriginal Peoples and spread that awareness, not only within our own organization but among all Canadians.

At a very tangible level, we know that Aboriginal Peoples and communities are affected by our activities and they must have the opportunity to benefit from energy development. Part of that is through more and stronger business partnerships. Another part is making our own workplace more welcoming and inclusive. And it's also about listening to Aboriginal youth and working with them to improve their opportunities for success.

Chief Joseph, which is the most important element: improving the level of relationship and trust or increasing economic benefits?

Chief Joseph: I think they go hand-in-hand. Before you can do a really good job on the latter, there has to be real dialogue and meaningful understanding between the parties. By transforming the nature of our relationship, we'll have better results in terms of negotiating economic benefits and opportunities. What I'm afraid of in Canada is that we may pre-empt the relationship-building and just concentrate on making ourselves look good. That won't lead to sustainable reconciliation.

To that point, Arlene, there are critics who say this kind of outreach to the Aboriginal community by a big energy company is really a public relations exercise designed to ensure you can continue to grow your business. How would you respond?

Arlene: It goes much deeper than that. The approach we are taking is founded in a recognition of Aboriginal rights that are embedded in treaties, the Canadian Constitution, the United Nations Declaration on the Rights of Indigenous Peoples and the recommendations of the Truth and Reconciliation Commission. Together, they outline how we should be engaging and walking side-by-side with Aboriginal Peoples. And there's a frank acknowledgment on our part that we haven't always been a good partner in the past. We are listening to communities and elders and realizing how much there is to learn. We want to do better going forward.

On a personal level, I'd just add that the fact Aboriginal Peoples are still willing to engage and try to walk side-by-side is a sign of great resilience on their part and a source of great hope for our country.

Chief Joseph, there are many First Nations communities that remain strongly opposed to many aspects of resource development. Part of that is based on a lack of trust in energy companies...

...to be good stewards of the environment. How is that mistrust overcome?

Chief Joseph: It's going to require continued, meaningful dialogue. If we can have that, then some of that trust will manifest itself. And as companies roll out their actual development plans, and if those plans are inclusive and give consideration to Aboriginal interests, that trust will grow incrementally. But there's no magic wand that's going to get all of us onside on one path, going down the road and singing "*Kum bay ya*" [laughs]. So it's hard work, but we have to do it.

Arlene: Chief Joseph is right; it is really hard work. I think it's a case of coming to the table – and being willing to stay there even when the conversation gets uncomfortable. When we at Suncor are invited to the table by Aboriginal communities in northern Alberta, we also have to hear about our history – and that's not always been one of respect and deep engagement. So it's also about owning that history and moving forward. I can't promise it will be perfect as we move ahead. But I hope we will be willing to stay at that table, learn from our mistakes and accept the invitation to work together in partnership in new and meaningful ways.

A couple of years ago, Suncor developed an online Aboriginal Awareness program for employees that outlines the history of relations between Aboriginals and all Canadians, including the impact of residential schools. That program...

...was recently posted on the company's external web site for all to see. What's the thinking behind that?

Arlene: It's part of the acknowledgment that we need to deepen our understanding, first within Suncor, but then also across the broader society. We had very positive feedback from employees who went through that training. So the next step was to share it with the general public and we've already had a very positive response on that front as well.

Chief Joseph, you took part in that online program and told your personal story. What do you hope comes from that as it gets more widely viewed?

Chief Joseph: Before the narrative of residential schools came up, there was absolutely no understanding of our history together, from the colonial period until now. Once it began to emerge how unjust Canada had been, Canadians began to wake up to the fact that we have some serious flaws in our relationships and our sense of who we are. That narrative is also about broken treaties, the Indian Act and assimilation efforts. It needs to be constantly retold.

In telling my story, I'm hoping more Canadians will learn about all of that. But I'm also hoping they will see that, if we can transform our relationship, our children and grandchildren – yours and mine – can grow up with the sense that we are all in this together.

Suncor has also established an Aboriginal Employee Network. What is it intended to do?

Arlene: We wanted to have a way for our Aboriginal employees to connect with each other. But because we want to increase mutual understanding and respect throughout the workplace, the network isn't limited to Aboriginal employees. There are now more than 400 people in that network. They get together for sharing circles. It's been a really rich learning experience for everyone involved.

Chief Joseph, when you talk about reconciliation, you stress the importance of both healing and learning. What can energy companies learn from Aboriginal Peoples?

Chief Joseph: Companies like Suncor, and governments as well, have much to learn from Aboriginal Peoples with respect to development. We have a lot of traditional knowledge about our territories that science misses. When we start to blend science and that knowledge together, we are going to be much better at keeping this planet safe and balanced.

At the same time, Aboriginal Peoples have much to learn from the larger society. When you've been in the cocoon so long, feeling marginalized, isolated and hated, you react from that basis. Distrust is your reflex response. We have to mitigate that kind of thinking, break down those walls – and try to create the kind of understanding that's needed to move forward together.

Arlene, Suncor's social performance goal similarly talks about building trusting relationships and learning from each other. Where do you see the greatest potential for that?

Arlene: There are many areas where that might happen, but I want to give one concrete example. Mark Little, Suncor's president of our Upstream business, has worked to build trusting relationships with the chiefs of the Fort McKay First Nation and Mikisew Cree First Nation of northern Alberta. Because of those relationships, we were able to enter into the signing of a major equity agreement with these First Nations for the East Tank Farm synthetic crude terminal associated with our Fort Hills mine. It really is a case of talking candidly to one another about mutual interests and finding a partnership that will work for those communities and for Suncor.

Finally, Chief Joseph, we started this conversation by talking about a dark chapter in Canada's history, namely the legacy of residential schools. Having lived that story, how optimistic are you that we can still achieve true reconciliation?

Chief Joseph: I'm very optimistic. There's a long road ahead and the challenges are going to be hard. But recent opinion polls show a strong majority of Canadians want to find a path towards reconciliation. To get there, Aboriginals and non-Aboriginals alike will have to accept reconciliation as a core value in their lives. Through this framework, we will be prompted to always seek balance, harmony, connectedness, mutual respect and accountability. I think we can do this in Canada if we don't lose the momentum. We can be one with each other.

Sustainability goals

On this page:

> "Business and economies are at risk if we fail to meet society's rising expectation for our performance"
>
> – Steve Williams, president and CEO

Suncor's sustainability goals acknowledge that we need to continue to evolve and manage our business for the long term by continually improving our environmental, social and economic performance. In 2016, we established two new sustainability goals, focused on strengthening relationships with Aboriginal Peoples in Canada and reducing our greenhouse gas (GHG) emissions intensity.

The goals, which have a baseline year of 2014, provide us with guide posts to drive performance improvement far beyond our current capabilities so we can contribute as constructively as possible to the world we all share.

We are also working towards setting a new long-term goal to extend our commitment to water conservation, based on what we learned from our 2015 water goal and building on the success of our water management strategy. This goal will reflect our water requirements with the need to maintain a clean, safe and plentiful supply of this important natural resource for current and future generations. Find out more about our current work:

- water quality and monitoring
- wetlands
- tailings management

Find out more about our sustainability goals:

Expand all | Collapse all

Social goal: Strengthening our relationships with Aboriginal Peoples in Canada

While we've worked with Aboriginal communities for more than 40 years, we recognize that sometimes our approach has been colonial rather than collaborative – we wanted to 'do' or fix things, rather than seek to understand the interests and needs of impacted communities.

Our first social goal is a declaration of our intent to do things differently. We're choosing a new path that focuses on strengthening relationships, so Aboriginal Peoples can play a larger role in how energy is developed – from project concept through to reclaiming the land back to its original state. For us, this path is about working together and creating more opportunities for greater involvement so that the social and economic benefits from Canada's resources are shared more fully. It reflects our commitment to change the way we think and act as an organization, and outlines four areas where we can work together to advance greater involvement:

1. Strengthening relationships between Aboriginal Peoples and all Canadians, starting within Suncor. This is about providing the opportunities for Suncor employees to increase their awareness of the history and experiences of Aboriginal Peoples.
2. Partnering with Aboriginal youth to develop their leadership potential through meaningful connections within and outside of Suncor.
3. Significantly improving our Aboriginal workforce development at Suncor through focused efforts on hiring, retention and advancement of Aboriginal employees across our business.
4. And, increasing revenues to Aboriginal businesses and communities through mutually beneficial marketing arrangements and procurements of materials and services. Find out more about how we're partnering with Aboriginal businesses and communities.

Learning together

This isn't work we can do on our own and it's not something we do 'to' or 'for' Aboriginal Peoples. We'll continue to learn from, and with, partners and communities so that we build trusting relationships. Truly collaborative partnerships require humility, honesty and a willingness to learn from one another so that there is a common understanding from which we can uncover where we have mutual interests.

Implementation

Suncor will progress the social goal, through the four performance areas, to 2025 and beyond.

This isn't a 'one size fits all' approach. Rather, we're working together with our businesses and each of the communities where we operate to build implementation plans that consider both community and business needs and capacity.

2016 was a planning year, an opportunity for Suncor business areas to develop their initial plans to progress the goal: from Upstream to Downstream, Legal to Finance, all business units and functions have developed plans. We've also spent time to build a developmental evaluation model, to define what we're going to measure and how we'll track the outcomes. Some of the social goal metrics are very clear and others less so, such as how will we know we are changing the way we think and act? It is also not just us evaluating our own performance, but taking the opportunity to look for input from our Aboriginal employees, leaders and community partners on how we're doing and where we can do better. This is a different approach than we've taken previously to evaluating our work and we expect it will evolve as we learn more.

We have also worked to embed the goal into our governance and stewardship processes across Suncor, so it is a part of our yearly business and financial planning.

A lot of our engagement to date has focused in Wood Buffalo and areas where our operations are in close proximity to traditional lands. With this goal, we aim to extend our reach beyond these areas. First, we need to learn from communities and seek to understand.Then, by looking at all the opportunities across our business and inspiring our own employees to take everyday actions, we believe we can make a difference and strengthen our relationships with Aboriginal Peoples.

GHG goal: Reducing our GHG intensity

We share in the global challenge to tackle climate change head on by reducing emissions, while providing energy the world needs. That's why in 2016, we announced a new greenhouse gas goal that aims to reduce the total emission intensity of the production of our oil and petroleum products by 30% by 2030.

This goal stretches us beyond our current competence and technology and ultimately aims to bend the curve on our absolute emissions, with the intent to be a low carbon intensity source of crude. We are taking a full life-cycle approach to ensure that our actions minimize carbon intensity throughout the oil sands

value chain – extraction of bitumen to the production of fuel.

Our focus this past year has been to examine the data and processes from every part of our business and identify high-opportunity areas, one of which is oil sands intensity and establishing targets for all major facilities and business units.

We are focusing our GHG intensity reductions in these key areas:

Energy efficiency and continuous improvements of our base assets

We continue to drive energy efficiency at all of our facilities, and switching to lower carbon fuels, such as natural gas. Our ongoing work includes:

- Sustainment of Suncor's Energy Management System (EMS) at our refineries and oil sands facilities will continue to identify and execute cost-effective energy efficiency project opportunities, resulting in potential energy savings in the range of 3% to 5%, and energy use is the main source of our GHG emissions. EMS was a key enabler in Suncor's 2015 energy efficiency goal and it will maintain a principle focus area for driving emissions reductions in our new goal.
- Establishing our governance structure to progress Environmental Excellence by sharing knowledge and best practices across our organization.
- Advancing a significant emissions reduction opportunity to replace the legacy petroleum coke-fired boilers from our Base Plant. We are currently evaluating the investment of replacing the coke-fired boilers with natural gas boilers which would result in significant emissions reductions estimated at one megatonne a year. Another option we are evaluating is the potential to install highly efficient natural gas cogeneration units in place of the coke-fired boilers.

Strategic technology implementation to reduce extraction and upgrading emissions

Our goal will require us to go beyond today's capabilities and technologies so we are aggressively working on technologies and taking an innovative approach to set us on a transformational path. In particular, one of our four strategic technology development programs at Suncor involves improving the cost competitiveness and carbon competitiveness of in situ bitumen production.

- To accomplish this, we have a basket of technologies that can be implemented in the near term to techniques that will take 10 years or more to develop. In the short term, our focus is on a simpler steam assisted gravity drainage (SAGD) design that uses less metal, is more efficient and creates a smaller footprint. Through that we expect to see reduced emissions, water usage and costs.

  Learn more about our approach

- Further out, we are examining how we can develop our resource base through the creation of the next generation of in situ recovery. To accomplish this, we're pursuing a portfolio of technologies that use less or no steam, and a combination of solvents, surfactants, and radio frequency heating. In our view, a likely solution will be a hybrid of many of the innovative approaches and technologies we're testing.

  Learn more about in situ technologies we're progressing

If we are successful in scaling up and deploying some of these approaches and technologies in some of our next phases of in situ development, we see the potential to reducing emissions towards achieving our goal.

Greening the electricity grid through investments in low carbon power such as cogeneration and renewables

Our GHG goal is also driving us to seek and evaluate new business opportunities in the evolving future energy system.

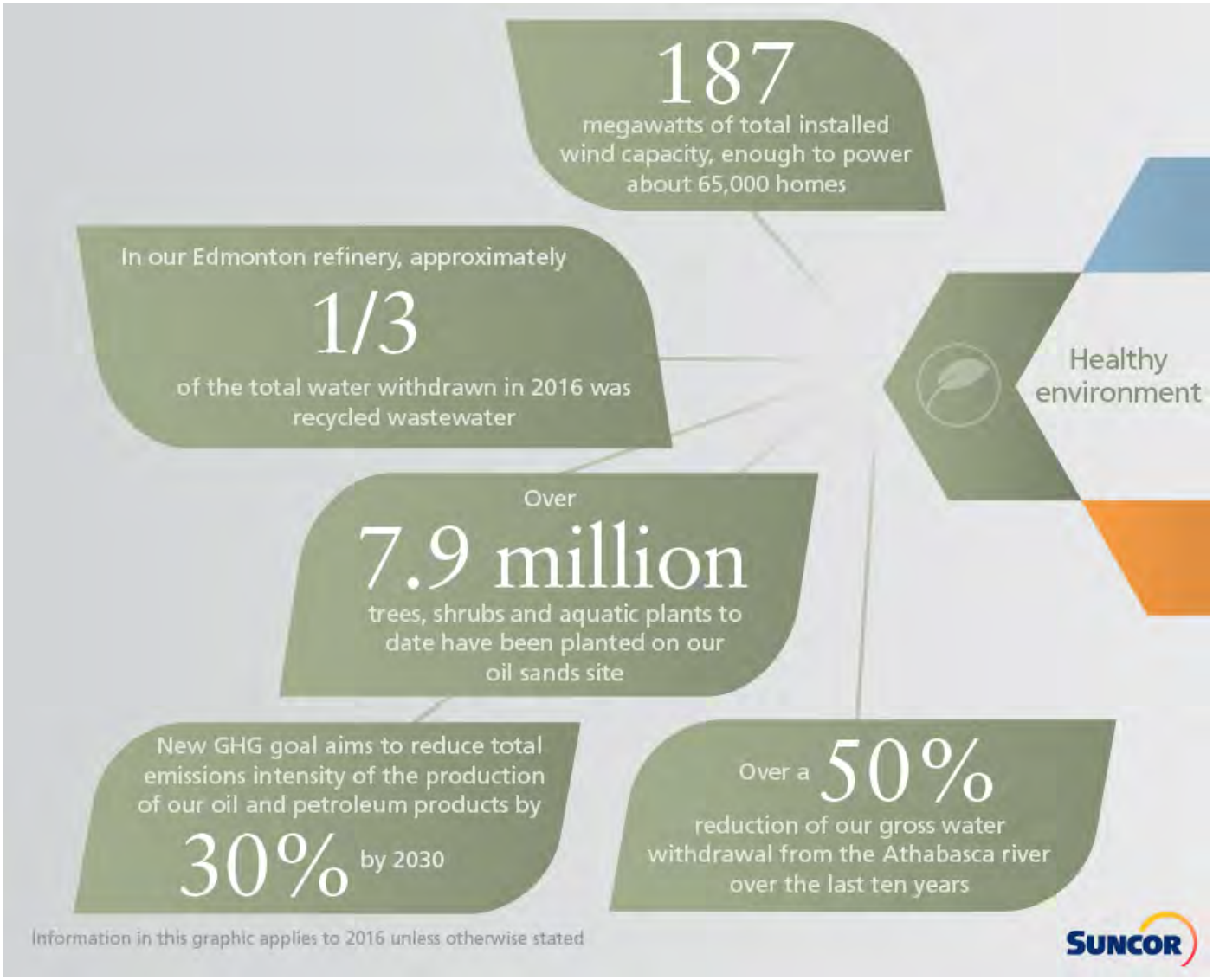
- Natural gas power generation technologies only convert 30-50% of the fuel energy into electricity and the rest of the energy is lost as heat. Alberta's oil sands industry, through the use of cogeneration, has the potential to achieve efficiencies as high as 80% as a result of the otherwise wasted heat which is captured and repurposed.
- All of Suncor's oil sands facilities use cogeneration, rather than drawing power from Alberta's electricity grid. The excess power from our cogeneration facility combined with our wind energy, have already reduced the overall grid intensity of Alberta's electricity grid.
- However, if we consider the incremental investment of installing highly efficient natural gas cogeneration units in place of natural gas boilers for future oil sands developments, our facilities could result in substantial surplus power that could be exported to the local power grid. This would not only lower the average provincial grid intensity, but it would also provide the needed base load for the increasing amounts of intermittent renewable energy.
- Continuing to evaluate investment opportunities for renewables as the Government of Alberta provides details on the next phase of its Climate Leadership Plan for renewable projects.

Other focused efforts in 2016 in support of our GHG goal included:

- Support for carbon pricing and advocate for strong policy development that ensures cost and carbon competitiveness through efforts such as ongoing participation in Alberta's Climate Leadership Plan, the Carbon Pricing Leadership Coalition, and Canada's Eco-Fiscal Commission.

- Amplify our climate actions through technology collaboration efforts such as Canada's Oil Sands Innovation Alliance and focused technology investments such as Evok Innovations.
- Embed climate risk and performance into our strategy and decision-making as evident in our Climate Report: Resilience Through Strategy.

Environment



Download

We know that energy development has an impact. And as we work to responsibly develop the energy the world needs, we have to think about:

- air quality
- how much water we're using
- our energy efficiency and how we can reduce greenhouse gas emissions
- the land we leave behind when we're done

To preserve a healthy environment, it's crucial we find balance and a better way to get things done. What follows is a snapshot of our management approach to the environmental issues we face, at both the global and local level.

Expand all | Collapse all

Our strategy

At the core, our corporate mission is to be trusted stewards of valuable natural resources. Guided by our values, we will lead the way to deliver economic prosperity, improved social well-being and a healthy environment for today and tomorrow.

One of the pillars of our corporate strategy is to be an industry leader in sustainable development by continued performance improvements in air emissions, water withdrawals, land reclamation and energy efficiency.

Read more about our vision and strategy

Through a bold pursuit of technology, innovation and operational excellence, we work to achieve or exceed performance levels governed by legislation and by evolving environmental, social and economic expectations of our stakeholders.

We use our Operational Excellence Management System (OEMS) to consistently and effectively identify, avoid and/or mitigate operational risks, environmental impacts and regulatory non-compliance to deliver safe and reliable operations.

Read more about our operational excellence management system

Policy

Supporting our mission and strategy is our Environment, Health & Safety (EHS) policy, which is built on our values and underpins our commitment to environment, health and safety.

Our EHS policy statement is: We are committed to a culture of operational discipline which is foundational in achieving safety, environmental, and health and wellness excellence.

We believe that:

- all incidents can be prevented
- to work here, you must be committed to working safely
- environmentally responsible operations are essential for our success
- leadership is accountable for EHS performance
- we deliver on our commitments
- our Operational Excellence Management System (OEMS) enables EHS excellence

The vice president of environment, health and safety is responsible for integrating EHS components of our OEMS and EHS performance measures across our operation.

The business and functional unit senior vice presidents and vice presidents are directly responsible for implementation of policies and practices.

Regulations and policies regarding energy and emissions

We are active participants in public policy discussions on energy and the environment, and regularly communicate with governments in the jurisdictions where we operate. We operate in many jurisdictions that have regulated or have proposed to regulate energy, greenhouse gas (GHG) emissions, water, land and biodiversity.

Read more about our public policy participation and specific regulations and policies on energy and emissions

We assess the ecosystems services and biodiversity as part of regulatory applications and approval conditions, as required. Biodiversity baseline surveys and protection measures are incorporated into management and operating procedures for exploration and new development throughout the project life-cycle. Risks from indirect impacts on biodiversity are addressed before starting new operations or changing existing ones. We have used conservation offsets for both regulatory and voluntary purposes in a number of jurisdictions.

Read more about biodiversity and offsets

Commitments

Our Environment, Health & Safety (EHS) policy recognizes that environmentally responsible operations are essential to our success and serves as our statement of intent for managing and minimizing all impacts on the environment.

Download our EHS Policy Statement (PDF, 1 pp. 156 KB)

Goals, targets and actions

Seven years ago, Suncor stepped out of the industry pack by setting four ambitious environmental goals for our organization. We did not know how we were going to achieve those goals, but simply setting them put us on the path towards environmental excellence. These goals, included;

- Reduce fresh water consumption by 12% by 2015
- Increase reclamation of disturbed land area by 100% by 2015
- Improve energy efficiency by 10% by 2015
- Reduce air emission by 10% by 2015

We are excited to say that we met the goals on reducing water use and air emissions, increasing reclamation* and came very close to meeting our goal on energy efficiency.

To ensure we continue to improve on our sustainability performance, we've set two new goals: one focused on climate change and, for the first time, a social goal focused on strengthening our relationships with Canada's Aboriginal Peoples. We are working towards setting a new long-term goal to extend our commitment to water conservation.

*Reclaimed lands have not been certified by government regulators. Please see Advisories.

Read more about our progress to our future goals

Responsibilities, resources and training

The Environment, Health, Safety and Sustainable Development Committee of the Board of Directors meets quarterly to review our effectiveness in meeting our environmental obligations. They also review our effectiveness in establishing appropriate EHS policies.

Download our Environment, Health, Safety and Sustainable Development Committee Mandate (PDF, 3 pp., 31 KB)

Our leadership is ultimately accountable for our environmental performance, and responsible for ensuring employees under their direction have the competencies, knowledge, tools, and resources to work in an environmentally responsible manner. We also conduct workshops and training sessions throughout the year as warranted.

Resources which help us execute our management strategies span several internal centres of expertise including:

- **Environment, Health Safety (EHS):** integrates EHS components of our Operational Excellence Management System (OEMS) and EHS performance measures for our operations. The business and functional unit senior vice presidents and vice presidents are directly responsible for policies and practices implementation. Environment, health and safety professionals directly support all parts of the business to implement EHS policies and practices and ensure learnings and best practices are shared across the business and functional units.
- **Sustainability:** identifies risks and opportunities to our social licence to operate and grow our business and develop a sustainability strategy. This includes:
    - developing corporate sustainability goals and stewarding their performance with the business units and stakeholders
    - non-government organizations outreach and engagement
    - advocating for sound energy and environmental policy
    - developing and stewarding Suncor's community investment strategy
- **Enterprise Technical Services:** drives operational and environmental business performance improvement across the enterprise.

- **Government Relations:** promotes and enhances strategic relations with all levels of government and informs government about industry and Suncor-specific energy development challenges.

Evaluation

Monitoring

We conduct Operational Excellence Management System (OEMS) and compliance self-assessments annually to assess our internal management approach. We participate in external benchmarks and performance ratings to compare our approach to our peers and we seek out diverse opinions that are different from ours to challenge our thinking.

Read more about external benchmarks and performance ratings

Conversations that will lead us to better, more responsible solutions means working with stakeholders, governments and industry partners. And while we might not always agree on everything, we do have a common goal – create energy to improve quality of life and do so sustainably.

We seek direct feedback from our external stakeholders and incorporate any findings into our management plans.

Read more about partnerships and collaborations

Results

Our environmental performance for 2016 is reported in the performance data section and year-over-year trends are provided, where possible.

Read more about our sustainability goals

What are we doing differently

We're working hard to address global and local environmental issues. We've made strides in:

- reducing and reusing water at our operations
- reducing our air emissions
- improving overall energy efficiency
- reclaiming disturbed lands to restore natural landscapes

We're also investing in new environmental technologies and continuing to develop our renewable energy portfolio.

We absolutely believe an energy company can be environmentally responsible. In fact, to stay in business over the long term, we have to be.

Climate change

"We need to understand how we can continue to deliver value in a carbon-constrained world."

A conversation with Fiona Jones, general manager, sustainability

Prior to Suncor's 2016 Annual General Meeting, NEI Investments filed a shareholder proposal calling on Suncor to provide ongoing reporting on how it is assessing and ensuring long-term corporate resilience in a future low carbon economy. Suncor's Board of Directors decided to support the resolution, which was subsequently passed by more than 98% of Suncor shares represented at the AGM.

Over the next several months, Suncor drafted a stand-alone report on carbon risk called Suncor's Climate Report – Resilience Through Strategy (PDF, 18 pp., 1 MB), the first of its kind in the Canadian oil and gas industry. The report, released in April 2017, discloses our best assessment of the business risk associated with climate change and the transition to a lower carbon economy – as well as the strategies we are taking to mitigate that risk. We intend to update our assessment on an annual basis as part of our Report on Sustainability.

Suncor's Fiona Jones, general manager, sustainability, describes the thinking behind the report, including how the company sees the energy transition unfolding, our strategy through that transition and the options we are building for the future.

Expand all | Collapse all

Why did Suncor decide to support the shareholder resolution on carbon risk disclosure and to produce a report?

We believe our investors and other stakeholders benefit from understanding how we are addressing the climate change challenge and how we plan to remain resilient in a world transitioning to a lower carbon energy system.

The fact is climate change mitigation tilts the playing field and will have, over time, a substantial impact on our business. We need to have a clear-eyed view of the path ahead and we want to share that information as transparently as we can.

It makes sense to do this now for several reasons. Regulations and policies being adopted at the local, national and global level to mitigate climate change will have an impact on how we produce and consume energy. As Canada's leading integrated energy company, we need to understand how we can continue to deliver value to shareholders in the transition to a carbon-constrained world.

Driving a lot of this is what the International Energy Agency (IEA) calls the "450 ppm scenario." This sets out an energy pathway aimed at limiting the global increase in temperature to 2° C, over pre-industrial levels, by limiting the concentration of greenhouse gases (GHG) in the atmosphere to around 450 parts per million of CO_2. This implies reducing the amount of hydrocarbons combusted from today's levels in the context of a growing global population.

As a result, we are starting to see credible global efforts at "squaring the circle" to achieve the desired outcome. This involves developing the technologies and policy pathways to deliver energy to that growing global population, while at the same time, mitigating climate change. This is very much the lens through which we are viewing our own business strategies.

Our Carbon Risk Report outlines many of those strategies. The report is intended to provide investors with Suncor's perspective on our energy future.

What are the key concerns Suncor investors have when it comes to carbon risk?

Most of our investors understand that the transition away from hydrocarbon fuels will likely take place over many decades as these fuels will continue to be needed to help meet global energy demand, particularly in developing economies. But they also recognize that, if we are to remain competitive and resilient, we must continue to aggressively lower costs and carbon intensity throughout our business.

In a nutshell, what our investors want to know is:

- Do you have processes in place to assess the risk in a clear-headed manner while also considering any potential blindspots?
- What is specific to your assets and business strategy that will ensure long-term resilience?
- What options are you building for the future to compete in a lower carbon economy?

What processes do you have in place to assess Suncor's carbon risk and what are they telling you about the level of risk the company faces going forward?

This is described in much greater detail in the report itself, but I'll try to briefly touch on some of the highlights.

One of the first things to understand is that Suncor routinely identifies, reviews and assesses what we call principal risks, which include commodity prices and economic and geopolitical factors. A principal risk is defined as one that has the potential to materially impact Suncor's ability to meet or support its strategic objectives. Carbon risk is one of the company's principal risks.

Our assessment of carbon risk is supported by our annual Carbon Price Outlook, which takes into account existing regulations, where those regulations are likely to head, and the impact that could have on our assets.

Investments and capital decisions – including whether or not to proceed with growth projects – are tested against a range of variables, including our Carbon Price Outlook. The goal is to ensure a competitive rate of return over the life of our assets.

We also use three long-term energy futures scenarios, substantially based on work done with IHS Markit. Each scenario has an implied crude oil price range and incorporates the potential impact of climate change regulations. All three reflect the current global aspiration to reduce carbon emissions; what distinguishes them is the context, pace and scale at which that comes about.

It's important to note that these scenarios are not forecasts, but an exploration of what *could* happen. Each scenario is equally plausible (although not inevitable) and each would affect our operating environment and business strategy in very different ways.

The scenarios are also not cast in stone. We monitor signposts to identify external shifts that could impact our energy future and, therefore, Suncor's business strategy. These signposts include changes in global energy demand and supply mix, political and economic indicators, climate data, policy trends, technology advances and consumer trends.

A couple of things stand out in terms of Suncor's assessed carbon risk. One is that all three scenarios point to the fact that long-term resilience depends on lowering both costs and carbon intensity across the entire energy value chain. The second is that, even under the scenario that represents a rapid shift away from liquid fuels, none of Suncor's existing assets are at risk of being stranded and we are positioned to continue to deliver strong shareholder value.

So oil sands development remains resilient even in a much more carbon-constrained world? Really?

I recognize that, in some quarters, that conclusion seems very counterintuitive. Conventional wisdom suggests that, when faced with an uncertain energy future, long-life assets like the oil sands should be at greater risk of being stranded. But, in fact, the unique characteristics of this resource base suggest the opposite: we are well positioned to continue to generate value for investors across a variety of possible energy futures.

We test our oil sands business and growth strategy against our three long-term energy scenarios. Under each of these scenarios – including the one that envisions the most aggressive decline in oil demand – we believe a substantial amount of oil will be required for decades. Meeting that demand, whether at low or highly volatile oil prices, will be a challenge for operators with shorter life reserves. They will find it increasingly difficult to finance the exploration and development required to replace oil declines, let alone grow production.

So while often characterized as the oil basin most vulnerable to a low oil demand scenario, the very long operating life and low decline rate of our assets are, paradoxically, a competitive advantage – both under a scenario of declining demand for crude oil and a correspondingly low oil price, or over an extended period of uncertainty and price volatility.

The key reason is that, once operating, oil sands projects are more like manufacturing facilities. Production does not rapidly peak and decline and we don't have to keep going to the market to raise exploration and development capital as a significant amount of the resource has already been discovered and is located near current surface facilities. Instead, we can essentially harvest the upfront capital investment made many years earlier to produce oil over the coming decades.

None of this gives us a pass when it comes to environmental performance. To remain competitive going forward, our goal is to continue to reduce the costs and carbon intensity of our business so that we are a global crude oil supplier of choice.

What are some of the options Suncor is building to ensure its place in a low carbon economy?

This isn't an exhaustive list, but here are five major options that stand out for me.

The first is to show leadership in terms of our public goals and aspirations. In 2016, Suncor adopted an ambitious new performance goal – to reduce the overall GHG emissions intensity of our products by 30% by 2030. We know we won't be able to achieve this goal without integrating carbon risk considerations into all aspects our business.

A second key option is our commitment to technology and innovation. While many energy companies have cut their investment in technology in the recent low-price environment, Suncor has not. We are strategically investing in new technologies – including next-generation in situ extraction processes – that hold the potential to transform bitumen production. Over the next 10 years, we believe technology will deliver the advances to make oil sands crudes both a low cost and low carbon source of crude.

A third option is Suncor's role in low carbon and renewable power generation. Since 2002, Suncor has invested in several wind energy projects. We are also a relatively large producer of cogeneration power. The requirement for steam at our facilities creates the opportunity for high-efficiency cogeneration that provides steam and power for our operations while also delivering surplus lower carbon power to the electrical grid.

We are evaluating further investments in this area. The value of cogeneration for an energy system in transition is considerable. In addition to providing an effective base load to manage the intermittency of wind and solar power, cogeneration can replace coal generation with a much lower carbon intensity

power.

A fourth option we are pursuing is to invest in outside companies whose technology ideas align with the strategic needs of our business. A good example is our investment in potential advances in biodiesel technology, which fits with our view that diesel demand will remain strong.

The fifth option is one that I think often gets overlooked when it comes to carbon risk – the importance of maintaining a strong balance sheet. Instead of chasing an array of unproven low carbon alternatives today, we believe it makes sense to preserve the financial flexibility to be able to invest in solutions as clear "winners" emerge. This manages your carbon risk, while also being a more effective way to advance environmental performance.

There remains a lot of uncertainty about the path forward in meeting global climate change goals and targets. Does Suncor still believe that setting a price on carbon is a critical first step forward?

The short answer is yes. We continue to believe that a broad-based carbon levy, equitably applied to both energy producers and consumers, is the most effective tool for advancing low-carbon technologies and encouraging smart energy choices. That's why, in 2016, Suncor became a signatory to the Carbon Pricing Leadership Coalition, a volunteer initiative aimed at promoting the successful implementation of global carbon pricing. It's also why we continue to work closely with Canada's Ecofiscal Commission, which brings together diverse interest groups to look at the best and most practical carbon pricing solutions.

That said, we also have to be clear-headed about certain current realities. As the Ecofiscal Commission has noted, the global playing field for carbon pricing is not level. Exposed sectors like oil and gas sell their products into global markets, where they must compete with jurisdictions that don't apply a carbon penalty. So there's the risk of investment shifts resulting in what's sometimes called "carbon leakage," where energy demand gets met by other jurisdictions, while producing the same or higher carbon emissions. In this way, Canada could suffer economic losses with no positive change in global emissions.

Going forward, what we need are carbon policies that strike a balance between emission performance and competitiveness. We believe such policies could prevent carbon leakage, while also allowing Canada to sustainably develop its natural resources and help fund the transition to a lower carbon economy.

2016 GHG performance

On this page:

> Our Report on Sustainability provides an annual accounting of our greenhouse gas (GHG) emissions, both in terms of absolute emissions and emissions intensity. The latter is calculated by using full-year production and carbon dioxide equivalent (CO_2e) volumes emitted from Suncor-operated facilities.

Production

Production numbers in our 2016 Annual Report are for upstream volumes only and include our net share of production from non-operated assets, as well as operated assets. This differs from production numbers used in our Report on Sustainability to calculate intensity metrics, which include 100% of the upstream production at Suncor-operated facilities only, and also includes downstream throughput volumes of saleable refined products from our Suncor-operated refineries and lubricants plant (previously owned by Suncor, and sold in early 2017). For the purposes of our Report on Sustainability, net corporate production in 2016 was approximately 45 million cubic metres (m^3), compared to 48.2 million m^3, in 2015. The decrease in 2016 production is a result of the impact from the Fort McMurray wildfires, when our operations in the Regional Municipality of Wood Buffalo (RMWB) were shut in during the second quarter, to ensure that process and personnel safety remained a top priority.

Please note: the sum of the individual facilities production volumes will not equal the reported net corporate production. Inter- and intra-business-unit product transfers (hydrocarbon streams that pass through more than one facility) are removed from the corporate and business unit totals to give the net production. This is done to prevent double-counting of hydrocarbon streams sent for further processing within the company.

- Individual facility intensities are calculated based on net facility production not including internally produced fuels and consumed volumes.
- Business unit intensities are calculated using business unit net production. Business unit net production is based on the sum of net facility production from individual facilities within the same business unit minus intra-business-unit intermediate product transfers.
- Corporate GHG intensity is calculated based on the sum of business unit net production minus inter-business unit product transfers.

As reported in our 2016 Annual Report, total upstream production averaged 622,800 barrels of oil equivalent per day (boe/d) through the course of 2016, compared to 577,800 boe/d in 2015. Oil sands production (excluding Syncrude) averaged 374,800 barrels per day (bbls/d) in 2016, compared to 433,600 bbls/d in 2015.

Read the 2016 Annual Report

Our oil sands operations were significantly impacted by the forest fires in the Fort McMurray region, with production being shut in during the second quarter, resulting in an approximately 18.8% decrease in annual production. The planned Upgrader 2 turnaround was also extended by more than one month as a result of the forest fire.

Despite the impacts of the fires at both facilities, in situ operations demonstrated strong reliability in 2016, maintained low steam-to-oil ratios (SORs), and set production records during both the first and fourth quarters, with 235,800 bpd and 238,400 bbls/d, respectively.

Suncor GHG absolute emissions and emissions intensity

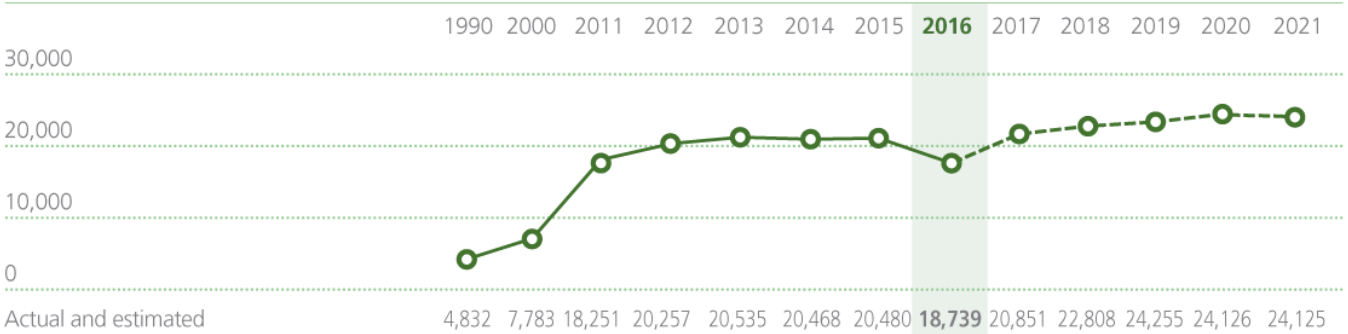
Absolute full-year GHG emissions in 2016 totalled 18.7 million tonnes, compared to 20.5 million tonnes in 2015. This is due primarily to decreased production as a result of the forest fires and extended Upgrader 2 outage. Using internationally accepted Global Reporting Initiative protocols; our 2016 corporate GHG emissions intensity remained relatively flat at 0.42 tonnes of CO_2e per m^3 of production.

Upstream intensity remained the same in 2016 as compared to 2015, despite the impacts of the Fort McMurray forest fire. Downstream intensity also remained relatively stable, observed across all the refineries (Sarnia, Montreal and Commerce City) as well as the Mississauga lubricants plant.

Read about the emission factors that went into calculating our 2016 GHG performance

Please note: All numbers included are for large, operated facilities and properties only and represent 100% of the direct and indirect emissions at these facilities. Data is not broken down by working interest and does not include non-operated facilities.

SUNCOR-WIDE ABSOLUTE GHG EMISSIONS
actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)(4)(5)(6)(7)
thousands tonnes CO_2 equivalents (CO_2e)



	1990	2000	2011	2012	2013	2014	2015	**2016**	2017	2018	2019	2020	2021
Actual and estimated CO_2e emissions (thousands tonnes CO_2e) — Actual --- Estimated	4,832	7,783	18,251	20,257	20,535	20,468	20,480	**18,739**	20,851	22,808	24,255	24,126	24,125
Oil Sands	3,631	5,564	8,524	9,204	8,417	8,542	8,685	**7,138**	8,661	9,077	9,596	9,620	9,555
Fort Hills	–	–	N/A	N/A	N/A	N/A	N/A	**N/A**	466	1,966	2,432	2,436	2,411
In Situ:	–	–	2,608	4,079	5,390	5,610	5,620	**5,443**	5,790	6,017	6,303	6,442	6,235
Firebag	–	–	2,001	3,471	4,703	4,903	4,991	**4,810**	4,894	5,149	5,426	5,565	5,329
MacKay River	–	–	607	608	687	707	628	**633**	896	868	877	877	906
Exploration & Production:	233	531	1,637	1,387	1,152	685	569	**581**	603	622	625	357	654
North America Onshore	233	531	1,035	995	630	42	20	**21**	20	19	17	15	46
East Coast Canada	0	0	602	391	522	642	548	**560**	582	603	608	342	608
Refining & Marketing:	968	1,687	5,323	5,420	5,406	5,467	5,438	**5,411**	5,164	4,957	5,132	5,102	5,101

Commerce City	–	–	1,011	1,145	1,205	1,183	1,101	**1,126**	1,094	1,054	1,083	1,083	1,083
Edmonton	–	–	1,766	1,742	1,677	1,694	1,734	**1,779**	1,860	1,761	1,922	1,904	1,903
Lubes	–	–	421	417	399	426	386	**420**	–	–	–	–	–
Montreal	–	–	1,123	1,137	1,172	1,160	1,204	**1,143**	1,235	1,208	1,172	1,160	1,160
Sarnia	–	–	948	919	889	918	918	**862**	894	853	873	874	874
Other (including Burrard terminal, Montreal Sulphur Plant and Pipelines)	–	–	54	60	64	86	95	**81**	81	81	81	81	81
Renewables			159	167	170	165	169	**166**	168	168	168	169	168

SUNCOR-WIDE GHG EMISSIONS INTENSITY actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)(4)(5)(6)(7)(8)

tonnes CO_2e/cubic metres of oil equivalent (m^3OE)

	1990	2000	2011	2012	2013	2014	2015	**2016**	2017	2018	2019	2020	2021
Actual and estimated CO_2e emissions intensity (tonnes CO_2e/cubic metres of oil equivalent (m^3OE))	0.570	0.402	0.375	0.413	0.412	0.451	0.425	**0.419**	0.429	0.402	0.405	0.408	0.417

■ Actual ■ Estimated

Oil Sands	1.196	0.817	0.510	0.561	0.503	0.497	0.456	**0.463**	0.447	0.490	0.494	0.499	0.510
Fort Hills	–	–	–	–	–	–	–	**–**	2.242	0.236	0.229	0.228	0.239
In Situ:	–	–	0.502	0.535	0.540	0.484	0.445	**0.450**	0.477	0.454	0.498	0.493	0.494
Exploration & Production:			0.170	0.157	0.154	0.238	0.251	**0.278**	0.330	0.302	0.221	0.197	0.215
Refining & Marketing:	0.225	0.193	0.202	0.199	0.200	0.203	0.199	**0.201**	0.185	0.184	0.186	0.183	0.183
Renewables	–	–	0.684	0.662	0.668	0.654	0.662	**0.654**	0.665	0.665	0.665	0.665	0.665

(1) Estimates are based on current production forecasts and methodologies. The charts contain forward-looking estimates and users of this information are cautioned that the actual GHG emissions and emission intensity may vary materially from the estimates contained in the charts. Please see Advisories.

(2) Data from 1990 and 2000 do not include Suncor's U.S. operations, and only include business areas in operation during these years. These data points have been provided for historical comparability, consistent with previous sustainability reports.

(3) Data here includes both direct and indirect CO_2e emissions, whereas the data included in the Alberta SGER reports and other regulatory reports are direct emissions only. No credit is taken for GHG reductions due to cogen export or purchased offsets. Emissions have been calculated using facility-specific methodologies; various reference methodologies accepted by jurisdictions where each facility is required to report GHG emissions. Where a jurisdiction has a prescribed methodology, it is followed and if none exists, the most applicable and accurate methods available are used to quantify each emission source. Beginning with 2013 data, the latest global warming potentials issued by the Intergovernmental Panel on Climate Change in their 2007 or Fourth Assessment report have been used to calculate CO_2e. Historical data has not been updated to reflect this change as it does not impact corporate-wide emissions materially.

(4) Beginning in 2013 Oil Sands methodology changed to reflect the inclusion of biomass, a methodology change in the calculation of fugitive emissions using flux chamber data, and revisions to emissions factors and calculations based upon AESRD's (now Alberta Environment and Parks) request. These changes are also consistent with the methodology used for SGER Bill 3 reporting. Additionally, also beginning in 2013, MacKay River implemented a revised scope 2 emission calculation methodology which has been implemented to the reported data. Also, reported Refining & Marketing emission values reflect classifying purchased hydrogen emissions and sold CO_2 as an indirect scope 3 instead of an indirect scope 2.

(5) The Suncor-wide emissions intensity uses net production, which is the sum of net facility production minus all internal product transfers.. The resulting net production is our Suncor product sales to market. The sum of the BU intensities will therefore not equal the Suncor-wide intensity. Forecasted emission intensity is now reported on the same basis as actual.

(6) Refining & Marketing emissions are inclusive of emissions from the pipeline from Oil Sands to the Edmonton refinery. Firebag to Oil Sands

and Fort Hills to Oil Sands), which are included in the Pipelines entity within R&M. Beginning in 2014, R&M emissions are also inclusive of the Montreal Sulphur Plant, purchased in July 2014. Data for this site has been reported based on the date of the sale and will therefore not be representative of a full year's operations. Forecasted data reflects full year operations. Suncor Energy closed the sale of our Petro-Canada Lubricants Inc. (PCLI) business in early 2017, but performance from our lubricants facility is represented up to and including 2016, and omitted from forecasts.
(7) The Other category includes Burrard terminal in all reported years, Pipelines and Montreal Sulphur Plant starting in 2014. The Montreal Sulphur Plant's 2014 data has been adjusted to reflect the portion of the year that it was owned and operated by Suncor (July-Dec). Starting with 2015 the Sulphur Plant's full year data is included (and for forecasted years as well).
(8) Wind, Terminals, Pipelines and the Montreal Sulphur Plant do not contribute to R&M production or Suncor Wide production (denominator for GHG intensity), only absolute GHG emissions (numerator for GHG intensity) due to the definition of the corporate wide production metric.

Definitions:
Direct GHG emissions: Emissions from sources that are owned or controlled by the reporting company.
Indirect GHG emissions: Energy-related emissions that are a consequence of the operations of the reporting company, but occur at sources owned or controlled by another company (e.g., purchased electricity or steam).
Absolute (total) emissions: The sum of direct and indirect emissions of a facility or reporting company.
Emission intensity: Ratio that expresses GHG emissions per unit of physical activity or unit of economic value (e.g., here it is total tonnes of CO_2e emissions per unit of production in cubic metres).

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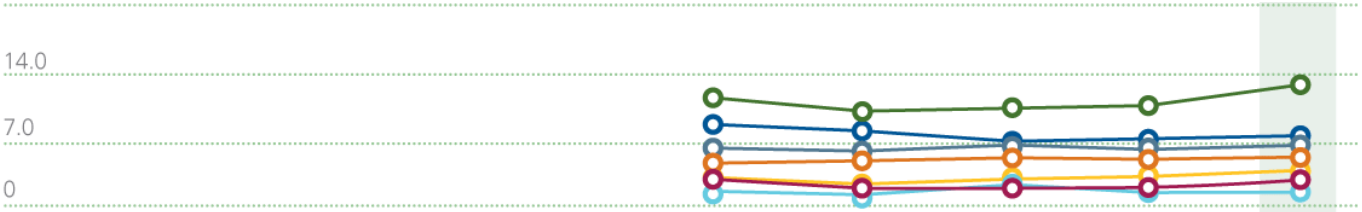
Suncor energy use and energy intensity

GHG emissions are closely linked to energy use, with approximately 90% of direct GHG emissions and nearly all Scope 2 emissions being related to the consumption of energy for operations.

Suncor is committed to energy management and continuously improving GHG emissions reductions as part of everyday operational excellence. In 2015, we came to within 1% of our environmental performance goal for energy efficiency that we established seven years prior, to achieve a 10% improvement in energy efficiency by the end of 2015.

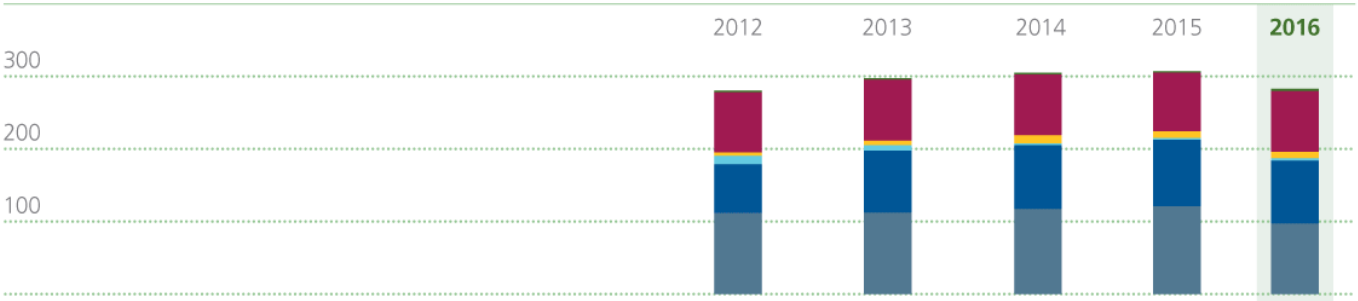
Our energy use and energy intensity graphs show similar year-over-year trends to the GHG emissions and GHG emissions intensity graphs shown above. In 2016, oil sands energy intensity was slightly lower than 2015 from lower energy use and reduced production due to Fort McMurray Fires. Renewables energy intensity was slightly higher than 2015 primarily due to less wind production in our portfolio. The energy intensity of renewables business is based on energy input for ethanol production with wind energy production deducted from that total energy input.

Please note: All numbers included are for operated facilities and properties only. They represent 100% of the direct and indirect energy use at these facilities. Data is not broken down by working interest and does not include non-operated facilities.



Oil Sands	6.86	6.73	6.83	6.30	**6.44**
In Situ[1]	8.83	8.60	7.73	7.39	**7.45**
North America Onshore	1.58	1.44	2.35	1.63	**1.88**
East Coast Canada[2]	3.56	2.95	3.19	3.29	**3.69**
Refining & Marketing[3]	3.06	3.11	3.20	3.22	**3.18**
Renewables[4][5]	9.92	8.93	9.11	9.45	**12.41**
Suncor Energy	5.75	6.01	6.70	6.43	**6.39**

ENERGY USE
(millions of gigajoules)



Oil Sands	112.54	112.72	117.30	119.47	**99.21**
In Situ[1]	67.26	85.93	89.46	93.27	**90.23**
North America Onshore	11.78	7.59	0.50	0.30	**0.32**
East Coast Canada[2]	4.80	6.46	8.49	6.87	**7.09**
Refining & Marketing[3]	83.23	84.37	86.19	88.08	**85.83**
Renewables[4][5]	2.51	2.27	2.30	2.42	**3.15**
Suncor Energy	282.40	299.33	304.25	310.40	**285.84**

(1) In Situ data includes Firebag and MacKay River operations.
(2) East Coast Canada data only includes energy use and production from the Terra Nova FPSO vessel.
(3) Refining & Marketing business unit is inclusive of the energy use associated with pipeline stations located on the pipeline from Oil Sands to Edmonton and the pipelines from Firebag to Oil Sands and Fort Hills to Oil Sands. The R&M business unit also includes energy use from the Burrard terminal and the Montreal Sulphur plant (prorated in 2014 based on partial ownership from July-Dec 2014).
(4) Renewables business unit is inclusive of the St. Clair ethanol plant and Suncor-operated wind farms. No adjustment is made for financial control, operated assets are 100% included.
(5) Electricity that is produced and sold to provincial grids by oil sands and in situ cogens and operated wind farms is converted to an equivalent amount in GJs and deducted from the total energy.

Performance highlights

What follows are highlights and explanations describing the most noteworthy emissions variances at some of our operations. Where emissions were relatively flat or stable, no commentary is offered.

Emissions totals and variances for all operated facilities are available in the performance data section of this report.

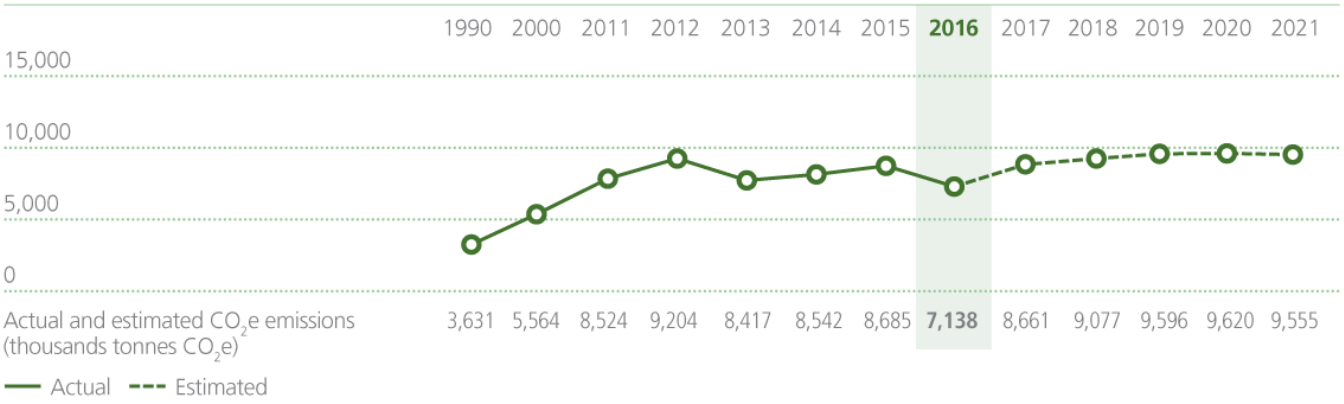
Expand all | Collapse all

Oil Sands

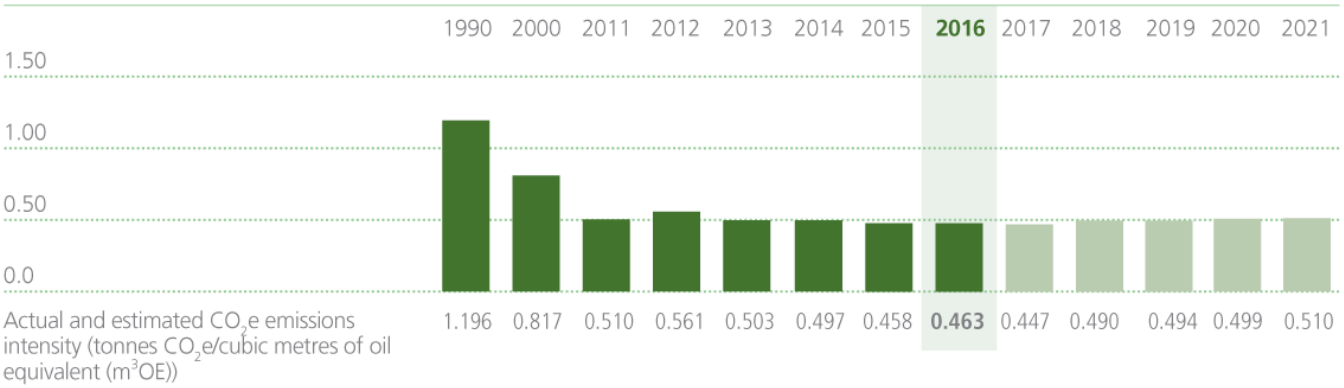
Absolute emissions from our mining, extraction and upgrading operations decreased by 17.8% in 2016 as compared to 2015 (7.1 million tonnes CO_2e in 2016 versus 8.7 million tonnes CO_2e in 2015). Emissions intensity increased by 1.2% over the same period. This is due primarily to decreased production as a result of the forest fires and extended Upgrader 2 turnaround.

Oil Sands GHG emissions absolute and intensity

OIL SANDS ABSOLUTE GHG EMISSIONS
actual (1990 – 2016) and estimates (2017 – 2021) [1][2][3][4]
thousands tonnes CO_2 equivalents (CO_2e)



OIL SANDS GHG EMISSIONS INTENSITY
actual (1990 – 2016) and estimates (2017– 2021) [1][2][3][4]
tonnes CO_2e/cubic metres of oil equivalent (m^3OE)



Actual Estimated

(1) Estimates are based on current production forecast and methodologies. The charts contain forward-looking estimates and users of this information are cautioned that the actual GHG emissions and emission intensity may vary materially from the estimates contained in the charts. Please see Advisories.

(2) Data here includes both direct and indirect CO2e emissions for Oil Sands Base Plant operations and Poplar Creek cogeneration, whereas the data included in the Alberta SGER report is direct only. No credit is taken for GHG reductions due to cogen or purchased offsets.

(3) Beginning in 2013 Oil Sands methodology changed to reflect the inclusion of biomass, a methodology change in the calculation of fugitive emissions using flux chamber data in 2012, and revisions to emission factors and calculation methodologies based upon AESRD's request. These changes are also consistent with the methodology used for SGER Bill 3 reporting.

(4) Data includes only Oil Sands base plant mining / extraction / upgrading and Poplar Creek cogen operations. As of September 2015, the Poplar Creek cogen is owned and operated by Suncor and is included in Oil Sands total direct emissions.

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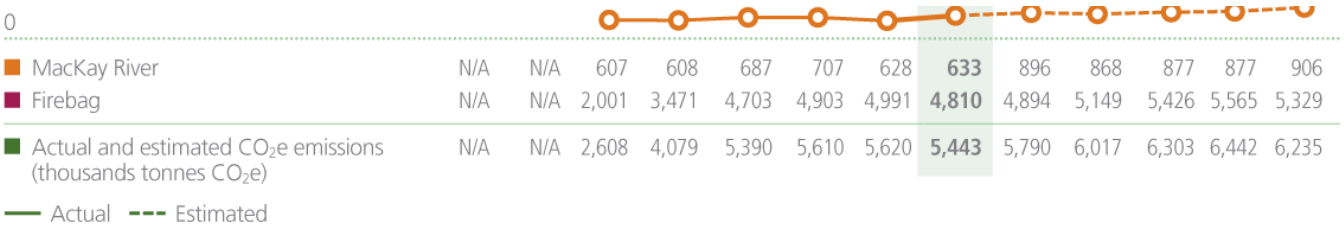
Fort Hills

Sanctioned in 2013, the Fort Hills mining project is expected to have a nameplate capacity of 194,000 bbls/d of bitumen. We expect this to add over 2.4 million tonnes of CO_2e to our operated GHG emission profile once it reaches full nameplate capacity. First oil from the project is expected in the fourth quarter of 2017.

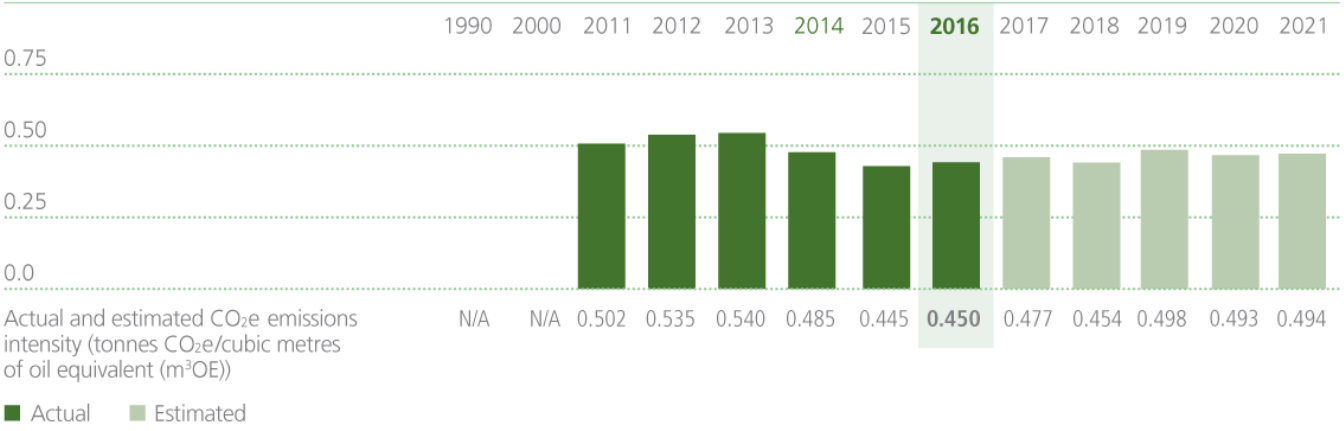
In Situ

The overall absolute emissions at our in situ operations decreased in 2016 compared to 2015, from 5.6 million tonnes CO_2e to 5.4 million tonnes CO_2e. The decrease was due primarily to operations being shut in as a result of the forest fires.

As a result of the extended plant outage at MacKay River, additional steam was required to re-heat and re-pressurize the reservoir during start-up, which resulted in a 12% higher emissions intensity in 2016 compared to 2015. At Firebag, despite the impacts of the forest fire event, emissions intensity slightly decreased (1%) compared to 2015. The decrease is mainly due to sustained low SORs, resulting from optimized reservoir management strategies and strong infill well performance.



IN SITU GHG EMISSIONS INTENSITY
actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)
tonnes CO_2e/cubic metres of oil equivalent (m^3OE)



(1) Estimates are based on current production forecast and methodologies. The charts contain forward-looking estimates and users of this information are cautioned that the actual GHG emissions and emission intensity may vary materially from the estimates contained in the charts. Please see Advisories.

(2) Data here includes both direct and indirect CO_2e emissions, whereas the data included in the Alberta SGER report is direct only. No credit is taken for GHG reductions due to cogen export or purchased offsets.

(3) For MacKay River, indirect emissions include electricity purchased from the grid, electricity purchased from the third party MacKay River cogen and purchased steam also purchased from the third party MacKay River cogen. Starting in 2013 MacKay River implemented a new methodology for calculating indirect emissions associated with energy streams purchased from the third party MacKay River cogen to remain consistent with the third party cogen that is the source of these energy streams. This change is reflected in the 2014 data and forecasted future years. Firebag cogens are owned and operated by Suncor and therefore all cogen emissions count toward Firebag's total direct emissions including emissions associated with generating electricity that is sold to the AB grid.

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Exploration & Production

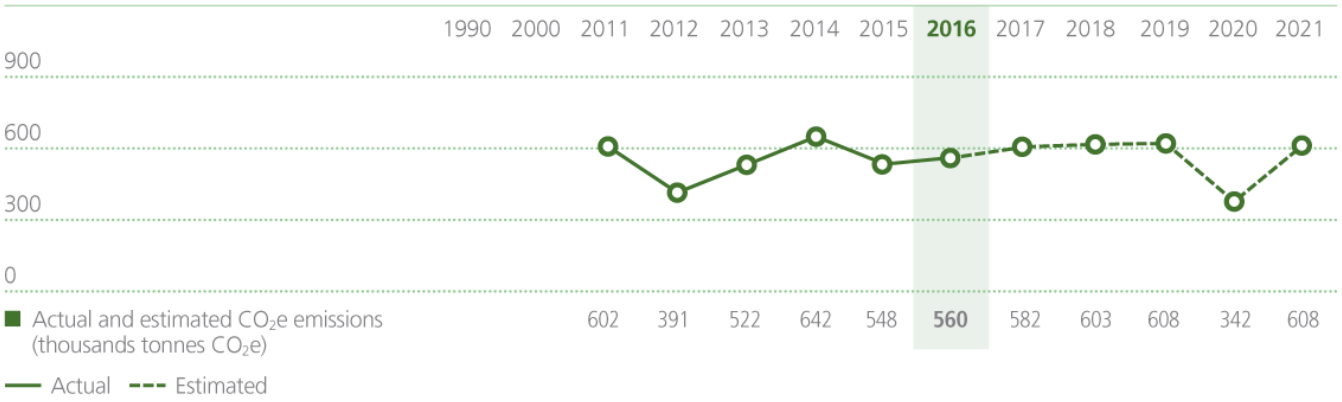
East Coast Canada

Terra Nova emissions increased by 2%, from 0.55 million tonnes CO_2e in 2015 to 0.56 million tonnes CO_2e in 2016. Terra Nova is the only East Coast

Canada asset Suncor operates. Other international and offshore production interests are joint ventures and not within our direct operational control. These joint venture operations are not included in this report.

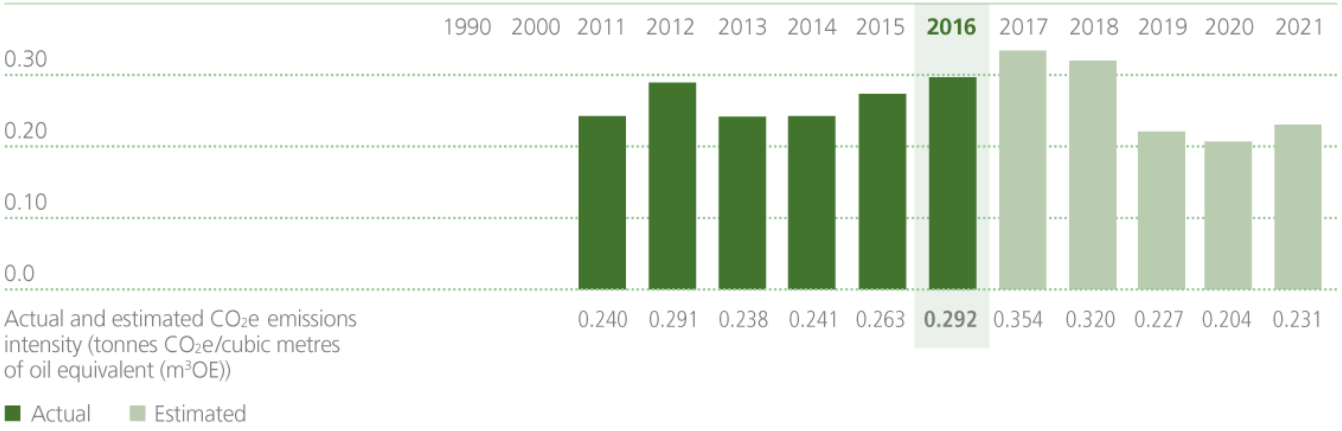
EAST COAST CANADA* ABSOLUTE GHG EMISSIONS actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)(4)(5)

thousands tonnes CO_2 equivalents (CO_2e)



EAST COAST CANADA GHG EMISSIONS INTENSITY actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)(4)(5)

tonnes CO_2e/cubic metres of oil equivalent (m^3OE)



* East Coast Canada data has only includes Suncor's Terra Nova offshore facility in eastern Canada.

(1) Estimates are based on current production forecast and methodologies. The charts contain forward-looking estimates and users of this information are cautioned that the actual GHG emissions and emission intensity may vary materially from the estimates contained in the charts. Please see Advisories.

(2) For historical Petro-Canada emissions please see the Report to the Community at suncor.com/.

(3) Data here includes both direct and indirect CO_2e emissions. No credit is taken for GHG reductions due to offsets.

(4) Data is presented for Suncor operated facilities only, and does not include our interests in non-operated joint ventures. Operated facilities are shown as 100%, not adjusted for Suncor's ownership share.

(5) Terra Nova production historically only included oil sales and not flaring and internally produced fuel. In 2011 these additional production volumes were included; however, to be consistent with other major facilities the production metric has been readjusted to only include oil sales.

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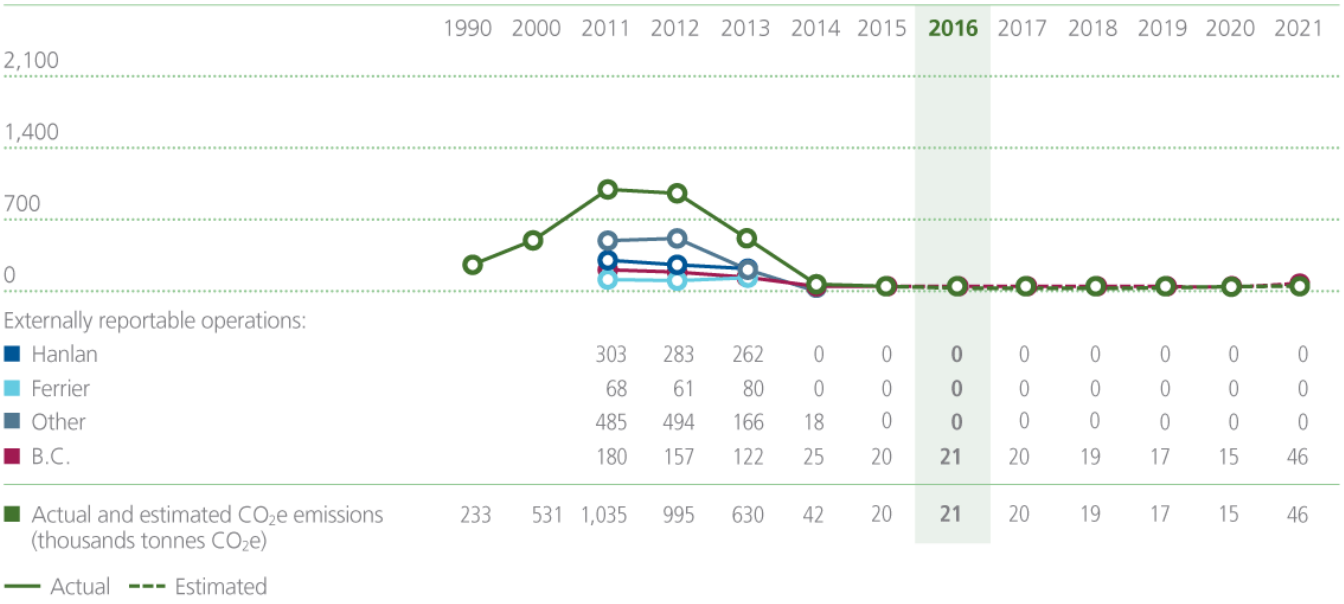
North American Onshore

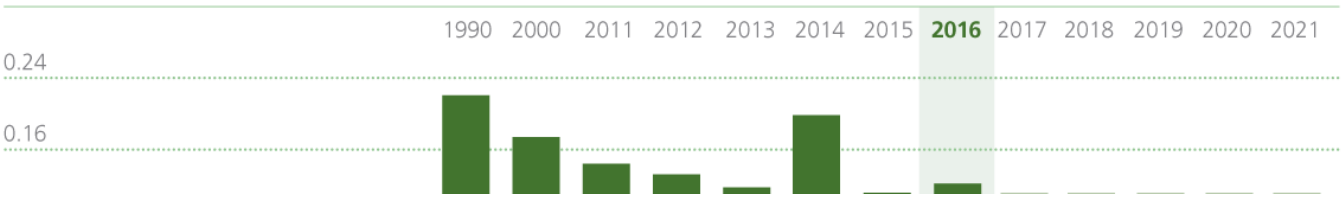
North America Onshore (NAO) emissions remained relatively flat, from 0.020 million tonnes CO_2e in 2015 to 0.021 million tonnes CO_2e in 2016.

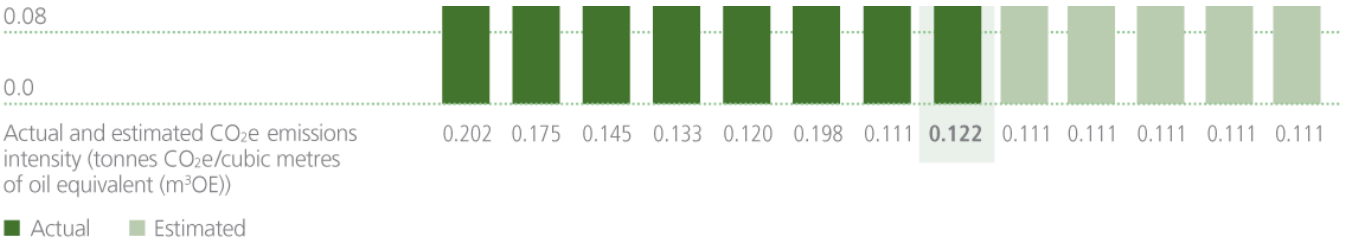
2015 was the first full year to report on only northeast British Columbia (B.C.) operations, as Suncor completed the sale of our Wilson Creek natural gas plant and field in Alberta late 2014. Reported numbers for NAO reflect assets owned in 2016. In previous years where NAO experienced divestments, the emissions of divested assets have been included up to their date of sale. Therefore, in 2014, Wilson Creek emissions are included up to its date of sale in late 2014, while emissions from the remaining B.C. operations are included for all of 2015 and 2016.

NORTH AMERICA ONSHORE ABSOLUTE GHG EMISSIONS
actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)
thousands tonnes CO_2 equivalents (CO_2e)



NORTH AMERICA ONSHORE GHG EMISSIONS INTENSITY
actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)
tonnes CO_2e/cubic metres of oil equivalent (m^3OE)





(1) Estimates are based on current production forecast and methodologies. The charts contain forward-looking estimates and users of this information are cautioned that the actual GHG emissions and emission intensity may vary materially from the estimates contained in the charts due to growth, development and/or dispositions. Please see Advisories.

(2) Data here includes both direct and indirect CO_2e emissions, whereas the data included in the Alberta SGER report or other regulatory reports are direct emissions only.

(3) The decreases shown from 2013-2015 reflect divestments of NAO assets, divested assets are reported up until the date of their sale.

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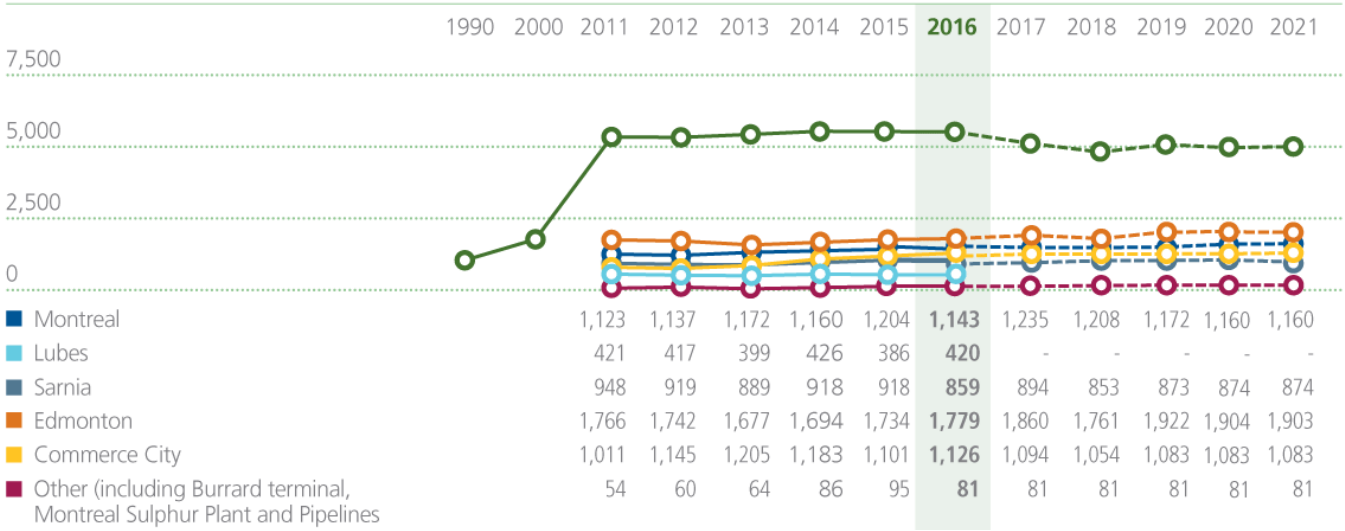
Refining & Marketing

In 2016, GHG emissions at our downstream facilities remained constant compared to 2015, with 5.4 million tonnes CO_2e emitted each year. Emissions intensity also remained constant, at 0.20 thousand tonnes CO_2e per m^3 of production. This performance is a result of continued strong refinery utilization.

COMBINED CANADA AND USA REFINING & MARKETING ABSOLUTE GHG EMISSIONS actual (1990 – 2016) and estimates (2017 – 2021) (1)(2)(3)(4)(5)(6)(7)(8)

thousands tonnes CO_2 equivalents (CO_2e)

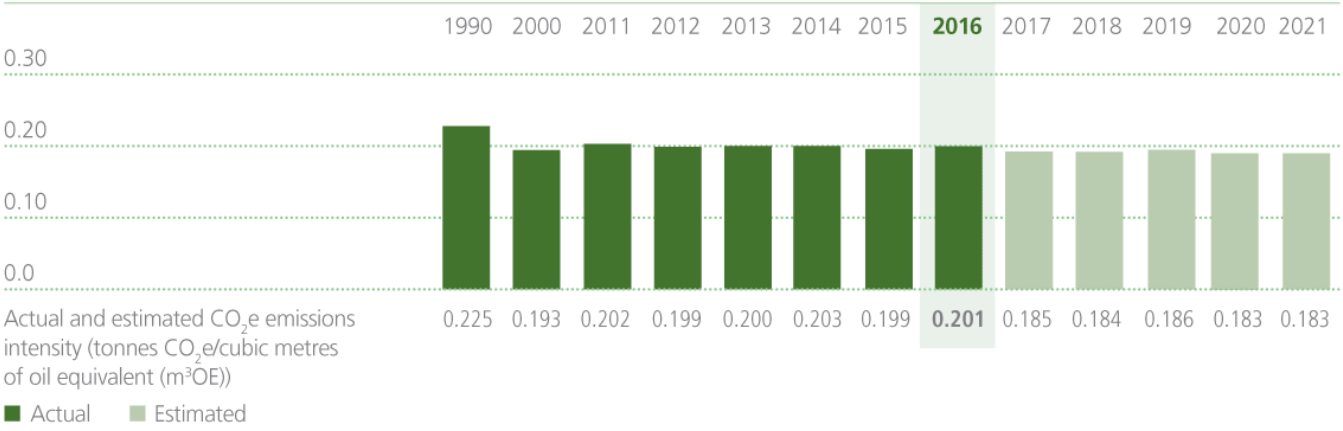


	1990	2000	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Actual and estimated CO_2e emissions (thousands tonnes CO_2e)	968	1,687	5,323	5,420	5,406	5,467	5,438	**5,408**	5,164	4,957	5,132	5,102	5,101

Actual --- Estimated

COMBINED CANADA AND USA REFINING & MARKETING GHG EMISSIONS INTENSITY actual (1990 – 2016) and estimates (2017– 2021) (1)(2)(3)(4)(5)(6)(7)(8)

tonnes CO_2e/cubic metres of oil equivalent (m^3OE)



	1990	2000	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Actual and estimated CO_2e emissions intensity (tonnes CO_2e/cubic metres of oil equivalent (m^3OE))	0.225	0.193	0.202	0.199	0.200	0.203	0.199	**0.201**	0.185	0.184	0.186	0.183	0.183

Actual Estimated

(1) Estimates are based on current production forecast and methodologies. The charts contain forward-looking estimates and users of this information are cautioned that the actual GHG emissions and emissions intensity may vary materially from the estimates contained in the charts. Please see Advisories.
(2) Data here includes both direct and indirect CO_2e emissions, whereas the data included in the Alberta SGER report and other regulatory reports are direct only.
(3) The numbers are gross operated volumes and do not include reductions from ethanol, internally generated emission performance credits or purchased offsets.
(4) R&M emissions from purchased third-party merchant hydrogen plants have not been included in the total GHG emissions (direct + indirect) as these emissions do not meet the definition for an indirect scope 2 emission source. These emissions are included in the indirect scope 3 emissions section of this report.
(5) R&M direct emissions do not include CO_2 transfers to third parties such as the food and beverage industries as they do not meet the definition for "CO_2 releases". For the purposes of this report, CO_2 volumes sold to third parties are considered to be indirect scope 3 emissions from products, consistent with provincial government reporting requirements in Ontario and Quebec.
(6) Re-reported emissions for previous years include subtracting the indirect emissions from purchased hydrogen and CO_2 sales volumes. Forecasted years also recognize this classification of purchased hydrogen and CO_2 sales emission sources as indirect scope 3 emissions.
(7) The Other category includes Burrard terminal, Pipelines and Montreal Sulphur Plant starting in 2014. The Montreal Sulphur Plant's 2014 data has been adjusted to reflect the portion of the year that it was owned and operated by Suncor (July-Dec). Starting with 2015 the Sulphur Plant's full year data is included (and for forecasted years as well). Pipelines include pipeline stations on the Oil Sands to Edmonton refinery pipeline as well as the pipeline from Firebag to Oil Sands and Fort Hills to Oil Sands. Suncor Energy closed the sale of our Petro-Canada Lubricants Inc. (PCLI) business in early 2017, but performance from our lubricants facility is represented up to and including 2016, and omitted from forecasts.
(8) Terminals, Pipelines and the Montreal Sulphur Plant do not contribute to R&M production (denominator for GHG intensity), only absolute GHG emissions (numerator for GHG intensity) due to the definition of the corporate wide production metric.

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Renewables

St. Clair ethanol plant

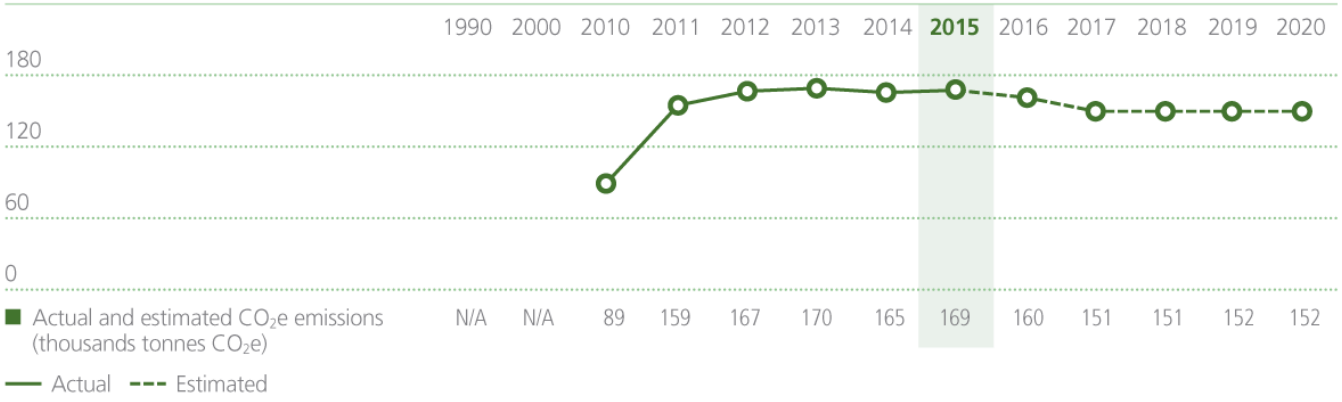
We've been blending ethanol in our retail fuels since 1992. We opened the St. Clair ethanol plant in Mooretown, Ontario in 2006. In 2011, we doubled the plant's production capacity to 400 million litres of corn-based ethanol annually. It is the single largest ethanol production plant in Canada.

Absolute emissions and emissions intensity from the St. Clair ethanol plant were relatively stable year over year.

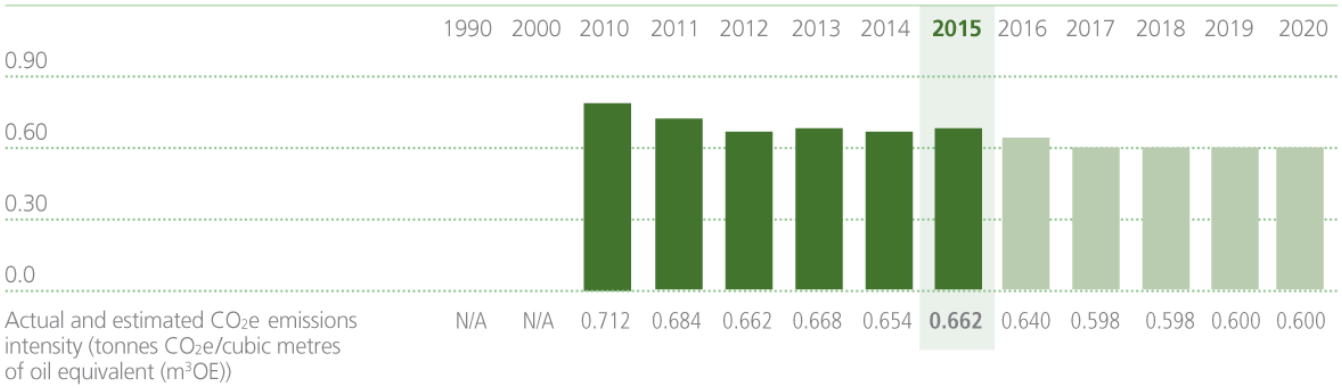
Wind power

Suncor and our partners are involved in five operational wind power facilities with a generating capacity totaling 187 megawatts (MW), enough to power about 65,000 Canadian homes. Performance data is reported 100% for operated wind farms only and is not adjusted to reflect ownership share. In 2016, our wind farms emitted 50 metric tonnes CO_2e and produced more than 100,000 MWh.

RENEWABLES ABSOLUTE GHG EMISSIONS
actual (1990 – 2015) and estimates (2016 – 2020) (1)(2)(3)(4)(5)(6)(7)
thousands tonnes CO_2 equivalents (CO_2e)



RENEWABLES GHG EMISSIONS INTENSITY
actual (1990 – 2015) and estimates (2016 – 2020) (1)(2)(3)(4)(5)(6)(7)
tonnes CO_2e/cubic metres of oil equivalent (m^3OE)



■ Actual ■ Estimated

(1) Estimates are based on current production forecast and methodologies. The tables contain forward-looking estimates and users of this information are cautioned that the actual GHG emissions and emission intensity may vary materially from the estimates contained in the table. Please see Advisories.
(2) Data here includes both direct and indirect CO_2e emission. No credit is taken for GHG reductions due to ethanol lifecycle GHG reductions or wind generated offsets.
(3) Historically, ethanol numbers for 2007 until 2008 were reported in R&M Canada. Those numbers have been backed out of R&M and placed here.
(4) The GHG and production numbers for the ethanol plant are constant from year to year as the plant runs at ~100% essentially all the time. Production is dependent on how much corn we can purchase and how much ethanol we can sell, which are predictable and mainly within our control.
(5) The capacity of the ethanol plant was doubled in 2011 to 400 million litres of ethanol per year.
(6) Beginning in 2012, Renewables includes total emissions (direct and indirect) from operated wind farms and the St. Clair ethanol plant. No credit is taken for generated wind offsets and generated electricity is not reflected as production in the intensity metric.
(7) In 2015 Suncor divested the Kent Breeze and Wintering Hills wind farms as part of an asset swap with TransAlta Corporation. These assets are included in the 2015 data up until the point of their sale and have been removed for 2016-2020 data shown.

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2016 Emissions factors

Measuring GHG emissions is complex, and it's important we do so in a transparent, consistent, verifiable and regulatory-compliant manner. Emissions factors, which allow us to estimate GHG emissions from a unit of available activity data (i.e., quantity of fuel consumed, quantity of product produced), help us achieve this.

Metric for reporting GHG emissions

The metric for reporting GHG emissions that is used in the Report on Sustainability is metric tonnes of carbon dioxide equivalent (CO_2e). This unit, which is commonly used for reporting GHGs, represents volumes of gases that have been studied to have an impact on the global atmosphere. CO_2e means that individual GHGs have been multiplied by their assessed global warming potential (GWP) compared to carbon dioxide (CO_2). This report uses the 100-year GWPs issued by the Intergovernmental Panel on Climate Change's (IPCC) fourth assessment report, which aligns to several jurisdictions of GHG reporting, including Environment Canada and the U.S. Environmental Protection Agency (EPA). This is consistent with our 2014, 2015 and 2016 Reports on Sustainability; however, sustainability reports prior to 2014 used the IPCC's third assessment report.

The major impacts of using the GWPs issued by the IPCC's fourth assessment report are that emissions from methane increase slightly due to an increase in the GWP factor from 21 to 25. Emissions from nitrous oxides (N_2O) decrease slightly with that factor decreasing from 310 to 298. Other GHGs have also had their GWPs adjusted but have little to no material impact on our total GHG emissions.

Measuring potential emission sources

As an integrated energy company spanning multiple jurisdictions, sectors and operations, we use several different externally developed and publicly accepted emission factor protocols to develop facility-specific emission calculation methodologies. We select the appropriate protocol for the site-specific fuel type and composition, emission source, facility or jurisdiction being considered. As required by regulators and verified by external auditors, we use internationally accepted GHG protocols and methodologies in determining our overall emissions profile.

In addition to using fuel-specific emission factors, some GHG emissions are calculated using process- or equipment-specific consumption rates in units such as 'run-hours' and not fuel volumes. Many of our sites have complicated processes that require specific emission factors and methodologies to accurately

calculate their emissions.

Primarily, our sites use protocols and methodologies that are required by their operating jurisdiction. However, if no prescribed methodology is required, it may be necessary to use a combination of standardized methodologies at a single facility due to site and sector-specific details that may not be completely covered by a single standard or regulation. On occasion, more accurate emission factors – measured, calculated from compositional data, or manufacturer-supplied – may be available for specific equipment. These are used whenever and wherever appropriate to ensure we gather the best quality data and use the most accurate measures.

Specific emission factors are calculated from actual measured data rather than applying generic estimated default factors as frequently as possible. In other cases, such as when calculating indirect emissions from externally purchased electric power, we use factors primarily where prescribed by regulation, secondarily from site-specific factors if available and finally, from published emission factors for remaining emission sources.

Due to the unique nature of each site, we have more than 1,400 standard emission factors in our Environmental Information Management System that are applied at different sites. This number does not include thousands of additional factors that are calculated daily for different fuels and sites based on fuel composition analysis. These factors give us real-time gas composition and resulting carbon content.

The role of regulation in GHG reporting

Many jurisdictions have, or are in the process of developing, prescriptive regulations that specify which factors can be used. For example, the EPA and regulators in Western Climate Initiative jurisdictions such as Quebec, Ontario and British Columbia all required operators to use specified factors for the 2016 reporting year.

Alberta requires large emitting facilities to use the methodology and emission factors used in their site-specific and government-approved Specified Gas Emitters Regulation (SGER) baseline, and changes cannot be made without restating and re-verifying the baseline and previous year's emissions. Each of our sites that report through the SGER successfully generated positive (approved) verifications for the 2016 reporting year at a reasonable level of assurance.

Standard practices and methodologies

External agencies have developed industry-accepted standard methodologies that operators can choose to use in the absence of prescribed methods. The standard practices and methodologies we follow are widely accepted, well researched and documented so that the numbers produced are verifiable by governments and third parties, and are consistently applied from year to year.

A partial list of these standard methodologies and guidance documents includes:

- IPCC fourth assessment report 2007
- American Petroleum Institute Compendium 2009
- World Business Council for Sustainable Development/World Resources Institute Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard 2004
- U.S. Environmental Protection Agency AP-42 Fifth Edition June 2007
- Environment Canada Greenhouse Gas Inventory 1990 – 2007 Report 2009
- Environment Canada Facility Greenhouse Gas Reporting Program
- Canadian Industrial Energy End-use Data and Analysis Centre 2009
- Intergovernmental Panel on Climate Change 2006 Guidelines for National Greenhouse Gas Inventories
- IPCC Guidelines Reference Manual (volume 2)
- Western Climate Initiative (WCI) Design for the WCI Regional Program, July 2010
- Alberta Environment and Sustainable Resource Development Specified Gas Emitters Regulation Technical Guidance Documents
- U.S. Environmental Protection Agency Mandatory Reporting Rule: GHG Reporting Program
- National Renewable Energy Laboratory Life Cycle Assessment of Hydrogen Production via Natural Gas Steam Reforming (PDF 33 pp., 634.43 KB)

Renewables

On this page:

Why renewable energy?

Global demand for less carbon-intense energy sources is dramatically increasing, and renewable power development is at the forefront of the transition towards a lower-carbon future.

Suncor is committed to developing and supplying energy options that meet the needs of both today and tomorrow. We share in the global challenge to tackle climate change head on by reducing emissions, while providing the energy that the world needs. Suncor has an ambitious goal to reduce carbon intensity by 30% by 2030 and investment in renewable energy is part of the solution.

We recognized the value of renewable energy 15 years ago, when we commissioned our first project in Gull Lake, Saskatchewan. Since then, our investments have been focused on wind power and biofuels, but we continue to evaluate opportunities in other renewable technologies, including solar.

As a large electricity generator in Alberta and an industry player keenly focused on reducing its carbon footprint, Suncor is eager to work with policymakers, industry partners and other stakeholders to increase investment in renewable power development. Wind power, solar power and biofuels are some of the future's energy sources – and we want to be among the providers of multiple energy solutions.

Our renewable power portfolio

Suncor and its partners are involved in five* operational wind power facilities in Canada, the first of which was commissioned in 2002. These wind power facilities have a gross generating capacity of 187 megawatts (MW), enough to power about 65,000 Canadian homes. This power generation avoids approximately 218,000 tonnes of carbon dioxide each year. Our wind facilities are located in Alberta, Saskatchewan and Ontario.

Summary of wind power projects

Project	Location	Commercial Operation Date	Gross Generating Capacity (MW)	Turbines	Ownership by Suncor
Adelaide	Strathroy, Ontario	2015	40	18	75%
Chin Chute	Taber, Alberta	2007	30	20	33.3%
Magrath	Lethbridge, Alberta	2004	30	20	33.3%
Sunbridge	Gull Lake, Saskatchewan	2002	11	17	50%
Ripley	Huron-Kinloss, Ontario	2008	76	38	50%

Our investments in renewable energy

Expand all | Collapse all

Ontario

Over the last several years, there has been a focus on the development of our wind portfolio in Ontario with the commissioning of both the Adelaide and Cedar Point wind power projects. In January 2017, Suncor sold its 50% interest in the Cedar Point wind facility.

The 40MW Adelaide wind power facility, located in Southern Ontario, is a notable project in our portfolio as it includes an equity partnership with a First Nation community. Under the partnership agreement the Aamjiwnaang First Nation has a 25% interest in the project.

"Suncor is committed to continue working closely with the Aamjiwnaang community and we look forward to building on this relationship over the lifespan of our project," says Jim Provias, vice president, renewable energy.

In September 2016, the Ontario government announced a suspension of the second round of the Independent Electricity System Operator's (IESO) Large Renewable Procurement (LRP) II process. This means a halt to the procurement of more than 1,000 MW of new renewable energy electricity generation. Since this announcement, Suncor has decided to pursue strategic investments in western Canada, where new aggressive renewable power generation targets have been set.

Alberta

The Government of Alberta is currently designing the framework for the Alberta Climate Change Leadership Plan (ACCLP), which is intended to spur the development of renewable power in the province by adding up to 5,000 MW of renewable power by 2030. The proposed changes in legislation and market structure are expected to support the development of renewable energy and cogeneration projects in Alberta.

Suncor is well positioned to participate in the procurement and development of future, potential renewable power projects. Two of our existing projects, Chin Chute and Magrath, are located near Lethbridge, Alberta. We are well positioned to participate in the procurement and development of future renewable power projects in southern Alberta, which may include the following wind and solar projects:

Wind

- Hand Hills (Phase 1) Wind Project, east of Drumheller, up to 80 MW
- Hand Hills (Phase 2) Wind Project, east of Drumheller, up to 80 MW
- Forty Mile Wind Project (phase 1), near Bow Island, up to 200 MW
- Forty Mile Wind Project (phase 2) near Bow Island, up to 200 MW
- Schuler Wind Project in Cypress County, up to 80 MW
- Huxley Wind Project, (near Trochu), up to 50 MW
- Braconnier Wind Project, (near Three Hills), up to 80 MW

Solar

- Hand Hills Solar Project, east of Drumheller, up to 80 MW
- Forty Mile Solar Project, near Medicine Hat, up to 80 MW
- Schuler Solar Project, in Cypress County, up to 80 MW

These projects are in the very initial phases of the AESO process and development activities.

Saskatchewan

Suncor is also considering future investments in Saskatchewan as the government is ramping up its renewable energy procurement to meet the provinces' target of 50% renewable power generation by 2030. To meet its target, SaskPower is moving forward with a competitive bid process for both wind and solar starting in 2017. Between 2019 and 2030, SaskPower hopes to develop up to 1,070 MW of new wind and 60 MW of solar.

Since 2008, Suncor has taken some initial steps toward the potential development of two wind projects through the optioning of land in the southern part of Saskatchewan:

- **Shaunavon**: located 20 kms from the Town of Shaunavon
- **Willow Bunch**: located 3 kms from the Town of Willow Bunch

In 2016 Suncor became a member of the First Nation Power Authority of Saskatchewan Inc. (FPNA). This membership will help us to cultivate relationships with Aboriginal peoples in Saskatchewan as well as provide opportunities for a potential partnership with a First Nations community.

Why we invest in wind power

Before many of our industry peers began investing in renewable energy, Suncor was developing and producing wind power across many jurisdictions in Canada. Over the last 15 years, we have developed eight wind power projects with a gross-generating capacity totaling 395 MW.

Wind is economically competitive today and both wind and solar are expected to grow as advances in technology are anticipated to continue to increase generator performance and decrease the cost of equipment. Wind and solar power are safe, reliable and emissions-free energy sources.

We are committed to the health and safety of everyone near our operations, including landowners, neighbours and employees. Developing wind power projects aligns with Suncor's values on social responsibility and community investment.

Social responsibility: Wind energy generates clean electricity, new jobs and economic development opportunities in communities across the country. We develop our projects in a socially responsible way taking great care to meet or exceed all regulations and address concerns from stakeholders in the areas we operate. Our project design philosophy aims to:

- minimize visual impact
- reduce turbine density
- maximize setbacks wherever practical

Community investment: We directly invest in helping to build sustainable communities in each of the locations where Suncor's wind farms operate through sponsorships, charitable donations and having our employees volunteer in the community. For example, in 2016, the SunBridge Wind Power Project sponsored the barbeque at the Hit and Run Slo-Pitch Tournament and members of Suncor's renewable energy team volunteered to support this community

initiative.

As Suncor develops new renewable energy projects, we enjoy meeting with the local community members in the proposed project areas to talk about Suncor, renewable energy and the community needs and concerns. We recognize that support for our projects, and for wind energy development in general, is not unanimous; however, we endeavor to work in an open, respectful and transparent way, engaging with communities early to alleviate and resolve issues wherever possible and reach mutually acceptable solutions.

** Suncor sold its 50% interest in the Cedar Point wind facility with an effective date of January 1, 2017.*

Biofuels and our investment in ethanol

We also operate Canada's largest ethanol facility, near Sarnia, Ont. The St. Clair ethanol facility has a production capacity of 400 million litres per year.

Virtually all the ethanol produced at the St. Clair plant is blended into Petro-Canada gasoline.

In 2014 Suncor made an investment in a biodiesel technology commercialization company. Along with this investment, we are participating in our first commercial-scale biodiesel plant in Nebraska.

Our investment in ethanol

We have been blending ethanol in our retail fuels since 1992. The St. Clair ethanol plant opened in Mooretown, Ont., in 2006 and we doubled the plant's production capacity to 400 million litres of corn-based ethanol annually in 2011.

The ethanol produced at the St. Clair plant is blended into our Petro-Canada branded gasoline, providing a lower environmental impact than, non-ethanolized gasoline and ensuring we meet government-mandated blending standards.

In Canada, the Federal Renewable Fuel Regulations requires an average of 5% renewable ethanol content in gasoline across Canada.

Some provinces have their own mandates for biofuel blending requirements, which means we need to purchase product from third parties to complement our supply from our St. Clair ethanol plant in Ontario.

There is growing evidence that biofuels, such as ethanol, are proven energy sources with demonstrable benefits.

The Conference Board of Canada concluded in a report titled Ethanol's Potential Contribution to Canada's Transportation Sector that:

- ethanol reduces greenhouse gas emissions (GHG) relative to gasoline by between 40% and 62% depending on agricultural and production practices
- improved farming techniques have significantly increased the average bushels of corn produced per acre, positively impacting water and fertilizer efficiency
- today's corn production is also more energy efficient

Although 10% ethanol-blended gasoline contains about 3% less energy than pure gasoline, it is an oxygenated fuel that has the ability to improve combustion efficiency in many vehicles. For most vehicles, this increased efficiency helps to offset the slightly lower energy content in the ethanol-blended gasoline.

Life cycle assessments

We believe it is appropriate to look at the full life cycle of ethanol production when discussing environmental benefits.

Before building our ethanol plant, we asked the Alberta-based Pembina Institute to conduct two life cycle assessments, which looked at all of the energy inputs from the corn field to the gas pump. Once the first phase of our facility was operational, we asked Pembina to revisit the study to ensure both the latest scientific methodology, along with actual operating data, was used.

Visit the Pembina Institute website to learn more

From its assessment, which was independently verified by the U.S. government's Argonne National Laboratory, Pembina estimated that overall CO_2 emissions could be reduced by up to 300,000 tonnes per year by blending all of the ethanol from the original St. Clair plant into gasoline. With the expansion of the plant, that environmental benefit has doubled to 600,000 tonnes per year. St. Clair's ethanol provides about a 60% reduction in GHG emissions compared to gasoline. These estimates were more recently reconfirmed by internal calculations.

Alternative land uses and crops

Much of the agricultural land used to produce ethanol today was previously used to grow tobacco. With the demand for tobacco on the decline, corn ethanol is providing a sustainable alternative crop for farmers.

The type of corn used as feedstock at the St. Clair plant has traditionally been used to feed livestock. Once the sugars and starches are extracted from the corn to make ethanol, the remaining elements are used to make premium cattle feed, which is then sold back to local livestock operators.

In sum, many parties benefit:

- farmers have an alternative crop to market
- livestock producers still get the feed they need for their cattle
- we are able to produce a fuel additive that boosts combustion efficiency and reduces the environmental impact of transportation fuels

We believe the biofuels industry is here to stay and we are committed to best-in-class production practices at our St. Clair plant.

Climate change action plan

On this page:

We recognized early on that climate change would be an important issue for our company and our stakeholders. That's why we introduced a seven-point action plan in 1997.

Guided by this plan, we have made substantial progress in reducing the overall carbon intensity of our operations (i.e., the amount of carbon emitted for each barrel or cubic metre (m^3) of oil produced or refined).

While much has changed over the years, our climate change strategy remains a reliable guide for an era when there is increased focus on the need for collaboration, investment in emissions-reducing technologies and constructive public policy development.

Read more about our public policy participation

Seven-point action plan

Below is a summary of actions we continued to take on our seven-point action plan to better manage our greenhouse gas (GHG) emissions and constructively address the climate change challenge.

Expand all | Collapse all

1. Manage our own emissions

- Absolute emissions decreased from 2016 as compared to 2015 primarily due to decreased oil sands production from forest fires and extended, planned turnaround of Upgrader 2.

- Our most effective near-term opportunity for reducing our GHG emissions and emissions intensity is through improved energy efficiency and plant reliability. We continue to invest in longer term technologies that hold the potential of significantly reducing emissions intensity and ultimately bending the curve on absolute emissions growth.
- In 2016, we were focused on sustainment and continuous improvement of our comprehensive Energy Management System (EMS) across all of our onshore operated facilities, which will be a key activity for achieving our 2030 GHG goal. EMS involves the implementation and sustainment of a comprehensive system that monitors, benchmarks and improves the energy efficiency of our facilities through operational discipline and targeted projects.

2. Develop renewable sources of energy

- We operate Canada's largest ethanol production plant.
- Suncor also monitors biofuels technologies being developed by external parties. This includes funding outside companies whose technology ideas align with the strategic needs of our operations or businesses. Suncor has invested in **Lanzatech**, a biofuels firm based in the United States, that is advancing a proprietary gas phase fermentation technology to recycle waste gas and greenhouse gas emissions into low carbon fuels and chemicals. Suncor also is invested in **Benefuel**, a technology commercialization company focused on building biodiesel production capacity using cost advantaged low carbon intensity feedstock
- Suncor is committed to increasing renewable energy generation in Canada and building best-in-class renewable energy projects. Wind power is one of the fastest growing sources of electricity generation in the world. It is efficient, emissions-free and renewable.
- Suncor and our partners are involved in five operational wind power facilities. These wind power facilities have a generating capacity of 187 megawatts (MW), enough to power about 65,000 Canadian homes.
- Suncor is well positioned to evaluate opportunities across Canada, and in particular, Alberta where the provincial government is targeting to build 5,000 MW of new renewable energy capacity.

Read more about renewable energy

3. Invest in technology and innovation

- Our continued investment in technology and innovation has allowed us to reduce our per barrel GHG intensity. We expect our ongoing commitment to research and development initiatives will reduce our emissions to be on par with, or lower than, other sources of oil.
- We continued to play a leading role in 2016 in developing long-term alternative bitumen extraction technologies that could result in significantly reducing the GHG emissions intensity of oil sands production.
- Among initiatives, we are leading a technology development project to conduct a commercial scale evaluation of the use of autonomous haulage systems in our mines, a first in North America. See technology development for further details.
- Suncor is examining novel methods of using steam, solvents and electromagnetics to produce in situ bitumen. If successful, these efforts could potentially reduce GHG intensity by over 50%. See technology development for further details.
- We also co-founded Evok Innovations, which is a unique partnership between Cenovus Energy, Suncor and the BC Cleantech CEO Alliance. Evok is a cleantech fund that accelerates the development and commercialization of solutions to the most pressing environmental and economic challenges facing Canada's energy industry.
- In 2012, we co-founded Canada's Oil Sands Innovation Alliance (COSIA), an alliance of companies representing 90% of Canadian oil sands production.
    - COSIA is committed to collaborative action to accelerate improvements in environmental performance in four key areas, including GHGs.
    - COSIA will build on the work of other collaborative networks to share knowledge and expertise about new technologies and innovation.
    - In terms of developing potential high-impact emissions-reducing solutions, COSIA is bringing together a broader range of ideas and resources and an increased capacity for implementing new approaches in a structured and disciplined way.
- As part of COSIA, Suncor is also helping to sponsor a $20 million Carbon XPRIZE contest that will encourage innovators to come up with new ideas to take carbon dioxide emissions from coal and gas plants and transform them from an environmental liability into usable products.
- To achieve further carbon intensity reductions and advance potential long-term climate change solutions, including energy efficiency, low-intensity bitumen extraction, or carbon capture and storage (CCS), we continued to work through organizations such as:
    - Emissions Reduction Alberta (formerly Climate Change and Emissions Management Corporation)
    - Carbon Management Canada
    - CO_2 Capture Project

- Alberta Innovates
- University of Alberta – Industrial Research Chair on Energy Systems

4. Use domestic and international offsets

- Our operating wind farms continued to generate GHG offset credits. In Alberta, our offset credits accrue based on the Wind-Powered Electricity Systems Offset Protocol in the Offset Credit System. In other jurisdictions where we operate, the credits or environmental attributes accrue to the Crown utilities that purchase power. The offset credits generated at our Alberta wind farms may be used by our oil sands facilities to help comply with the Alberta Specified Gas Emitters Regulation.

  Read more about our wind farms

- We are a member of the International Emissions Trading Association (IETA). IETA is dedicated to establishing a functional international framework for trading in GHG emission reductions. Through our affiliation, we participate in various working groups to ensure environmental integrity first and foremost, but also to create flexibility for business solutions that leverage actions and opportunities across the globe and the entire Canadian economy.

  The IETA Canadian Working Group has been effective in:

  - collaborating to help structure dialogue and alignment work related to harmonizing GHG emissions monitoring, reporting, and verification systems
  - compatibility of market infrastructure (i.e., tracking and registries)
  - offset system development and protocol alignment
  - technology fund design
  - informing provincial-federal GHG emission equivalency agreements through regular dialogue between industry, provincial, territorial and federal governments

- We also made a 10-year commitment to the Rio Bravo Carbon Sequestration Project in Belize. The project involves the conservation and sustainable management of more than 51,000 acres of forest in northwest Belize.

  In 2011, part of this project was certified under the Verified Carbon Standard as a United Nations Reducing Emissions from Deforestation and Forest Degradation project. The balance, in which Suncor has an interest, suffered hurricane damage in 2010 and likely will not be certified until an assessment can be made of the long-term impacts.

  The project continues to provide valuable learning to the forestry community, offset developers and policymakers on issues such as permanence, additionality and leakage, and demonstrates how saving forests is part of the climate change solution.

5. Collaborate on policy development

Increasingly in Canada, public policy is developed through open and transparent processes, incorporating the expertise and perspective of a broad range of stakeholders. Suncor participates in these forums, bringing our industry perspective and a solutions-based mindset to advance responsible development.

Suncor continues to play an active role in advocating for climate policy leadership nationally and within the jurisdictions in which we operate to ensure that Canada, a resource producing jurisdiction, has a place at the global table to influence collective action on the global challenge of climate change. In July 2016 Suncor became a signatory to the Carbon Pricing Leadership Coalition, a voluntary initiative that aspires to catalyze action towards the successful implementation of global carbon pricing. Suncor also supports the work of Canada's Ecofiscal Commission on fiscal policies that align economic growth and improved environmental performance.

We view GHG emissions trading and other carbon pricing mechanisms as useful tools. We also believe that to be effective, climate change policy must encourage consistent and patient investment in new technologies that will transform how we produce and use energy. Strategic technology investments can lead to deep emission reductions, but there needs to be a willingness to direct industry and public funds toward innovation. Carbon pricing policies alone will not accomplish this.

Read more about public policy participation

6. Educate employees and the public

Energy literacy is a necessary foundation for truly innovative and practical energy solutions. We continue to work with leading organizations to promote energy literacy and advance thinking around a low carbon energy future.

Through Suncor and the Suncor Energy Foundation, we've invested in:

- The Natural Step's Energy Futures Lab is bringing together innovators and influencers to collectively address current and future energy challenges
- Pollution Probe's efforts to advance energy literacy and a systems-based approach to thinking about energy through the Energy Exchange
- Quality Urban Energy Systems of Tomorrow (QUEST), an organization that seeks to foster an integrated, community-based approach to resolving energy and environmental challenges
- the development of a national community of practice for energy literacy through the Canada Science and Technology Museum
- The Walrus Talks Energy speaker series in partnership with The Walrus Foundation, highlighting various perspectives on the current and future energy system
- an initiative by The Pembina Institute, called Green Energy Futures, which profiles real people and their experiences using green energy technologies
- Student Energy and their global activities to educate and connect people and ideas around the future of energy development
- Alberta Council for Environmental Education and its efforts to develop and introduce environmental and energy literacy into the Alberta education curriculum
- our employees, who continue to take individual accountability for reducing waste and improving energy efficiency as part of our employee engagement initiative. This initiative extends from lunchtime sessions on energy conservation to recognizing employees for energy efficiency and GHG emission reduction projects through our President's Operational Excellence Awards

Read more about our community investment activities

7. Measure and report our progress

- In March 2017, we filed five annual GHG emission compliance reports for our Alberta operations with the Alberta government to the province's Specified Gas Emitters Regulation (SGER).
- We are also in compliance with all applicable requirements of the European Union Emission Trading System.
- We annually report to Environment Canada for all our facilities in Canada that emit over 50,000 tonnes of CO_2 equivalent, to the U.S. Environmental Protection Agency for our Commerce City refinery and to the provincial jurisdictions of Alberta, Ontario, Quebec and British Columbia in compliance with their reporting requirements.
- We report our overall progress on managing GHG emissions to all stakeholders through our Report on Sustainability and CDP Climate Change Response (PDF, 88 pp., 957.4 KB).
- In April 2017, we announced the release of Suncor's Climate Report: Resilience Through Strategy (PDF, 18 pp., 1.05 MB), which provides information on how the company assesses climate risk and outlines its plans to build long-term resilience in a low carbon economy.

For business planning purposes, we model the emissions associated with all of our future operated production, including growth projects, to assess our risks and identify opportunities associated with existing and anticipated carbon regulatory regimes. Our future carbon price assumption takes into account the best information we have from carbon markets and emerging public policy in the jurisdictions where we have material operations.

Our carbon price outlook assumes that the current carbon price will rise to $65/tonne, on an increasing percentage of our emissions, by 2035. As most of our facilities are currently, or will be from 2018, regulated under various carbon pricing regimes, the impact of our outlook is built into our planning assumptions. We estimate the impact of our carbon price outlook on Net Asset Value to be approximately 3.5%. The production weighted average after-tax cash cost per barrel of global upstream production over the period 2018 to 2027 is estimated at approximately $0.60/bbl.

Water stewardship

On this page:

Suncor believes that water is a shared and precious resource that must be managed wisely using a balanced, sustainable approach to integrated water management. This holistic approach includes optimizing water withdrawal practices, reuse of water already in our system, and the return of water to the watershed. We continue to invest in research and development to increase information, expertise, technological innovations and practices in an effort to sustainably manage water and reduce overall environmental impacts.

Water principles

We use four principles to guide our integrated water management approach:

1. **Shared value of water**: Water is a valuable natural resource with environmental, social and economic value. All water use must be managed wisely. Responsible energy development means ensuring industry's water use does not compromise the availability of clean, safe and plentiful supply of this important resource for current and future generations. We advocate and support policy development that strives to balance social, environmental and economic considerations.
2. **Watershed management**: Watershed management should be conducted on a regional scale, considering all users and the overall cumulative impact. We believe in the importance of working collaboratively with peers, government and environmental groups as well as affected Aboriginal communities through transparent, informed discussions about water stewardship in the Athabasca watershed.
3. **Reduce-Reuse-Return:** A truly sustainable integrated water management approach must simultaneously balance, reduce-reuse and return:
    - **Reduce**: A responsible water footprint means reducing water use must be balanced against the understanding of the overall net environmental effects.
    - **Reuse**: Reusing water to improve efficiency while considering net effects related to safety, reliability, energy use or future reclamation successes.
    - **Return**: A critical component of an integrated water management approach is the ability to safely return water to the watershed. Water Return is required to manage on-site water quantity and quality and is essential to minimize other environmental impacts (i.e. land disturbance, energy intensity/GHG emissions, waste generation).
4. **Integrated options analysis**: This analysis recognizes the integration of water management principles with site-specific conditions. Sustainable water management for an individual facility must include the principles of reduce, reuse, and return of water, recognizing that for each facility this will be unique based on a number of factors. All of these factors will lead to the development of options or opportunities in all three areas of water

management (reduce-reuse-return).

Collaboration on regional water stewardship

As the oil sands industry grows, we recognize the need to increasingly focus on the cumulative demands development places on regional water resources over the long term. Understanding that water impacts and challenges extend well beyond our own plant gates, we are also working closely with fellow oil sands operators, regulators and other stakeholders to move beyond just water management to water stewardship in the Athabasca River watershed.

Beginning in 2009, we've worked as part of the Oil Sands Leadership Initiative, now Canada's Oil Sands Innovation Alliance (COSIA), to advance a regional understanding of water. Suncor has either led or collaborated on projects that target three critical areas:

- understanding the watershed (users, flow, water quality and regional stakeholders) now and in the future
- understanding water use on our operational site and opportunities to reduce, reuse and return water in the watershed
- continuing to develop strong environmental monitoring in the watershed

Our regional collaborative work is key to ensure we find the right balance for all water users and the environment.

Through COSIA, Suncor and other member companies have executed more than 17 projects and contributed more than 180 technologies on these three critical areas of water stewardship.

Read more about our water management strategies

Technology and innovation in water treatment

As part of COSIA, we are working with industry partners to develop the Water Technology Development Centre (WTDC), which will advance new water treatment and recycling technologies for oil sands development. The $165 million WTDC is scheduled to be open in 2019 and will be attached to our Firebag in situ operations, allowing researchers to test new technologies on 'live' process fluids.

The WTDC will also allow participating companies to test more technologies than could be evaluated by each company individually while collaboratively managing the risks and costs of technology development. It will shorten the time required to field test technologies and move them to commercial application. Other targeted benefits include:

- reducing the cost of water recycling
- increasing steam and bitumen production
- improving the reliability of water recycling technology
- reducing water use and energy efficiency
- developing and applying improved technologies and practices for managing water treatment byproducts

Water quality and monitoring

On this page:

> Suncor recognizes the importance of preserving the health of the Athabasca River. We are working with governments, industry peers and stakeholders to support strengthened aquatic monitoring programs aimed at understanding and minimizing the impact of oil sands development on the Athabasca watershed.

Water quality monitoring is an integral component of water stewardship, and there are multiple points where we monitor water quality and then use that information to adapt our water use. Water quality monitoring occurs inside our operations, at the points where we return water and in the watershed:

- Monitoring water on our site allows us to understand the drivers for managing risks as well as opportunities to reduce, reuse and return water. It also provides us with information on the need to develop new water technologies.
- Monitoring water where it is returned to the river ensures we meet all stringent quality standards. It also helps identify how effectively our treatment systems operate and areas where we need to make improvements.
- Monitoring in the river is a key step to detecting and understanding changes in the river. This information is used to set water use as well as effluent guidelines for all watershed users.

Taken together, these oil sands water monitoring efforts create an overall water stewardship framework that contributes to preserving the value of water in the watershed.

Ongoing aquatic monitoring

The Athabasca River provides habitat for many fish species and other aquatic organisms, and feeds into Lake Athabasca. It is also a water source for the industry.

To ensure the health of the river is maintained, we analyze our discharges and support ongoing aquatic monitoring of the Athabasca River. In the past, aquatic monitoring was carried out through the Regional Aquatic Monitoring Program (RAMP). That function is now overseen by the Alberta Government under the Oil Sands Monitoring Program.

The Joint Canada-Alberta Implementation Plan for Oil Sands Monitoring

In 2012, the Government of Canada and the Government of Alberta launched the Joint Canada-Alberta Implementation Plan for Oil Sands Monitoring. The plan was jointly managed by the two governments to strengthen existing environmental monitoring programs for air, water, land and biodiversity in the oil sands region.

The Oil Sands Monitoring Program, now in its 5th year, has resulted in:

- a larger number of sampling sites over a larger area
- a larger number and additional types of parameters being sampled
- a higher frequency of sampling and in some areas improved methodologies for monitoring both air and water
- an integrated, open data management program

In terms of water monitoring, key features include:

- improved co-ordination of sampling practices to improve the understanding of potential cumulative impacts
- new sediment monitoring throughout the Athabasca River system to establish baseline and downstream conditions of potential contaminant
- new systematic sampling of snow and rainfall to assess the relationship between airborne processes, deposition and surface runoff entering tributaries and moving downstream
- new monitoring techniques for measuring potential ice contaminants, ice processes, the impact of freeze-up and break-up, sediment processes and water measurement under ice
- new integrated and intensive scientific investigations on representative watershed
- new intensive monitoring of sources of potential near-surface groundwater contaminants and pathways

The data from the monitoring program and the methodology used to produce it will be made public on an ongoing basis. We also continue to support the Oil Sands Monitoring Program in helping to better understand and manage potential cumulative impacts from oil sands operations on the Athabasca watershed.

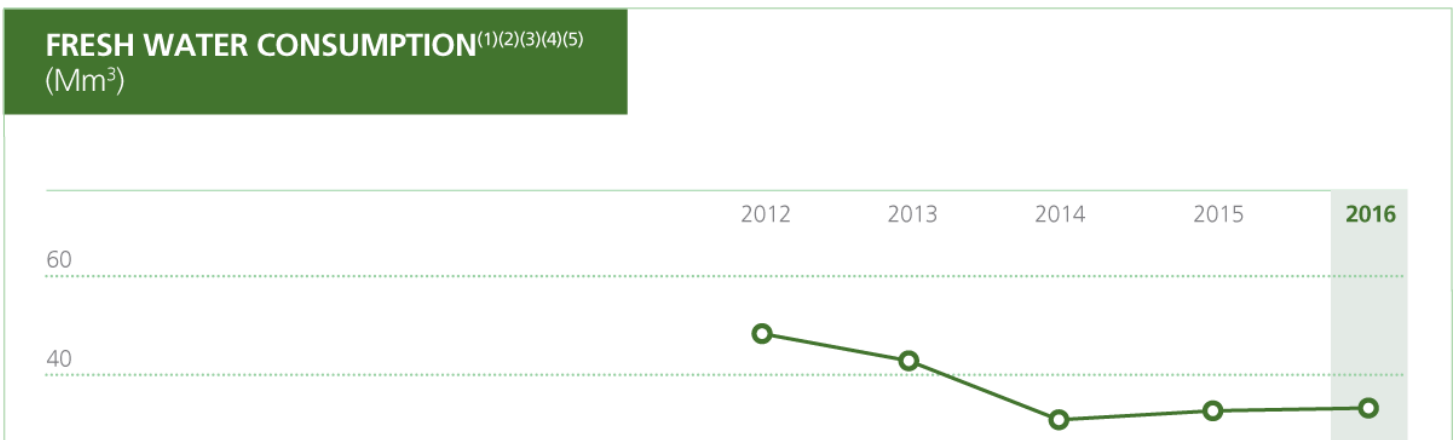
2016 Water Performance

On this page :

Suncor fresh water use and intensity

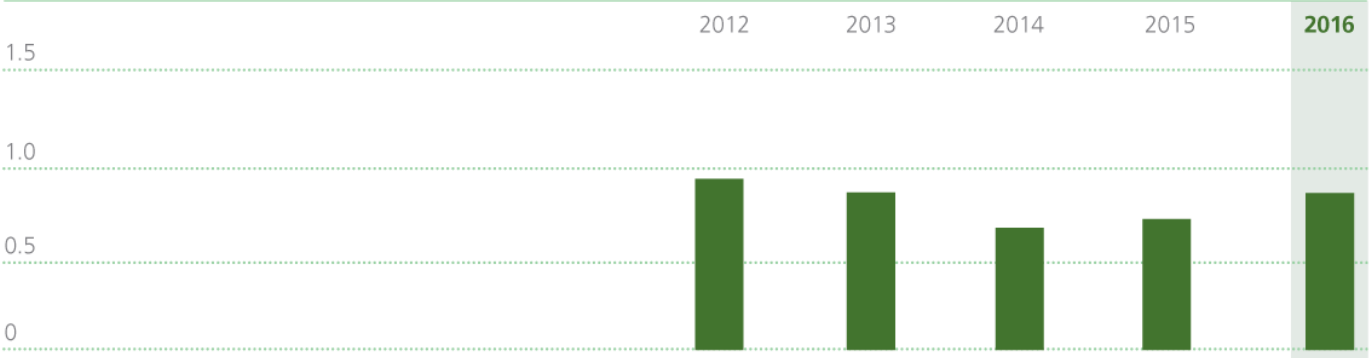
Suncor strives to continuously improve our water performance. We committed to reducing our company-wide fresh water consumption by 12% by 2015 (as compared to 2007). We successfully met that goal with a fresh water consumption 27% lower than our 2007 usage in 2015.

In 2016, Suncor's water intensity increased by 11% compared to 2015, primarily due to operational changes due to forest fires and lower production at oil sands. The forest fires in the Fort McMurray region significantly impacted oil sands, with less wastewater recycled due to operational upsets. The planned Upgrader 2 turnaround was also extended by more than one month due to the forest fire. As a result, oil sands production decreased by about 19% compared to 2015, which increased the overall fresh water consumption intensity.



Suncor total fresh water consumption [2]	47.1	41.2	30.8	35.9	**36.8**
Oil Sands[3]	28.0	23.6	18.3	16.6	**20.1**
In Situ[4]	2.3	2.2	1.9	1.7	**1.3**
Refining & Marketing[5]	16.9	16.4	10.9	17.3	**14.4**
St. Clair ethanol plant	0.9	1.0	0.9	0.9	**0.9**

FRESH WATER CONSUMPTION INTENSITY[1][3][4][5][6] (m^3/m^3 production)



	2012	2013	2014	2015	**2016**
Suncor total fresh water consumption intensity	0.96	0.83	0.68	0.74	**0.82**
Oil Sands[3]	1.75	1.44	1.09	0.89	**1.34**
In Situ[4]	0.31	0.22	0.15	0.12	**0.11**
Refining & Marketing[5]	0.64	0.58	0.40	0.63	**0.53**
St. Clair ethanol plant	3.71	3.77	3.66	3.68	**3.68**

(1) North America Onshore and East Coast Canada are not included as they are not material sources of freshwater consumption for our business.
(2) The sum of the business area fresh water consumption volumes does not equal the Suncor total due to transfer of treated wastewater from Oil sands to the Firebag In Situ facility. This volume is netted out of the Suncor total to avoid double accounting.
(3) Oil sands does not include industrial runoff water, which is subject to variances year over year based on precipitation. Withdrawal and consumption including the industrial runoff volumes are shown in the Performance Indicators section of our Report on Sustainability.
(4) In Situ data includes Firebag and MacKay River operations.
(5) Refining & Marketing includes four refineries and lubricants facility. Water measurement and estimation methodology of select operations is greater than +/-10% uncertainty
(6) Fresh water consumption intensity is the volume of water consumed (m^3) per volume of hydrocarbon product produced (m^3).

Water performance highlights

Expand all | Collapse all

Mining

Many of our stakeholders remain concerned about the amount of water oil sands producers are allowed to withdraw from the Lower Athabasca River. Industry, First Nations, Aboriginal Peoples, environmental groups and government bodies have discussed the issue at length.

Our mining and extraction operations mix oil sands with water to separate out the bitumen. The cleaned sand and water are then sent to tailings storage ponds where the sand settles out and the water is recycled back to the extraction process.

Approximately 85% of the water used by our mining and extraction operations is recycled tailings water. The primary source for the make-up water is the Athabasca River in one of Alberta's largest river basins.

Read more about our mining operations

Our oil sands base plant is licensed to withdraw up to 59.8 million m^3 of water annually from the Athabasca River – about 0.3% of the river's annual average flow. We continue to operate well below our water license even as production levels increase.

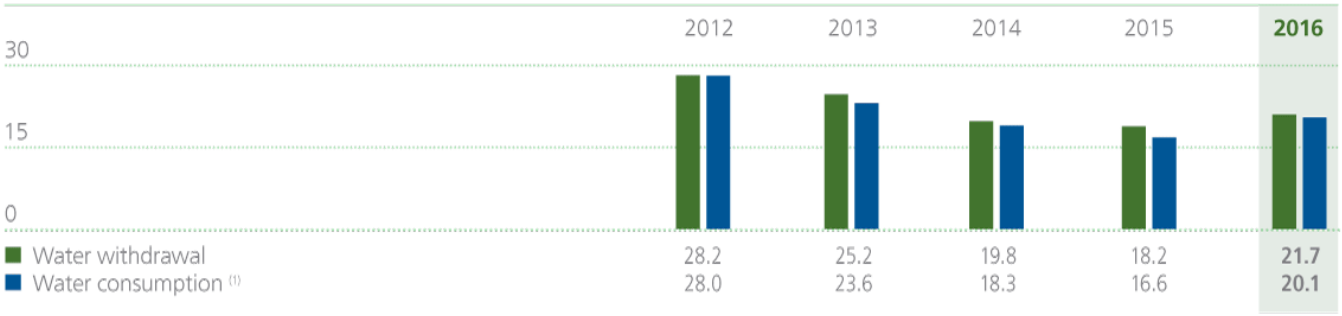
Through better water reuse and recycling in our operations in our oil sands operations, we have halved our fresh water withdrawal from the Athabasca River over the last 10 years. Our total oil sands fresh water withdrawal is now below 1998 levels, even though production has more than tripled since that time.

Over the last few years, Suncor executed a water management strategy at our oil sands base plant facilities to reduce the amount of water stored on site in tailings ponds and manage water quality in the system. The strategy contains three phases and more than 15 projects that:

- conserve or eliminate water use
- reuse water where possible
- return clean water to the watershed

The implementation of the strategy has resulted in Suncor reducing its water withdrawal rates dramatically since 2007 from the Athabasca River. In 2016, we withdrew about 21.7 million m^3 of water from the Athabasca, while returning 1.7 million m^3 of treated water back into the river. Our gross fresh water withdrawal from the Athabasca River has declined by 53% since 2007 when 43.7 million m^3 of fresh water was withdrawn.

OIL SANDS FRESH WATER WITHDRAWAL AND CONSUMPTION*
(million m^3)



*The methodology for calculating the water withdrawal metric for Oil Sands does not include industrial runoff volumes, which are subject to variances year over year based on precipitation. Withdrawal and consumption including the industrial runoff volumes are shown in the Performance Indicators section of our Report on Sustainability.

(1) Water consumption is defined as the quantity of water used and not returned to its proximate source or no longer available in its original form.

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While a significant amount of the water use reduction is permanent, over the longer term Suncor's water withdrawal from the river will stabilize to maintain a water balance and dissolved ion chemistry to successfully achieve reclamation objectives for mine closure.

Our oil sands water strategy is further presented below:

Concept #1: Directly reuse tailings water

The first major phase of our water strategy, formally commissioned in 2013, involves sending treated tailings water from our oil sands Base plant to our in situ water network. There, the tailings water is used as a make-up water supply.

The result is a system designed to allow up to 10,000 m^3 (or four Olympic-sized swimming pools) of tailings water per day to be used as in situ make-up water instead of being stored in tailings ponds.

This project is unique in several respects. Reusing tailings water for make-up water in the in situ extraction process is new not only for us, but for the entire industry.

This initiative was one of three separate projects to be honoured with the President's Award during the Canadian Association of Petroleum Producers (CAPP) Responsible Canadian Energy Awards in 2014.

Concept #2: Recycling industrial wastewater

In 2014, we commissioned a new wastewater plant designed to take wastewater from our upgrading ponds and remove solids and oils, so we can reuse that water in our operations or return it to the environment.

The plant can recycle all of the wastewater between 22,550 and 43,222 litres of water per minute (or 12 to 35 Olympic-sized swimming pools per day)

depending on the time of year, and could reduce the need for river water by an equivalent amount.

This project allows Suncor greater flexibility to manage water across the site depending on overall needs and changes to the watershed. With the wastewater treatment plant in operation, Suncor has the potential to reduce our river water withdrawal by about 65% compared to 2007.

The next step: expand initiatives to treat and reuse tailings water and wastewater

The third phase of our strategy will target further water use reductions by designing more systems to reduce and reuse water (tailings or wastewater) from operations for a variety of purposes. These improvements in efficiency will reduce the amount of fresh water we require.

As we continue to lead and innovate, we will share the lessons learned with our industry peers through Canada's Oil Sands Innovation Alliance (COSIA). By doing so, we are confident that we can reduce the regional operational footprint and better protect natural water resources.

Fort Hills

Fort Hills, operated by Suncor, is scheduled to produce first oil in 2017. The project has started to use river water for potable water for the construction worker housing facilities, to establish a water cap in the out of pit tailings area and to start filling the on-site water storage.

We have a separate water licence allocation of up to 39.3 million m^3 of river water annually for the Fort Hills project, which was sanctioned in 2013. Taken together, the base plant and Fort Hills allocations represent about 0.5% of the Athabasca River's annual average flow.

As we better understand our operational water use and efficiency, we will continue to explore opportunities to further reduce water use.

In situ

Our in situ operations reach oil sands deposits buried too deep to be mined (about 97% of the reserves that underlie the oil sands surface area are in this category). We use water to create the high-pressure steam that is injected through a well to heat the bitumen underground.

This process makes the bitumen less viscous, allowing it to flow to the surface. Most of the steam condenses in the reservoir and returns to the surface with the oil. This water is then separated, treated and recycled.

Approximately 96.5% of the water used at our Firebag in situ site is recycled. The make-up is drawn from recycled wastewater from our oil sands upgrading and utilities operations, surface run-off water collected within the facility boundary, and from groundwater wells.

At our MacKay River in situ facility (where about 98.5% of the water is recycled), the majority of make-up water comes from groundwater. Most of that water is too high in salt and mineral content to be used for potable water or agriculture.

Over the last five years, in situ fresh water use intensity has decreased by over 75% primarily due to our continuous improvement efforts, such as wastewater recycling, to maintain the fresh water use while tripling our production. Our in situ water consumption intensity is 0.11 m^3 of water per m^3 of oil produced.

Downstream draw on local fresh water sources

Our refineries use fresh water for heating and cooling. While water use has remained relatively flat, there have been local initiatives that have resulted in more efficient water use. For example, in the case of our Edmonton refinery, approximately one-third of the total water withdrawn in 2016 was recycled wastewater supplied from the municipal Gold Bar Wastewater Treatment Plant, significantly reducing the amount of fresh water withdrawn from the North Saskatchewan River.

Suncor completed a comprehensive detailed water risk assessment for all operations in 2013 and also utilized the IPIECA Global Water Tool for Oil & Gas. Suncor has a Strategic Issues Management Process (SIMP) that captures and responds to rapid developing water risks.

The five facilities represented about 29% our total corporate water use.

East Coast Canada

The only fresh water consumed in our offshore operations is for cooking, drinking, showers and other domestic purposes. In our East Coast Canada operations water is either produced offshore through desalination or is transferred via vessel from St. John's, N.L.

Read more about offshore operations

Recommended base flow rate

The Lower Athabasca Regional Plan (LARP) Surface Water Quantity Management Framework's Ecological Base Flow (EBF) for the river is 87 cubic metres per second (m^3/s) – a rate so low that it has never happened since river monitoring began. At that flow, most current and future oil sands mining operators would stop withdrawals from the river and rely entirely on stored water.

The exceptions are Suncor (oil sands Base plant) and Syncrude, which due to legacy plant designs are unable to store the water required to completely cease water withdrawals. However, we have both agreed to reduce our withdrawal rate by 50% at the EBF and we are evaluating additional measures to reduce withdrawals even further. At our base plant, we have reduced our water withdrawal by 53% since 2007. Our 2016 water withdrawal was about 35% of our water license of 59.8 Mm^3 annually.

The reason for the exemption for Canada's two oldest oil sands operators is that our licences were granted in the 1960s and 1970s based on the way plants were designed then – without on-site water storage facilities. Our mining operations, as well as Syncrude's, cannot operate without at least some fresh water intake, especially in the winter.

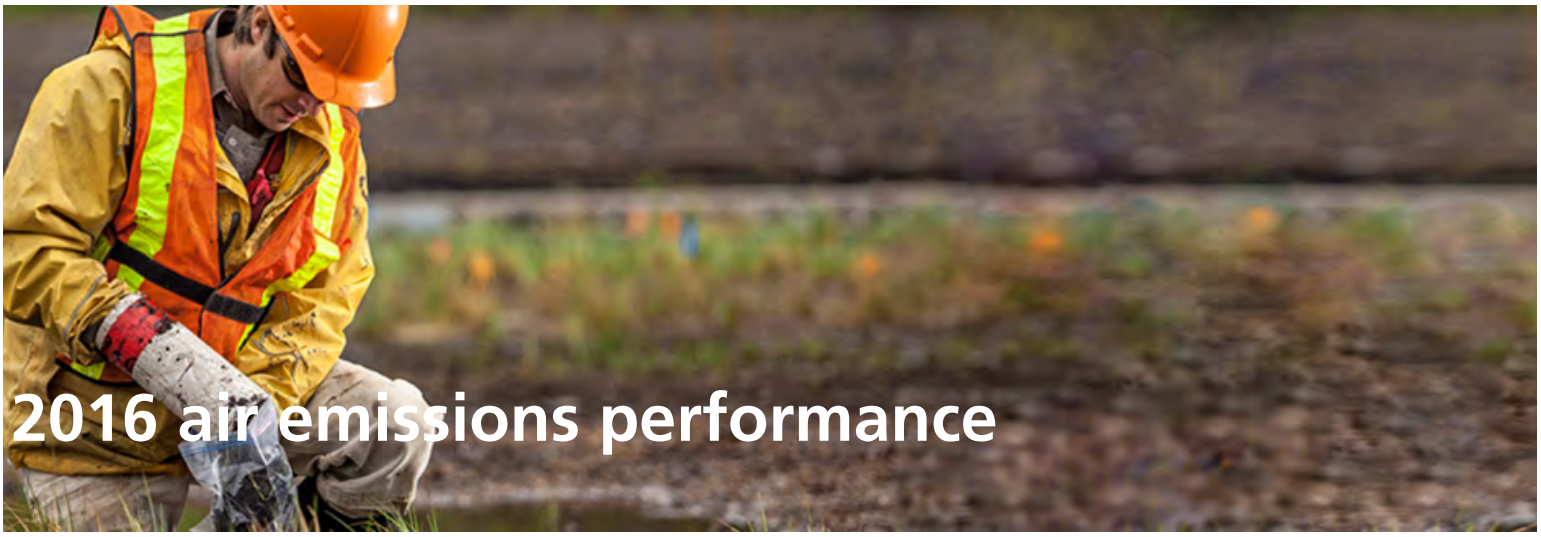
All new oil sands mines, including Suncor's Fort Hills mine scheduled to begin operations in late 2017, have on-site water storage facilities to supply water when withdrawals are not permitted.

The general consensus (including ours) is that, at some extreme low flow, all water withdrawals should cease. We believe further regional monitoring, such as programs previously undertaken by Alberta Environmental Monitoring, Evaluation and Reporting Agency (AEMERA) and now Alberta Environment and Parks (AEP), is required before the appropriate level can be determined. In the meantime, both Suncor and Syncrude have agreed to voluntarily reduce water withdrawals to half the maximum permitted allocation during periods of low flow.

Water storage and land disturbance

For us to build water storage facilities at our existing operations now would require significant land disturbance beyond our existing mining footprint and result in additional energy use and GHG emissions. We believe this would have a negative impact on the environment, especially given the rare occurrence of the base flow rates envisioned by the LARP Surface Water Quantity Management Framework.

Read more about our reclamation efforts

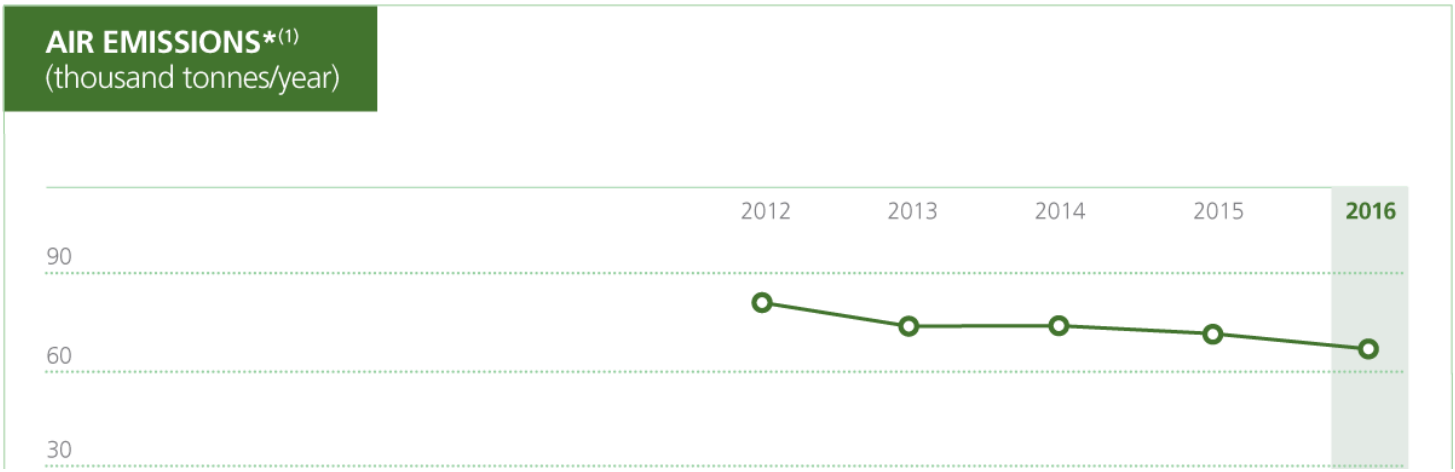


2016 air emissions performance

> We are committed to maintain and improve air quality near our operations and to preserve healthy ecosystems through investments in technology and promoting continuous improvement in our operations.

On this page:

Overall, in 2016, total Suncor wide air emissions decreased by 3% compared to 2015. The decrease in emissions can be largely attributed to the overall decrease in production at our upstream operations due to the forest fires in Fort McMurray, offset by operational upsets in refining and marketing business.



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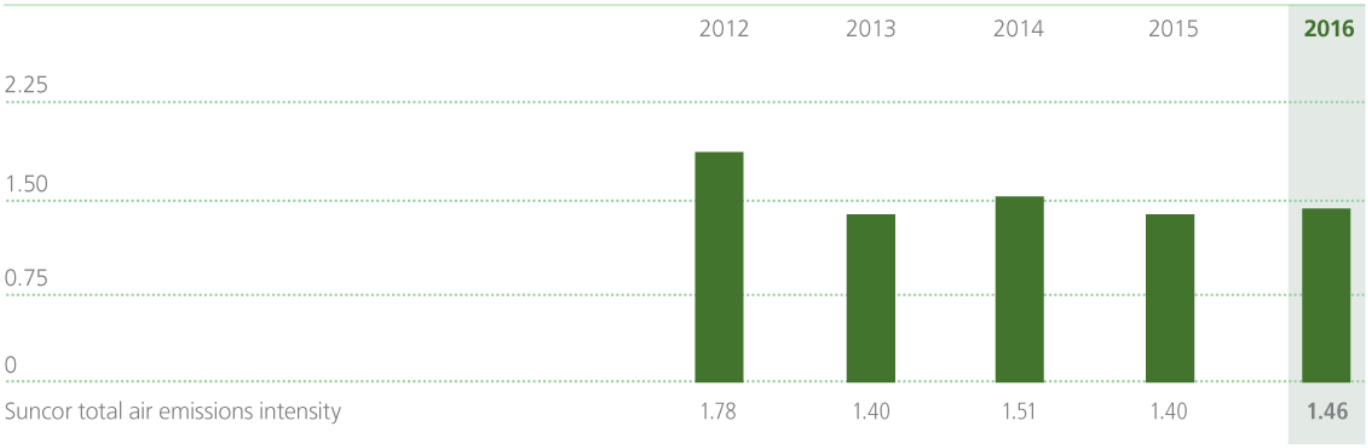
Suncor total air emissions	87.4	69.9	68.4	67.4	**65.5**
Oil Sands	55.8	39.7	47.2	47.2	**43.6**
In Situ	2.8	3.3	3.5	3.3	**3.2**
East Coast Canada	3.0	3.2	2.6	2.7	**2.4**
North America Onshore	11.0	8.0	0.4	0.4	**0.4**
Refining and Marketing	14.5	15.4	14.2	13.6	**15.7**
Renewables	0.4	0.4	0.4	0.4	**0.4**

AIR EMISSIONS INTENSITY*(1) (kg/m³ production)



Oil Sands(1)	3.40	2.37	2.75	2.49	**2.83**
In Situ	0.37	0.33	0.31	0.26	**0.27**
East Coast Canada	2.20	1.46	0.99	1.30	**1.22**
Refining & marketing	0.53	0.57	0.53	0.50	**0.58**

* Air emissions include SO_2, NOx and VOC emissions. Suncor total air emissions intensity values are inclusive of our North America Onshore and Renewable business areas.
1) There was a considerable reduction in VOC emissions values in 2013 compared to previous years due to extensive sampling conducted in the mining and dedicated disposal areas and increase in VOC emissions testing frequencies. There was also a reduction in SO_2 and NOx emissions from oil sands and utilities (E&U) plant and can be attributed to the use of alternate fuels and major outages that occurred at the E&U plant.

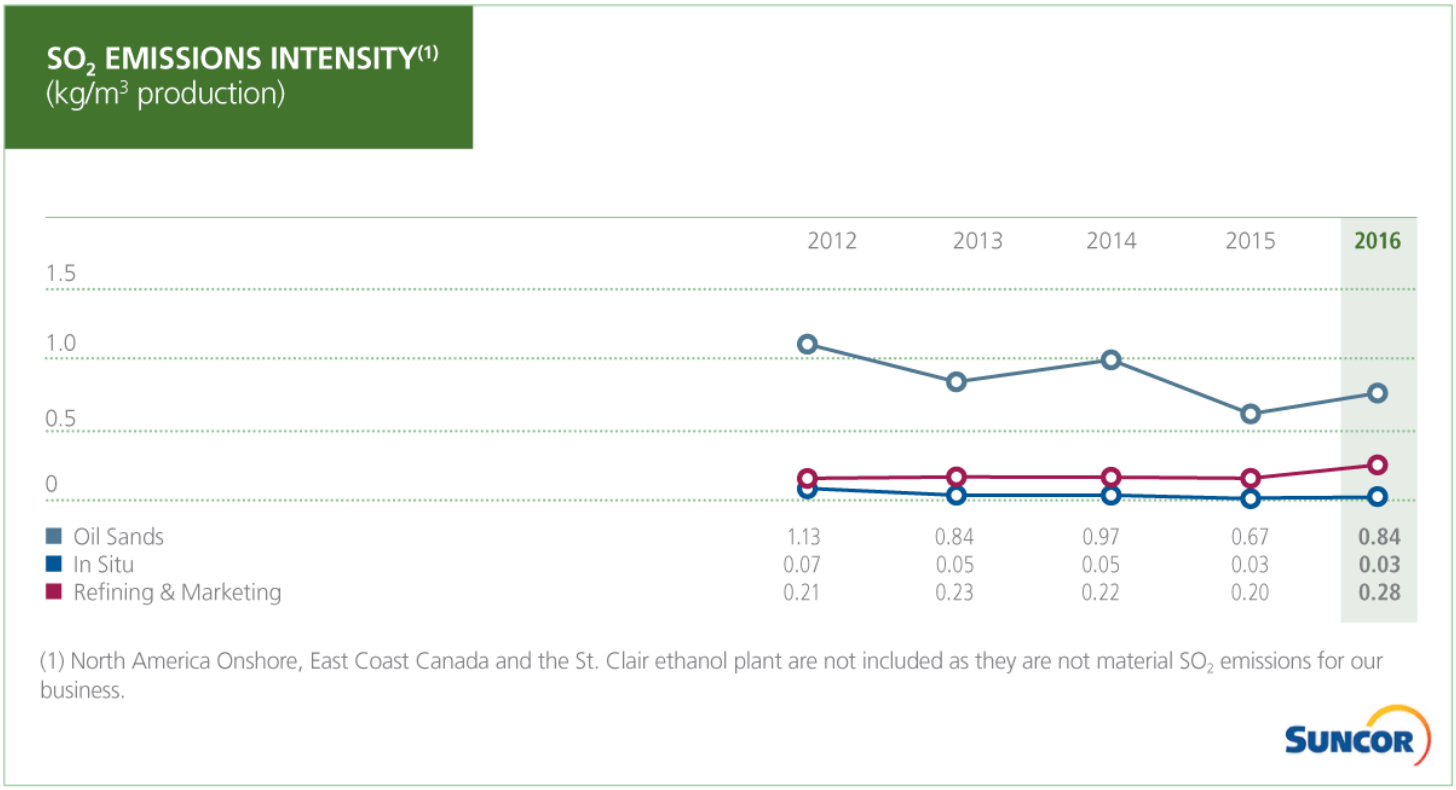
Further information on our performance is below:

Sulphur dioxide (SO_2)

In 2016, company-wide absolute SO_2 emissions and emissions intensity increased by 14% and 24%, respectively, as compared to 2015.

In 2016, SO_2 emissions increased from our downstream operations mainly from emergency and upset flaring at Denver and Sarnia refineries and a small increase in sulphur content at Montreal Refinery and at the lubricants facility Suncor previously owned.

There was also an increase in the SO_2 emissions from our upstream oil sands operations primarily attributed to the multiple upgrader start-ups and shutdowns stemming from the forest fires in 2016 and other planned and unplanned outages on site.



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Nitrogen oxides (NO_x)

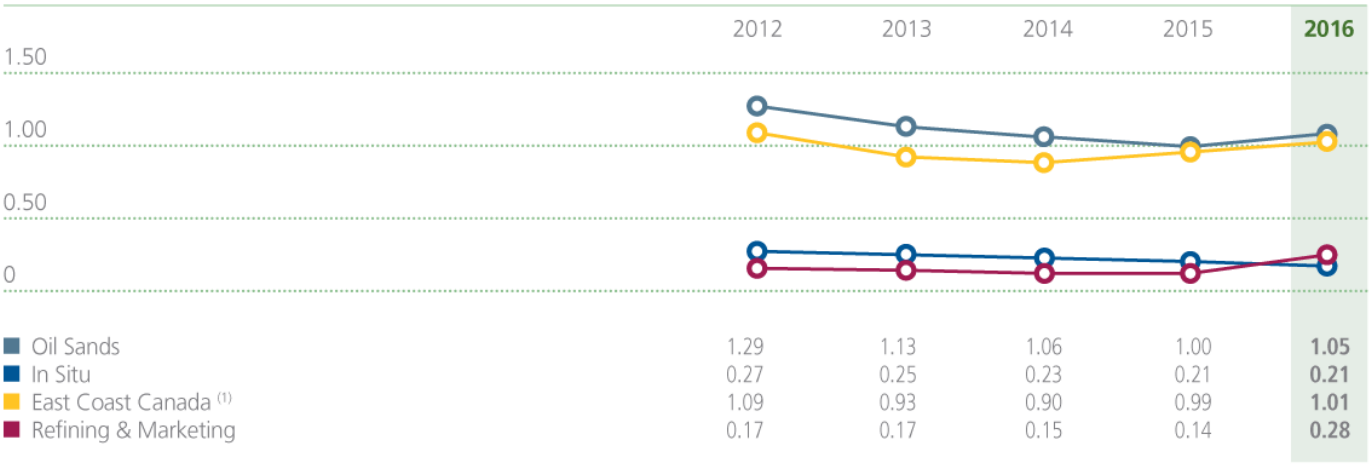
In 2016, company-wide absolute NO_x emissions and emissions intensity decreased by 10.6% and 5%, respectively, as compared to 2015.

Absolute NO_x emissions from our Base plant and in situ facilities decreased by 15% and 4%, respectively, mainly due to the operations being shut in as a result of the 2016 forest fires. While the year over year NO_x emission intensity at our Base Plant increased due to the decrease in the production, the NO_x emission intensity remained relatively flat at our in situ facilities, as shown in the chart below.

Overall NO_x emissions from our downstream operations remained unchanged in 2016 compared to 2015.

Absolute NO_x emissions and the NO_x emissions intensity from our Terra Nova facility increased slightly by 7% and 1.2%, respectively, in 2016 compared to 2015. This is mainly due to increase in the production on site for 2016.

NOx EMISSIONS INTENSITY[1]
(kg/m³ production)



	2012	2013	2014	2015	2016
Oil Sands	1.29	1.13	1.06	1.00	**1.05**
In Situ	0.27	0.25	0.23	0.21	**0.21**
East Coast Canada [1]	1.09	0.93	0.90	0.99	**1.01**
Refining & Marketing	0.17	0.17	0.15	0.14	**0.28**

(1) North America Onshore and St. Clair ethanol plant are not included as they are not material sources of NOx emissions for our business.
(2) Data only includes emissions from the Terra Nova FPSO vessel off the east coast of Canada.

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Volatile organic compounds (VOCs)

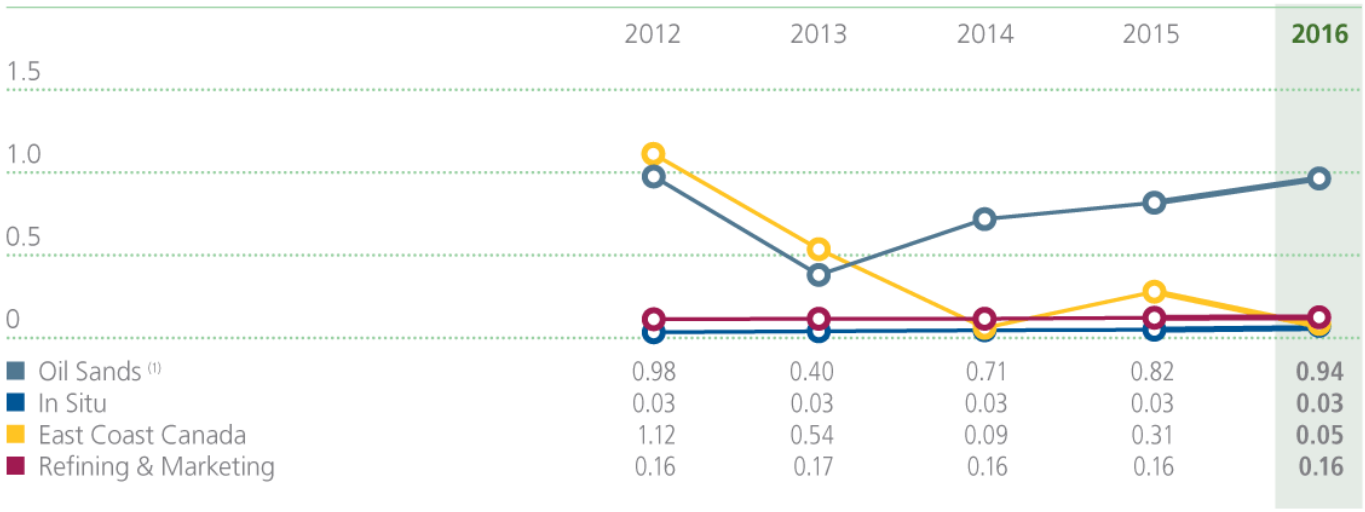
Overall, company-wide absolute VOC emissions decreased by 8% and VOC emission intensity remained relatively flat in 2016 when compared to 2015.

Absolute VOC emissions from both our Base Plant and in situ facilities decreased by 8% and 6%, respectively, in 2016 when compared to 2015. While there was an increase in VOC emission intensity from the Base Plant by 15% in 2016 mainly due to the decrease in production following the forest fires, the VOC emission intensity at our in situ facilities remained relatively flat between 2016 and 2015 levels.

The overall downstream VOC emissions were relatively flat in 2016 compared to 2015. The increase in VOC emissions at our Sarnia refinery and Denver refinery were offset by decreases in emissions at our Edmonton Refinery, Lubricants facility and at the terminals.

VOC emissions from our Terra Nova facility also considerably decreased as the hydrocarbon blanket gas was 100% efficient in 2016 versus 85% in 2015.

VOC EMISSIONS INTENSITY*
(kg/m³ production)



	2012	2013	2014	2015	2016
Oil Sands (1)	0.98	0.40	0.71	0.82	**0.94**
In Situ	0.03	0.03	0.03	0.03	**0.03**
East Coast Canada	1.12	0.54	0.09	0.31	**0.05**
Refining & Marketing	0.16	0.17	0.16	0.16	**0.16**

* North America Onshore and the St. Clair ethanol plant are not included here as they are not material sources of VOC emissions for our business.

(1) Oil Sands estimation accuracy is greater than +/-10% and limited by currently accepted methodology and measurement instruments.

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What is odour?

Odour is defined as a quality of something that is perceived by human's sense of smell. Odours are subjective and different individuals will identify and sense an odour at varying concentrations. Odours are monitored as part of regulatory and stakeholder requirements at our operations.

Odour monitoring in the Wood Buffalo region

Suncor engages regularly with community stakeholders, government and other external agencies on odours to discuss best practices and management strategies.

Suncor is currently engaged with government, industry and external stakeholders to develop an improved odour management system. This process was a result of Suncor's proactive management of community concerns related to odours. In early 2014 Suncor organized meetings between industry and community members to have an initial discussion about their concerns, and a follow up meeting was held in early 2015 at which time Alberta Health was engaged to address concerns about health impacts from the community. These meetings demonstrated a need for further work regarding odours in the community, for which Suncor remains engaged.

Suncor is pro-actively researching and testing new methods and technologies to monitor fugitive emissions. In 2014, we tested a new fugitive emissions monitoring technology (Open Path-Fourier Transform Infrared (OP-FTIR) remote sensing) to improve the accuracy of our estimation. R&D and field validation of new measurement technologies will continue with other industry members, government, and academia over the next few years.

Air quality monitoring

We are a member of the Alberta-based Wood Buffalo Environmental Association (WBEA), which monitors air quality throughout the Regional Municipality of Wood Buffalo and home to the oil sands industry 24 hours a day, 365 days a year. WBEA provides ambient air quality data and a real-time air quality index (updated hourly) that are available to the public.

We also support air monitoring through the following multi-stakeholder airsheds/organizations which monitor and report air quality around the clock, and ensure timely availability of air quality monitoring results to the public and government agencies, as required.

Alberta

- Parkland Airshed Management Zone
- Alberta Capital Airshed, through involvement in the Strathcona Industrial Association
- Alberta Clean Air Strategic Alliance

We strongly support the ambient air monitoring by Alberta Environment and Parks (AEP) through their newly formed Environmental Monitoring and Science Division (EMSD). AEP air monitoring provides open and transparent access to credible and relevant scientific data and information on the condition of Alberta's environment to policymakers, regulators, planners, researchers, communities, stakeholder groups, industries and the general public.

Ontario

- Sarnia Lambton Environmental Association
- Clarkson Airshed Study, through participation in the Clarkson Airshed Industrial Association

Montreal

- We collaborate with the Service de l'environnement de la ville de Montréal by providing ambient air quality monitoring data for reporting and analysis.

We also continuously work with federal and provincial governments, industry peers and other stakeholders to ensure these additional monitoring measures are implemented effectively and efficiently as we pursue the shared goal of minimizing the impact of our operations on the regional air quality.

Flaring

On this page:

> Flaring can concern stakeholders as it involves a visible flame at the end of a tall stack. While flaring is important from a safety and environmental standpoint, we are working to reduce flaring events across our operations.

What is flaring?

Flaring is the controlled combustion of excess hydrocarbons, and other contaminants that cannot be handled by processing facilities, at the end of a flare stack or boom. It is a necessary practice at any energy facility to manage gases that accumulate as hydrocarbon feedstocks are transformed into useful products.

Why do we flare?

There are many safety and environmental reasons for flaring. Flaring is an important measure used to dispose of waste gas that would pose a hazard to workers, nearby residents and facility equipment if it were to be released in a non-routine occurrence like emergencies, process upsets, equipment failures or power outages. Essentially, flaring is used to safely depressurize a process unit to reduce risk of pressure build up that, if unmanaged, could lead to a combustive incident.

Flaring is also done to reduce the toxicity of gases by converting those toxic components, such as hydrogen sulphide (often found in sour gas), into less harmful substances like sulphur dioxide. It can also be used to convert hydrocarbons into carbon dioxide, which has less impact on our atmosphere from a global warming potential and volatile organic compounds perspective.

How is flaring controlled?

Flaring, like other aspects of energy production, is tightly regulated. In Alberta, the Alberta Energy Regulator ensures companies that flare are doing so in a controlled and monitored way.

For certain types of emissions, like sulphur dioxide, releases must fall within regulator-approved quantity limits. These limits are put in place to maintain high quality air standards for areas neighbouring operations. Emission levels exceeding these limits are subject to penalty.

Can flaring be eliminated?

New technologies and industry best practices show promise for reducing or even eliminating flaring by:

- minimizing waste gas production from processing units
- using waste gas in production instead of releasing it

Using these technologies and best practices it would be possible for us to:

- capture energy value that would have otherwise been wasted
- minimize emissions of greenhouse gases and other air pollutants

The reliability of our operations and equipment used also greatly impacts the need to flare. Implementing effective procedures and controls throughout our operations is critical to minimizing overall flare volumes. Through stringent procedures and controls, we can minimize waste gas volumes, make use of waste gas recovery systems and recycle recovered gas for reuse as fuel or process gas.

Flaring simply because it is convenient, or because it has been a long-standing industry operating practice, is unacceptable; however, while industry's objective is to eliminate routine flaring and minimize non-routine flaring, emergency flaring is still the most fail-safe operational measure available to prevent a serious incident.

Land and biodiversity

On this page:

> We recognize our operations have an impact on our shared environment, including valuable land resources.

Energy development disturbs land – there is no way around that. However, the land is not lost forever. We undertake detailed planning to reclaim land affected by development before the first tree is removed or the first shovel hits the ground.

Reducing our footprint, reclaiming land, promoting biodiversity

Our land stewardship efforts are focused in three key areas:

1. reducing the impact of our operations on land resources through scientific research and best management practices, while also working with neighbouring companies to reduce the cumulative effects of development
2. accelerating the pace of reclamation of disturbed lands, including the reclamation of tailings ponds
3. preserving biodiversity by working internally and with industry peers and multi-stakeholder organizations on initiatives to conserve and reclaim habitat for birds, mammals, fish and other species

Reserves that underlie 97% of the oil sands surface area are recoverable only using in situ drilling technology, which is similar to conventional oil production. In situ operations disturb about 15% of the land required for mining operations and do not produce tailing ponds. However, in situ operations contribute to forest fragmentation – an issue we are addressing through initiatives undertaken by Canada's Oil Sands Innovation Alliance (COSIA).

The following biodiversity elements were implemented recently during reclamation planning and execution to improve landscape biodiversity outcomes:

- By working with Aboriginal communities, culturally-significant wetland and riparian plants have been incorporated into existing reclaimed areas and the revegetation plans for future reclamation.
- Diverse ecosystems were created, including lakes, streams, shallow open water, marsh and fen wetlands, and many different forest types.
- Different types of native trees, shrubs and aquatic plants – about 40 species – have been planted, including those important for local wildlife food and habitat and Aboriginal cultural significance.
- Coarse woody debris was recovered from disturbed forests and reused in reclamation to establish wildlife habitat and control soil erosion.
- Logs recovered from disturbed forests were reused as snags or wildlife trees to create perches and nesting sites for birds and habitat for other wildlife.
- Bird and bat boxes were constructed and installed in many new areas.
- Rock piles were established as denning sites for small animals.
- Direct placement of soils in newly reclaimed areas to conserve native seed propagules.

Working with stakeholders

The impacts of our operations are assessed in many ways, including for their impact on biodiversity when permits change or an expansion project warrants a review.

Local stakeholders are often involved in monitoring significant risks and/or potential impacts on biodiversity. We're required to provide the provincial government with plans and progress updates to manage our impacts on many components of biodiversity within the areas where we operate. This includes:

- revegetation plans
- soil salvage and placement plans
- wildlife mitigation and monitoring plans

Environmental impact assessments and/or socio-economic impact assessments are required by law at all sites where we operate.

Suncor is involved with many stakeholder groups, research activities and monitoring programs aimed at understanding and mitigating potential industry impacts on biodiversity. This includes oil sands development in Canada's boreal forest, one of the world's largest intact ecosystems.

We're committed to being a responsible steward of the boreal forest by striving to preserve the region's biodiversity. We work independently, and with industry peers and multi-stakeholder organizations, to conserve and reclaim habitat for species, including those potentially impacted by our operations.

We are a signatory to the Boreal Forest Conservation Framework – a groundbreaking national conservation vision developed by 20 First Nations, environmental groups and resource companies.

Learn more at the Boreal Leadership Council website

Working to minimize our impact

We are working on a number of other fronts to minimize our impact in the boreal region:

- **Advancing progressive reclamation techniques at our oil sands mining and in situ operations.** We're actively reclaiming lands disturbed by both mine and in situ operations and continuously working to accelerate the time it takes to return disturbed lands to a self-sustaining, locally common boreal forest ecosystem.

- **Pioneering research and innovation** on wetland reclamation, including the official opening, in 2013, of one of the world's first man-made fens. (A fen is the most common boreal wetland found in the oil sands region). Learn more about reclamation efforts

- **Conservation of environmentally sensitive boreal habitats.** In 2003, Suncor Energy and Alberta Conservation Association (ACA) formed the Boreal Habitat Conservation Initiative (BHCI) to conserve ecologically significant areas of Alberta's boreal forest. Since then, with almost $6.15 million invested, 8,872 acres of natural boreal forest have been protected with the creation of 39 Conservation Sites.

- Recognizing **conservation is a long-term commitment**, this partnership was initiated as a front-runner to the concept of voluntary offsets. The BHCI continues to acquire and manage habitat in the boreal forest, while looking for opportunities to include additional partners and make greater impact in protecting the boreal forest. The BHCI is a leader in collaboration supporting boreal conservation and is a model for how ACA has developed partnerships with other industries in this area.

- **Managing our in situ footprint.** We continue to work with industry peers to pilot techniques and increase understanding of how to effectively reduce fragmentation of natural habitat related to in situ bitumen extraction and other resource activity in the boreal forest.

We also work through COSIA on a wide range of projects aimed at restoring disturbed lands and protecting natural habitat.

Examples of our ongoing biodiversity initiatives:

Expand all | Collapse all

Our wildlife monitoring and mitigation programs

We pay close attention to how our operations affect the environment, especially wildlife. We invest in research, monitoring and conservation activities in partnership with a variety of organizations. This includes support of developing science and research into reclamation efficacy through monitoring of wildlife species returning to reclaimed areas, as well as avian monitoring projects and bat mortality studies at our wind farms. We follow an integrated approach to landscape management and wildlife protection. Reducing impact to wildlife is incorporated into our project planning process.

Wildlife management program

The objective of Suncor's wildlife management program on our oil sands leases in the Regional Municipality of Wood Buffalo (RMWB) is to minimize human-wildlife conflicts and wildlife habituation and conditioning while maintaining a healthy wildlife population and diversity.

In 2016, Suncor continued to take a holistic approach to its wildlife management program, with proactive strategies focused on waste management, wildlife conflict prevention, inspections and education.

We regularly consult and collaborate with the Alberta Energy Regulator's (AER) wildlife biologists and local fish and wildlife officers.

Investigating wildlife incidents helps us understand the cause and prevent future occurrences. Following a fatal bear attack at our oil sands site in May 2014, we have implemented additional preventive measures to minimize risk of future human-wildlife encounters at our Wood Buffalo region leases, including:

- mandatory wildlife awareness training for all workers on Suncor sites or projects in the RMWB
- an online wildlife tracking tool within Suncor to increase awareness and understanding of wildlife present on our leases
- additional training for personnel working in natural habitats such as remote locations away from vehicles or buildings
- wildlife specialists focused on bear aversion conditioning, effective waste management and education on site
- the addition of wildlife hazard considerations in our standards and procedures

Bird protection program

Suncor is committed to minimizing interactions between birds and the process-affected ponds required for its operations in the oil sands through:

- adoption and refinement of deterrent methods
- monitoring for bird contacts
- searching for bird mortalities

We implement a combination of radar linked deterrents, non-radar linked deterrents and physical deterrents to discourage waterfowl from landing on tailings and other process-affected ponds. We closely monitor our deterrents and attend to any impacted birds in consultation with the AER.

In 2016, a total of 47 species were recorded among 15,648 observations of landed birds at process-affected ponds. Seven dead, oiled birds were found during ground-based (foot) transect mortality searches and an additional 25 birds were found oiled during quick scans and incidentally, 23 were mortalities. These are included in the total of 58 birds that died on our oil sands mine leases in 2016, compared to 38 in 2015 and 45 in 2014.

Industry collaboration on biodiversity

As the oil sands industry grows, it becomes increasingly important to work together to address the cumulative impacts of development on wildlife and biodiversity. One way we do this is through our participation in COSIA.

COSIA's land environmental priority area is focused on reducing the footprint intensity and impact of oil sands mining and in situ operations on the land and wildlife of northern Alberta. Through COSIA, we work on a wide range of projects aimed at footprint reduction, accelerating reclamation and preserving

biodiversity.

Some examples of COSIA projects related to boreal forest biodiversity:

Reclamation efforts in the Algar region

The Landscape Ecological Assessment and Planning (LEAP) tool and database developed by COSIA was used to plan caribou habitat restoration in the Algar region, an area covering 570 km^2 along the Athabasca River southeast of Fort McMurray. The Algar project was completed through an integrated regional approach, with COSIA companies working together to repair fragmented habitat across an area of land outside of their actual license areas.

The project, originally planned as a five-year program, was completed over a four-year period ending in 2015 with a total of 387 km of seismic lines treated and 162,000 trees planted to help restore woodland caribou habitat within the Algar region. Implementation of vegetation and wildlife monitoring programs continued in 2016 to track how the restoration work affects wildlife movement in the area and measure the success of treatments applied through the project.

Read more about the restoration of Algar

The Faster Forests program

The Faster Forests program is designed to address forest fragmentation by strategically planting trees in disturbed areas across the oil sands region. In 2016, more than 650,000 trees and shrubs were planted, bringing the total number of trees and shrubs planted since 2009 to approximately four million.

Planting shrubs native to the area is a major focus. These shrubs will help tree seedlings grow healthier, faster and with less competition for nutrients and water from fast-growing grasses. The result: greater ecological integrity and biodiversity. Berry-bearing shrubs such as blueberry and saskatoon are important to Aboriginal communities and wildlife.

Suncor has adopted learnings from the Faster Forests program and incorporated them into our operations. This practice has allowed us to address historical disturbances that were not otherwise revegetating.

Read more about the Faster Forests program

Alberta Biodiversity Conservation Chairs

COSIA is sponsoring the Alberta Biodiversity Research Chairs Program that's intended to fast-track biodiversity science and support on-the-ground research on the environmental impact of development in the boreal forest of northern Alberta.

The current program includes two research chairs at the University of Alberta, which cover four integrated research themes:

1. rare and endangered species monitoring and conservation
2. cause and effect assessment of biodiversity change as the foundation for effective management
3. improve monitoring, modelling and management of terrestrial biodiversity for regional land use planning
4. integrated restoration – from site to landscape levels

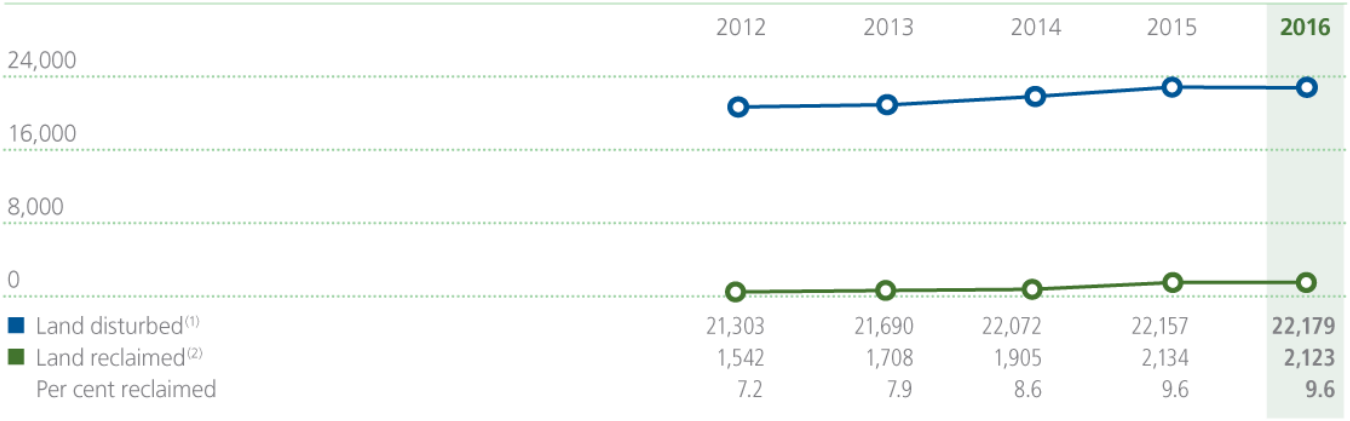
Reclamation

On this page:

> Wherever our developments disturb land, we pursue progressive reclamation, including reclaiming tailings ponds that are no longer required for active operations.

Since Suncor opened Canada's first oil sands mine in 1967, our oil sands operations have disturbed approximately 22,179 hectares of land. Land reclamation takes place once the disturbed land is no longer part of active operations. As of the end of 2016, the company had reclaimed about 10% of the total land disturbance to date.

LAND USE AT OIL SANDS
(cumulative hectares)



	2012	2013	2014	2015	2016
Land disturbed[1]	21,303	21,690	22,072	22,157	**22,179**
Land reclaimed[2]	1,542	1,708	1,905	2,134	**2,123**
Per cent reclaimed	7.2	7.9	8.6	9.6	**9.6**

(1) Land disturbed is the total active footprint which includes the cumulative hectares (ha) for areas cleared, disturbed, ready for reclamation, soils placed and permanently reclaimed. This is used to represent all land area that has been or is currently disturbed at Oil Sands. The area reported as land reclaimed is a subset of the total active footprint and the area of non-reclaimed land at Oil Sands is 20,056 ha for the 2016 reporting year.

(2) Reclaimed lands have not been certified as such. For further details on the definition of reclaimed, see the Advisories page.

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Improving reclamation techniques and accelerating the rate at which land is reclaimed are two key ways we strive to balance responsible resource development with the need to ensure a healthy environment for future generations.

We are committed to ultimately returning all lands disturbed by our oil sands mining and in situ operations to a self-sustaining, locally common boreal forest ecosystem. Our efforts have led to milestones already being reached in both tailings pond and wetland reclamation, including:

- In 2010, Suncor became the first oil sands company to reclaim a tailings pond to a trafficable surface, consisting of a 220 hectare watershed that supports a mixed-wood forest, a network of streams and a marsh wetland;
- In 2011, Suncor joined 12 companies to form Canada's Oil Sands Innovation Alliance (COSIA) to enable responsible and sustainable growth of Canada's oil sands while delivering accelerated improvement in environmental performance through collaborative action and innovation;
- In 2012, Suncor set a new planting record for planting the most trees, shrub and aquatic plants in a single season - 694,533 seedlings;
- In 2013, Suncor became one of the first companies in the world to complete reconstruction of a fen peatland watershed.
- In 2015, Suncor planted more than 230 hectares in one season, exceeding our record for the largest area reclaimed in one year.
- By the end of 2016, Suncor had planted more than 7.9 million trees, shrubs and aquatic plants at our Base plant alone – including 692,808 trees planted in the previous year.

Here are some details on Suncor's reclamation procedures and performance in 2016:

Expand all | Collapse all

Progressive reclamation: A multi-phase process

Developing a reclamation and closure plan

Before constructing a new mine, we develop a conservation, reclamation and closure plan that identifies how and when mine disturbed areas will be reclaimed. We engage key stakeholders and consider their input during plan development. We also develop conservation, reclamation and closure plans with respect to land disturbed by our in situ operations. The Alberta government must authorize reclamation plans for all new projects.

Mining oil sands requires digging up to 50 metres below the surface, creating a pit. The soils and underlying overburden that sit over the oil sands deposit are salvaged. Soil is used immediately, when land is available for reclamation, or both soil and overburden are stored close to the mine site for future reclamation. The mine pits are often filled in with tailings from the extraction process.

In the past, there was a lag time of many years between when soil and overburden were removed and land reclamation could begin. We are working to close that gap so that disturbed areas become available soon after they are created, a process known as progressive reclamation. For example, we typically reclaim overburden storage areas immediately after they are created. In the case of tailings ponds, reclamation involves two distinct components:

- transformation of the tailings ponds into a solid deposit that can be reclaimed as a stable closure landform
- a self-sustaining ecosystem is established after soil is placed and local trees and shrubs are planted that support local wildlife

Collaborating on tailings technologies

As a company committed to accelerating environmental performance improvements, Suncor has shared details around our tailings management work with fellow members of COSIA. In return, we have gained access to technologies that other member companies are using to manage existing tailings ponds.

By sharing research, experience, expertise and financial commitments, we are able to investigate new tailings technologies at a more rapid pace. We expect this will result in improved tailings and reclamation management now and at future oil sands mine sites.

- Learn more about COSIA's tailings environmental priority area
- Read more about our tailings management

Returning the land to a self-sustaining boreal ecosystem

Once a landform is considered 'ready for reclamation', or no longer used for active operations, final closure contouring is completed. Closure drainage channels are installed, if necessary, and variation to landform's surface and wildlife habitat features are added to encourage biodiversity in the final landscape. Soil is placed, either from stockpile or directly from a salvage area and erosion control mitigations are implemented where required.

Locally sourced tree, shrub and aquatic seedlings are planted and the soil is fertilized directly at the seedling roots to give the young plants help during early development years. Reclaimed areas are monitored to ensure the new forest and wetlands mature into a healthy, self-sustaining ecosystem.

Areas planted in the 1980s are now seeing young conifer seedlings take root under mature trees – a positive sign of regeneration within a healthy forest.

Another indicator of success is the increase in wildlife returning to reclaimed lands. The species spotted on our reclamation areas include:

- avian species, including green-winged teal, horned grebe, common yellow throat and least fly-catcher
- coyote
- grey wolf
- red fox
- mule deer and white-tailed deer
- snowshoe hare
- moose
- amphibian species, such as the Canadian toad
- muskrat
- otter
- beaver
- lynx

Learn about our biodiversity initiatives

2016 progress on land reclamation

To achieve our reclamation goal established in 2009 to increase land reclamation to 100% by 2015, we aimed to significantly increase our yearly reclamation performance. We surpassed our target by reclaiming 3730 ha of oil sands in situ and mine disturbed lands or achieving a 176% increase relative to the 2007 baseline.

During 2016, Suncor reclaimed tailings sand and overburden areas within the Millennium and Steepbank mines by completing landform contouring and soil placement over these areas. Due to the Fort McMurray fire, tree planting was postponed in these areas to 2017.

Suncor continues to implement progressive reclamation, reclaiming land that is no longer required for operations. This includes the coke-capping of consolidated tailings underway at Pond 5, and the accelerated tailings dewatering (e.g. TRO process) currently being implemented.

Certification of reclaimed lands: A complex issue

Some people question why so few of the lands disturbed by the oil sands industry have been certified as reclaimed by the regulator. There is an expectation by the regulator and stakeholders that reclaimed land must be shown to be on a trajectory to achieving the final closure outcome, which is, for Suncor, a locally common, self-sustaining boreal forest ecosystem. There are a number of assessment points along that trajectory, specifically related to vegetation success. It is in the company's best interest to ensure all regulatory expectations for reclamation can be met before applying for a reclamation certificate.

The reclamation certification process and expectations for oil sands mines have not been thoroughly described by the regulator. A reclamation certificate will be issued when an operator can demonstrate that equivalent land capability has been achieved. Land capability must consider the physical, chemical and biological characteristics of the land, including topography, drainage, hydrology, soils and vegetation. Reclamation and closure plans developed by the operators and authorized by the regulator include these objectives.

Once a reclamation certificate is issued by the regulator, the land is returned to the Crown. Although public access can be controlled through dispositions issued by the Public Lands Act, the land is no longer available for use by the company. If there is any chance that the land may be necessary for future development, it is not in a company's best interest to certify the land.

Some industry observers are able to assert that, to date, only 0.2% of the land disturbed by oil sands development has been certified as reclaimed by the regulator. While technically accurate, the statement is incomplete since progressive reclamation has been occurring since the 1970s and as of 2015, 6,164 hectares of land has been permanently reclaimed in the mineable oil sands region. Certification is only the final confirmation that land has been permanently reclaimed.

A transparent reclamation reporting system

In 2009, the Government of Alberta implemented a reclamation reporting system that gives stakeholders a clear understanding of the progress being made along every step of the reclamation process. The Oil Sands Information Portal (OSIP) is a one-window source for information; the public portal has both an interactive map display and a data library.

Consistent with OSIP, the oil sands mine operators provide the regulator with Annual Reclamation Progress Tracking Reports that track reclamation progress through eight key milestones:

1. tree cleared
2. soil disturbed
3. ready for reclamation (no longer used for operations)
4. soils placed – terrestrial, wetlands and aquatics
5. temporary reclamation – terrestrial
6. permanent reclamation – terrestrial
7. permanent reclamation – wetlands and aquatics
8. certified

In situ land disturbance

As the oil sands industry grows, the ratio of land being disturbed by development is expected to decline. That is because reserves that underlie approximately 97% of Canada's oil sands surface area are recoverable using in situ (drilling) technology, which is similar to conventional oil production. In situ operations disturb only about 15% of the land required for traditional mining operations and do not produce tailings ponds.

However, in situ oil sands projects, along with oil and gas exploration, forestry and other industrial activities, do have an impact. The associated roads, seismic lines, power corridors and pipelines leave linear paths that cause forest fragmentation, which negatively impacts wildlife habitat.

In situ oil sands exploration requires the creation of temporary drilling pads to effectively explore and delineate bitumen deposits. In 2012, to address the historical Oil Sands Exploration (OSE) footprint, we undertook a focused effort to identify the persisting factors at individual sites that were preventing corresponding OSE programs from receiving reclamation certification. These efforts paid dividends, with more than 162 hectares of reclaimed lands from 140 OSE wells attaining reclamation certification that year.
As part of COSIA, we are participating in several projects to address the issue of forest fragmentation. These include:

- The Faster Forests Program, which in 2016 saw 656,808 trees and shrubs strategically planted in disturbed areas across the oil sands region. Since 2009, four million trees and shrubs have been planted cumulatively by this program alone.
- The Algar Restoration Program saw 162,000 trees planted in 387 kilometres of seismic lines southeast of Fort McMurray within the Algar region. These tree plantings took place outside of actual license areas as part of an effort to reduce the regional impact of seismic lines and restore woodland caribou habitat. Implementation of vegetation and wildlife monitoring programs continued in 2016 to track how restoration work affects wildlife movement in the area.

All of Alberta's in situ operations are now required to submit Project-Level Conservation, Reclamation and Closure Plans to the regulator. This new project-level approach to managing disturbance and reclamation activities across Suncor's Firebag and MacKay River facilities is expected to lead to improved reclamation timelines and better reclamation outcomes.

Other land disturbance challenges

As a matter of course, we undertake remediation at our downstream retail sites operated under the Petro-Canada, Shell and ExxonMobil brands. Remediation is done in conjunction with upgrades to facilities and tanks at existing operations and at sites slated for closure.

Read more about Shell and ExxonMobil brands on suncor.com

Remediation is also conducted at our conventional oil and natural gas sites impacted by historical activities. Where remediation has been completed, the next phase is reclamation, including the establishment of vegetation.

Reclamation research and monitoring

Suncor participates in a number of ongoing research and monitoring projects that are helping us understand the impact of development on the boreal forest and the steps we can take to improve reclamation designs and minimize land disturbance.

Among these are projects that support native tree, shrub and wetland species that are an ecologically and culturally important component of boreal forest ecosystems:

- In the **culturally significant wetland plant program**, we partnered with elders from five First Nation communities to develop a list of 10 significant wetland plants to grow and plant in reclamation. The list reflects and respects the traditional knowledge of Aboriginal communities and enhances Suncor's reclamation.
- The **Improving Seed Longevity of Native Shrubs program** identifies optimal storage conditions for native shrub seed so a steady supply for reclamation will be possible.
- The Native Plant Establishment program determines how best to collect and prepare seed, and how to establish dozens of native shrub and wetland plants in reclaimed sites.
- The **Seed Delivery Systems Research (SEEDs) program** is working with a northern Alberta nursery and investigating an alternative re-vegetation technique.
- Development of seed-containing pucks. The concept is expected to improve planting efficiency during reclamation, especially for hard-to-access locations, such as remote in situ linear corridors.
- The **Industrial Research Chair in Forest Land Reclamation** is expanding its early success in better understanding forest canopy development and working to improve tree growth during forest stand initiation and development. The program is also developing recommendations for establishing more spatially diverse site conditions and forest communities.

Part of a larger, continent-wide initiative, **the Boreal Monitoring Avian Productivity and Survivorship program** is advancing our understanding of avian population dynamics and diversity in reclaimed and disturbed habitats in the Athabasca oil sands region. Through ongoing monitoring, the program is evaluating disturbance effects on avian habitat quality and assessing reclamation designs to help guide our reclamation work.

The **Wildlife Habitat Effectiveness and Connectivity program** advanced our understanding of the effects of mine activities on wildlife population dynamics. Through research and monitoring, the program evaluated the function of undisturbed or reclaimed buffers adjacent to mines and the buffers' effects on wildlife dispersion, connectivity and predator/prey interactions.

Human health and wildlife risk assessment research and monitoring continued in 2016 to ensure mining and in situ-disturbed lands are reclaimed in a manner that prevents health risks to the people and wildlife that will use these areas after closure. Results are shared with COSIA to ensure we are not only accelerating Suncor's environmental performance, but improving results across the entire oil sands region.

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* Reclaimed lands have not been certified as such by government regulators. For further details on what we mean by reclaimed, see the legal advisories.

Caribou

Caribou conservation and impact mitigation

> Canada's boreal forest is home to many things, including both Suncor's oil sands operations in northeast Alberta and a diverse range of wildlife including woodland caribou, a federally listed species at risk.

Woodland caribou are well adapted to the life in the boreal forest. They are a non-migratory subspecies with an anti-predator strategy of spatial separation (i.e., to live where others don't) that requires large expanses of habitat with low densities of predators. Unlike the large migratory herds of barren-ground caribou that travel through the northern tundra, woodland caribou are usually found in small numbers.

The boreal population of woodland caribou is listed as threatened under Canada's *Species at Risk Act* (SARA) due to declining population trends likely to be caused primarily by increased predation due to habitat loss, degradation and fragmentation. Natural (e.g. fire) and anthropogenic factors within the boreal forest have altered and contributed to a fragmented landscape. This often leads to increased populations of deer, moose, elk and their predators. Given the low numbers of woodland caribou in the boreal forest any increased predation pressure can have devastating effects.

While caribou conservation is a shared government, public and private sector responsibility, it is led by government. As such, the Government of Alberta is developing caribou range and action plans that are due in 2017. Implementing these plans to stabilize, recover and sustain woodland caribou populations will require a broad range of tools applied at both the local and landscape levels. As an operator in the boreal forest, Suncor has a role to play in demonstrating progress towards caribou recovery goals and recognizes the importance of both local and landscape scales when considering taking any action for caribou recovery.

To address the risk of operating in areas inhabited by woodland caribou, Suncor has developed a caribou strategy. The goals of the strategy are aimed at mitigating our impact on woodland caribou.

Suncor regularly considers caribou-focused objectives at both the local and landscape scales. As examples, Suncor incorporates under-pipe crossings along above-ground pipelines at in situ projects and reclaims disturbed areas to accelerate recovery of caribou habitat. While at the landscape scale, Suncor, in collaboration with Canada's Oil Sands Innovation Alliance (COSIA,) completed a multi-year caribou habitat restoration program, to repair fragmented habitat, within the Algar region of northeast Alberta.

Learn more about accelerating habitat recovery

As a member of COSIA Land Environmental Performance Area and Caribou Working Group, Suncor continues to support development of landscape and population tools designed to demonstrate progress towards caribou habitat recovery objectives and self-sustaining caribou populations in the boreal forest.

Wetlands

Wetland reclamation: pioneering fen research

Wetlands are an important part of reclamation efforts. To date, 48.2 hectares of wetland and lake reclamation have been completed by Suncor. A high research priority is developing the ability to reconstruct wetlands, including swamps, marshes and fens. Until recently, reclamation efforts had primarily focused on marshes.

In 2013, Suncor marked a milestone in wetland reclamation: the official opening of a reconstructed fen that is planned to emulate the properties of a natural fen. Our fen – **one of the first reclaimed fen wetland watersheds in the world** – is named Nikanotee (pronounced *Nee-ga-no-tee*), a Cree word meaning future.

A fen is the most common boreal wetland type found in the mineable oil sands region. Fens tend to:

- accumulate large deposits of organic matter (called peat) and are primarily fed by groundwater inputs
- be perpetually wet, storing water and releasing it slowly during dry periods
- act as filters for streams and rivers lower down, improving water quality by capturing run-off and scrubbing out nutrients and sediments
- be home to diverse biota, such as amphibians, birds, moose and a wide range of plants, including the insect-eating pitcher plant

Learn more about the Nikanotee fen

Located at our oil sands Base plant near Fort McMurray, Alberta, our three-hectare fen is fed by a man-made 32-hectare watershed. The project is the culmination of 10 years of collaborative research.

The University of Waterloo led the fen hydrological feasibility modelling, in partnership with the Cumulative Environmental Management Association (CEMA). Suncor funded the design and construction of the fen. Along with Shell and Imperial Oil, we are funding ongoing research and monitoring of the constructed site.

Ongoing research and monitoring of the fen wetland watershed is conducted by students from five universities and colleges – Waterloo, Calgary, Colorado State, Wilfrid Laurier and Keyano – as well as our staff. It's expected this work will reveal a lot about the potential for recreating these natural habitats.

The Nikanotee fen is now a joint industry project, contributed by Suncor to other members of Canada's Oil Sands Innovation Alliance.

Tailings management

On this page:

> Finding ways to get fluid tailings to be suitable for reclaiming is critical to improving our overall reclamation performance. Left unmanaged, these fluid tailings could take centuries to be reclaimed.

All forms of mining – whether coal, gold, uranium or potash – produce tailings. Mining operators must determine how to safely and effectively manage this byproduct. With the scale of oil sands mining operations, the challenge is all the more daunting.

Oil sands tailings are the remaining sand, water, clay, silt and residual hydrocarbons left after the majority of the hydrocarbons are recovered from the oil sands during our water-based extraction process. Fluid tailings are clay particles that do not bind to the trafficable tailings sand. Fluid tailings represent less than 10% of the total mineral from the oil sands.

Suncor Base plant has a holistic approach to tailings management called Tailings Reduction Operations (TRO™). TRO™ includes:

- Fluid Transfer and Storage Systems
- Sand Dumps
- Dedicated Disposal Areas

As mining operations expanded, fluid tailings volumes increased. With the implementation of TRO™ in 2010, fluid tailings volumes at site have remained steady. Suncor currently has about 300 million cubic metres of fluid tailings.

The Suncor-operated Fort Hills project is targeting first oil by the end of 2017. This mine is leveraging the operating experience of the other mining operators through Suncor's involvement in COSIA. Fort Hills plans to treat fluid tailings from the start of operations with extraction thickeners and tailings sand placement activities to reduce the amount of fluid tailings created and minimize further treatment. Tailings operations will begin with an out-of-pit tailings area with plans to transition to below-grade tailings treatment once space is made available in the first mining area. The peak fluid tailings inventory at Fort Hills is

expected to be only 126 million cubic metres. This represents a step-change in fluid tailings management compared to industry demonstrated inventories.

Oil sands tailings management

Over the past seven years, Suncor's approach has allowed us to surface reclaim a tailings pond (Wapisiw Lookout) and make another one trafficable through the use of coke-capping technology. We are in the process of converting another one to a dedicated disposal area.

Expand all | Collapse all

Tailings Directive

In 2016, the Alberta Energy Regulator (AER) introduced a new oil sands directive called the Fluid Tailings Management for Oil Sands Mining Projects (Tailings Directive 85). This regulation includes tailings management plan application and tailings performance reporting requirements aligned with the government's Tailings Management Framework released in 2015.

During the fall of 2016, Suncor was invited to work with Aboriginal communities, the Alberta Energy Regulator and other stakeholders to support development of version 2 of the Tailings Directive. This version added sections on performance evaluation, compliance and enforcement.

To meet the new requirements, Suncor is requesting to add treatment capacity to our TRO™ operations at Base plant and Fort Hills is updating its tailings management plan to align with the new requirements in the Tailings Directive under the Tailings Management Framework policy. The updated plans are based on what we've learned through our implementation of TRO™ and from members of COSIA.

Raising the bar: tailings collaboration

As a member of COSIA, Suncor is sharing details of our tailings technologies with the other member companies. In return, we are provided access to the technologies that others are using to manage their tailings. By the end of 2016, the industry had shared $705 million of tailings innovations.

Through shared research, experience, expertise and financial commitments, we are able to investigate new tailings technologies at a more rapid pace. We anticipate this resource sharing through COSIA will improve tailings management now and at future oil sands mine operations.

Learn more about COSIA's tailings environmental priority area.

Coke-capping technology

Suncor is also accelerating tailings pond reclamation by using petroleum coke, a byproduct of upgraded bitumen, to help create a trafficable surface on the Base plant's Pond 5.

The coke-capping layer is light enough to float on the surface of the pond and yet strong enough to allow large trucks and other equipment to drive over the pond surface. The access for equipment has allowed us to place vertical drains in the deposit. These drains act like straws to speed the expression of water from the underlying treated fluid tailings. This in turn will result in improved reclamation performance.

The Pond 5 coke capping project is one of the largest field trials of a tailings technology anywhere in the world. The cap is expected to be complete by 2019; in a few years afterwards, we expect the required settlement to have slowed to a rate to deem the area as ready for reclamation and, at that point, further reclamation activities can start.

Spills and releases

On this page :

Incident prevention

Our focus is always on incident prevention. This means having:

- capable and well-trained people
    - Suncor has response teams that receive ongoing training and participate in regularly scheduled exercises
    - Suncor has agreements in place with spill response agencies
- rigorously controlled working procedures
    - Suncor has spill prevention processes and procedures, as well as emergency response plans that are reviewed at least annually
- equipment and technology designed for our operating environment
- appropriate third-party vetted contractors

All of these elements, combined with careful planning and risk assessment, reduce the probability that a spill or release will occur.

We manage spills by sharing best practices to increase awareness and mitigate risks of future incidents.

Spill events are recorded and investigated. Root cause is determined and remedial actions are implemented to minimize risk and chance of recurrence.

Spill reporting and emergency response plans

We have systems in place to inspect and audit our facilities and have emergency response and spill reporting plans at all our locations, including:

- upstream and offshore facilities
- refineries and other downstream operations
- distribution terminals
- our network of service stations

In addition to our own internal response capability, we're a participating member in a number of response organizations, including:

- Eastern Canada Response Corporation
- Western Canada Marine Response Corporation
- Western Canada Spill Services Ltd.
- Oil Spill Response Ltd.

Growth and increasing complexity in our operations mean we must continuously improve our reporting practices and strengthen mitigation efforts to further reduce the number and volume of spills.

A tiered approach to offshore oil spill response

We have three tiers of spill response:

1. This is the immediate front-line response conducted by trained staff and contractors, using procedures and equipment identified in the oil spill response plan. Tier 1 equipment is kept readily available on both support vessels and the offshore installation.
2. This response is provided by local onshore oil spill resources. For example, the Eastern Canada Response Corporation (ECRC) provides support services for our operations off the coast of Newfoundland and Labrador. ECRC is a Transport Canada-certified response organization contracted to provide additional resources for regional oil spill response staff and equipment.
3. This response is provided by an international company that specializes in oil spill response, Oil Spill Response Limited (OSRL). OSRL provides access to oil spill response resources and equipment that can be deployed rapidly to any of our assets globally.

Continually improving response capability

We are committed to continually improving our oil spill response capability.

As part of our contingency plans, we conduct regular tabletop and on-water training exercises. We invite regulatory agencies and oil spill response organizations to participate in these preparedness exercises.

We work with other companies in the regions where we operate, to build capacity through shared knowledge, experience and resources.

We also work with industry associations to ensure subsea well control equipment, including capping devices and dispersant tool kits, are available to our operations in the unlikely event of a subsea release during drilling. For example, Oil & Gas UK, through the Oil Spill Prevention and Response Advisory Group, has designed, constructed and tested a capping stack which is now available for use by companies with operations on the United Kingdom continental shelf.

To ensure that well control/intervention equipment is also available for our operations on Canada's East Coast and in Norway, we subscribe to the Subsea Well Intervention Service through a supplementary agreement with OSRL.

Our primary focus is to execute our drilling projects with careful planning and due diligence to prevent incidents from occurring. We also ensure suitable well control/intervention equipment is in place for our drilling operations.

Watch a video from the Canadian Association of Petroleum Producers about spill prevention and response in the offshore energy industry

Social responsibility

The trust and support of stakeholders are foundational to successful energy development. We work hard to build and maintain relationships with local communities and stakeholders, to meaningfully consider their issues and concerns about the effect of proposed development and operations on the land and resources – including working together to mitigate potential environmental and social impacts, and ensuring that local communities benefit from development.

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Our strategy

We believe that those affected by Suncor's business have a right to be informed about our activities, participate in a transparent engagement process and be involved in the issues and opportunities affecting them. We actively seek stakeholders' input and feedback on our activities and decisions, and encourage stakeholders to define how they wish to be consulted.

Often, it's simply an informal discussion, at other times it's through more formal engagement or consultation processes. For example, we regularly participate in community advisory meetings with several Aboriginal communities and in multi-stakeholder forums with groups including Ceres and the Boreal Leadership Council.

We also engage on issues of national interest with stakeholders, through multiple forums. Our president and CEO Steve Williams is a member of Canada's

Ecofiscal Commission which aims to shape policy to encourage economic activities that support mutual benefits such as job creation, investment and innovation. We also provided feedback through Alberta's Climate Change Advisory Panel in support of the Climate Leadership Plan.

Read more about Suncor's engagement on public policy issues

As part of Suncor's operational excellence management system, the Stakeholder Relations Framework ensures that we have a consistent approach to relationships with stakeholders and Aboriginal communities, whether it is local engagement or involvement in national forums. The framework outlines Suncor's responsibilities and commitments, and provides a mechanism to consider stakeholders needs, interests and concerns, and incorporate this into our business decisions on a day-to-day basis. It is implemented via standards and guidelines, and is supported by procedures, practices and tools.

Policy

Our stakeholders are the individuals and groups who could be affected by our operations or who could, through their actions, affect our business. Examples include:

- landowners and community residents
- Aboriginal communities
- trappers
- governments and regulators
- non-government organizations and environmental groups
- community investment partners
- business groups
- customers and suppliers
- employees

Our Human Rights, Stakeholder Relations and Canadian Aboriginal Relations policies outline our commitments and key beliefs with respect to stakeholders and communities where we operate. Related policies include:

- Improper Payments policy
- International Security policy
- Harassment and violence-free working environment

Suncor's Stakeholder Relations and Canadian Aboriginal Relations policies are reviewed every three years. We are continuing on work that began in 2015 to ensure that the policies reflect changing societal expectations and external context, like the government's commitment to adopt the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Responsibilities

All Suncor employees and contractors engaged in activities under our operational control are responsible for applying these policies. Managers are also responsible for promoting our beliefs and principles underlying these policies in joint ventures not operated by Suncor.

Suncor's president and chief executive officer is accountable to the Board of Directors for ensuring that Suncor's Stakeholder Relations and Canadian Aboriginal Relations policies are implemented.

Commitments

Our Stakeholder Relations and Canadian Aboriginal Relations policies outline our commitment to developing and maintaining positive, meaningful relationships with our stakeholders and to working closely with Canada's Aboriginal Peoples and communities to build and maintain effective, long-term and mutually beneficial relationships.

Community agreements

More broadly, we define a "commitment" as a formal pledge made by the organization to a regulator or other authority, including communities and stakeholders. Beyond those commitments outlined in the policies, we also have agreements with Aboriginal communities. These agreements address how we work together on matters like project consultation, and ways to realize the benefits from our industry such as commercial and business opportunities, and

skills/ employment and training opportunities.

Learn more about recent community agreements

Goals, targets and actions

Relationships are best maintained through regular effort and engagement. This means being involved and part of the community, so that we can listen and actively engage with local stakeholders and Aboriginal communities. Some examples of how we do this include:

Culturally significant wetland plants study

Through ongoing engagement and consultation with Aboriginal communities in the Wood Buffalo region, we heard that Suncor's site reclamation and closure plans should better result in an environment that can support traditional activities such as hunting, fishing, gathering and trapping.

To respond to this feedback, Suncor's Reclamation and Stakeholder and Aboriginal Relations teams jointly developed an engagement approach that sought input from the five First Nations and one Métis Local in the region to better understand what wetland plant species are important to these communities. Suncor invited five Elders from each of the participating communities to jointly develop the wetland plant species project. In 2016, at the request of one of the local Métis groups, Elders from that community also joined the team.

This study is a collaborative approach from start to finish between Suncor and local Aboriginal communities to build a list of wetland plant species that reflects and respects the traditional knowledge of communities and enhances Suncor's reclamation activities. After the three-year workplan is accomplished, Suncor will work to incorporate the inclusion of the plant species into our reclamation and closure activities.

Engagement with our neighbours in Sarnia

The Aamjiwnaang First Nation is the closest neighbour to our Sarnia refinery and our relationship with the community is an important priority for us. We recognize our activities have an impact on Aamjiwnaang First Nation and we've worked to minimize these impacts, while demonstrating our commitment to being a safe and environmentally responsible operator.

Over the past few years, we've worked to address issues of concern, while further strengthening our relationship with this Nation. We are doing this by focusing on operational improvements, better communication and meaningful engagement. We have made progress in our communications, incident notification and alerts. We also participate in regular meetings with the Aamjiwnaang Environment Committee as well as host meetings that give community members an opportunity to learn about the work at the Sarnia refinery, ask questions and talk to us about what is on their mind.

Through respectful, two-way dialogue, we're growing our relationship. While we'll continue to look for ways to improve, constructive conversations are helping us to better understand the priorities and concerns identified by the Aamjiwnaang Fist Nation – and how we can work together to address them.

Supporting processes

Beyond direct consultation and engagement activities, several internal processes ensure that we are aware of and understand stakeholders' interest and concerns, and are considering those views in operations and business planning.

- Our Strategic Issues Management Process (SIMP) works to proactively identify, monitor and manage key environmental, economic and social issues considered most critical to Suncor, stakeholders, First Nations and Aboriginal communities.
- Through Asset Development and Execution Model (ADEM), consideration for stakeholders, First Nations and Aboriginal communities' concerns, and potential impacts are integrated into early project planning stages, before engagement occurs and/or final business decisions are made.
- Our annual materiality review identifies key issues of concern for stakeholders, First Nations and Aboriginal communities, and includes information learned from ongoing engagement and feedback from Suncor's annual multi-stakeholder forum with Ceres.

Evaluation

Monitoring

As part of our Operational Excellence Management System, the Stakeholder Relations Framework includes:

- Guidelines and processes to ensure that engagement planning and practice is annually reviewed and measured against performance metrics, and that those learnings are applied to future engagement.
- A grievance mechanism that enables us to receive, investigate and respond to complaints from stakeholders that may arise from direct and/or indirect impacts associated with Suncor's operations or activities in a timely and consistent manner.

Beyond our policies and management system, the ongoing effectiveness of our stakeholder relations activities are monitored through several processes, including the Aboriginal Relations Governance structure and the Strategic Issues Management Process.

Results

The way the world views energy development has fundamentally changed. Stakeholder expectations are increasing, the legal and regulatory context continues to evolve and become more complex. We believe our social performance has become as important as our environmental performance. Last year, we built on the learnings from the strategic environmental performance goals established in 2009 and released our first social goal. This year, we're focused on implementation of that goal. The new goal is aspirational, bold and designed to challenge and stretch our organization.

What we are doing differently

Social Goal: We've learned that setting goals can incent us to look at how we do business and work with others. In 2017, we continue to implement the social goal. It will not be the work of a small group at Suncor; it will be the work of all of us. You can learn more about how we're working across the entire business, and giving every employee the opportunity to take part, in our Goals and Progress page.

Expanding Partnerships: In 2016, Suncor announced that it had entered into participation agreements with Fort McKay First Nation (FMFN) and Mikisew Cree First Nation (MCFN) for ownership in the East Tank Farm, a strategic infrastructure asset in the Wood Buffalo region. The combined equity interest by FMFN and MCFN in Suncor's East Tank Farm Development will be 49% upon completion. This will be the largest investment by First Nations in this industry to date.

Integrated Governance: To meet increasing stakeholder expectations, we recognize the need to embed our approach to stakeholder and Aboriginal relations across the organization. One of the ways we're doing this is through the Aboriginal Relations Governance structure. The governance includes a VP forum, network and multidisciplinary teams that work across the organization to ensure that Suncor's activities are strategic, coordinated and advancing strong, mutually beneficial relationships. We're also leveraging other internal processes such as the Strategic Issues Management Process and the Asset Development and Execution Model to ensure we're considering the social context of our activities as early as possible.

Beyond Wood Buffalo: Suncor has been operating in the Wood Buffalo region of Alberta since 1967. We've been part of the community and building relationships for a long time. While we'll continue to do so, we know that we need to broaden our focus to our other operating areas. As we implement our social goal, we'll look to increase opportunities with communities and our key partners though the Suncor Energy Foundation.

Aboriginal relations

On this page:

Our relationship with Aboriginal communities over the past 40 years has been a journey. We know that earning the trust and support of Aboriginal Peoples and communities is foundational to our business.

There is much we can still learn from Aboriginal Peoples and communities. It is from being honest and willing to learn from one another that we can uncover mutual interests and build authentic relationships.

- Read more about our approach in our Canadian Aboriginal Relations Policy (PDF, 2 pp., 1.3 MB)
- Listen to the policy in Cree or Dene:
    - Cree audio translation – Download MP3 file (10 MB)
    - Dene audio translation – Download MP3 file (11 MB)

We know that there is still work to be done, but we are making progress. Many initiatives are underway to embed our approach to Aboriginal relations across all areas of our business. For example, last year we announced a social goal, as part of our larger sustainability goals.

The social goal is a declaration of our intent to do things differently – to choose a new path that focuses on strengthening relationships with Aboriginal Peoples. For us, that path is about working together and creating more opportunities for greater involvement in the energy industry, so that the social and economic benefits from Canada's resources are shared more fully.

Learn more about Suncor's sustainability goals and each of the performance areas

See below for a few other initiatives underway within Suncor and together with our partners.

Expand all | Collapse all

Integrated Aboriginal relations governance

Over the past few years, we've worked to embed Aboriginal relations more fully across the organization.

Suncor's Aboriginal Relations Governance structure is made up of three interconnected groups that each play a role in ensuring that our activities are strategic, co-ordinated and advancing strong, co-operative relationships with Aboriginal Peoples in Canada. They include:

- A VP Forum
- A Network
- Multidisciplinary teams: Environment and Regulatory, Workforce development and Business Development

Other connected processes include the Strategic Issues Management Process (SIMP) and the Asset Development Execution Model (ADEM).

SIMP ensures that consideration for Aboriginal communities and stakeholders informs our thinking on all key environmental, economic and social issues that are most critical to Suncor and its stakeholders.

Suncor's ADEM ensures that the interests and concerns of Aboriginal communities are identified and considered in early project planning stages and that engagement occurs before final decisions are made.

Community partnerships

In 2016, Suncor announced the signing of partnerships agreements with Fort McKay First Nation and Mikisew Cree First Nation for ownership in the East Tank Farm, a strategic infrastructure asset in the Wood Buffalo region. The combined equity interest by Fort McKay First Nation and Mikisew Cree First Nation in Suncor's East Tank Farm Development will be 49%. Upon completion, this will be the largest investment by First Nations in this industry to date.

The signing of these agreements is the result of many years of hard work and discussions to understand and identify areas of mutual interest. Through this process, we've developed greater understanding and trust – and we worked collaboratively to achieve this. This demonstrates a very positive evolution in our long-term relationships and a new way that we will work together.

Wheels to Lambton program

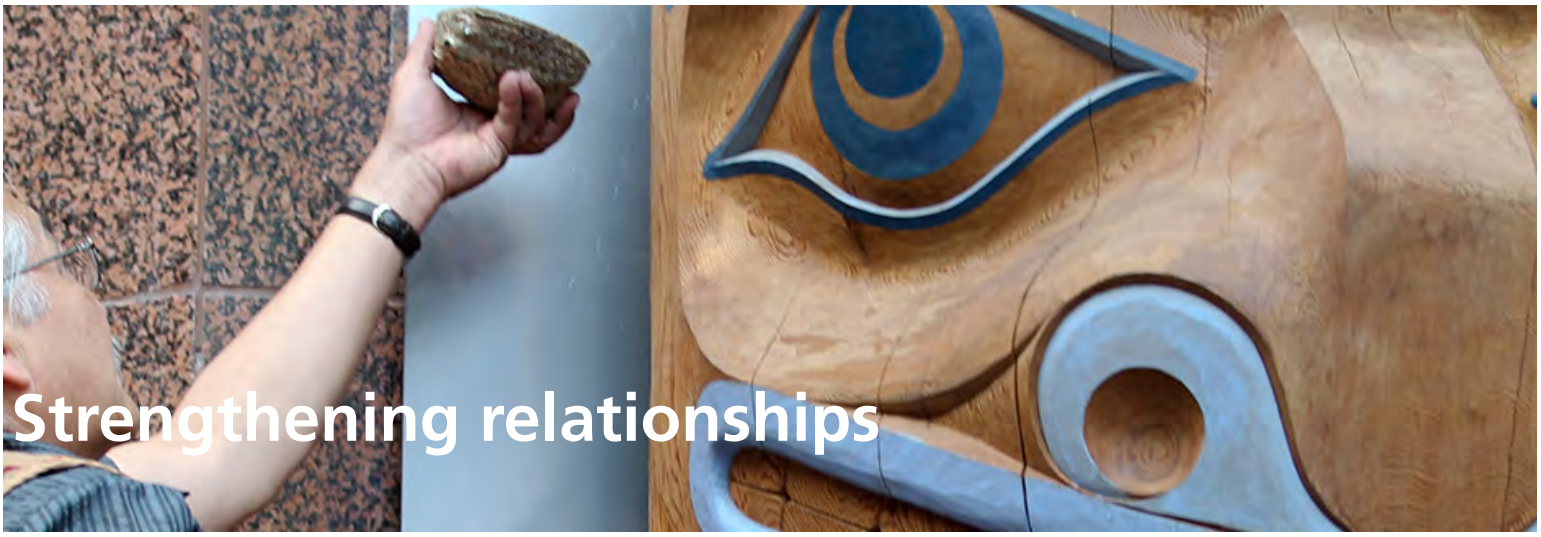
The Suncor Sarnia refinery is among several industry partners of a recently launched transportation program between Walpole Island, Aamjiwnaang First Nation and Lambton College.

Over the past three years, as a member of the Visions of Harmony (VoH) committee, Suncor participated on a team working to help alleviate the transportation barrier for First Nations students who attend Lambton College. VoH is an organization that includes local First Nations communities, industry, education and workforce development.

"This is a wonderful initiative to be a part of because of its collaborative nature," says Jennifer Johnson, senior advisor, communications and stakeholder relations. "This program is entirely driven by the Walpole Island and Aamjiwnaang communities."

Both communities identified the transportation issue, conducted the necessary research to confirm the need and potential use of the shuttle, submitted applications for government funding, hired and trained the drivers, and purchased the vans. "Our investment of $20,000 from the Suncor Energy Foundation was a small way to help bring their vision to reality," adds Jennifer.

"We know that students face multiple barriers when they start college," says Mark Hiseler, vice president, Sarnia refinery. "We hope that by helping eliminate the transportation barrier, this initiative will not only help students succeed in their various programs, but also encourage others to consider attending Lambton College."



Strengthening relationships

On this page:

> Performance Area: Strengthen relationships among Aboriginal Peoples and all Canadians, starting with Suncor

We can do more to learn about the history and experiences of Aboriginal Peoples, so that we can better understand one another.

We commit to providing our employees with more training and also more opportunities to participate in cultural experiences. We will measure changes in understanding and behaviours – within Suncor and through the work of the Suncor Energy Foundation's key partners, like Indspire, Bridges Social Development and Reconciliation Canada.

Supporting initiatives

Strengthening relationships will be an evolution for each of us at Suncor and we have designed many supporting initiatives to enable our employees along the way. We're focusing on four key areas:

1. increasing awareness
2. building understanding
3. shifting attitudes
4. changing behaviours

Aboriginal awareness training

At the end of 2015, we launched our new web-based training to ensure that every employee can have a basic level of awareness about the history and

experiences of Aboriginal Peoples across Canada. We developed our own training with input and guidance from partners such as Reconciliation Canada and also our own Aboriginal employees. The training features their stories and perspectives, which has made the information and messages more relatable.

In 2016, approximately 2,200 employees completed the Aboriginal awareness web-based training.

We also offer a more comprehensive classroom session that expands on the awareness created through the web-based training. It builds understanding about the historic and current relationship between Aboriginal Peoples and all Canadians through storytelling and meaningful discussion.

Aboriginal employee network

Suncor's Aboriginal Employee Network (AEN) is our employee resource group that supports advancing Aboriginal inclusion at Suncor. The network is structured around four focus areas, called circles. The Aboriginal Awareness Circle specifically supports cross-cultural sharing by increasing awareness and understanding within Suncor of Aboriginal experiences.

Experiential learning opportunities

We are creating opportunities for employees across Suncor to participate in cultural learning experiences. These experiences enable direct engagement and cultural exchange between Aboriginal and non-Aboriginal people. Examples include participating in community events, such as Treaty Days, or volunteering for specific initiatives, such as leading business development workshops through our partnership with Northeastern Alberta Aboriginal Business Association (NAABA).

Mikisew Cree First Nation Cultural Retreat

Held from Aug. 22-24, 2016 in Fort Chipewyan, the cultural retreat was organized to bring members of the community and local energy companies together to develop connections, cultural understanding and, ultimately, have fun along the way.

Visitors to the community took part in educational and interactive activities, such as best bull and cow moose calls, Cree language challenge, crib tournament, jigging, and arts and crafts as part of the two-day event.

"It is important to participate in the communities to develop an understanding of Aboriginal culture and values," says Angela Pohl, senior advisor, stakeholder and Aboriginal relations, Wood Buffalo. "Through these opportunities, we develop stronger relationships. There is mutual trust and respect when you have a personal connection."

The ideal outcome is that industry members will share their positive experiences and new insight into Aboriginal traditional values and connection with the land with their co-workers and industry partners.

Ultimately, involvement in the community can accomplish what a meeting in a boardroom cannot. We need to learn from communities near our operations to understand and better consider their needs and interests.

Growing awareness and understanding, one employee at a time

Aboriginal awareness training is a key way we're enabling every employee at Suncor to learn more about the history and experience of Aboriginal Peoples. Employees across Canada who've taken the training have given some great feedback. Here are just a few samples of what they said:

- *I like the fact I am walking away appreciating our history as a country and not treating this as only the First Nations history; we had a role in making the history and we have a role in making a better future for all Canadians regardless of background*. – Calgary
- *Wow, to be honest, I never really thought of Aboriginal relations in my personal life until I saw this video. It was a glimpse of how much I didn't know that I didn't know. . . It inspired me to learn more about the culture and how I can help bridge the gap. Thank you*. – Mississauga
- *It was an emotional experience going from learning the issues, to feeling ashamed of our past, and to feeling proud to be in a company that is really trying to make a difference*. – Fort McMurray

Beyond Aboriginal awareness training, we spent some time in 2016 to ensure that more opportunities were available for employees to become engaged and to learn more about the history and experiences of Aboriginal Peoples. For example, beyond the AEN and opportunities for cultural experiential learning, we:

- created a new employee section on our intranet that highlights a wide variety of topical resources such as books, movies, websites, music and podcasts
- distribute a community update e-newsletter that profiles an AEN member, provides updates on the work of each of the AEN Circles and includes a cultural awareness moment along with other relevant news
- maintain a calendar of events so that employees across Suncor can see upcoming opportunities and get involved

Measuring our progress

As with the supporting initiatives, we're measuring relationship building in a number of ways along the journey. Internally, we're measuring awareness building and changing attitudes through the number of participants attending the online and classroom-based Aboriginal awareness training, as well as conducting pre and post-surveys. We'll also be using developmental evaluation to assess the effectiveness of our work, to look for shifts in perception, attitudes and behaviours, as well as identify emerging opportunities.

Partnering with Aboriginal businesses

On this page:

> Performance Area: Increase revenue to Aboriginal businesses and communities

Increasing marketing arrangements

Over the last several years, we have successfully grown relationships and expanded business development opportunities with Aboriginal communities through Suncor's downstream business. These mutually beneficial business relationships between Suncor and Aboriginal communities leverage our Petro-Canada brand and communities' goals for economic development.

In the next 10 years, we want to expand these efforts and increase our business with Aboriginal communities because it makes good economic sense – for Suncor and for Aboriginal Peoples across Canada.

Increase Aboriginal supplier-spend

Suncor has a long history of working with Aboriginal suppliers, particularly in the Wood Buffalo region. We want to apply what we've learned over the last 20 years more consistently across our businesses, so that more Aboriginal entrepreneurs and communities have the opportunity to participate in and benefit from our operations.

2016 Examples

Siksika Nation celebrates Petro-Canada grand opening

January 30 was a cold and blustery day an hour east of Calgary, but that didn't dampen the warm welcome of the Siksika Nation, along with 10 Suncor

employees, to celebrate the grand opening of their new Petro-Canada station. The station has been in the works for a few years, with the support, vision and leadership of current and former Chief and council members. Chief Joe Weasel Child spoke at the ceremony and recognized the efforts of previous council and the vision of the community for the project. He thanked all partners and congratulated the team on the project. A prayer was offered by a community Elder and, following the ribbon cutting, a feast was had as part of the celebration.

Manager Corey White has a lot to be proud of. He and Petro-Canada territory manager Dylan Kristofic worked together to ensure training and support was available to the team for the site opening. Ten community members are employed at the site, further supporting the Nation's employment and development goals. Siksika Resource Development Ltd. stewarded the project. It is the first business to open at the new Business Centre, which will also house other retail tenants in the near future.

The Siksika Nation Petro-Canada joins 20 other Aboriginal owned and operated stations in Western Canada. Petro-Canada is very proud and honoured to be Siksika's branded fuel partner. We look forward to a long, mutually beneficial relationship in which we learn and grow together.

RezGas 2016

In 2016, Petro-Canada partnered with Aboriginal Marketplace Events to lead an information session at the RezGas conference held in Richmond, B.C. This event was North America's only conference and trade show dedicated to Aboriginal communities focused on gas station development. It provided Aboriginal communities with a forum to network, learn and share knowledge on what makes a successful retail fuel operation.

Planning for long term relationships

We are working with key communities in Wood Buffalo to develop Joint Business Development Plans (JBDP). JBDPs provide structure on how we work together and collectively focus on key objectives. These plans often include annual workplans that help Aboriginal communities to direct efforts where there is a possibility to increase business and help Suncor to track suppliers' capabilities.

Sustaining opportunities

Given the economic environment, our project spending for the coming years may be significantly reduced. As a result, there may be fewer contracting opportunities. We know that project spending fluctuates and we're working hard to define sustained opportunities for Aboriginal vendors in the years ahead. We're focusing on a few areas:

- Internally, we're changing our approach by integrating Aboriginal vendor inclusion into each of our supply chain categories to create more opportunities across a broader group of categories.
- We're also working to embed this approach with our suppliers and contractors. Aboriginal vendor inclusion is a key component we use to evaluate our contractors and suppliers, ensuring they're also focused on advancing Aboriginal subcontracting strategies.
- We're finding ways to broaden and diversify the scope of our overall spend that's available to Aboriginal vendors, and we're working directly with select businesses to build their capability.
- Historically, we've been focused on the Wood Buffalo region. By continuing our partnerships with Northeastern Alberta Aboriginal Business Association (NAABA) and the Canadian Council for Aboriginal Business (CCAB), we're looking beyond Wood Buffalo for opportunities to build relationships and to partner with Aboriginal vendors in some of the other communities where we operate across Canada.

Partnering with Aboriginal youth

On this page :

> Performance Area: Partnering with Aboriginal youth to develop their leadership potential

Our partners and youth have taught us that organizations and programs rooted in culture and reconciliation lead to pride in self, culture and create a path towards success. Today's youth are tomorrow's leaders – that's why we're focused on building stronger connections with Aboriginal youth.

Through the Suncor Energy Foundation (SEF), we are supporting our partner organizations working towards innovative solutions for Aboriginal communities such as youth engagement, cultural opportunities and leadership/education programs to provide pathways towards a successful future.

Supporting initiatives

It starts with partners who share our vision. Through the SEF funding strategy, we can be a catalyst, working with others, and connecting and supporting our communities. Some partners leading change in our community include:

- **Bridges Social Development:** works with Aboriginal youth in southern Alberta to find their purpose and voice while developing community leadership opportunities
- **Actua:** inspires youth in Aboriginal communities across Canada to see science, technology and math as a potential career path by using connection to culture and communities
- **Indspire:** provides opportunity for Suncor to invite Aboriginal students from our operating communities to the Indspire Awards and meet the inspiring award recipients for a life-changing experience.
- **Learning Through the Arts:** works with Aboriginal students in the Wood Buffalo region to use arts and culture as tools to understand curriculum and has significantly improved graduation rates in the region.

Partnering with Bridges Social Development

In the summer of 2016, our partner organization Bridges Social Development once again hosted The Aboriginal Youth Explosion. The annual event brings together the collective voices of Alberta's Aboriginal youth to celebrate the exploration of their personal wisdom and potential. It showcases the adventurous and challenging work being done by Aboriginal youth as participants of Canada Bridges' Unveiling Youth Potential (UYP) Program – an empowerment program aimed at realizing the potential of youth and young adults by supporting their leadership roles in building strong, resilient communities.

Watch the Aboriginal Youth Explosion videos

Measuring our progress

Over the next 10 years, we will measure year-over-year increases in two areas:

1. Number of opportunities for youth leadership training and experiences
2. Number of opportunities for Suncor employee and youth interactions

We'll measure much of this work through our transformative community partners. We'll also work with our own employees through the Aboriginal Employee Network (AEN). In particular, the AEN's Outreach Circle is working to build a community of support for Aboriginal employees at Suncor and is developing an ambassador program. The program is intended to create a pool of ambassadors representing a broad cross-section of our Aboriginal employees interested in engaging with youth in schools and communities to share their experiences.

Improving Aboriginal workforce development

On this page :

> Performance Area: We're improving Aboriginal workforce development through hiring, retention and advancement of Aboriginal employees across our businesses

Advancing Aboriginal employment at Suncor means more than increasing the number of self-identified Aboriginal Peoples working at Suncor. While this continues as a priority, we also know that to truly create lasting positive change, we need to build a culture of greater inclusion at Suncor. This means changing the way we think and act so that all diverse groups are respected, valued and engaged in our workplace.

We recognize that having Aboriginal Peoples working at all levels and across Suncor's business provides an important connection to other Aboriginal employees and communities across Canada.

Supporting initiatives

Inclusive recruitment processes

In 2015, Suncor enlisted the help of the Aboriginal Human Resource Council (AHRC) to conduct an independent review of our recruitment and selection practices. The AHRC report recognized the positive activities taking place related to Suncor's Aboriginal recruitment and selection efforts. It highlighted recommendations to strengthen attraction activities and to encourage Aboriginal candidates to apply for Suncor opportunities.

A number of these recommendations have been actioned:

- Suncor shares Aboriginal job postings with Aboriginal employment coordinators in many communities in the Wood Buffalo region. This is helping us to attract more qualified candidates for open positions.

- Suncor has developed new marketing tactics and has increased the number of outlets that we share our postings with to reach this important talent segment Canada-wide, including partnership with the Aboriginal Link network.
- A Suncor representative visits local Wood Buffalo Aboriginal communities on a regular basis to review resumes, talk about what it's like to work for Suncor and share additional information about education and training programs.
- Suncor has an Aboriginal workforce strategy for our Fort Hills operations. The strategy has helped us to consistently increase Aboriginal hiring and retention.
- Suncor actively participates in Aboriginal recruitment events, as well as community outreach events (i.e. Saddle Lake).
- Suncor actively participates in Aboriginal recruitment events, as well as community outreach events (i.e., Saddle Lake). Suncor's Aboriginal summer program resulted in a record number of student placements at our operations in Calgary, Fort Hills and Fort McMurray, so far.

Aboriginal Employee Network

The Aboriginal Employee Network is an employee resource group developed by and for Suncor employees wanting to play a part in advancing Aboriginal inclusion and creating a safe and supportive workplace culture for Aboriginal employees. Approximately 400 people joined the network since its launch in the summer of 2015, and membership continues to grow steadily. The network is structured around four focus areas being advanced by small work teams called Circles. Each Circle has five to eight members from across Suncor's business, who meet regularly to develop programs and initiatives in support of four key objectives:

1. **Aboriginal Community Circle:** build a community of support for Aboriginal employees at Suncor
2. **Aboriginal Outreach Circle:** develop a pool of Suncor ambassadors to visit Aboriginal communities, with a focus on youth
3. **Aboriginal Advisory Circle:** create a way for Aboriginal employees to advise Suncor on how the company works with Aboriginal Peoples
4. **Aboriginal Awareness Circle:** to increase awareness and understanding within Suncor of Aboriginal experiences

Unconscious bias

While not a program targeted specifically at Aboriginal inclusion, we have introduced the concept of unconscious bias to our leaders. We began offering an unconscious bias course to our mid and senior level leaders in 2016. In addition, conversations aimed at mitigating bias are embedded in key people programs:

- succession planning
- performance
- recruitment

Identifying and addressing unconscious bias is foundational to changing the way we think and act. Leader education and ongoing application of learnings will assist in mitigating bias in our talent management processes to provide fair access to opportunities and rewards. Our belief is that this training, coupled with Aboriginal Awareness training for all employees, will lead to a more diverse and inclusive workforce.

Building relationships

Suncor's Diversity and Inclusion and Talent Acquisition teams are working to build relationships with Aboriginal communities. We are focused on First Nations communities in the Regional Municipality of Wood Buffalo (RMWB), as well as with the Aboriginal SET holders in the RMWB and Edmonton areas. The discussions are helping us to:

- understand the employability, needs and interests of Aboriginal Peoples in the areas where we operate
- gather labour market information regarding the skills, education and availability of potential candidates for Suncor
- identify interested, qualified candidates for current job opportunities
- understand the challenges and opportunities relevant to our Aboriginal workforce development plans

Community investment

On this page :

As stewards of valuable natural resources, we have the opportunity – and responsibility – to help build a better future. By supporting resilience, skill development and social well-being in the communities around us, we strive to create shared value and benefit for all involved.

We are here to connect and support, as well as learn with our community partners. By working with others, we increase our body of knowledge and make progress on addressing complex social needs that impact us all.

Collaboration is at the heart of our community investment strategy. By working collaboratively, we can find and realize opportunities for long-term solutions that can positively impact communities, future generations and our company. It also ensures we continue to understand each other's interests, issues, needs and concerns.

Our community investment strategy

Suncor and our private, non-profit, charitable organization, the Suncor Energy Foundation (SEF), are guided by a strategy focused on targeted investments intended to help communities near our operations grow, thrive and become sustainable and resilient.

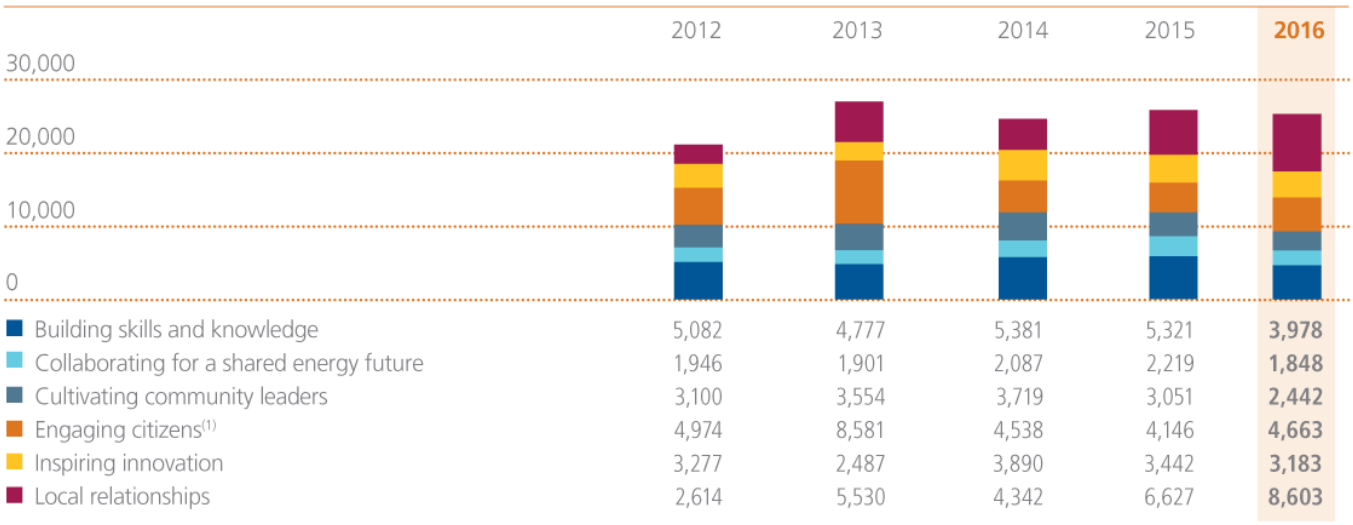
By leveraging our strengths as an integrated energy company, we believe we can be an effective partner in supporting sustainable, resilient communities. That's why we focus our investments in five key areas to support integrated initiatives that:

- strengthen communities by cultivating community leaders
- support building skills and knowledge for the current and future workforce
- foster the ability to think creatively through inspiring innovation
- build employee and volunteer capability by engaging citizens in community activities
- engage employees and communities in collaborating on our energy future

"Our collaborative approach allows us to work in partnership with communities to understand the needs that impact both society and Suncor," says Lori Hewson, director, community investment and social innovation. "Going forward, we're being more deliberate about focusing on the systems connected to

three areas: Aboriginal youth engagement and leadership, energy transition, and community resilience. When we have a clear understanding of all the elements of a system - including who's involved, the roles they play, and how impacts are felt - we can be more strategic with our investments and better ensure they support transformative and lasting change."

COMMUNITY INVESTMENT BY FUNDING PRIORITY*
($ thousands)



	2012	2013	2014	2015	2016
Building skills and knowledge	5,082	4,777	5,381	5,321	**3,978**
Collaborating for a shared energy future	1,946	1,901	2,087	2,219	**1,848**
Cultivating community leaders	3,100	3,554	3,719	3,051	**2,442**
Engaging citizens[1]	4,974	8,581	4,538	4,146	**4,663**
Inspiring innovation	3,277	2,487	3,890	3,442	**3,183**
Local relationships	2,614	5,530	4,342	6,627	**8,603**

* Suncor and the Suncor Energy Foundation have a Community Investment strategy in place with funding priorities that reflect our commitment to be actively engaged in the development of sustainable communities in our key operating areas. For historical community investment information under previous funding priorities, please refer to archived copies of Suncor's Report on Sustainability.
(1) Contributions in 2013 to the "engaging citizens" priority were significantly higher as a result of the activation of several Suncares Humanitarian matching grant programs for employees (Alberta floods, Colorado floods, Haiyan typhoon). 2016 contributions were higher as a result of the matching grant program for employees (Wood Buffalo wild fires).

SUNCOR

Download

For most energy companies, 2016 continued to be a difficult year to navigate in terms of how best to support community organizations through the ongoing economic downturn and budget constraints. In addition, SEF inherited community commitments with Suncor's acquisition of Canadian Oil Sands Limited. SEF was also able to draw on knowledge and experience from the southern Alberta floods of 2013 to support the relief and rebuilding efforts following the fire in the Wood Buffalo region that displaced nearly 90,000 residents in May.

Through the corporate foundation model, SEF continued to draw on the reserve fund to honour commitments and maintain support to community partners. Our Foundation is an example of sustainability in action by allowing us to be resilient in times of economic uncertainty. While SEF could not consider a lot of new funding, we were able to maintain support to our strategic initiatives and partners through dollars, in-kind contributions and volunteerism.

Read more about our Community Investment strategy and the Suncor Energy Foundation

Community investment: Our support in the community

Suncor is part of our communities so we need to play a role in working alongside partners and communities, strengthening our collective resilience and sustainability. By taking this approach, we can help support lasting change and, ultimately, contribute to communities that have the ability to rebound more quickly during downturns or times of crisis.

“For many years, we were doing what we thought was right, being reactive and doing things ‘to’ community. Now we’ve started to move into a ‘with’ and ‘of’ space: how do we work together in partnership for the common good?” reflects Hewson. “One key learning we’ve had is that we have to be comfortable with uncertain outcomes, and to be prepared to allow ourselves and our organization to be changed by what we’re seeing and hearing.”

This approach was strengthened from the SEF Gathering events and can be seen in some emerging collaborations such as the Alberta Social Innovation fellows, Alberta Ecotrust’s Climate Gathering and the creation of the social goal.

The Wood Buffalo wild fires and our support

SEF’s community investment philosophy was put to the test in 2016, as we worked alongside partners to support citizens and organizations in the aftermath of the fires in the Wood Buffalo region of Alberta, the costliest disaster in Canadian history.

Within days of the community evacuation, the SunCares Humanitarian Grant was launched, with Suncor employees from as close as Fort McMurray to as far away as Scotland and Norway opening their hearts and wallets to support those affected by the disaster.

The result was an astounding 1,700 donations totalling more than $547,000 contributed by employees, leaders, contractors, retirees and Suncor’s Board of Directors to the Canadian Red Cross and the United Way of Fort McMurray. This support reached an all-time high by employees. In addition, the SEF matched the donations for a total contribution of $1.094 million.

Through Petro-Canada and its loyalty program Petro-Points, members donated over two million points, and gas cards were provided to various non-profits assisting with relief efforts. Petro-Canada retail stations in Alberta accepted Red Cross fuel vouchers from evacuees.

In addition, the Suncor Energy Foundation and Suncor provided approximately $1 million in grants to charities and non-profit organizations in Wood Buffalo to support their recovery efforts.

Overall, including Suncor employee donations, Suncor and the Suncor Energy Foundation provided over $3 million in cash and in-kind support to the community through the fires.

“There’s no playbook for this scale of disaster,” says Russell Thomas, director of communications and community impact for the United Way of Fort McMurray. “The support we received from Suncor helped charities and non-profit organizations deliver much needed programs and services in the days and months after the fires, including mental health, children and youth programs, and seniors care to name a few.”

Learning from the Calgary floods in 2013, the SEF team also immediately established a Funders Circle. The Funders Circle brings together a variety of government, private and industry funders on a regular basis to share information and discuss funding and collaboration opportunities around short, medium and long-term needs.

This agility and resilience was due in part to the long-time work of community partners, including SEF, prior to the fires to strengthen the social profit sector in the Wood Buffalo region through the Social Prosperity Wood Buffalo initiative. Among other outcomes, it resulted in the creation of a backbone organization, FuseSocial, which helps connect and support social profit organizations to innovate to meet the needs of a rapidly changing community.

“When disasters occur, it’s important to consider not only the immediate needs of a community, but how we can come together with others to support re-entry, recovery and long-term community rebuilding efforts,” reflects Kim Nordbye, manager, community investment at Suncor.

And this is how our support continues today - working together with community leaders, government, other funders and industry as the Wood Buffalo community looks to the future.

Examples of our strategy in action

Here are some examples of the community investment strategy in action in 2016, and what we’ve learned:

Expand all | Collapse all

Collaborating on our energy future

Meeting society's energy challenges today and tomorrow is all about making informed choices. That's why Suncor and the SEF are investing in an evolving set of initiatives to collaborate on the energy future we'll all share. Our goal is to leverage our strengths as an energy company and be a catalyst for an inclusive national dialogue that will enable Canada to use our energy resources wisely and pave the way for a sustainable energy future.

Launched in 2015 with 40 Fellows, The Energy Futures Lab (EFL) is an Alberta-based, multi-sector collaboration designed to help shape Alberta's energy future and strengthen its position and reputation as a global energy leader. Led by The Natural Step (TNS) Canada, it's supported by four other convening organizations: the SEF, the Banff Centre, the Pembina Institute, and the Government of Alberta. The Fellows are exploring the question: How can Alberta's leadership position in today's energy system serve as a platform for transitioning to the energy system the future needs?

In 2016, the Fellows identified nine innovation pathways, including radical carbon efficiency in energy production, deployment of distributed renewables and smart energy communities, to focus their work in the coming years. Check out the Energy Futures Lab website to learn more about each of the pathways and the progress that's being made.

"The work of building a new energy future is as relevant to the oil and gas industry as it is to new tech and renewables," says Sandy Martin, EFL Fellow and vice president, regional technical services at Suncor. "If the oil sands industry wants to play a role in the energy future, we have to keep upping our game. Bitumen is a great source of energy; we can also make it an even more valuable resource for a low carbon future."

Another initiative supported in the energy space is Student Energy (SE), and its interactive energy literacy platform. SE is a global not-for-profit that is helping post-secondary students to become the next generation of leaders committed to transitioning the world to a sustainable energy future. Their approach of engaging all perspectives for a balanced understanding aligns with how we want to have the conversation about our energy future.

Success of Indigenous youth

Another example of our community investment strategy in action is our efforts to support Indigenous youth success. We have focused on four areas – reconciliation, culture, learning and leading and have partnered with organizations that are building networks across these four streams. Find out more below, and within our partnering with Aboriginal youth section of this report.

Reconciliation Canada

Through our partnership with Reconciliation Canada, Suncor is learning what reconciliation means in Canada and for our organization. As outlined in our social goal, Suncor has committed to changing the way we think and act in regards to our relationship with Aboriginal Peoples in Canada. Reconciliation is the process of understanding and coming to terms with our shared history in order to have a vibrant community where all peoples, including Indigenous youth, achieve their full potential and have an opportunity to share in their prosperity.

Indspire

Our long-time work with Indspire includes support of the yearly Indspired Youth Experience, which brings Indigenous youth from communities near our operations to the Indspire Awards gala. This event enables youth to see role models, celebrate culture and learn from recipients. SEF also supports Indspire's yearly National Gathering for Indigenous Education, which brings together 700-800 educators to focus on tactics to support Indigenous education success, and services and supports for educators.

Urban Native Youth Association (UNYA)

In the fall of 2016, Suncor stood beside representatives from the Urban Native Youth Association (UNYA) at Vancouver City Council as Suncor's donation of a parcel of Petro-Canada land in the East Hastings area was formally approved for an Indigenous youth centre.

"This partnership with the City of Vancouver and Urban Native Youth Association will lead to a safe space for Indigenous youth in Vancouver, a place where they can meaningfully engage with their culture and community, expand their knowledge, life and employment skills, and further develop their leadership capacity," says Tracey Wolsey, director, stakeholder and Aboriginal relations, Suncor. "Through the diverse opportunities created by the Native Youth Centre, Indigenous youth will be empowered to define their own path to success."

Learning Through The Arts

SEF has also partnered with The Royal Conservatory's Learning Through The Arts (LTTA) and the Calgary Board of Education (CBE), to support nearly 2,000 Calgary students, including Indigenous learners, to participate in an innovative program that provides a way for teachers to connect core curriculum to the experiences and context of their students, leading to greater engagement and retention of learning.

Through the Design | Media Arts program, teachers learn to provoke learning in their students by curating or designing 'provocations' such as videos or artworks that stimulate curiosity and bring forth a variety of points of view about topics in core curriculum.

CBE is collaborating with LTTA to develop an online version during the 2017/18 school year that will ultimately make it possible for all 7,000 CBE teachers and their students to benefit over the next several years. The Design | Media Arts model has also formed the basis for programming LTTA is leading in collaboration with First Nations-run schools in five Indigenous communities across Canada, including Fort Chipewyan in the Wood Buffalo region.

Investing in social innovation

To further support the new skills and thinking needed to make progress on complex community challenges, SEF, in partnership with The Banff Centre, continued to support the four-week Getting to Maybe social innovation residency program in 2016. It brings together approximately 30 leaders from diverse corporate, government and community roles to explore ways to make communities better places to live by looking at issues through:

- systems thinking
- the environment
- Indigenous knowledge
- the creative process and arts as a foundation for social innovation theory

The program is collaboratively designed by academic experts from the Waterloo Institute for Social Innovation and Resilience at the University of Waterloo and expert faculty and thought leaders from The Banff Centre and SEF.

Reflects one participant, "Having the opportunity to be in a diverse cohort, I became convinced that we all need to partake in this type of meaningful learning and create more opportunities to engage like this in our work. These perspectives, including Indigenous knowledge and learnings, have now become embedded in our organization and in what we think is most important in Canada."

Find out more about the *Getting to Maybe* social innovation residency.

Local communities

During 2016, Suncor and SEF continued to support many local initiatives in our operating communities, including:

St. John's – Memorial University – Centre for Social Enterprise - a catalyst to nurture social entrepreneurs and strengthen social enterprises in Newfoundland and Labrador through three strategic pillars: Research Centre, Supporting Teaching and Learning Programs and Social Enterprise Incubator.

Fort McMurray – FuseSocial: emerging from the Social Prosperity Wood Buffalo project, this organization strives to enhance the capacity of social profit organizations in the region.

Sarnia – Centennial Park: Sarnia's waterfront plays an important role in bringing the community together and supporting local organizations working hard to make the community a great place to work and live. Supporting the Gathering Space in Centennial Park was our way to help bring people together.

Denver – Boys and Girls Club: As a long-time supporter, we proudly celebrated the grand opening of the new Suncor Boys & Girls Club facility in Commerce City. The new space will support expanded programs to meet the community needs for years to come.

Montreal – Youth Fusion: If we want our youth to understand that they can be the future innovators in energy fields, we must start supporting them at an early age. Youth Fusion exposes youth to different careers in STEM but also provides the necessary tools to experiment and learn directly through a variety of mentors.

Edmonton – Women Building Futures: Takes unemployed and underemployed women and puts them through an intense pre-trades program to empower women to succeed in non-traditional careers, inspiring positive economic change for women and forever transforming the face of industry in Canada.

Supporting our employees

Volunteerism and community engagement has long been part of how our employees contribute to the community. Through our SunCares employee program, we support the causes that are important to them in the following ways:

- Volunteering – We provide tools and resources to help our employees find volunteer opportunities, either as an individual, part of a Suncor team or through a Suncor-sponsored event.
- SunCares Grants – SEF and Suncor provide a number of grants to support our employees' engagement in their communities.
- United Way – During the 2016 Suncor United Way Campaign, more than $5.8 million was contributed to United Way chapters through employee donations, special events and the corporate donation provided by Suncor and SEF.

At the end of 2016, SEF transitioned to a new grants management system provider, Benevity. The transition will provide the opportunity to make appropriate changes to the SunCares Employee Program to enable stronger employee engagement and provide more choice for supporting communities.

Canadian Olympic and Paralympic Games support

Through our Petro-Canada brand, we are a long-time supporter of the Canadian Olympic and Paralympic movement. Our current sponsorship agreement extends our support for Canadian Olympic and Paralympic athletes, coaches and their families through to 2024.

Our involvement in the Canadian Olympic movement is a journey that began in 1987, when Petro-Canada organized and sponsored the Torch Relay for the 1988 Olympic Winter Games in Calgary. We are proud to continue our support of the Canadian Olympic and Paralympic Teams and the Coaching Association of Canada.

Petro-Canada's Fuelling Athlete and Coaching Excellence (FACE™) Program has supported more than 2,700 athletes on their way to the Olympic and Paralympic Games. Every year, 55 promising athletes from across Canada are awarded a $10,000 FACE grant, shared with their coaches, to help them along their journey.

We believe one of the best ways to support Canadian athletes is to help their biggest fans, their families. We continue to support a Canadian ticketing program that will help ensure family members have the opportunity to see their athletes compete live in PyeongChang in 2018.

Other examples

You can find more examples of our community investment strategy in action in other areas of the Report on Sustainability, including how:

- we help address skilled labour challenges
- we're working with others to address climate change and be part of the energy transition

Economic

Download

> “Sustainability is about striking a balance between opportunity and risk. Businesses and economies are at risk if we fail to meet society’s rising expectations for our performance.”
>
> – Steve Williams, president and CEO

Strong economic performance, social responsibility and environmental stewardship is foundational to being a sustainable energy company. What follows is a high-level overview of our economic management approach.

Our strategy

We aim to deliver competitive and sustainable returns to shareholders by focusing on:

- capital discipline
- operational excellence
- long-term profitable growth
- leveraging our competitive differentiators

Our management approach to economic risk is to mitigate negative impacts while enhancing positive impacts, where possible. We also continue to execute well on our strategy which focuses on:

Capital discipline

Strong cost management, focusing on core assets and investing in projects that deliver the best possible returns are all examples of creating value for every dollar spent.

Our $4.8 to $5.2 billion capital spending plan for 2017 reflects a reduction of approximately $1 billion from 2016 as the Hebron and Fort Hills spending begins to wind down.

Operational excellence

We strive to continuously raise the bar on operational performance through consistently applied standards and principles. In 2016, for example, our refining facilities achieved 93% and Syncrude utilization was 102% of nameplate capacity in the fourth quarter of 2016, compared to 73% in the prior year quarter. Our Oil Sands base upgrader averaged more than 90% utilization when adjusting for the impact of the forest fires in the second quarter of 2016. Operational excellence is also about becoming a more sustainable energy company. Every barrel of water conserved and every emission reduced means lower input costs and supports our social licence to operate and grow.

Profitable growth

Our focus is on smart, profitable growth. Our Fort Hills mining project, for example, continues to be on schedule, with construction more than 76% complete at the end of 2016.

Read more about our growth plans and capital spending

Read more about our vision and strategy

Download our 2016 Management's Discussion and Analysis (PDF, 54 pp., 267 KB)

We also ensure that the management of economic risks by joint venture partners and subsidiaries are in line with our vision and strategy.

Policy

We have adopted several policies related to economic performance. These include:

- competition
- accounting reporting and business control
- business conduct
- enterprise risk management

Our strategy leverages our competitive differentiators and paves the way for us to unlock our company's full potential for the benefit of our employees, shareholders and stakeholders. We strive to profitably operate and develop our oil sands resources, optimize value through integration, achieve industry-leading unit costs in each business segment and be an industry leader in sustainable development.

Implementation of our Operational Excellence Management System (OEMS) across the entire enterprise is a key example of continually improving the reliability and performance of our assets. This means integrated and consistent standards, processes and procedures that reduce risk and enable continuous improvement.

For more information on our business strategy, growth projects, performance, financial goals and objectives, visit Suncor's Investor Centre.

Additional policies and practices include:

- Prevention of Improper Payments, which sets out that funds and facilities are not to be used for any illegal or improper purposes.
    - Read more about prevention of improper payments
    - Download our PG&S on the Prevention of Improper Payments (PDF, 10 pp., 71 KB)
- Conflict of interest, which sets out conduct for Suncor personnel in a conflict of interest situation.
    - Read more about corporate governance
    - Learn more about our governance policies on suncor.com
- Aboriginal Relations, which encourages each business unit to plan and measure business activities and partnerships that create opportunities for Aboriginal-owned businesses.
    - Read more about partnering with Aboriginal businesses
    - Download the Aboriginal Relations Policy (PDF, 2 pp., 1.3 MB) (PDF, 2 pp., 1.3 MB)

We also have specific practices in place related to local supplier selection. Regional development clauses are in place with suppliers and in contracts across all businesses, and sourcing documents often have criteria that evaluate suppliers on Aboriginal or local content. Additionally, our common practice is to post local contract and supplier opportunities on regional organizations' websites such as Regional Economic Development (REDlink) and Northeastern Alberta Aboriginal Business Association (NAABA). This is to ensure local businesses and suppliers are the first to be aware of opportunities in their region.

Commitments

We are committed to a mission, vision and values which guide our business decisions.

Strong economic performance, along with social responsibility and environmental stewardship, is part of being a sustainable energy company. Our investment in energy production, upgrading, refining and marketing benefits the economy by:

- creating well-paying jobs
- promoting economic growth
- providing governments and suppliers with revenues

Development of our core assets also allows us to invest in our renewable energy business and in new technologies to improve company-wide operational efficiency and environmental performance.

In all of these ways, we continue to create value – for our shareholders and society at large.

Goals, targets and actions

We are committed to five enterprise-wide value-driving goals:

- continue to advance our journey to operational excellence
- improve maintenance and reliability across Suncor's operations
- accelerate progress on Suncor's culture and workforce performance
- generate and sustain industry-leading returns
- achieve long-term sustainability goals

For information about how we delivered on these goals in 2016, download our 2016 Annual Report (PDF, 136 pp., 3 MB) and see pp. 7-9.

Technology investment

Our strong balance sheet allows us to invest in new technologies, for potential use to reduce carbon emissions, water use and the overall environmental footprint of our business. In 2016, Suncor spent more than $150 million to support research and development of technology across the corporation. These investments include technologies to improve the efficiency of bitumen extraction from the oil sands, while reducing carbon intensity.

Read more about our latest developments in technology

Community investment

Through the company and our private, non-profit charitable organization, the Suncor Energy Foundation, we provide targeted investments intended to help communities near our operations grow, thrive and become sustainable. In 2016, our community investments totalled approximately $34 million.

Read more about our community investment strategy

Responsibilities, resources and training

Our senior management team is responsible for delivering significant growth while maintaining operational excellence, led by our president and chief executive officer Steve Williams.

Our senior executive compensation program is designed to support and reinforce Suncor's value drivers:

- continue to advance Suncor's journey to operational excellence
- materially improve maintenance and reliability
- accelerate progress on Suncor culture and workforce performance
- generate and sustain industry-leading returns
- achieve long-term sustainability goals

More information about compensation programs can be found in our 2017 Management Proxy Circular (PDF, 111 pp., 888 KB)

Resources and training

- We have had a comprehensive anti-bribery compliance program in place since 2012. The program includes training, contractual protections, audits and third-party contractor prequalification.
- We conduct an annual business conduct compliance program with employees, contract staff and directors, who must review our business conduct policies and make an affirmation respecting policy compliance during the preceding calendar year.
- In light of the current crude price environment, Suncor has reduced the size of our workforce and implemented a number of directives around discretionary spending to continue to drive a sustainable, cost-conscious culture across all levels of the organization. This cost-conscious culture will not deter our focus on safe, reliable and environmentally sound operations; these areas are critical to the long-term viability and success of Suncor.
- Read more about our standards of business conduct code

Results and evaluation

Our integrated business model, along with a relentless focus on cost reduction and operational discipline, delivered financial, operational and strategic achievements over the course of 2016.

We continued to demonstrate:

- industry-leading, discretionary free cash flow* from our integrated model and a strong focus on execution
- emphasis on capital discipline by maintaining a strong balance sheet, with a decreasing net debt balance while steadily increasing the return of cash to shareholders

Our strong economic performance allows us to invest in profitable growth and continuous improvements in our existing operations, despite an uncertain oil price environment. The ripple effects of that investment are felt across the North American economy and well beyond.

Financial performance information is included in our 2016 annual disclosure documents.

- Download our 2016 Annual Report (PDF, 54 pp., 35 KB)
- Download our Annual Information Form dated March 1, 2017 (PDF, 984 pp., 357 KB)

Read about our economic performance

What we are doing differently

Read about our growth plans and capital spending

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* Non-GAAP financial measure. Please see the Advisories.

2016 economic performance

On this page :

> We are one of a few energy companies in Canada to operate across the value chain – from resource extraction and upgrading to midstream logistics to refining and marketing. This integrated business model, along with a strong focus on execution, continues to generate solid results.

Here is a look at the main indicators of our internal economic performance in 2016:

Expand all | Collapse all

Production

Total upstream production averaged 622,800 barrels of oil equivalent per day (boe/d) in 2016, compared to 577,800 boe/d in 2015. This amount reflected an increase in volumes from Oil Sands operations due to the acquisition of additional Syncrude working interests in 2016, and continued strong performance within our upstream assets apart from the second quarter in Oil Sands, which was significantly impacted by the forest fires in Fort McMurray.

The production in 2016 included 504,900 barrels per day (bbls/d) from our Oil Sands business unit and 117,900 boe/d from Exploration and Production. Oil Sands operations production decreased to 374,800 bbls/d in 2016 from 433,600 bbls/d in 2015, primarily due to the loss of production associated with the forest fires in the Fort McMurray area and a major turnaround of Upgrader 2 in the second quarter, with both 2016 and 2015 impacted by planned maintenance in the third and fourth quarters. Lower Synthetic Crude Oil (SCO) production was partially offset by an increase in non-upgraded bitumen, which was the result of debottlenecking activities at Firebag, completed in the fourth quarter of 2015, and strong reliability.

Firebag's steam-to-oil (SOR) ratio was comparable with the prior year. MacKay River's SOR increased to 3.2 in 2016, from 2.9 in 2015 due to an additional steam requirement for a new well pad.

Please note: The production numbers cited above are from Suncor's 2016 Annual Report. These are for upstream volumes only, and include production from non-operated assets. This differs from production numbers used in the performance data section of Suncor's Report on Sustainability, which includes 100% of the production at Suncor-operated facilities only, and also includes downstream throughput volumes of saleable refined products.

Please note: The production numbers cited above are from Suncor's 2016 Annual Report. These are for upstream volumes only, and include production from non-operated assets. This differs from production numbers used in the performance data section of Suncor's Report on Sustainability, which includes 100% of the production at Suncor-operated facilities only, and also includes downstream throughput volumes of saleable refined products. *For the purposes of our Report on Sustainability, net corporate production in 2015 was approximately 48.2 million cubic metres (m^3), compared to 45.4 million m^3 in 2014.*

Earnings

We reported net earnings of $445 million in 2016, compared to net losses of $1.995 billion in 2015. Operating losses* for 2016 were $83 million, compared to operating earnings* of $1.465 billion in 2015.

Consolidated funds from operations* for 2016 was $5.988 billion, compared to $6.806 billion in 2015. Funds from operations decreased primarily due to the decline in crude prices, partially offset by higher production volumes and lower operating costs.

Operating costs*

Reducing our cash operating costs continues to be a focus for us. We reduced annual Oil Sands operations cash operating costs* per barrel from $27.85 per barrel (bbl) in 2015 to $26.50/bbl in 2016.

Share prices and dividends

Our common share price closed at $43.90 on the Toronto Stock Exchange on Dec. 31, 2016, an increase of approximately 23% from the year before.

- We returned $1.877 billion in dividends in 2016, a 14% increase versus 2015.
- 2016 marked the 14th consecutive year in which Suncor's annual dividend has increased.

Balance sheet and financial position

Our approach to prudent capital spending in 2016 resulted in the company finishing the year within its revised 2016 capital guidance range of $5.8 to $6.0 billion, and $1 billion below the low end of initial 2016 guidance. We ended the year with $3 billion in cash and cash equivalents.

Read more about our economic performance in our 2016 financial reports

*Non-GAAP financial measure. Please see the Advisories.

Growth plans and capital spending

On this page:

Suncor remains focused on profitable growth. In 2016, we successfully acquired Canadian Oil Sands Limited and Murphy Oil Company Limited's interest in Syncrude, increasing our interest to 53.74%. We have also made significant progress on the Fort Hills mining project and acquired an additional 10% working interest in the project in 2015. First oil is targeted for the fourth quarter of 2017.

We are also making significant progress on our growth projects in Exploration and Production:

- acquired 30% participating interest in the U.K. North Sea Rosebank project
- development of the Hebron project continued in 2016, with first oil expected in late 2017

Preserving energy and economic growth opportunities for the future

In response to the continued lower crude price environment, we have elected to defer some capital spending. This means that projects such as McKay River 2 and the White Rose Extension will await more favourable market conditions. We'll carefully stage these projects so that, when the time comes to bring them back into development, previously invested capital will be preserved.

Market access

Growth requires access to markets. We're well positioned with more than 750,000 barrels per day of near-term North American market access. Key 2016 highlights include:

- Supply and Trading expanded Suncor's international presence in 2016, identifying new customers for proprietary crude and increasing international trading activity.
- Oil Sands base growth capital of $418 million was primarily attributed to construction of the East Tank Farm Development, which will support market access for Fort Hills bitumen.

Read more about market access

2017 capital spending plan and production outlook

Learn more about our corporate guidance on 2017 capital spending and anticipated production

Contribution to economy

On this page:

> The economic benefits of our success extend well beyond the returns we provide to shareholders. In 2016, we contributed a combined $418 million in royalties and taxes for governments – revenues that were then available to help fund public sector programs, including education, health care and vital infrastructure.

Royalties and taxes

In 2016, royalties totalled $265 million, including $52 million directed to oil sands royalties. As well, income taxes totalled $153 million to governments in Canada and internationally.*

* Does not include excise taxes collected and remitted by Suncor.

Capital spending

Capital and exploration expenditures totalled $6 billion in 2016, not including capitalized interest, compared to $6.2 billion in 2015.

Goods and services

A look at our supply chain spending shows we had more than 4,800 Canadian vendors spanning all 10 provinces as well as the Northwest Territories and the Yukon. The United States was our next biggest supplier (more than 1,300 vendors), and we also purchased from nearly 40 other countries.

We have seven major category groups that are further segmented into categories and subcategories. The taxonomy used to define and create these categories and subcategories is the United Nations Standard Products and Services Code (UNSPC) that is used globally to classify products and services. The range of goods and services is extensive and includes:

- aviation services
- chemicals, gases and fluids
- civil works
- construction services
- drilling machinery and accessories
- drilling and completion services/machinery
- environment health and safety services or consulting
- electrical
- engineering and consulting services
- facility services or materials
- fleet and fleet parts
- freight and transportation
- ground transportation
- health and wellness
- instrumentation and controls
- information services (hardware, services, applications and infrastructure)
- lodging
- maintenance services
- marketing and sales
- materials (consumables and structural steel/PVF)
- mining equipment
- offshore equipment and services
- professional services
- software
- static equipment
- support services
- tailings on-pond assets
- telecom
- travel and entertainment

The typical split of materials versus services depends on the type of worksite, such as the following:

- operating facilities, where the spend is typically 60% services and 40% materials
- major greenfield construction sites, where the spend is typically 70% services and 30% materials

Aboriginal partners

In 2016, we spent $428 million on direct purchases from Aboriginal businesses, as well as $16.8 million with Aboriginal subcontractors, for a total of $445 million. Since 1999, Suncor has spent approximately $3.9 billion with Aboriginal businesses (as direct contractors and subcontractors), nearly half of which was spent since 2013.

Corporate governance

On this page :

> Good corporate governance is a critical part of our business culture and practice. Making decisions responsibly and in the best interests of our shareholders and stakeholders is a key focus, from the Board of Directors to every employee.

Leadership starts at the top

Our Board of Directors sets the standard for our governance structure. The Board oversees the management of Suncor's business and affairs on behalf of our shareholders. It has processes in place to help ensure we live up to regulatory requirements and the standards of excellence we set for ourselves.

The Board's responsibilities include, amongst others:

- identifying principal risks and ensuring systems are in place to effectively monitor, manage and mitigate those risks
- ensuring Suncor has an effective strategic planning process
- overseeing the establishment and enforcement of Suncor's Standards of Business Conduct
- ensuring systems are in place for communication with investors and other stakeholders
- selecting, monitoring and evaluating executive leadership and aligning management's decision-making with long-term shareholder interest
- ensuring processes are in place to monitor and maintain the integrity of Suncor's internal controls and management information systems

Read about our Board of Directors

Experienced and diverse leaders

According to the Canadian Board Diversity Council (CBDC), having a diverse, experienced and well-credentialed Board of Directors improves Board discussions, contributes to greater diligence when decisions are being made and leads to improved financial performance and shareholder value.

Suncor's Board aims to be comprised of directors who have a range of perspectives, insights and views in relation to the issues affecting Suncor. It looks for members from diverse backgrounds, having regard to gender, ethnicity/Aboriginal status, age, business experience, professional expertise, personal skills, stakeholder perspectives and geographic background.

To encourage board diversity across Canada, our president and chief executive officer, Steve Williams, is a supporting CEO of the CBDC, while Suncor is a founding sponsor.

Suncor is also a proud supporter of the 30% Club Canada, a not-for-profit organization that is focused on the continued drive towards achieving greater gender balance at all levels, including an aspirational objective of 30% women on boards by 2020.

Learn more about CBDC

Learn more about our governance policies

Corporate governance structure

Effective corporate governance comes from leadership and good corporate structure. Economic, environmental and social issues aren't considered separately but evaluated together as part of our strategic decision-making process. This has informed our corporate structure and its key features:

- Our Board of Directors and its committees have clearly defined and distinct oversight roles to protect the interests of our shareholders set out in terms of reference.
- The Board's environment, health, safety and sustainable development (EHS&SD) committee monitors management's performance in areas within its mandate. They also review emerging trends and issues in the areas of health, environment, climate change, safety and sustainable development to ensure we are anticipating future challenges and positioning ourselves to minimize risks.
- Our senior management team integrates key operational and functional accountabilities for maximum efficiency and effectiveness.
- The vice president, sustainability and communications, reports directly to our executive vice president, business services.
- Environment, health and safety and sustainability employees have direct access to senior management.

Download the company's annual 2017 Management Proxy Circular and related governance policies.

Download

Ethical business conduct

On this page:

> Our commitment to integrity and ethics is the foundation for our Standards of Business Conduct Code and the company policy guidance and standards that reinforce it.

The code requires strict compliance with legal requirements and sets standards for the ethical conduct of our business, allowing us to maintain the confidence of our customers, colleagues, shareholders, vendors and the governments and communities where we do business globally.

Standards of Business Conduct Code

Our business conduct policy statement articulates our commitment to sound legal and ethical business practices. We meet this commitment through our Standards of Business Conduct Code, which is comprised of a number of detailed policy guidance and standards (PG&S) and a code compliance program.

Under the code, every Suncor director, officer, employee and contract worker is required annually to take an online training course and review the code and certify that he or she:

- has reviewed a summary of the code
- understands the requirements of the code
- has complied with the code; alternatively, has disclosed and resolved any non-compliance with the code

Consultants working on our behalf or in our name through outsourcing of services, processes or business activity, are required to abide by the code when representing Suncor.

Topics addressed in the code, and detailed further in various PG&S, include:

- competition
- conflict of interest and confidentiality
- trading in shares and securities
- improper payments
- fair dealing in trade relations
- harassment
- accounting, reporting and business control
- protection and proper use of corporate assets and opportunities

Stewarding to business conduct code

- Our Board of Directors exercises stewardship over the code.
- Internal auditors audit the compliance program annually.
- The vice president of enterprise risk and audit, who has a direct reporting relationship with the audit committee, reports on compliance to that committee.

At least once annually, the code is reviewed and if appropriate, updated. Management reports to the governance committee annually on this process and any recommended changes are approved by the governance committee.

Any waivers of code requirements for executive officers or members of the Board must be approved by the Board or appropriate Board committee and disclosed. No such waivers were granted in 2016.

Raising ethical concerns

We encourage employees to raise ethical concerns without fear of reprisal with these teams/departments:

- Management
- Legal
- Corporate Security
- Human Resources
- Internal Audit

In addition, we have established an integrity hotline to provide a means for our employees and contractors to report issues of concern anonymously to a third-party service provider.

The integrity hotline is available 24/7 days a week. All serious issues are investigated by Internal Audit or the chief compliance officer. The audit committee receives regular updates on integrity hotline activities.

Download The Way We Do Business Guide (PDF, 24 pp., 1 MB)

Prevention of improper payments

Corruption constrains sustainable economic activity. It hinders the development of fair market structures and distorts competition. More important, corrupt business practices undermine citizens' trust in political and business systems, institutions and leadership. We strive to act transparently and in the best interests of the communities where we operate.

Our position on bribery and corruption is clear and detailed in the PG&S on the prevention of improper payments, which includes:

- Funds and facilities aren't to be used for any illegal or improper purposes.
- Bribery, kickbacks or any payment to a person to commit an unlawful act, or to influence a person performing public duties, are prohibited, as is the diversion of assets for personal benefit.
- Personnel are required to comply with all applicable laws concerning improper payments to foreign officials or other third parties.

Supervisors and managers are expected to promote a working environment consistent with this PG&S and assist all personnel within their supervision to understand and comply with it.

Our Board of Directors reviews compliance with this PG&S as part of its annual review of the Standards of Business Conduct Compliance Program. Our

chief compliance officer oversees this PG&S and provides periodic reports to the general counsel and Board of Directors.

Download our PG&S on the Prevention of Improper Payments (PDF, 10 pp., 71 KB)

Privacy

We collect, use and store personal information about employees, contractors, customers, suppliers, associates and others in the course of business activities. The collection, use and disclosure of personal information is subject to provincial, federal and international laws. We respect privacy rights of all individuals and have policies, procedures and practices to protect those rights.

Competitive practices

We strive not to engage in anti-competitive activities. We compete for business vigorously, honestly and in material compliance with all applicable antitrust and competition laws. These laws encourage fair competition in the marketplace for products and services.

Those negotiating or administering agreements, involved in advertising and promotion, or participating in industry associations or similar groups, are required to be familiar with local laws regarding competition and trade practices. We try to identify, select and do business with suppliers who enhance our competitiveness and who have a consistent vision of sustainability and business ethics.

- Download our PG&S on Competition (PDF, 19 pp., 98 KB)
- Download our PG&S on Trade Relations (PDF, 2 pp., 28 KB)

Open, honest and transparent relationships support sound corporate governance and high ethical standards. Within the bounds of commercial confidentiality, we commit to transparent relationships with employees, shareholders and stakeholders alike. We encourage transparent transactions and operating agreements with provisions that respect the local laws of wherever we operate around the world.

Many of our investments and projects are long-term in nature and we expect to be a corporate citizen in communities where we're located for many years. We have a clear interest in social and economic development in regions and countries where we work.

As such, we support public accountability by governments and transparency of revenues, as a means to promote political and economic stability in regions where we operate. We acknowledge work that the Extractive Industries Transparency Initiative does in this regard and, while we haven't formally endorsed the initiative, we consider supporting host countries seeking to implement greater transparency if requested.

Conflict of interest

Our governance committee annually reviews a declaration of interest from each Board member to determine if any conflicts of interest exist. In addition, directors are required to maintain with the corporate secretary a current list of all other entities in which they have a material interest or on which they serve as a director, trustee, or in a similar capacity.

Download Suncor's 2017 Management Proxy Circular (PDF, 111 pp. 888 KB)

As per the Board's conflict of interest policy, if a director is a party to, or has an interest in any party to, a contract or transaction before the Board of Directors (regardless of the materiality of the contract or transaction), the director must:

- immediately advise the Board chair or the particular committee chair;
- exit from the meeting for any material discussions or deliberations concerning the subject matter of the contract or transaction;
- abstain from voting on any resolution in respect of such contract or transaction.

The conflict or potential conflict is recorded in the meeting minutes. The corporate secretary also ensures that directors don't receive Board materials in situations where the subject matter of the materials could involve an actual or potential conflict of interest.

Executive pay

On this page :

> Shareholders and other stakeholders have a strong interest in executive pay and its alignment with performance. This is evident in evolving regulatory requirements, increased emphasis on pay-for-performance in what continues to be a challenging business environment for the energy industry, in expectations for the application of good governance practices, and transparency in disclosure of executive pay.

Compensation linked to goals

Our executive compensation plans, policies and programs are designed to support and reinforce successful strategy execution, achievement of our corporate and business unit goals, and to attract and retain top talent, resulting in profitable growth and long-term shareholder value.

Alignment on key priorities through our goal-setting process begins with the president and chief executive officer and cascades through the organization. Goals are established by each of the business units in key performance areas that will drive value:

- safety
- sustainability
- base business
- growth
- workforce and organizational performance

We ensure our executives' focus is linked with the interests of our shareholders through alignment on key priorities, and tying executive incentive

compensation to the achievement of our goals and strategy.

Consistent pay-for-performance approach

To deliver sustained performance and increased shareholder value, it is essential that we attract, engage and retain talented, capable executives who can lead and execute business plans that position us for long-term success. One way we do this is by designing and implementing compensation plans, policies and programs that provide an attractive and competitive total compensation opportunity.

This is demonstrated in the total direct compensation provided to executives, which has a significant portion at risk (70-85% for senior executives), in the form of short, medium and long-term performance-based pay. The annual, medium and long-term incentive plans are tied directly to operational performance measures, to absolute increases in share price and to our relative increase in shareholder return compared to peers.

Our incentive-based pay-for-performance design provides executives with the opportunity to increase their compensation when above-target operational and shareholder return performance is achieved and limits their compensation when performance warrants.

This pay-for-performance approach is a fundamental part of our identity, underpins the design of our incentive programs and responds to shareholder expectations of a strong link between executive pay and longer term value creation.

Oversight of compensation programs

An important responsibility of the Board is ensuring that executive compensation plans, policies and programs are aligned with shareholder interests, are competitive and that compensation risks are limited.

This key governance responsibility is carried out with the assistance of the Human Resources and Compensation Committee and accomplished through the committee's mandate, which includes:

- design of executive compensation plans, policies and programs to reinforce performance and to include thresholds, caps or maximums, performance hurdles and robust share ownership requirements
- review and approval of incentive plan performance goals
- monitoring and feedback on performance versus plans
- application of sound executive compensation governance based on best practices

For more information on executive compensation, download the 2017 Management Proxy Circular (PDF, 111 pp., 887 KB).

Managing enterprise risk

On this page:

To drive consistent outcomes that are expected by our stakeholders, we must constantly identify, assess, treat and monitor risks inherent to our assets, activities and operations. Some of these risks are common to operations in the oil and gas industry as a whole, while some are unique to Suncor. Suncor's Risk Management Policy drives a culture of being:

- **Proactive:** we do the right thing by identifying and managing risks in advance.
- **Transparent:** we foster a culture that is open and honest about our risks. We actively provide and seek out information so we can make better decisions.
- **Consistent:** we take a disciplined approach to achieve excellence in risk management. We do the right thing the right way.

Our rigorous enterprise risk management program engages all levels of the corporation – from the Board of Directors and Audit Committee, which are responsible for oversight of our principal risks and ensuring there are systems in place to manage their impact, to individual business units and functions, which regularly identify, mitigate and report on critical risks in their areas of business.

Colin Foley, vice-president, enterprise risk and audit, notes that proactive risk conversations, at all levels of the organization, have been driving a culture of risk transparency and clear accountability. "These important conversations are leading to informed risk-based, decision-making across the company, helping us to achieve more predictable outcomes."

Risk matrix tool

Once identified, risks are assessed and evaluated in terms of magnitude of impact and likelihood by using an internal risk matrix tool. A single risk matrix tool allows employees to consistently assess risks and evaluate the consequence and likelihood of risk events. The consequence is based on the following five receptors on the risk matrix:

1. health and safety (to the public and employees)
2. environmental
3. regulatory
4. reputation
5. financial impact

A risk owner is assigned who develops a plan to treat and monitor the risk. They also report up the organization to the people accountable and responsible for the risks to ensure decisions are being made at the appropriate leadership level. Followup measures are in place to ensure risk management decisions are properly and effectively implemented and monitored.

Identifying principal risks

We define principal risks as those that have the potential to materially impact our ability to meet or support Suncor's business strategy.

In 2016, we focused on eight principal risks:

1. **Commodity price:** fluctuations due to market dynamics that affect our profitability.
2. **Government/Regulatory Policy and Effectiveness:** changes relating to air, water, land, climate change or health regulations or to tax and royalty structures that materially affect us and our competitive position, or delays or denials of approvals that could disrupt or stop core operations, projects and Suncor's growth strategy – ultimately resulting in financial penalties or lost opportunity.
3. **Major Operational Incident (Safety, Environmental and Reliability):** significant or catastrophic incident that causes potential harm to people or the environment or threat to our operations, or an asset failure affecting profitability and/or stakeholder confidence.
4. **Carbon Risk:** broad shift in public policy, breakthrough technology and societal attitudes have led to governments in Canada and around the world adopting ambitious emissions reductions targets and supporting legislation. This includes measures relating to carbon pricing, clean energy and fuels standards, and alternative energy incentives and mandates which could impact profitability and, or Suncor's reputation.
5. **Market access:** macro-economic and political conditions that affect the ability to maintain or increase access to markets.
6. **Information security**: pace of technology advancement and sophistication could place us in a vulnerable position to cyberattack and penetration of our information systems that could lead to economic loss and brand damage.
7. **Project execution:** inability of a project to meet business requirements, achieve expected benefits or realize optimal life-cycle costs.
8. **Change capacity:** concurrent demand to deliver operational excellence and growth activities exceeds our capacity to adopt and implement change.

All principal risks must be reported annually to the Board of Directors and Audit Committee. Reporting includes details on what's being done to address these risks, how the risks are being monitored and any changes in the risk profile.

Evolving risks

In the constantly evolving energy business, new risks can emerge and established risks can take on new forms or orders of magnitude. In late 2016, we changed the Fossil Fuel Industry Reputation principal risk to the Carbon Risk principal risk. We also consolidated two of our principal risks: Cost Pressure was consolidated into the Commodity Price principal risk and the Operational Outage and Major Safety Environmental Incident principal risks were consolidated into the Major Operational Incident (Safety, Environmental and Reliability) principal risk.

Our employees

Download

> Our vision to be trusted stewards of valuable natural resources and lead the way to deliver economic prosperity, improved social well-being and a healthy environment depends on the commitment, development and performance of an engaged, highly skilled and high performing workforce that shares our values. Our people are the key to our success.

Expand all | Collapse all

Our workforce strategy

Filling trades and operations roles has been described as a risk in Canada – often felt in Alberta, where large-scale construction projects, maintenance and turnarounds draw upon this in-demand workforce. Although oil prices have begun to stabilize, ongoing budget constraints, along with project cancellations or deferrals in the industry, have created uncertainty about the amount of forecasted jobs needed in the next decade.

An economic downturn also has a ripple effect on those entering the labour market – many of them may have limited work. For tradespeople, this can lead to a delayed achievement of journeyperson status which may cause them to leave the industry. We also know that an aging workforce is a demographic certainty and we will need to replenish positions that open up when people retire over the next few years.

Advancements in technology may also affect our workforce, but not necessarily by decreasing the demand for trades and operations roles, as most occupations rely heavily on the physical labour and skill contribution of its workers.

That's why, through our own research and experience, we expect that there will be an increase in the demand for trades and operations labour over the long term, given expected global demand for the products we develop and produce.

The oil sands are the single largest employer of tradespeople and operators in Canada. This means our hiring will support our oil sands operations with a particular focus on recruiting for these roles. And certainly, in 2017, this is the case as we focus our hiring efforts on the Fort Hills oil sands mining project in Alberta.

To address workforce challenges, we're working with:

- industry
- government
- labour union providers
- contractors
- trainers
- educators

We're also taking proactive steps to manage all of our workforce requirements. This means we're focused on keeping people here and we're purposefully planning for future workforce needs through the following:

- As baby boomers retire, we've focused on mentoring to transfer knowledge to our next generation of leaders. We're also building new talent for the future through our early talent programs, including engineer-in-training programs.
- We continue our strong focus on developing our internal talent for senior technical types of roles, such as engineers.
- We foster a diverse and inclusive work environment that provides employee programs to support quality of life and career development while offering a 'total rewards' compensation package, including flexible benefits, pension and savings plans. This is in addition to a competitive pay package, generous vacation and performance-based annual incentive bonuses.
- We work with industry and educational institutions to encourage Canadians, especially young Canadians, to consider training for careers in the oil and gas sector once they have completed their high school education.
- All salaried employees have an annual development goal, in support of their work priorities and performance goals. Employees may also have required training for their role, which is assigned and managed through a central, corporate learning system. Our learning and development programs are aligned in this way to help employees further develop the skills they need to execute our business strategy in a safe, reliable and cost-effective way.

Suncor's hiring includes securing the workforce we currently need while also ensuring we have strong succession plans for the future. We source talent from geographic regions that best support operations and hire from the local population where possible. Suncor actively develops skills in the communities in which we operate by sponsoring programs at local colleges. We are finding the talent we need within Canada. The only recruiting that occurs out of country is typically for 'hard-to-fill' positions, such as mid-career professionals. This consists of less than 1% of total hiring volume over the past year.

We also partner with other companies who share our values. In certain commercial agreements, we include the expectation that our partners understand our employee policies and have policies of their own which, at a minimum, adhere to employment standards and human rights legislation in all jurisdictions where we operate.

Policy

Internal policies are communicated to ensure the workplace is safe and respectful. Among others, these include:

- Standards of Business Conduct (PDF, 2 pp., 74 KB)
- Harassment and violence-free working environment (PDF, 6 pp., 113 KB)
- Environment, Health and Safety (PDF, 1 pp., 157 KB)
- Human Rights (PDF, 2 pp., 19 KB)

The above policies are applicable to all Suncor employees, contractors and entities. The policies are approved by various members of senior leadership who are responsible for the stewardship of that subject matter.

Most policies are reviewed annually, with the Environment, Health and Safety Policy reviewed every three years.

Workplace diversity, inclusion and respect

We are committed to equal opportunity employment and cultivating diversity within a respectful, inclusive workplace. We believe in creating an environment where all employees, wherever we do business, are treated respectfully and feel valued.

A diverse and inclusive workforce enables us to benefit from a wide range of backgrounds, perspectives and experiences. Suncor believes diversity and inclusion leads to a healthier and more successful workplace and ultimately, better performance.

We continue to progress our organizational diversity and inclusion strategies which are focused on increasing the attraction, representation and progression of women and Aboriginal Peoples in our workforce.

In 2017, we are continuing the work to improve workforce diversity through improved representation and a reduced systemic bias.

- continue to develop strategies to increase the attraction, representation and progression of women and Aboriginal Peoples in our workforce
- continue to educate the organization on the impact of unconscious bias on an environment of inclusion
- continue key partnerships such as Women in Engineering program
- enable the Aboriginal Employee Network to support the progress of our organizational goals
- continue to leverage the Aboriginal Awareness web-based training program available for all Suncor employees and contractors to understand the importance of our relationships and partnerships with these key communities
- enable the women's networks across the company
- leverage our annual goal setting process to continue to show our commitment to diversity and inclusion as a priority for the organization

Commitments

Where labour or employment issues arise, we have mechanisms in place for employees to raise concerns in good faith.

Employees can raise an issue with their:

- supervisor
- business unit manager
- legal department
- corporate security representative
- human resources representative
- internal audit

Alternately, employees and contractors can file a report about a suspected violation of Suncor's Business Code of Conduct through our integrity hotline – a third-party service where concerns can be reported anonymously and confidentially.

In certain commercial agreements, we ensure that suppliers have employee policies in place that adhere to legislated employment standards and match our values.

Suncor has a corporate responsibility to respect human rights and to ensure that we are not complicit in human rights abuses. In our human rights policy, we acknowledge that our responsibility to respect human rights applies to all of our activities and to our business relationships with others. The scope of our human rights responsibility includes our own operations and where we can influence our third-party business relationships, those of others.

Goals, targets and actions

We use an integrated workforce planning process which identifies the skills and capabilities we need. This work allows us to strategize for and recruit the right balance of early talent, mid-career employees and senior contributors, which ensures our workforce meets our strategic needs, now and in the future.

Supporting educational institutions

To help build the skills and knowledge needed for careers in trades and operations, we support educational institutions that offer programs that produce qualified individuals for our workforce. Our long-term partnership with Keyano College in Fort McMurray, Alberta, as an example, helps us meet industry needs for tradespeople and operators in the Regional Municipality of Wood Buffalo. Since 1998, the Suncor Energy Foundation has invested more than $4.7 million to support the college with a focus on its mining and operations programs.

Rewards and career opportunities

Suncor is a company where talented people thrive. With a comprehensive rewards package and diverse career opportunities, we attract, recruit and retain some of the most capable individuals in the industry. It takes great people to make a great company, and we value our employees' contributions and hard work.

Our total rewards approach for employees is robust. It includes:

- competitive compensation
- health and insurance benefits
- career development
- pension and savings plans

Rounding out this picture are additional programs designed to enhance quality of life for employees and their families. These include:

- time-off programs
- employee and family assistance
- scholarships for dependent children
- some benefits that accompany employees into retirement

We continue to conduct exit interviews with employees who choose to leave the company. Through these interviews, we learn why employees leave Suncor and how we might minimize employee turnover, which is among the lowest in our industry.

Responsibilities, resources and training

Suncor's senior vice president, human resources, oversees policies and programs relating to our employment practices and reports to the chief executive officer as well as to the Board of Directors.

The corporate human resources team develops tools and provides oversight and consistency to the business units. Business unit vice presidents are directly responsible for the implementation of policies and practices and are supported by human resources (HR) advisors.

We have a central, specialized labour and employee relations team that handles labour and employee relations issues that arise within the business.

These HR professionals are fully dedicated to the delivery of a wide range of labour and employee relations services. This includes:

- leading labour negotiations
- interpreting and administering collective agreements
- administering grievances
- providing information and expertise on employment-related legislation
- conducting harassment and disciplinary investigations, and any resulting actions, up to and including termination of employment

Examples of the technological capital we invest in to manage our workforce are:

- a central system to maintain employee information and manage payroll
- a performance management tool

Suncor is moving towards a single learning technology for all employees and contractors. Released in early 2015, the Suncor Learning Management System integrates with our talent management tools to improve the tracking and reporting of employee competency and related training, including safety, technical and other learning activities, and has room to grow with developments in our learning program.

Evaluation

Monitoring

Human Resources shares a monthly workforce stewardship report with the executive leadership team that provides a point-in-time view of our business and functional unit people statistics and communicates year-to-date changes in our business and functional unit workforce. Other monitoring mechanisms include:

- compliance with our business code of conduct policies (employees and contractors are asked to make an annual affirmation respecting compliance). Online and in-person training is available
- a confidential integrity hotline available for employees and contractors. An internal audit team addresses issues raised and the Board is updated regularly
- labour and employee relations issues are centrally governed and managed locally

About every two years, Suncor encourages employees to participate in an engagement survey as a way to collect feedback on what employees say about:

- working at Suncor
- what drives them to stay with the company
- what degree they go over and above
- what is expected of them in their role

Employees are also given opportunities to provide more immediate feedback on their work or ask questions about the company through:

- regular company-wide town halls
- regular business unit or function town halls
- access to the Employee Centre
- regular check-ins with their leader as part of the annual performance management cycle
- one-to-one sessions with their manager's leader

For in-demand talent segments, the creation and implementation of key strategies will continue to be a focus in order to ensure talent is available. Suncor monitors these segments and continually assesses internal and external health so that our investment in programs is driven by need and risk.

Results

Stewardship of HR program reporting
Every year, human resources information related to senior leadership succession planning, the annual incentive program and executive compensation is shared with Suncor's Board of Directors.

Top-rated employer
We are proud to be recognized as a great place to work. Awards we've achieved include:

- Alberta Apprentice and Industry Training Board's 2016 Employer of the Year
- Glassdoor's Best Places to Work 2016

Through our recruitment campaigns, we continue to attract co-op students, new graduates and experienced people to Suncor.

What we are doing differently

We continue to evolve the work around areas identified for improvement in our employee engagement survey results in 2014, including:

- managing performance
- work processes
- resources (people, tools and systems)
- career opportunities

Across the company, action plans were developed to address two priority themes from those areas:

- improving leadership effectiveness and support
- work processes

The employee engagement survey in 2017 will provide a progress update on the impact of the work in these areas, as well as a view to the current level of engagement of our employees.

How we manage performance

- We align goals annually (through an extensive goal alignment process) and progress is tracked as part of ongoing conversations between salaried employees and leaders, and then formally reviewed at mid-year and year-end. This process creates a clear line of sight for employees to Suncor strategy and prioritized work.
- We emphasize high-quality employee development plans as an important focus area, which is enabled through our annual development goal-setting process.
- Our process includes opportunities for formal and informal feedback on both the “what” and the “how” of performance throughout the year.

Process safety

> Suncor applies the Operational Excellence Management System (OEMS) to manage process safety and reliability. Suncor leverages lessons from internal and external incident investigations to improve process safety and reliability performance. This ensures learnings are embedded in our work practices and mitigating actions are implemented to prevent the reoccurrence of similar incidents. Audits and management reviews are used to ensure Suncor's practices are effective and continuously improve.

Process safety

Suncor is focused on reducing loss of primary containment incidents by assessing incidents and prioritizing gap closure and continuous improvement opportunities. Effective management has ensured alignment across Suncor to identify opportunities and accelerate performance improvement. Recent improvements include updating our management of change, incident management and process hazard analysis standards.

Reliability

Through a robust governance structure, senior leadership sets enterprise priorities and manages initiatives to ensure a focused effort on maintaining and improving reliability. Stewardship of key indicators and benchmarking is an important component to ensure progress and sustainment of reliability elements such as asset criticality assignments, strategies, root cause analysis, work execution, bad actor elimination and Safety Instrumented System integrity.

Safety Instrumented Systems (SIS) improvement

SIS are key controls to mitigate process safety and reliability risks. In 2016, a team of Suncor Process Automation Systems experts continued a multi-year journey to improve SIS management. Through this team, Suncor incorporates industry best practices into existing functional safety management programs to ensure consistency and effectiveness to improve the reliability of these key controls.

Operational controls

Operating Procedures, Safe Work Practices and Operating Envelopes enable our front-line employees to manage operational risks. Suncor continues to raise the bar through the implementation of new standards across the company. Increasing the effectiveness of operational controls helps us manage personal and process safety risks and supports reliability improvement initiatives.

Personal safety

On this page:

> Our environment, health and safety policy states our unwavering commitment to our value of safety above all else.

Our Journey to Zero program asks all employees and contractors to honour our beliefs and commitments:

- all incidents can be prevented
- to work here you must be committed to working safely
- leadership is accountable for environment, health and safety performance
- we deliver on our commitments
- our Operational Excellence Management System (OEMS) enables environmental, health and safety excellence

We're working to continuously learn, share and improve personal safety efforts by embedding safety leadership into our culture, fully engaging all employees in safety and providing a safe work environment for all employees and contractors. Our EH&S Policy was reviewed and re-approved during 2016. Doing so is more than a formality. It's an opportunity to reaffirm our commitment to putting safety above all else.

Read more about our environment, health and safety policy

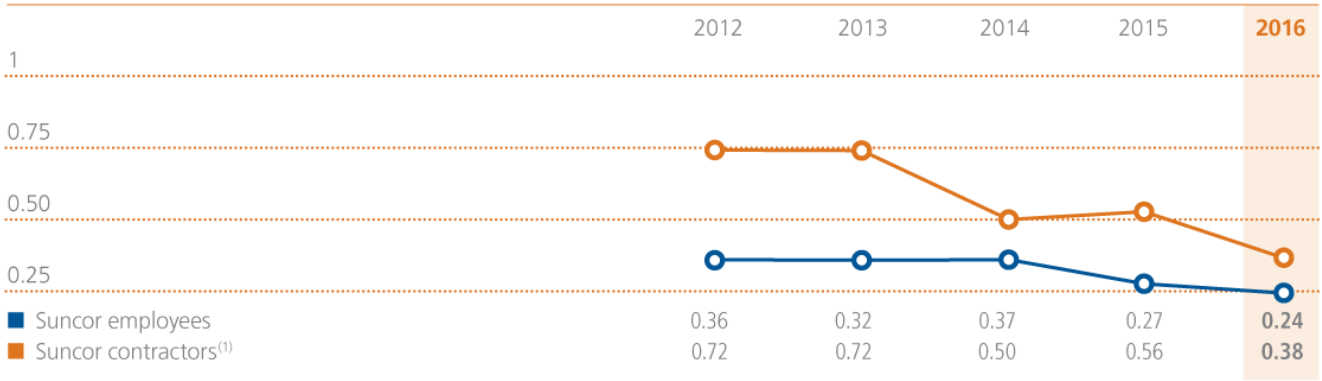
Read more about our Journey to Zero program

Expand all | Collapse all

A sustained commitment from people at every level of the company – people who champion and cultivate a culture of safety all day, every day – made 2016 a strong year for safety at Suncor.

Our 2016 combined employee and contractor recordable injury frequency (RIF) performance of 0.33 was favorable to the 2016 target of 0.44. This is a record for Suncor and an improvement of 27% over the preceding two years. Our lost time injury frequency (LTIF) from 2016 was 0.04, same as was reported last year.

RECORDABLE INJURY FREQUENCY*
(injuries per 200,00 hours worked)



	2012	2013	2014	2015	2016
Suncor employees	0.36	0.32	0.37	0.27	**0.24**
Suncor contractors(1)	0.72	0.72	0.50	0.56	**0.38**

* The number of recordable injuries (including medical treatment, restricted work and lost time) multiplied by 200,000 (based on 100 workers working full time divided by the actual exposure hours. This tells us how many people are injured for every 100 workers in a calendar year.
(1) Contractors refer to any organization, company or individual who provides goods and/or services to Suncor. Prime contractor incident data is excluded from this metric.

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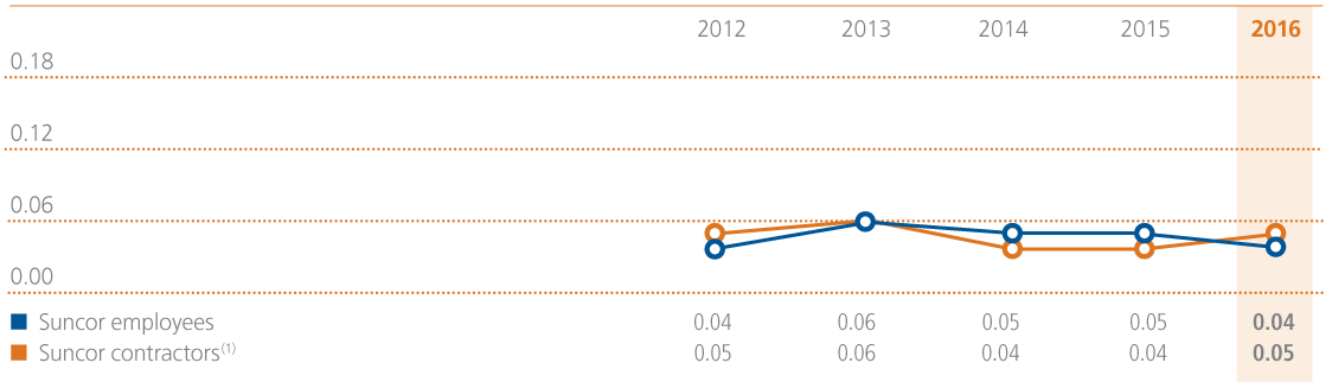
LOST TIME INJURY FREQUENCY*
(injuries per 200,00 hours worked)



	2012	2013	2014	2015	2016
Suncor employees	0.04	0.06	0.05	0.05	**0.04**
Suncor contractors(1)	0.05	0.06	0.04	0.04	**0.05**

* Lost time injury is a work related injury that results in lost days from work. Fatalities are included in lost time injuries. Frequency is calculated as the number of lost time injuries multiplied by 200,000 (based on 100 workers working full time for 1 year) divided by the actual exposure hours. This tells us how many people are injured for every 100.
(1) Contractors refer to any organization, company or individual who provides goods and/or services to Suncor. Prime contractor incident data is excluded from this metric.

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Safety initiatives

We promote workforce safety dialogues and participation through various activities and processes, including:

- procedures to secure site access and ensure we know who's working on our sites
- safety meetings to exchange information, concerns and increase safety awareness
- toolbox talks at work sites focused on specific hazards
- regular safety stand-down sessions to reflect on performance and reinforce our commitment to safety
- a dedicated management system outlining requirements for reporting, investigation and management of incidents, hazards and near misses

Other initiatives include the Serious Injury and Fatality (SIF) prevention strategy. SIF incidents have been tracked and reported for over a year, helping us to identify our top precursors (hazardous situations in which management controls are either ineffective or not complied with, and which could reasonably result in a serious injury or fatality, if allowed to continue). Recognizing the precursors, learning from these incidents, and taking corrective actions is the key to preventing SIF incidents.

Consequently, we completed an enterprise-wide 'dropped/unsecured objects at height' safe-work practice (SWP), based on lessons learned from the past year and best practices across Suncor and the industry. During the last quarter of 2016, Suncor also established a new Community of Practice (CoP), specifically for SIF. This group will lead the charge on SIF reduction, using the SIF reduction road map as its guide.

By the end of 2016, we also completed our enterprise-wide implementation of Enablon, Suncor's new tool for incident and corrective action management. Moving forward, our focus shifts to furthering our competence with incident and hazard reporting, investigations and root-cause analysis. We can then better track trends from a growing pool of quality data, allowing us to address our greatest operational risks.

We also launched the 'On Second Thought' campaign, to encourage reporting and educate ourselves on what should be reported.

Raising the bar on workplace safety

Concrete measures are being taken to move us further along our Journey to Zero. Our plan for 2017 includes:

SIF reduction

Our SIF reduction road map for 2017 was approved. To reduce – and eventually eliminate – SIF incidents (actual and potential) we are working on:

- strengthening controls for our top three precursors
- aligning on tools for field verification of controls for top precursors
- compiling lessons learned from 2016 SIF incidents through the production of a SIF yearbook and sharing the lessons across the enterprise

Contractor safety

Contractor safety performance improved in 2016 but continues to lag behind that of Suncor employees. An initiative to improve our process and tools for, and competence in, managing contractor safety has been underway for a year. Last year, we focused on building strong solutions. In 2017, we will move to solution implementation. Other areas of focus are:

- ensuring strong hazard assessment on work scope
- requesting and assessing value-adding contractor safety plans
- ensuring sound management of contractors as they perform their work

Incident management and corrective actions (IM/CA) – next steps

We continue to encourage everyone to report all incidents and hazards, and enter accurate and quality information into the new Enablon tool. In addition to monitoring the tool to identify and close data gaps, we will also focus on building competence in key IM/CA processes. This includes how we conduct investigations, perform root-cause analyses and create strong corrective actions. Closing these gaps will enable us to track trends from a growing pool of data to better understand our operational risks, identify new ones and address those with potential for greatest harm.

Occupational health and wellness

On this page:

> In support of our Journey to Zero, we work towards improving and maintaining the personal health and well-being of our employees with the prevention of illnesses and injuries, identifying potential occupational health risks and proactively monitoring working environments to minimize potential hazards.

Medical monitoring programs

Medical monitoring programs are used for workers who are at risk of exposure to potential health hazards. This is coupled with ongoing industrial hygiene sampling to proactively measure workplace exposures and provide exposure control solutions.

Integrated disability management

Our integrated disability management program involves early intervention to positively alter the course of medical absence due to an illness or injury, for both occupational and non-occupational injuries and illnesses. The program uses a multi-disciplinary and collaborative approach, working with the employee, the employee's medical practitioners and the supervisor to facilitate early, safe and productive return to work.

Promoting wellness and healthy lifestyles

Promoting wellness and healthy lifestyles is part of our safety commitment to employees and contractors. We have programs that are tailored to specific business needs and environments. These include our annual influenza vaccination program and ergonomics workshops.

Employee and Family Assistance Program (EFAP)

The Employee and Family Assistance Program (EFAP) is a confidential and voluntary support service that is offered to our employees and immediate family members to help them with personal issues. Offering expert information and immediate support resources to help with work, health and life challenges, the EFAP provides both short-term clinical counselling and work/life consultations. EFAP is available 24/7 with simple access via phone, web, mobile app as well as in-person counselling.

Read about our benefits programs

Alcohol and Drug policy

Alcohol and drugs can adversely affect a safe work environment.

Our Alcohol and Drug policy aims to minimize risks in the workplace associated with alcohol and drug use and ensure our workers are fit for duty. It outlines specific responsibilities, requirements and expectations to adequately mitigate the workplace risks associated with alcohol and drugs.

Alcohol and drug dependencies are treatable illnesses. We encourage employees who suspect they have a substance dependency or an emerging alcohol or drug problem to seek immediate assistance and follow appropriate treatment. In cases where there is an alcohol and/or drug dependency, we support employees through any treatment program recommended by an approved substance-abuse professional.

Building talent

On this page:

We help our employees and leaders build skills and knowledge to master the roles they're in today as well as prepare them for their next and future roles.

Our employees build their skills through development goals that align to their career aspirations and to our business needs and priorities. Suncor's approach to learning and development is grounded in a 70/20/10 development formula which states that development occurs in three main ways:

- 70% from real life and on-the-job experience
- 20% from feedback and observing and working with role models
- 10% from formal training

Helping people continue to develop is key to high performance and the company achieving its goals.

Watch our employee testimonials

Navigating career development

Our company offers a variety of career paths for operations, technical, professional and leadership streams. The Career Compass is a tool that gives insight into various career paths at Suncor and the different ways people can move into a new position or organizational level, or stay in their current role for a satisfying career.

Within the career tool, there are many resources that help identify potential career paths. It also shows how others have navigated their careers at Suncor and gives a standard way to talk about career and development.

The Career Compass, along with other resources in our development toolkit, supports our ability to retain and engage people to meet our business needs.

Educational assistance programs

This program provides financial support to employees who want to build skills and knowledge applicable to their current position or future aspirations. Currently, the program is available to employees who must complete external training or coursework to attain or retain required certification for their position.

We also offer a company-wide scholarship program to help employees' children access post-secondary education.

Developing our leaders

Suncor has a succession-planning process that identifies and prepares those employees with the capability and interest to take on more senior leadership roles. In doing so, we ensure business continuity as roles become vacant, we proactively plan for leadership roles that are critical to executing our business strategy and build the talent we need for the future from within the company.

Orienting and onboarding new leaders

Suncor's leader onboarding program helps new front-line leaders in their first 90 days in the role. This program offers a comprehensive suite of tools and resources to assist new leaders in their transition from individual contributor to leader, or from external hire to new leader.

Managing performance and development

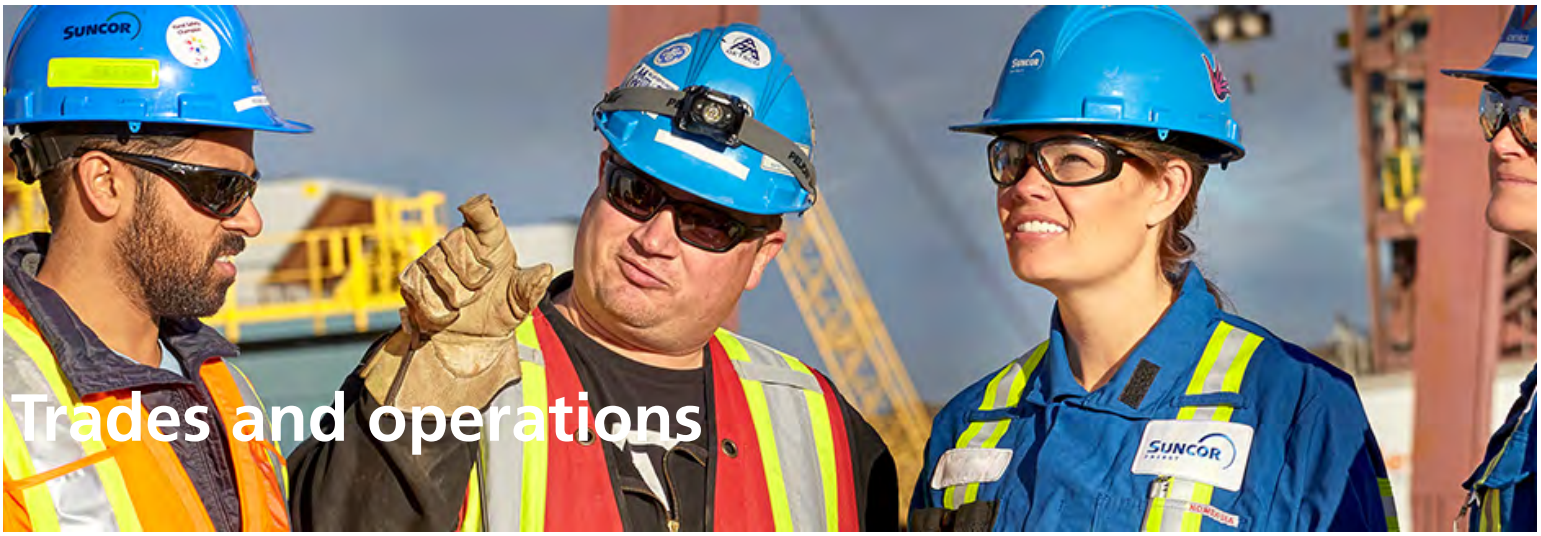
Performance management also helps align our employees to the strategic goals of the organization through our goals translation and goal planning processes. It is through these guided discussions with their leader that employees understand how their work contributes to the overall goals, what their performance expectations are and how their performance will be measured. Our process includes opportunities for formal and informal feedback on both the "what" and the "how" of performance throughout the year.

Effective performance management:

- ensures performance is meeting expectations
- provides an opportunity for leaders to recognize and reward performance
- gives leaders the information they need to support employees' ongoing development
- helps the organization to meet its strategic objectives

To support the process, salaried employees across the company use an online tool as a repository for all talent information and to document the following:

- **Goal setting:** Leaders work with employees to establish and agree upon goals and make sure individual goals align with those of the business, as well as personal development needs and aspirations.
- **Manager-once-removed discussions:** an annual opportunity for employees to meet with their leader's leader to discuss the employee's work, career aspirations and development goals.
- **Mid-year reviews:** a mid-year check-in between employees and their leader to see if they are on track to meet goals and to identify any challenges.
- **Year-end performance review:** employees meet with their leader to go over performance and measure their results. This discussion forms the basis for our salaried employees' performance rating and associated rewards.
- **Live profile:** Employees can document their experience, education, aspirations and ability to relocate for new roles and other specific skills in an online tool. This information – visible only to the employee's leader and leader's manager – supports effective discussions about an employee's experience, interests, aspirations and career development.
- **Training requirements:** Employees and leaders access courses and development opportunities through a centralized hub called the Learning Management System.



Trades and operations

On this page:

As oil prices stabilize, business and industry continue to prepare for the long-term need to fill trades and operations roles in the construction and oil and gas sectors, including when baby boomers retire from the workforce. We have developed a proactive approach to managing these workforce needs today and into the future.

We believe in hiring in the communities where we operate. But not all of our recruitment needs can be filled locally. Where we have remote camp-based operations, we recruit both locally and from outside of Alberta. Employees and contractors travel to and from these work sites from various cities.

Our multi-pronged approach is the best way to meet our workforce demands.

Building awareness of career opportunities for trades and operations

Along with our industry partners, we work to build awareness of career opportunities and the important role tradespeople and operators play in our industry and across the Canadian economy.

This includes telling an authentic and compelling employment story in print, traditional, digital and social media. It also means engaging a broader and more diverse workforce to explore career options within the sector.

We accomplish this work through supporting key Suncor Energy Foundation (SEF) partners that help to build the skills and knowledge needed in the workforce such as:

- Women Building Futures: an organization based in Edmonton, Alberta, which specializes in training women for careers in the heavy industrial workforce, including heavy equipment operators.
- CAREERS: The Next Generation: an organization based in Edmonton, Alberta, that works throughout the province to introduce youth in high school to rewarding career opportunities and to develop the skilled workers of the future through their apprentice and co-op programs.

- Indspire Institute: an Indigenous-led registered charity that invests in the education of Indigenous people for the long-term benefit of these individuals, their families and communities, and Canada. Among other programs, the SEF supports their Apprenticeships, Skilled Trades and Technology scholarship programs.

We also look to inform all Canadians about our industry and showcase the variety of employment opportunities available to them. We partner with groups like Calgary Economic Development and the Edmonton Economic Development Corporation to help tell the Alberta labour story nationally and internationally in an effort to help attract qualified labour to the province.

Our executive team also plays an important role in sharing the industry's employment story. Through our Speakers Bureau program, executives provide speeches and presentations to a variety of stakeholder groups across North America and beyond.

Encouraging careers in the trades and operations

To help build skills and knowledge needed for careers in trades and operations, we support educational institutions that offer programs that feed our workforce.

- Through the SEF and the company, we have a long-term partnership with Keyano College in Fort McMurray, Alberta. to help meet industry needs for skilled trades in the Regional Municipality of Wood Buffalo. Since 1998, we have invested more than $4.7 million to support this partnership. Our contribution primarily supports the college's mining and operations programs.
- Through our talent recruiting program, we visit schools across Canada each year, talking with students about trades, operations and technical careers in the energy sector.
- We also work with organizations like Skills Canada Alberta to educate youth, parents and high school counsellors about opportunities to work in trades, including the Skills in the Classroom Program.

Having information about opportunities in trades and operations is particularly important to youth as they make decisions about future career opportunities.

Once someone has made the decision to pursue a career in trades or operations, we support their development.

- We hire apprentices and support them as they develop essential skills required to become a full-fledged journeyperson. This commitment to career progression is key to building a workforce that supports us in achieving our high safety and reliability standards.
- We participate in Alberta's Registered Apprenticeship Program. This program is designed for high school students who know they want to pursue a career in the trades. Participating students have the opportunity to earn school credit for their apprenticeship and divide their time between an approved work site, like ours, and their high-school studies. In 2016, the Alberta Apprentice and Industry Training Board (AIT) named Suncor as the 2016 Employer of the Year for Alberta's north region, recognizing Suncor's support for and participation in the province's apprenticeship and industry training programs.
- In partnership with Southern Alberta Institute of Technology (SAIT), the SEF supports a blended learning program that allows apprentices to learn through online modules while on the job site. This saves time for students as they only need to come to campus for the lab and testing phases of their training. It also offers SAIT more training capacity and more options for using its physical space.
- We partner with Lambton College, in Sarnia, Ontario, by supporting its chemical/power engineering training programs that help meet the needs of industry in Eastern Canada. The SEF has provided funding to support their Centre of Excellence in Energy and Bio-Industrial Technologies – building on previous support of the college's Suncor Sustainability Centre, which has become a focal point for sustainability initiatives and programs in the Sarnia-Lambton region.

Participating in collaborative solutions

We're proud to collaborate with other companies in our industry to attract qualified people. We, along with five other oil sands construction owners, have formed the Association for Construction Worker Acquisition (ACWA) to work with government to address the ongoing demand for skilled construction workers in the Alberta oil sands region. ACWA's chair is Ron Genereux, vice president, productivity and construction at Suncor.

Construction industry leaders from across Canada continue to support BuildForce Canada, a national organization to help keep a steady flow of highly skilled workers available to the construction industry.

We are also a member of the Alberta Council of Turnaround Industry Maintenance Stakeholders, which is a not-for-profit organization representing:

- three major oil sands owners (Shell, Syncrude and Suncor)
- various industrial maintenance contractors
- the building trades labour providers

This unique collaboration benefits both the industry and the people qualified to work in the heavy industrial maintenance industry.

The benefit to prospective tradespeople and operators is that their résumé is shared with and reviewed by many contractors. This gives them the opportunity to work on multiple sites, one after the other. Industry benefits include timely acquisition of skilled and qualified workers for the owners' turnaround maintenance events.

Lastly, we're involved in the Construction Association of Alberta, a forum where best practices and learnings are shared to enhance the construction industry at all levels.

Unions and agreements

Wherever we do business, we respect the right of eligible employee groups to choose representation by a bargaining agent. Where employee groups have made that choice, we bargain in good faith to reach and renew collective agreements that balance the needs of the business and represented employees with settlements reflecting current economic and business realities.

Existing collective agreements

Approximately 4,350, or nearly one-third of our employees, are covered by collective agreements and about 90% of our represented employees are members of Unifor, which represents workers in oil sands, in situ, refining, distribution and Canadian offshore operations. The majority of our represented employees are covered by collective agreements linked to a national agreement with Unifor. The majority of current collective agreements expire in 2019.

Performance data

On this page:

Report framework

This report has been prepared based on the Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines and Oil & Gas Sector Disclosures to the Core option. It represents a balanced and reasonable presentation of our company's social, environmental and economic performance.

Steve Williams

president and chief executive officer

Boundary conditions

We measure progress by monitoring selected performance indicators. These indicators provide insight on the environmental, economic and social impacts and benefits of our business and are used to continuously improve performance.

The performance data section of our 2017 Report on Sustainability includes social, environmental and economic performance indicators from the 2016 reporting year. Data is reported by significant operating business segments and consolidated to Suncor-wide totals, where feasible. A five-year trend is provided, where applicable.

Environmental performance indicators are reported on operated assets only, unless otherwise stated. Economic performance indicators are reported in a manner consistent with our 2016 Annual Report (PDF, 161 pp., 1.74 MB).

Select 2016 economic indicators have been calculated according to the International Financial Reporting Standards (IFRS).

Footnotes available in performance data tables provide additional information for specific boundary conditions, changes in methodology and definitions.

Third party assurance

Ernst & Young LLP was engaged to provide independent assurance on selected performance indicators for Suncor's Report on Sustainability for the year ended Dec. 31, 2016.

Read the Independent Assurance report and the performance indicators reviewed (PDF, 3 pp., 255 KB)

Any data point that is accompanied by the **A** symbol has been independently reviewed and assured by Ernst & Young LLP.

Performance indicators

Business segment structure changes and explanations on re-statements or changes to historical data are reflected accordingly in the introductory statements for the following:

- Suncor-wide (rollup of all data where relevant and applicable)
- Oil Sands (includes the oil sands mining and upgrading facility but does not include Syncrude)
- In Situ (includes Firebag and MacKay River)
- Exploration & Production (see additional information below) – reported as:
    - North America Onshore
    - East Coast Canada (Terra Nova offshore platform only)
- Refining & Marketing (R&M) (facilities include the Montreal, Edmonton, Commerce City and Sarnia refineries, the Montreal sulphur plant and various Canadian pipelines and terminals. See additional information below)
- Renewable Energy – reported as:
    - St. Clair ethanol plant
    - Wind (Suncor-operated wind energy facilities)
- Major Projects

When data for performance indicators was not available a line entry (--) appears in the table.

Exploration & Production

Suncor's Exploration & Production (E&P) segment consists of offshore operations off the east coast of Canada and in the North Sea, and onshore assets in North America, Libya and Syria.

These include:

E&P Canada:

- White Rose
- Hibernia
- Hebron
- Terra Nova
- Unconventional natural gas properties in Western Canada.

E&P International:

- Buzzard and Golden Eagle offshore projects (U.K. sector of the North Sea)
- Syria and Libya facilities (Note: operations in Syria have been suspended indefinitely due to political unrest in the country. Production in Libya has been substantially shut-in due to political unrest, with the timing of return to normal operations remaining uncertain).

As Suncor is the operator and has significant impact over the Terra Nova platform off the east coast of Newfoundland, only environmental performance indicators for this facility are included in the East Coast Canada performance indicator section of this report. Environmental indicators for other joint ventures not operated by Suncor are not included.

Refining & Marketing

Our lubricants business, including the lubricants plant located in Mississauga, Ontario, was sold in early 2017. For the purposes of this report, performance indicators from this facility are included for the 2016 reporting year.

Suncor is part of several joint ventures in our Refining & Marketing segment, including the Sun-Canadian Pipe Line Company Limited, UPI Energy LP, Pioneer Petroleum, Trans-Northern Pipeline, Portland-Montreal Pipeline, Alberta Products Pipeline (APPL), Sun Petrochemicals, ParaChem Chemicals L.P. (ParaChem), and with numerous terminal sites.

As Suncor has control and significant impact over the Sun-Canadian Pipeline Company Limited, applicable performance indicators for this entity are included in the Refining and Marketing performance data section.

Suncor holds a 51% interest in ParaChem, which owns and operates a petrochemicals plant located adjacent to the Montreal refinery. Suncor does not exercise significant control or influence over this wholly independent operation, despite the majority ownership position. This investment is not deemed to pose a significant risk to Suncor’s sustainability performance, and thus is also not included in the performance indicators.

Suncor-wide

This 2017 Report on Sustainability summarizes our sustainability performance for the 2016 reporting year and provides five-year performance trends on consolidated social, environmental and economic data, where possible.

Expand all | Collapse all

Environment

Filter display

The A symbol (**A**) reflects data that has been assured by a third party. View a complete list of reviewed data to confirm the performance indicators that have been assured.
In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Production								
Upstream processed volumes and net production	million barrels of oil equivalent / year	A	OG1	176.39	186.64	162.03	171.63	**152.40 A**
Upstream processed volumes and net production	million cubic metres (m^3) of oil equivalent / year	A	OG1	28.04	29.67	25.75	27.29	**24.23 A**
Downstream net production	million m^3 refined product / year	B	OG1	27.46	27.35	27.16	27.62	**27.23 A**
Total upstream and downstream production	million m^3 / year	C	OG1	49.09	49.79	45.38	48.24	**44.71 A**
Air emissions		D						
Greenhouse gas (GHG)	thousand tonnes carbon dioxide equivalent (CO_2e)	E	G4-EN15 G4-EN16	20,257	20,535	20,468	20,480	**18,739 A**

GHG emissions intensity	tonnes CO_2e/m^3 OE production	F	G4-EN18	0.41	0.41	0.45	0.42	**0.42 A**
Indirect (Scope 3) GHG emissions	thousand tonnes CO_2e	G	G4-EN17	1,594	1,628	1,466	1,549	1,623
Sulphur dioxide (SO_2)	thousand tonnes		G4-EN21	28.5	23.2	23.1	18.4	21.1
SO_2 emission intensity	kilograms/m^3 production		G4-EN21	0.58	0.47	0.51	0.38	0.47
Nitrogen oxides (NO_x)	thousand tonnes		G4-EN21	36.2	33.3	27.8	27.9	24.9
NO_x emissions intensity	kilograms/m^3 production		G4-EN21	0.74	0.67	0.61	0.58	0.56
Volatile organic compounds (VOCs)	thousand tonnes		G4-EN21	22.7	13.4	17.5	21.1	19.5
• Benzene	tonnes		G4-EN21	87.2	95.23	88.0	89.6	86.9
National Pollutant Release Inventory (NPRI) on-site releases	thousand tonnes	H	G4-EN21	115.4	82.87	96.7	104.5	101.6
Energy consumption		I						
Energy use	million gigajoules (GJ)	J	G4-EN3 G4-EN4	282.4	299.3	304.3	310.4	285.8
• Direct energy use	million GJ	J	G4-EN3	269.8	291	296	301	276
• Indirect energy use	million GJ	J	G4-EN4	12.51	8.37	8.24	9.78	10.02
Energy intensity	GJ / m^3 production	J	G4-EN5	5.75	6.01	6.70	6.44	6.39
Water use								
Total water withdrawal	million m^3	K	G4-EN8	143.63	155.91	149.27	142.47	**162.18 A**
• Surface water withdrawal	million m^3		G4-EN8	110.88	113.02	116.36	118.92	124.78
• Groundwater withdrawal	million m^3		G4-EN8	3.2	3.04	2.1	2.72	2.51
• Municipality / city / district water withdrawal	million m^3		G4-EN8	4.14	4	3.49	4.27	4.22
• Treated waste water withdrawal	million m^3	L	G4-EN8	2.7	1.54	1.29	1.51	1.37
• Industrial run-off water withdrawal	million m^3	M	G4-EN8	22.71	34.3	26.03	15.05	29.30
Surface water withdrawal intensity	million m^3		G4-EN8	2	2.27	2.56	2.46	2.79
Groundwater withdrawal intensity	million m^3		G4-EN8	0.06	0.06	0.05	0.06	0.06

Municipality / city / district water withdrawal intensity	million m^3		G4-EN8	0.07	0.08	0.08	0.09	0.09
Total water withdrawal intensity	m^3 / m^3 production		G4-EN8	2.59	3.13	3.29	2.95	**3.63 A**
Total water returned	million m^3		G4-EN22	87.06	97.14	101.22	97.46	105.12
Water consumption	million m^3	N		56.57	58.77	49.14	45.33	57.19
Water consumption intensity	m^3 / m^3 production			1.02	1.18	1.08	0.94	1.28
Waste management		O						
Hazardous waste generated	thousand tonnes		G4-EN23	2,086.49	2,230.90	2,298.70	1,992.12	1,981.50
Non-hazardous waste generated	thousand tonnes		G4-EN23	434.63	235.34	213.87	398.97	166.73
Drilling waste disposed or treated	thousand tonnes	P	OG7	63.19	116.1	126.9	70.3	0
Waste recycled, reused, or recovered	thousand tonnes		G4-EN23	125.22	96.95	88.72	135	123
Products and services								
Ethanol blended in gasoline	thousand m^3		G4-EN27	979	828	1,000	1,027	1,135
Sulphur content of gasoline	parts per million (ppm)			25.8	22.7	18.7	15.7	15.3
Compliance								
Regulatory contraventions		Q	G4-EN29	171	89	63	51	18
Regulatory fines	thousand $	R	G4-EN29	2,366	130	2,257	908	265
Total volume of reportable spills	m^3		G4-EN24	2,419	3,134	2,949	6,335	5,763
Environment, Health & Safety (EH&S) management								
EH&S professionals on staff		S	G4-EN31	356	374	361	315	311

Suncor-wide Environment Footnotes

A Upstream production includes: Oil Sands, North America Onshore, In Situ and East Coast Canada.

Transfers between In Situ and Oil Sands have been removed from the Suncor-wide total.

Barrels of oil equivalent and cubic metres of oil equivalent may be misleading as an indicator of value. See "Advisories".

B Downstream production data includes saleable yield from Refining & Marketing Canada and Refining & Marketing U.S.A. Data from Suncor's Refining & Marketing (R&M) business units and the St. Clair ethanol plant. Transfers within R&M have been removed from downstream production. Wind, Terminals, Pipelines and the Montreal Sulphur plant do not contribute to R&M production or Suncor Wide production, due to the definition of the corporate wide production metric.

C The sum of upstream and downstream net production minus upstream to downstream transfers. Production numbers found in Suncor's annual report are for upstream volumes only and include production from non-operated assets.

This differs from production numbers used in Suncor's Report on Sustainability, which include only operated facilities, but also include downstream volumes. Sustainability reports net production on a facility basis, which is a measure of total saleable product.

D Emissions from the production of crude oil, natural gas, natural gas liquids, ethanol and refined products. Emissions are also inclusive of the production of retail products at the Mississauga, Ont. lubricants facility (which was sold in 2017), Canadian Terminals, Alberta Pipelines and the Montreal Sulphur Plant.

E Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions within which each facility is required to report GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exist, then the most applicable and accurate methods available are used to quantify each emission source.

This report uses global warming potentials (GWPs) from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (2007) to convert individual GHGs into CO_2e units.

F Suncor-wide GHG intensity is calculated using total upstream and downstream production minus transfers between upstream and downstream business units.

G Indirect Scope 3 GHG emissions reported here include GHG emissions reported for R&M consisting of purchased hydrogen and CO_2 streams we produce that are sold to third parties for further processing as well as corporate wide emissions from:

- commercial air travel
- Sunjet travel
- Sunjet chartered flights
- leased buildings (Suncor Energy Centre, Sheridan Park and Suncor Business Centre)
- ground transportation services for employees and contractors in Fort McMurray
- licensed Canadian fleet vehicles

In 2013 it was brought to our attention that industry best practice for disclosing emissions associated with the purchasing of hydrogen should be classified as a Scope 3 indirect source as they do not fall under the Scope 2 indirect emission categories of purchased electricity, purchased steam, purchased heating or purchased cooling. Therefore emissions from purchased hydrogen are reported as a Scope 3 indirect source and are not reported as a Scope 2 indirect emission source.

The breakdown for 2016 includes:

- facilities: 7,024 tonnes of CO_2e
- ground transportation: 15,289 tonnes of CO_2e
- Canadian light truck fuel fleet: 2,793 tonnes of CO_2e
- business travel: 27,196 tonnes of CO_2e (applies to both commercial air travel and Sunjet scheduled and chartered flights)
- Hydrogen purchased from third parties: 1,338,778 tonnes of CO_2e
- CO_2 sold from our facilities to third parties: 260,345 tonnes of CO_2e

Based on the defined scope, Suncor's 2016 Scope 3 emissions were 1,651,425 tonnes of CO_2e.

H National Pollutant Release Inventory (NPRI) on-site releases include all NPRI-reportable nitrogen oxides, sulphur dioxide, total volatile organic compounds, carbon monoxide and total particulate matter.

More information about the Toxic Release Inventory (TRI) can be found on the Environmental Protection Agency website. Beginning in 2015, TRI releases are no longer reported in our Report on Sustainability.

View Suncor's submissions to the:

- Facility Reported Data on the National Pollutant Release Inventory (NPRI)
- U.S. Toxins Release Inventory (TRI) program

I Energy consumption by source is not reported at this time.
Suncor-wide total energy is inclusive of all Suncor operated assets and is reported on a lower heating value (LHV) basis.

J Total energy is equal to the sum of direct and indirect energy.

Direct energy is primary energy consumed on-site by Suncor operated facilities.

Indirect energy includes imported electricity, steam, heating and cooling duty from third parties. The indirect energy calculation methodology was changed to credit operations for electricity exported to external users and/or other Suncor facilities. The facility that exports the electricity subtracts the equivalent gigajoules of electricity from their indirect energy use. The facility that receives the electricity counts it as a Scope 2 indirect energy use, regardless of source. Suncor's renewable operations produced over 107,000 MWh (0.38 million GJ) to the Alberta and Ontario power grids from operated wind farms. This power then ultimately supplies Suncor's operations in Alberta and Ontario with renewable electricity through the provincial power grids.
Energy intensity is calculated using total energy consumed divided by total upstream and downstream production.

K Includes all water withdrawn from rivers, groundwater wells, industrial runoff and water purchased (municipality/city/district), either permanently or temporarily.

L As per GRI guidance, the volume of treated wastewater transferred between Suncor facilities has been reported in the water withdrawal total for the facility sending the water. It is not included in the water withdrawal total for the facility receiving that water.

M Industrial runoff water is included as water withdrawn for all relevant facilities.

N Water consumed is the quantity of water used and not returned to its proximate source or no longer available for use. Includes water used and/or retained within an operation.

O Based on reclassification of waste streams for 2014 for our in situ facilities, the total value of hazardous waste generated would be 2,298.52 thousand tonnes.

P This is inclusive of drilling mud waste from drilling operations. This value has not been captured in the hazardous waste generated and non-hazardous waste generated values.

Q A regulatory contravention is an environmental incident that breaches a regulatory limit (prescribed threshold required by legislation, approval or permit from a regulatory authority) or requirement (any law, act, regulation, licence, standard, approval, directive and/or permit applicable to Suncor's activities) and that triggers formal regulatory reporting.

R Data includes regulatory fines related to environmental contraventions paid during the stated year. Details of regulatory fines can be found on applicable performance pages, by business area.

S Professionals (not including Professional Services Agreements (PSAs) and non-positioned contractors) dedicated to environment, health or safety matters, including the corporate office, Major Projects and personal and process safety management. Beginning in 2014 the Operational Excellence Management System (OEMS) enablement group was added to this total. As of 2015, this indicator is only reported at a Suncor-wide total.

Economic[1]

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Economic value generated and distributed		T						
Revenues and other income	$ millions		G4-EC1	38,526	40,297	40,490	29,680	26,968
Operating, selling and general expense (OS&G)	$ millions	U	G4-EC1	8,897	9,462	9,541	8,607	9,150
• Employee costs	$ billions	U	G4-EC1	3.2	3.3	3.4	3.3	3.4
Royalties and taxes paid	$ millions	V	G4-EC4	3,828	3,347	5,259	1,805	105
Community investments	$ thousands	W	G4-EC1	22,619	30,594	27,246	26,346	35,496
Distribution to shareholders	$ millions		G4-EC1	1,411	1,826	2,267	2,565	2,889

• Dividends paid on common shares	$ millions		G4-EC1	756	1,095	1,490	1,648	1,877
• Share capital issued under dividends reinvestment plan	$ millions		G4-EC1	15	28	38	47	0
• Interest expense on debt	$ millions		G4-EC1	640	703	739	870	1,012
Economic value retained								
Economic value retained	$ millions	X	G4-EC1	–	–	23,396	16,677	14,789
Other financials								
Market capitalization (debt plus equity)	$ billions		G4-9	60	66	66	67	89
Capital and exploration expenditures	$ millions	Y	G4-EC1	6,957	6,777	6,961	6,667	6,582
Taxes and royalty credits earned	$ millions	Y	G4-EC4	31.56	31.1	21.8	11.3	14.9
Political donations	$ thousands	Z	G4-EC1 G4-SO6	80.1	73.4	95.6	14.6	2.9
Purchases								
Goods and services	$ millions	AA		11,220	11,487	11,951	12,797	11,905
Goods and services purchased in or from:								
• Canada	$ millions			10,284	10,584	10,915	11,178	10,632
• Local businesses and suppliers	$ millions	AA	G4-EC9	5,536	3,498	4,920	4,504	3,732
Aboriginal spend	$ millions	BB	G4-EC9	284	431	463	599	445

Suncor-wide economic footnotes

1 Select economic figures have been calculated according to the International Financial Reporting Standards (IFRS). For complete disclosure of our financial information, see our 2016 Annual Report (PDF, 161 pp., 1.8 MB)

T To better align with the Global Reporting Initiative guidelines, economic indicators are aligned with G4-EC1 in calculating the economic value generated, distributed and ultimately retained.

U OS&G expenses are subject to historical restatements due to reclassifications within our income statement. Employee costs are reported in our Annual Report under Operating, Selling & General and include salaries, benefits and share-based compensation. Typically a portion of employee costs are capitalized as part of fixed assets.

V Monies remitted to government, including income, property, and other taxes; Crown royalties; and lease bonuses and rentals.

W Data reported for 2014-2016 were calculated by Suncor and the Suncor Energy Foundation (SEF). Values are not defined by the London Benchmarking Group (LBG) model as it is no longer an accurate reflection of our programs and strategies. 2012 to 2013 community investment values were reported according to this model.

X 2014 was the first year that Suncor reported economic value retained, to better align with GRI reporting guidelines. This reflects the direct economic value generated (revenues) minus economic value distributed (operating costs [including employee costs), taxes and royalties paid, distribution to shareholders and community investments).

Y Capital and exploration expenditures reported here includes capitalized interest.
Taxes and royalty credits earned includes the Investment Tax Credit on Scientific Research and Experimental Development Expenditures, Deep Gas Royalty Holiday Program and Alberta Royalty Tax Credit. The decline beginning in 2014 is due to decreased drilling activity by North America Onshore, resulting in lower royalty credits.

Z Alberta's Government no longer allows union or corporate donations, as of June 2015. As such our contributions were considerably less in 2015. As of June 1, 2016, Suncor no longer makes political contributions as a matter of policy, except in exceptional circumstances. Any such contributions will continue to be disclosed in this report. For more information, see the GRI Content Index page of this report, under G4-SO6.

AA Goods and services: 2013 and 2014 local spend excludes Oil Sands operations and Major Projects, due to data management capabilities of tracking local spend in these business areas.

Suncor-wide spend excludes Syria and Libya.

BB Aboriginal businesses include those:
- with a minimum of 51% ownership by Aboriginal individuals or organizations

Values reported for Aboriginal supplier revenues earned from 2012-2013 include GST. Beginning in 2014, values reported reflect amounts captured in our enterprise software data management system, minus 5% GST.

Inclusion of contracts in the reporting year is based on the payment date, not the date of services rendered.

Data includes Aboriginal spend across Suncor's operations Canada-wide.

Social

Filter display

The A symbol (**A**) reflects data that has been assured by a third party. View a complete list of reviewed data to confirm the performance indicators that have been assured.
In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Health and safety		CC						
Employee lost-time injury frequency		DD	G4-LA6	0.04	0.06	0.05	0.05	0.04
Contractor lost-time injury frequency		DD	G4-LA6	0.05	0.06	0.04	0.04	0.05
Employee recordable injury frequency		EE	G4-LA6	0.36	0.32	0.37	0.27	0.24
Contractor recordable injury frequency		EE	G4-LA6	0.72	0.72	0.50	0.56	0.38
Fatalities		FF	G4-LA6	0	0	3	0	**0 A**
Employee Relations								
Employees receiving performance reviews	%	GG	G4-LA11	100	100	100	100	100
Training and development	$ thousands	HH	G4-LA9	24 262	20 210	20 534	5,327	5,849
Education assistance plan	$ thousands		G4-LA10	725	1,107	1,246	611	200

Scholarships for employee dependents	$ thousands	II	G4-EC1	1,158	--	1,300	1,240	1,240
New employee hires		JJ	G4-LA1					
• Male	%		G4-LA1	70.5	73.9	72.8	70.7	77
• Female	%		G4-LA1	29.5	26.1	27.2	29.3	23
• Age less than 30	%		G4-LA1	31.5	30.9	32.4	29.2	27
• Age 30 to 50	%		G4-LA1	57.9	57.1	58.6	60.3	63
• Age greater than 50	%		G4-LA1	10.5	11.7	9.0	10.8	10
Employee turnover:	%	KK	G4-LA1	6.5	4.1	5	7.6	7.0
• Male	%		G4-LA1	6.5	4.1	4.9	6.5	6.4
• Female	%		G4-LA1	6.8	4.2	5.4	11.3	8.9
• Age less than 30	%		G4-LA1	7.4	5.5	6.8	6.8	4.9
• Age 30 to 50	%		G4-LA1	7.5	4.8	5.5	9	4.8
• Age greater than 50	%		G4-LA1	4.1	1.9	3.2	4.8	13.1
Parental leave:		LL	G4-LA3					
• Male employees who took parental leave	#	LL	G4-LA3	63	61	60	61	72
• Male employees who returned to work after parental leave ended	#	LL	G4-LA3	53	60	66	54	46
• Male employees who returned to work after parental leave ended who were still employed 12 months after their return to work	#	LL	G4-LA3	--	--	88	82	97
• Female employees who took parental leave	#	LL	G4-LA3	174	169	246	172	183
• Female employees who returned to work after parental leave ended	#	LL	G4-LA3	49	60	159	186	162
• Female employees who returned to work after parental leave ended who were still employed 12 months after their return to work	%	LL	G4-LA3	--	--	88	80	90

Workforce								
Suncor employees	#	MM	G4-9	14,198	14,132	14,425	13,235	13,243
Full-time	#		G4-10	13,836	13,815	14,056	13,042	12,888
Part-time	#		G4-10	96	67	108	97	121
Temporary/Casual	#		G4-10	266	250	261	96	252
Long-term contractors	#	NN	G4-10	3,505	3,669	3,231	2,663	757
Workforce unionized	%	OO	G4-11	32.8	32.3	32.4	34.5	34.6
Equal opportunities and workforce diversity	% of total workforce	PP						
Aboriginals / American Indians	%	PP	G4-LA12	2.7	2.6	1.5	1.6	1.9
Visible minorities	%	PP	G4-LA12	11.1	12.1	10.4	10.3	12.6
Persons with disabilities	%	PP	G4-LA12	0.9	0.8	0.5	0.5	0.8
Women	%	PP	G4-LA12	23.3	23.5	25.1	23.4	24.5
Men	%	PP	G4-LA12	74.3	74.6	74.7	75.7	75.5
Age less than 30	%		G4-LA12	14.6	14.4	12.7	11.6	11.3
age 30 to 50	%		G4-LA12	56.8	57.7	60	60.5	62.0
Age greater than 50	%		G4-LA12	26.3	26.1	27.1	27.1	26.7
Percentage of basic salary (women to men):		QQ						
• Management	%	QQ	G4-LA13	89.2	90.9	96	96	96
• Professional	%	QQ	G4-LA13	82	83.9	95	97	97
• Business support	%	QQ	G4-LA13	87.47	96.8	104	103	103
• Operations	%	QQ	G4-LA13	94.7	95	98	100	100
Diversity in management		RR						
Employees in management	%		G4-LA12	19.4	21.7	20.4	19	20.4
Women in management	%		G4-LA12	21.3	21.3	21.7	22.4	20.1
Persons with disabilities in management	%		G4-LA12	1	1	0.7	0.7	1.1
Age less than 30 in management	%		G4-LA12	2.6	2.3	2.1	1.5	1.6

Age 30 to 50 in management	%		G4-LA12	64.6	65.5	66.8	65.9	66.7
Age greater than 50 in management	%		G4-LA12	26.3	32.1	31.3	32.6	31.8
Community investment		SS						
Total value of all contributions made to charitable, non-charitable and community groups (categorized below):	$ thousands		G4-EC1	22,619	30,534	27,246	26,346	35,496
Total value of cash donations	$ thousands		G4-EC1	18,115	23,367	23,745	24,425	22,843
Total value of time donations	$ thousands	TT	G4-EC1	945	747	798	408	83
Total value of in-kind donations	$ thousands	UU	G4-EC1	367	2,716	214	382	10,873
Total value of management cost donations	$ thousands	VV	G4-EC1	1,525	1,625	1,384	988	953
Total value of external resources leveraged	$ thousands	WW	G4-EC1	1,665	2,079	1,105	143	744
Suncor's donation to the Suncor Energy Foundation (SEF)	$ thousands	XX	G4-EC1	18,800	19,740	19,530	4,500	10,164
Suncor Energy Foundation / Suncor Energy Inc. disbursements (distribution by funding priority)			G4-EC1					
• Building Skills & Knowledge	$ thousands		G4-EC1	5,082	4,777	5,381	5,321	3,978
• Collaborating for a Shared Energy Future	$ thousands		G4-EC1	1,946	1,901	2,087	2,219	1,848
• Cultivating Community Leaders	$ thousands		G4-EC1	3,100	3,554	3,719	3,051	2,442
• Engaging Citizens	$ thousands	YY	G4-EC1	4,974	8,581	4,538	4,146	4,663
• Inspiring Innovation	$ thousands		G4-EC1	3,237	2,487	3,890	3,442	3,183
• Local Relationships	$ thousands		G4-EC1	2,614	5,530	4,342	6,627	8,603
United Way donations								
Suncor Energy Foundation	$ thousands		G4-EC1	2,225	2,510	2,315	2,290	2,000

Suncor Energy Inc.	$ thousands	ZZ	G4-EC1	82	100	100	100	77
Suncor employee and retiree contributions	$ thousands		G4-EC1	4,494	4,779	5,013	4,108	3,780

Suncor-wide social footnotes

CC Rates of absenteeism, lost days and occupational disease are tracked but not reported by Suncor.

DD Lost time injury requires medical attention and results in an employee being absent from work on the next regularly-scheduled work day or any subsequent work day.

Lost time injury frequency is the number of such injuries per 200,000 hours worked, divided by the number of exposure hours.

EE Recordable injuries include lost-time injuries as well as medical aid injuries. Medical aid injuries require medical attention but do not result in an employee being absent from work. Recordable injury frequency is the sum of lost-time and medical aid injuries per 200,000 hours worked, divided by the number of exposure hours.

FF The number of fatalities reported are for employees and contractors (excluding prime contractors). The prime contractor for a work site is (a) the contractor, employer or other person who enters into an agreement with the owner of the work site to be the prime contractor, or (b) if no agreement has been made or if no agreement is in force, the owner of the work site.

We experienced 3 tragic employee fatalities at Oil Sands in 2014:

- January 19, 2014 – an employee was fatally injured when he fell through the surface into a cavity containing sand and water.
- April 20, 2014 – an employee was fatally electrocuted when working on a compressor/electrical panel.
- May 7, 2014 – an employee was fatally injured when attacked by a black bear while working in a lay down yard.

Two prime contractors were also fatally injured in 2014 on Suncor's sites. Prime contractors have full care, custody and control meaning they manage their own work and are responsible for maintaining safe working environments. These incidents are described below:

- March 14, 2014 – a worker was overcome by water and the elements when a backhoe broke through the ice that was over top of a borrow pit.
- June 2, 2014 – a worker was fatally injured when he was struck by a plate while performing maintenance work on a piece of heavy equipment.

GG Everyone receives performance reviews, except those paid hourly. Hourly workers receive informal evaluations.

HH Training and development is representative of fees for professional development courses taken by Suncor employees. This total consists of values reported for all business areas (Oil Sands, Exploration & Production, Refining & Marketing and St. Clair ethanol) and our corporate operations.

II In 2013, scholarships for employee dependents was rolled into the employee benefits indicator G4-LA3.

JJ Any externally hired regular full-time or regular part-time employee whose permanent start date falls within the period being reported.

KK Defined as the percentage of employees who leave the organization under any circumstance in a given year. Only terminations are included and numbers are based on full-time and part-time Suncor employees only.

LL All regular full-time and regular part-time employees may apply for maternity leave, parental leave and paternity leave. These are unpaid leaves. To qualify, you must have completed 13 continuous weeks of service before the anticipated date of placement of the child or prior to the commencement of your leave. Only regular full-time and regular part-time employees that took parental leave and returned to work prior to December 31, of the reporting year are included in the retention rate.

MM Employee is defined as regular full-time, regular part-time, students, casuals or temporary employees. Leaves, other than long-term disability, such as maternity, paternity, personal leave, as well as short-term disabilities, are considered active and are included.
Historical U.S.A. data long-term contractors include contractors at the refinery, based on full-time equivalent staff in the Denver office.

Beginning in January 2015, as part of an overall cost management program that began in 2014 accelerated by a low crude price environment, Suncor reduced the size of our workforce primarily through our contract workforce, not backfilling attrition for non-critical positions, and employee reductions.

NN Individual worker engaged as a Contractor to support work that is short-term or variable in nature.

OO Unionized data is only applicable in areas where there is a unionized environment.

PP	Certain operating regions prohibit collecting information on gender, therefore data presented here may not be reflective of our entire workforce due to data availability. Workforce diversity is calculated based on information provided voluntarily by employees. Indicators referring to ethnicity and disability reflect only those employees who consented to release of this information.
QQ	Beginning in 2014, average salaries were calculated using a weighted average to ensure the data represents a comparison of equal level positions between men and women. Salary comparison data between women and men is reported on a Suncor-wide basis as position levels are corporately administered and do not differ based on operating area. Base pay is linked to how an employee's job is classified within job families to ensure consistency of how work is assessed and valued across the company. Variation within a job's salary band recognizes an individual's position on the learning curve and demonstration of job capacity.
RR	Management is classified as front-line leaders, mid-level leaders, members of the management committee or members of the corporate committee.
SS	Data reported for 2012-2013 for total value of all contributions made to charitable, non-charitable and community groups was defined by the London Benchmarking Group (LBG) Canada model. Since 2014, these values have been calculated by Suncor and the Suncor Energy Foundation (SEF). The SEF is audited annually by PricewaterhouseCoopers (PWC).
TT	Volunteer time is reported by employees to Suncor on a voluntary basis. The hours shown represent hours volunteered during working hours.
UU	In-kind contributions in 2013 were significantly higher as a result of the Alberta floods, the Colorado floods and our decommissioning of the Voyageur Upgrader site. Contributions were significantly higher in 2016 as a result of a land donation by Petro-Canada to the Urban Native Youth Association in Vancouver, valued at about $9M.
VV	The value of management costs from 2014 - 2016 is for the Suncor Energy Foundation only.
WW	External resources leveraged represents cash and in-kind value generated as a result of Suncor's involvement, but which is not a cost to the company (e.g. employee contributions through our Suncares employee programs, food donations, matching donations from other funders, etc.).
XX	Suncor established the Suncor Energy Foundation (SEF) in March 1998. The SEF is limited to providing donations to registered Canadian charitable organizations. This figure represents Suncor's donation to the SEF for donations, operating budget and appropriate allocations to a reserve fund which protects multi-year commitments going forward. Charitable contributions to the community made by the SEF are included in the community investment values presented at the beginning of the table.
YY	Contributions in 2013 were significantly higher as a result of the activation of several Suncares Humanitarian matching grant programs for employees (Alberta floods, Colorado floods, Haiyan typhoon). In 2015 two SunCares Humanitarian matching grant programs for employees were activated (Nepal Earthquake and Syrian Refugee Crisis). 2016 contributions reflect activation of the Suncares Humanitarian matching grant program (Wood Buffalo wildfires).
ZZ	United Way contributions for Suncor Energy U.S.A.

Oil Sands

Environmental data consists of Oil Sands mining operations (does not include Syncrude).

All economic data for Oil Sands includes our In Situ operations as well as the Oil Sands mining operations in alignment with our Annual Report (including Syncrude).

Expand all | Collapse all

Environment

Filter display

The A symbol (**A**) reflects data that has been assured by a third party. View a complete list of reviewed data to confirm the performance indicators that have been assured.
In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Production								
Gross production	million barrels of oil/year	A	OG1	103.25	105.31	108.18	119.50	96.87
Gross production	million cubic metres (m^3) of oil/year	A	OG1	16.4	16.7	17.2	19.0	15.4
Air emissions								
Greenhouse gas (GHG)	thousand tonnes carbon dioxide equivalent (CO_2e)	B	G4-EN15 G4-EN16	9,204	8,417	8,542	8,685	7,138
GHG emissions intensity	tonnes CO_2e/m^3 production		G4-EN18	0.56	0.5	0.50	0.46	0.46
Ozone-depleting substances	kilograms (kg) of chlorofluorocarbon (CFC)11 equivalent	C	G4-EN20	0	0	0	0	0
Sulphur dioxide (SO_2)	thousand tonnes	D	G4-EN21	18.54	14.1	16.68	12.64	12.96
SO_2 emissions intensity	kg/m^3 production		G4-EN21	1.13	0.84	0.97	0.67	0.84

Nitrogen oxides (NO_x)	thousand tonnes	E	G4-EN21	21.1	18.8	18.3	19.1	16.2
NO_x emissions intensity	kg/m^3 production		G4-EN21	1.29	1.13	1.06	1.0	1.1
Volatile organic compounds (VOCs)	thousand tonnes	F	G4-EN21	16.1	6.77	12.27	15.52	14.53
• Benzene	tonnes		G4-EN21	11.5	13.6	18.1	22.6	25.2
• Toluene	tonnes		G4-EN21	127.2	144	265	205	189.3
• Ethylbenzene	tonnes		G4-EN21	70	36.43	80.4	62.9	99.8
• Xylene	tonnes		G4-EN21	188.5	175.14	387.1	300.1	326.4
VOC emissions intensity	kg/m^3 production		G4-EN21	0.98	0.4	0.71	0.82	0.94
National Pollutant Release Inventory (NPRI) on-site releases	thousand tonnes		G4-EN21	70.5	50.1	63.77	72.50	69.83
Flared gas	million m^3	G	OG6	60.3	92.9	54.3	118.04	44.8
Flared gas intensity	m^3/m^3 production		OG6	3.67	5.55	3.16	6.22	2.91
Energy consumption								
Total energy use	million gigajoules (GJ)	H	G4-EN3 G4-EN4	112.8	112.72	117.30	119.47	99.21
• Direct energy use	million GJ	I	G4-EN3	114.9	115.19	119.32	121.20	100.82
• Indirect energy use	million GJ	I	G4-EN4	-2.38	-2.47	-2.02	-1.74	-1.61
Energy intensity	GJ/m^3 production		G4-EN5	6.86	6.73	6.83	6.30	6.44
Water use								
Total water withdrawal	million m^3	J	G4-EN8	44.81	51.35	37.36	25.56	41.9
• Surface water withdrawal	million m^3		G4-EN8	26.6	22.83	18.65	16.90	20.72
• Groundwater withdrawal	million m^3		G4-EN8	1.7	1.38	1.13	1.26	1.02
• Industrial run-off water withdrawal	million m^3	K	G4-EN8	16.54	26.14	17.58	7.40	20.20
Water withdrawal intensity	m^3/m^3 production		G4-EN8	2.73	3.07	2.17	1.35	2.72
Water returned	million m^3	K	G4-EN22	11	17.73	9.92	6.27	9.91
Water consumption	million m^3	L		33.79	33.62	27.44	19.29	32.02
Water consumption intensity	m^3/m^3 production			2.06	2.01	1.60	1.02	2.08
Water discharge quality								
Oil and grease in effluent	tonnes	M	G4-EN22	7.67	11.57	7.23	5.14	6.16
Total suspended sediment	tonnes	M	G4-EN22	77.6	138.82	77.44	63.19	57.78
Chemical oxygen demand	tonnes		G4-EN22	609.93	995.01	477.15	210.27	375.29
Phenol	tonnes	M	G4-EN22	0	0	0	0	0.03

Metals in effluent	tonnes	M	G4-EN22	20.3	43.51	25.25	28.9	36.06
Waste management		N						
Total hazardous waste generated	thousand tonnes	N	G4-EN23	0.38	0.28	7.81	4.31	4.14
• Hazardous waste incinerated	tonnes	N	G4-EN23	5.92	17.23	4.06	4.78	0
• Hazardous waste deep well injected	tonnes	N	G4-EN23	7.42	3.17	13.39	3.23	13.02
• Hazardous waste landfilled	tonnes	N	G4-EN23	352	223.46	256.90	40.96	213.21
• Hazardous waste otherwise disposed	tonnes	N	G4-EN23	13.05	39.29	58.01	141.91	29.99
• Hazardous waste recycled, recovered or reused	tonnes	N	G4-EN23	--	--	7,479.50	4,115.30	3,886.98
Total non-hazardous waste generated	thousand tonnes	O	G4-EN23	84.4	42.8	103.73	57.16	79.63
• Non-hazardous waste incinerated	tonnes		G4-EN23	0.18	0	0	0	0
• Non-hazardous waste deep well injected	tonnes		G4-EN23	1.02	1.58	0	0	0
• Non-hazardous waste landfilled	tonnes	O	G4-EN23	84,334.30	42,758.50	89,069.18	35,352.19	62,838.43
• Non-hazardous waste otherwise disposed	tonnes		G4-EN23	0	36.8	0	0	0
• Non-hazardous waste recycled, recovered or reused	tonnes	O	G4-EN23	–	–	14,663.20	21,804.40	16,793.13
Waste reused, recycled or recovered (off-site)	thousand tonnes	P	G4-EN23	29.5	26.5	–	–	–
Waste reused, recycled or recovered (on-site)	thousand tonnes	P	G4-EN23	2.1	1.28	–	–	–
Land disturbance and reclamation								
Total land holdings approved for development (mineable oil sands)	hectares	Q	G4-EN11	24,432	24,432	22,458	22,548	23,954
Total land disturbed	cumulative hectares	Q	G4-EN12	21,303	21,690	22,072	22,157	**22,178 A**
Land reclaimed	cumulative hectares	Q	G4-EN13	1,542	1,708	1,905	2,134	**2,123 A**
Combined surface area of tailings ponds	hectares	R	G4-EN23	2,712	2,864	2,654	2,606	2,698
Compliance								
Regulatory contraventions	#	S	G4-EN29	9	8	6	5	0
Regulatory fines	$ thousands	T	G4-EN29	0	0	0	14.5	0

Reportable spills	#	U	G4-EN24	7	5	11	168	144
• Spills to natural water bodies	#		G4-EN24	0	2	0	0	1
Total volume of reportable spills	m^3	V	G4-EN24	1,058	353	2,658	3,045	625.90
Air quality exceedances	#	W	G4-EN29	0	0	0	0	10
Industrial wastewater limit exceedances	#		G4-EN29	1	1	0	0	3

Oil Sands environment footnotes

A Gross sweet and sour synthetic crude oil production. This volume is used to calculate emission intensities since it represents emissions associated with mining, extraction and upgrading. This volume is reported as a gross total as it includes unprocessed volumes. See the 2016 GHG performance page of this report for more information on the difference between production reported here and our 2016 Annual Report.

B Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions each facility is required to report its GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exist then the most applicable and accurate methods available are used to quantify each emission source.

GHG emissions and emissions intensity values are consistent with Suncor's Specified Gas Emitters Regulation (SGER) Bill 3 reported Total Annual Emission (TAE) values, with a few exceptions. The reported TAE in the SGER Compliance report excludes carbon dioxide (CO_2) emissions from biomass, industrial process emissions and total indirect emissions. Our Report on Sustainability GHG emissions includes industrial process, total indirect emissions, and biomass emissions. Oil Sands GHG data in this report also includes the emissions associated with the Poplar Creek cogeneration facility which is within the Oil Sands facility boundary. Additionally the production definition used in SGER is different than what is reported here. SGER production is a weighted production value which takes into account mining and upgrading products, not only gross synthetic crude oil production.

2012 and 2013 emission methodology was updated as required by Alberta Environment and Sustainable Resource Development (AESRD). This updated methodology has been used since 2012.

C Retrofitting of refrigeration systems currently using R-22 or any other hydrofluorocarbons (HCFCs) are part of Suncor's ongoing program to phase out the use of ozone-depleting substances on-site. The conversion of all remaining R-22 systems with RS-44 with more than 10 kg in it is ongoing and will continue until complete. RS-44 is a non-ozone depleting substance.

D We use low or ultra-low-sulphur diesel in our mining equipment. Beginning in 2014 we include mining combustion equipment emissions in our total sulphur dioxide (SO_2) emissions, even though emissions from these sources are minimal.

E Site-wide nitrogen oxide (NO_x) emissions as reported to Alberta Environment and Parks. This also includes NOx emissions from mobile sources.

F We discovered that a portion of the total VOC emissions reported in 2013 was inadvertently omitted and if this was included in the VOC emissions, the 2013 value would increase by approximately 29%.

G These values include both emergency and non-emergency flaring volumes. In 2014, the maintenance plan was modified to have annual inspections of the sulphur recovery units, subsequently resulting in reduced emergency flaring events.

In 2015, we experienced an increase in our flared gas volumes primarily as a result of an atypical heat exchanger issue that required us to flare a large volume of impure steam for a short period.

H Total energy is equal to the sum of direct and indirect energy.

I Direct energy is primary energy consumed on-site by Base Plant operations and the Poplar Creek cogeneration facility which is within the Base Plant Oil Sands facility boundary. Direct energy includes combustion of petroleum coke, natural gas and internally produced fuels; diesel combusted as fuel in mine trucks, and flaring.

Indirect energy includes imported electricity, steam, heating and cooling duty from third parties. The indirect energy calculation methodology credits operations for electricity exported to external users and/or other Suncor facilities. The facility that exports the electricity subtracts the export value from its indirect energy use. The facility that receives the electricity counts it as a Scope 2 indirect energy use, regardless of source. The Oil Sands indirect energy figures have been negative because the amount of electricity exported by the Poplar Creek cogen was greater in value than the amount of electricity imported.

J Includes surface water, groundwater and industrial run-off water as per Alberta Environment and Parks withdrawal licences.

In 2014 the wastewater treatment plant became operational, resulting in the use of more recycled water and reductions in our river water withdrawal.

K Industrial run-off outfall volumes have been incorporated and include precipitation on process and non-process areas.

Water returned is comprised of treated industrial waste-water and runoff from non-process areas that gets collected, diverted and eventually discharged to the environment (destination is the Athabasca River).

L Water consumption is the total water withdrawn minus the water returned. In 2015, as a result of increased recycling of industrial wastewater at our base plant, water consumption decreased relative to 2014.

M The destination of water discharge for our Oil Sands operations is the Athabasca River. Pond C was closed all of 2012 and pond E was also closed the majority of the year.

N Prior to 2014, waste that was reused, recycled and recovered was not included in the totals for hazardous and non-hazardous waste generated and was reported as an aggregated total. Beginning in 2014, in order to provide a more detailed depiction of the waste streams created due to our operations, we have included this category of waste in both hazardous and non-hazardous total waste generated.

Reduction in hazardous waste volume in 2012 resulted from no sulphur being sent to landfill. In 2014, a change in third party waste receivers is reflected in the volumes of hazardous waste reported in individual categories as the final method of waste disposal is dependent on the options available at those sites.

O Non-hazardous waste volume is dependent on site activities and may fluctuate annually.
Prior to 2014, waste that was reused, recycled and recovered was not included in the totals for hazardous and non-hazardous waste generated and was reported as an aggregated total. Beginning in 2014, in order to provide a more detailed depiction of the waste streams created due to our operations, we have included this category of waste in both hazardous and non-hazardous total waste generated.

P Beginning in 2014, in order to provide a more detailed depiction of the waste streams created due to our operations, we have included this category of waste in both hazardous and non-hazardous total waste generated.

In 2012, a third-party contractor transported used oil offsite for recycling; in previous years this was done on-site.

Q Total land holdings approved for development is consistent with the Government of Alberta's Environmental Protection and Enhancement Act (EPEA) approved footprint for Suncor's Base Plant operations, as mapped by GIS internally. Fort Hills is approved but not yet reported because no production is occurring.

Total land disturbed is the total active footprint of our Base Plant mining operations, which includes the cumulative hectares (ha) for areas cleared of vegetation, soil disturbed, ready for reclamation, soils placed and permanently reclaimed. This is consistent with reporting to the Alberta Energy Regulator (AER) and represents all land area that has been or is currently disturbed at our Base Plant mining operation.

Land reclaimed is land that is no longer being used for mine or plant purposes and has been, or is in the process of being, reclaimed. This value is a subset of the total active footprint. The area of non-reclaimed land at our oil sands Base Plant mining operation is 20,056 ha for the 2016 reporting year. Reclamation is tracked as the cumulative area reclaimed. As such, the total number of hectares reported from year to year may increase or decrease based on activities undertaken at the site since these activities may lead to new reclamation or re-disturbance of previously reclaimed areas.

Permanently reclaimed lands have met the plans for soil placement and re-vegetation but have not been certified by the Alberta Energy Regulator. Following Alberta Environment's issuance of standards for Geographic Information System spatial data reporting, in 2010, Suncor annually re-evaluates permanent reclamation areas and recalculates historical reclamation totals. Disturbance feature types (such as roads, power lines, pipelines, etc.) that occurred post-reclamation are removed and any new areas of reclamation are added. See Advisories.

No permanent reclamation was conducted in 2016, due to the wildfires that occurred in proximity to our Base Plant operations. Some permanent reclamation was lost due to the creation of firebreaks.

R The tailings pond area calculation is based on fluids area only and does not include solid structures such as beaches and dykes.

S A regulatory contravention is an environmental incident that breaches a regulatory limit (prescribed threshold required by legislation, approval or permit from a regulatory authority) or requirement (any law, act, regulation, licence, standard, approval, directive and/or permit applicable to Suncor's activities) and that triggers formal regulatory reporting.

T Data includes regulatory fines related to environmental contraventions paid during the stated year.

U A reportable spill is an unplanned or accidental event resulting in a release of material either into the environment or into a location that does not usually contain the material, as specified by Alberta regulation. Beginning in 2014, regulations placed greater emphasis on spill reporting, and subsequently our reportable number and volume of spills, including contractors. The increase in the number of reportable spills in 2015 resulted from changes in the expectation of spill reporting from the regulator. This includes spills that are both recovered and non-recovered.

V All recovered spill volumes are discounted from final spill volumes. Spills are also discounted when the material was spilled into a containment system that was intended for the material, or into a system that would fully recover the material.

2015: The increased volume in 2015 is correlated to the increase in our number of reportable spills as described in footnote V. A number of rupture disk incidents were reportable, which tend to have larger volumes (>2,000 m^3), but these are generally recovered and not included in the reportable spill volume. The total volume from all spills (including those that were recovered) was 94,678 m^3. Volume of hydrocarbon spills to soil was 1,256 m^3; there were no hydrocarbon spills to water. Diesel spills to soil were cleaned up and disposed of as hazardous waste. For liquid releases from processes the material was generally recycled back into our facility.

W Suncor continues to investigate and evaluate changes that may improve air quality. Ambient ground level concentration exceedances are not provided, as other reduced sulphur compounds and possibly non-sulphur containing compounds may interfere with hydrogen sulphide (H_2S) analyzers, leading to results that are not accurate reflections of the actual H_2S concentrations in the ambient air.

Economic

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Financials		X						
Tax and royalty credits earned	$ millions	Y	G4-EC4	14.5	10.3	15.6	7.5	10.3
Investments								
Capital and exploration expenditures	$ millions		G4-EC1	4,957	4,311	3,826	4,181	4,724
Purchases								
Goods and services	$ millions			4,194	4,651	4,244	4,080	3,314
Goods and services purchased in or from:								
• Canada	$ millions			4,076	4,512	4,081	3,950	3,207
• Local businesses and suppliers	$ millions	Z	G4-EC9	1,929	--	--	--	--

Oil Sands economic footnotes

X For complete disclosure of financial information, see our 2016 Annual Report (PDF, 161pp, 1.73 MB). Oil Sands financial information reported here includes Syncrude to align with the Annual Report.

Y Investment Tax Credit on Scientific Research and Experimental Development Expenditures.

Z Local is defined as businesses and suppliers based in the Regional Municipality of Wood Buffalo. Data from 2012 includes Oil Sands mining and In Situ spend. Beginning in 2013, this number is reported on a Suncor-wide basis.

Social

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Health and safety								
Employee lost-time injury frequency		AA	G4-LA6	0.09	0.04	0.07	0.08	0.04
Contractor lost-time injury frequency		AA	G4-LA6	0.08	0.01	0.02	0.06	0.07
Employee recordable injury frequency		BB	G4-LA6	0.69	0.5	0.65	0.43	0.40
Contractor recordable injury frequency		BB	G4-LA6	0.87	0.67	0.54	0.47	0.49
Fatalities		CC	G4-LA6	0	0	3	0	0

Employee relations								
Employees receiving performance reviews	%		G4-LA11	100	100	100	100	100
Training and development	$ thousands	DD	G4-LA9	9,879	10,331	11,249	2,251	3,698
Ratio of lowest wage to minimum wage		EE	G4-EC5	1.6	2.3	1.6	2.3	2.3
Ratio of average wage to minimum wage		EE	G4-EC5	5.3	5.5	5.7	5.2	5.0
Ratio of jobs offered to jobs accepted		FF		1.11	1.13	--	--	--
New employee hires:		GG	G4-LA1					
• Male	%		G4-LA1	84.1	84.1	80.5	73.6	80.4
• Female	%		G4-LA1	15.9	15.7	19.5	26.4	19.6
• Age less than 30	%		G4-LA1	36.3	28.2	33.0	27.4	23.5
• Age 30 to 50	%		G4-LA1	53.7	56.9	59.4	62.0	65.3
• Age greater than 50	%		G4-LA1	9.7	14.4	7.6	10.6	11.1
Employee turnover:	%		G4-LA1	6.4	4.4	5.8	6.2	5.1
• Male	%		G4-LA1	6.2	4.2	5.8	5.6	5.0
• Female	%		G4-LA1	1.2	5.3	5.1	10.2	5.6
• Age less than 30	%		G4-LA1	8.1	5	8.1	6.2	3.6
• Age 30 to 50	%		G4-LA1	7.1	5.1	5.8	7.4	3.6
• Age greater than 50	%		G4-LA1	3.1	1.8	4.1	3.4	9.7
Workforce								
Suncor employees	#		G4-10	5,192	5,768	5,710	5,632	5,833
• Full time	#		G4-10	5,156	5,741	5,636	5,596	5,674
• Part time	#		G4-10	8	3	13	21	30
• Temporary/casual	#		G4-10	28	24	61	15	129
Long-term contractors	#		G4-10	465	615	676	548	318
Workforce unionized	%		G4-11	57.2	52.9	51.6	51.0	49.6
Equal opportunity and workforce diversity		HH						
Aboriginals	%	HH	G4-LA12	4.9	4.6	2.3	2.3	4.4
Visible minorities	%	HH	G4-LA12	10.6	10.8	8.3	8.6	11.2
Persons with disabilities	%	HH	G4-LA12	0.8	0.7	0.3	0.3	0.7
Women	%	HH	G4-LA12	13.1	13.5	15.1	14.1	15.4
Men	%	HH	G4-LA12	86.3	86.1	86.1	85.7	84.6
Age less than 30	%		G4-LA12	18.8	17.1	14.7	13.3	13.0
Age 30 to 50	%		G4-LA12	57.9	58.8	61.3	61.4	62.2
Age greater than 50	%		G4-LA12	22.7	23.7	25.0	25.1	24.8

Diversity in management	% in management							
Employees in management	%		G4-LA12	14.3	18.2	17.8	14.6	17.6
Women in management	%		G4-LA12	10.9	10.4	11.6	11.9	11.2
Persons with disabilities in management	%		G4-LA12	0.8	0.6	0.6	0.3	1.2
Age less than 30 in management	%		G4-LA12	4.1	3.3	3.6	2.4	3.0
Age 30 to 50 in management	%		G4-LA12	65.7	67.3	69.7	67.6	69.0
Age greater than 50 in management	%		G4-LA12	30.3	29.4	26.7	30.0	28.0

Oil Sands social footnotes

AA A lost-time injury requires medical attention and results in an employee being absent from work on the next regularly scheduled work day or any subsequent work day. Lost-time injury frequency is the number of such injuries per 200,000 hours worked, divided by the number of exposure hours.

BB Recordable injuries include lost-time injuries as well as medical aid injuries. Medical aid injuries require medical attention but do not result in an employee being absent from work. Recordable injury frequency is the sum of lost-time and medical aid injuries per 200,000 hours worked, divided by the number of exposure hours.

CC The number of fatalities reported are for employees and contractors (excluding prime contractors). The prime contractor for a work site is (a) the contractor, employer or other person who enters into an agreement with the owner of the work site to be the prime contractor, or (b) if no agreement has been made or if no agreement is in force, the owner of the work site.

We experienced 3 tragic employee fatalities at Oil Sands in 2014:

- January 19, 2014 – an employee was fatally injured when he fell through the surface into a cavity containing sand and water.
- April 20, 2014 – an employee was fatally electrocuted when working on a compressor/electrical panel.
- May 7, 2014 – an employee was fatally injured when attacked by a black bear while working in a lay down yard.

Two prime contractors were also fatally injured in 2014 on Suncor's sites. Prime contractors have full care, custody and control meaning they manage their own work and are responsible for maintaining safe working environments. These incidents are described below:

- March 14, 2014 – a worker was overcome by water and the elements when a backhoe broke through the ice that was over top of a borrow pit.
- June 2, 2014 – a worker was fatally injured when he was struck by a plate while performing maintenance work on a piece of heavy equipment.

DD Fees for professional development courses taken by Suncor employees. Includes the educational assistance plan that reimburses tuition upon successful completion of a course or program.

EE Compares full-time base wage to the province of Alberta's minimum wage ($12.20/hour in 2016). Beginning in 2014, Alberta's minimum wage was used across our operations for this metric for comparison purposes.

FF Beginning in 2014, this indicator is reported Suncor-wide.

GG Any externally-hired regular full-time or regular part-time employee whose permanent start date falls within the reporting period.

HH Certain operating regions prohibit collecting information on gender, therefore data presented here may not be reflective of our entire workforce due to data availability.

Workforce diversity is calculated based on information provided voluntarily by employees. Indicators referring to ethnicity and disability reflect only those employees who consented to release of this information.

Performance data for our In Situ business includes MacKay River and Firebag operations. Economic data for In Situ is included with Oil Sands performance data.

Expand all | Collapse all

Environment

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Production								
Net production	million barrels of oil / year	A	OG1	47.8	62.84	72.79	79.37	76.23
Net production	million cubic metres (m^3) of oil / year	A	OG1	7.6	9.99	11.57	12.62	12.12
Air emissions								
Greenhouse gas (GHG)	thousand tonnes carbon dioxide equivalent (CO_2e)	B	G4-EN15 G4-EN16	4,079	5,390	5,610	5,620	5,443
GHG emissions intensity	tonnes CO_2e / m^3 production		G4-EN18	0.54	0.54	0.48	0.45	0.45
Sulphur dioxide (SO_2)	thousand tonnes	C	G4-EN21	0.53	0.5	0.52	0.36	0.39
SO_2 emissions intensity	Kilograms (kg) / m^3 production		G4-EN21	0.07	0.05	0.05	0.03	0.03

Nitrogen oxides (NO_x)	thousand tonnes	D	G4-EN21	2.03	2.5	2.66	2.61	2.51
NO_x emissions intensity	kg / m^3 production		G4-EN21	0.27	0.25	0.23	0.21	0.21
Volatile organic compounds (VOCs)	thousand tonnes	E	G4-EN21	0.23	0.3	0.36	0.36	0.33
• Benzene	tonnes		G4-EN21	16.62	26.41	27.56	26.45	24.74
• Toluene	tonnes		G4-EN21	18.03	14.99	15.52	13.29	12.40
• Ethylbenzene	tonnes	E	G4-EN21	0.25	0.21	0.30	0.01	0
• Xylene	tonnes	E	G4-EN21	11.46	3.46	3.45	0.13	0.10
VOC emissions intensity	kg / m^3 production		G4-EN21	0.03	0.03	0.03	0.03	0.03
National Pollutant Release Inventory (NPRI) on-site releases	thousand tonnes		G4-EN21	7.32	6.94	8.34	7.98	7.26
Flared gas	million m^3	F	OG6	1.95	3.62	1.78	0.50	1.44
Flared gas intensity	m^3 / m^3 production	F	G4-EN21	0.26	0.36	0.15	0.04	0.12
Energy consumption								
Total energy use	million gigajoules (GJ)	G	G4-EN3 G4-EN4	67.26	85.93	89.48	93.27	90.24
• Direct energy use	million GJ	H	G4-EN3	63.94	86.28	90.45	92.96	89.95
• Indirect energy use	million GJ	H	G4-EN4	3.32	-0.35	-0.97	0.31	0.29
Energy intensity	GJ / m^3 production		G4-EN5	8.75	8.6	7.73	7.39	7.45
Energy saved through conservation and efficiency improvements	thousand GJ		G4-EN6	513.37	0	0	0	160
Water use								
Total water withdrawal	million m^3	I	G4-EN8	0.83	0.88	1.57	2.03	2.87
• Surface water withdrawal	million m^3	I	G4-EN8	0	0	0.13	0.13	0.05
• Groundwater withdrawal	million m^3		G4-EN8	0.61	0.74	0.65	1.14	1.14
• Treated wastewater from external organizations	million m^3	I	G4-EN8	0	0	0	0	0
• Industrial run-off water	million m^3	I	G4-EN8	0.23	0.14	0.79	0.76	1.68
Water withdrawal intensity	m^3 / m^3 production	I	G4-EN8	0.11	0.09	0.14	0.16	0.24

Water returned	million m^3	I	G4-EN22	0.01	0.01	0.73	0.68	1.62
Water consumption	million m^3	J		2.34	2.15	1.86	1.67	1.33
Water consumption intensity	m^3 / m^3 production			0.31	0.22	0.16	0.13	0.11
Produced water	million m^3		OG5	24.86	32.59	32.86	34.48	33.12
Average annual water recycling rate	%		G4-EN2 G4-EN10	94.5	94.6	97.6	98.1	97.5
Waste management		K						
Total hazardous waste generated	thousand tonnes	K	G4-EN23	764.9	987.3	1,209.0	1,020	1,003
• Hazardous waste incinerated	tonnes		G4-EN23	2.3	0.55	0	0	0
• Hazardous waste deep well injected	tonnes	L	G4-EN23	704,829.00	901,377	951,648	1,018,064	999,984
• Hazardous waste landfilled	tonnes	L	G4-EN23	877.5	7,765.90	763.40	2,316	2,947
• Hazardous waste otherwise disposed	tonnes	L	G4-EN23	59,222.90	78,190.40	103,780.19	3	25
• Hazardous waste recycled, recovered or reused	tonnes	K	G4-EN23	--	--	100.98	0	57
Total non-hazardous waste generated	thousand tonnes	K	G4-EN23	111.47	95.02	92.19	332	74
• Non-hazardous waste incinerated	tonnes		G4-EN23	--	--	956	899	202
• Non-hazardous waste landfilled	tonnes		G4-EN23	55,803.64	84,392.33	79,171.32	318,038	70,466
• Non-hazardous waste otherwise disposed	tonnes	M	G4-EN23	55,345.54	10,382.36	10,851.00	10,320	2,850
• Non-hazardous waste recycled, recovered or reused	tonnes	K	G4-EN23	--	--	1,209.00	2,951	927
Drilling waste disposed or treated	tonnes	N	OG7	62,723.95	106,225.37	124,972.00	70,267	0

Waste reused, recycled or recovered (off-site)	thousand tonnes		G4-EN32	2.8	2.7	--	--	--
Waste reused, recycled or recovered (on-site)	thousand tonnes	O	G4-EN32	0	0	--	--	--
Land disturbance and reclamation								
Total land holdings approved for development	hectares	P	G4-EN11	24,537	24,537	24,537	24,537	24,780
Total land disturbed	cumulative hectares	P	G4-EN12	1,172	1,356	1,632	1,600	1,434
Land reclaimed	cumulative hectares	P	G4-EN13	0	10.2	15	19.7	16.9
Total number of producing wells	#	Q		168	211	241	289	288
Shut-in or suspended production wells	#	Q		4	95	2	6	16
Compliance								
Regulatory contraventions	#	R	G4-EN29	91	15	12	7	8
Regulatory fines	$ thousands	S	G4-EN29	0	0	0	0	0
Reportable spills	#	T	G4-EN24	28	27	28	43	17
• Spills to natural water bodies	#		G4-EN24	0	0	0	0	0
Total volume of reportable spills	m^3	U	G4-EN24	1 081	622	239	2,074	5,113
Air quality exceedances	#		G4-EN29	16	9	15	6	6
Industrial wastewater limit exceedances	#		G4-EN29	0	0	1	0	2

In Situ environment footnotes

A Production stated is net bitumen sales. The net volume is used to calculate emission intensities as it represents emissions associated with total plant saleable product. In 2014, production increased mainly due to this being the first full year of operations from all four stages of Firebag's operations.

B Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions each facility is required to report its GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exists then the most applicable and accurate methods available are used to quantify each emission source.

GHG emissions and emissions intensity values are consistent with Suncor's Specified Gas Emitter's Regulation (SGER) Bill 3 reported Total Annual Emission (TAE) value, with an exception. The reported TAE in the SGER Compliance report excludes CO_2 emissions from total indirect sources, such as the third-party cogen at MacKay River.

	Firebag data in this report includes all cogen emissions as Scope 1. MacKay River data includes the portion of third-party cogen emissions associated with the steam and electricity we consume as Scope 2. Beginning in 2014 and amended in 2015, MacKay River implemented a new methodology for calculating these indirect emissions; therefore all reported data has been calculated using this method.
C	A sulphur recovery unit has been in place at Firebag since 2011
D	In 2012 to 2014, increase in NO_x emissions was due to the ramp-up of Firebag, which required an increase in steam generation to bring new wells online.
E	In 2012 to 2014, increase in total VOCs and specified VOCs emissions were due to the increase in steam generation required to bring new wells online.
F	Values include emergency and non-emergency flaring volumes. Reductions in 2015 resulted from reduced venting and flaring from our Firebag facility.
G	Total energy is equal to the sum of direct and indirect energy. It includes combustion of natural gas and internally-produced fuels, flaring and electrical power imports. For MacKay River, exported electricity sent to the grid from the third party cogen is not claimed as an indirect; only the power consumed by Suncor Operations since the cogen is independently operated by TransCanada. For Firebag, the exported electricity to the grid is deducted from the total energy use since the cogen is operated by Suncor. Direct energy consumption is calculated using lower heating value (LHV) in order to be consistent with all other operating facilities.
H	Direct energy is primary energy consumed on-site by Suncor operated facilities; it includes combustion of natural gas and internally produced fuels. Indirect energy includes imported electricity, steam, heating and cooling duty from third parties. The indirect energy calculation methodology credits operations for electricity exported to external users and/or other Suncor facilities. The facility that exports the electricity subtracts the value from their indirect energy use. The facility that receives the electricity counts it as a Scope 2 indirect energy use, regardless of source. As such, Firebag indirect energy figures are negative, because the amount of electricity exported was higher in value than the amount of electricity imported. The negative Firebag indirect energy figures for 2013 and 2014 are higher than the MacKay River indirect energy figures, which is why the In Situ total indirect energy figures are negative for these years. For Firebag, the exported electricity (regardless of destination) is deducted from the indirect energy use since the cogen is operated by Suncor. For MacKay River, only the imported electricity (regardless of source) is reported as indirect energy use. Power sold to the grid by the MacKay River TransCanada cogen is not included in this number.
I	Beginning in 2014, In Situ reported new volumes of surface water withdrawn and industrial runoff water used for road dust suppression and ice road building. This water is also returned to the environment as part of these activities. The volume of treated wastewater that Oil Sands sends to our Firebag In Situ facility is removed from Firebag's water withdrawal volume and is accounted for in the Oil Sands' withdrawal volume.
J	Total Firebag and MacKay River water consumption is comprised of water withdrawn from licenced groundwater wells, treated wastewater and industrial run-off water, minus the water returned.
K	Prior to 2014, waste that was reused, recycled and recovered was not included in the totals for hazardous and non-hazardous waste generated and was reported as an aggregated total. Beginning in 2014, in order to provide a more detailed breakdown of the waste streams created due to our operations, we have included this category of waste in both hazardous and non-hazardous total waste generated.
L	Waste that is sent to deep well injection is primarily related to blowdown from our SAGD operations at Firebag consisting of concentrated water impurities that accumulate during the steam generation process. This boiler feed water is intentionally wasted from the boilers to avoid concentration of impurities during continuing evaporation of steam. Deepwell disposal methods of this nature are safe, viable and part of normal operating parameters and our operations are within the disposal limits for these waste streams (regulated by the Alberta Energy Regulator). Our operations also have exceptionally high water recycle rates, above regulated levels. Hazardous waste landfilled is primarily off-spec warm lime sludge, created by upset. The period of time dealing with upset conditions at Firebag was a matter of weeks in 2013, compared to several months in 2014. Otherwise disposed includes cavern and ecopit disposal. A reclassification of waste streams would result in the value of deep well injection in 2014 revised to 1,000,671 tonnes and 54,577 tonnes otherwise disposed in 2014 for a total hazardous waste generated value of 1,056 thousand tonnes in 2014.
M	Includes sewage sent to Fort McMurray.
N	This is hazardous and non-hazardous drilling waste. There were no drilling programs at Firebag or MacKay River in 2016.
O	Beginning in 2012, drilling waste with greater than 8% bitumen content, hauled to the mine for re-processing, is no longer reported as waste reused onsite but has been captured in the OG7 indicator.

P Total land holdings approved for development is consistent with the Government of Alberta's Environmental Protection and Enhancement Act (EPEA) approved footprint for our Firebag and MacKay River in situ production operations, as mapped by GIS internally. Meadow Creek East is approved but not yet reported because no production is occurring.

Total land disturbed is the total active footprint of our approved in situ projects, which includes the cumulative hectares (ha) for areas cleared, disturbed, ready for reclamation, soils placed and permanently reclaimed. This is used to represent all land area that has been or is currently disturbed at our in situ projects.

Land reclaimed is land that is no longer being used for in situ production purposes and has been, or is in the process of being, reclaimed. This value is a subset of the total active footprint. The area of non-reclaimed land at our in situ operations is 1,417 ha for the 2016 reporting year. Reclamation is tracked as the cumulative area reclaimed. As such, the total number of hectares reported from year to year may increase or decrease based on activities undertaken at the site since these activities may lead to new reclamation or re-disturbance of previously reclaimed areas. Reclaimed lands have not been certified by government regulators. See Advisories.

Q Some wells (core holes) identified as inactive operated wells in 2013 were incorrectly categorized as such.

R A regulatory contravention is an environmental incident that breaches a regulatory limit (prescribed threshold required by legislation, approval or permit from a regulatory authority) or requirement (any law, act, regulation, licence, standard, approval, directive and/or permit applicable to Suncor's activities) and that triggers formal regulatory reporting.

S Data includes regulatory fines related to environmental, health and safety contraventions paid during the stated year.

T A reportable spill is an unplanned or accidental event resulting in a release of material either into the environment or into a location that does not usually contain the material, as specified by Alberta regulation.

U In 2014, regulations placed greater emphasis on spill reporting, resulting in a greater emphasis on spill reporting, including contractors.
2015: Volume of hydrocarbon spilled to soil was 261 m^3; no hydrocarbon spills to water.

Social

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Health and safety								
Employee lost-time injury frequency		V	G4-LA6	0	0	0	0	0
Contractor lost-time injury frequency		V	G4-LA6	0	0.03	0	0	0
Employee recordable injury frequency		W	G4-LA6	0.12	0.24	0.38	0.48	0.59
Contractor recordable injury frequency		W	G4-LA6	1.04	1.04	0.86	0.76	0.60
Fatalities			G4-LA6	0	0	0	0	0
Employee relations								
Employees receiving performance reviews	%		G4-LA11	100	100	100	100	100
Ratio of lowest wage to minimum wage		X	G4-EC5	2.5	2.1	2.5	2.4	2.2

Ratio of average wage to minimum wage		X	G4-EC5	5.6	5.7	5.8	5.3	4.9
Ratio of jobs offered to jobs aAAepted		Y		1.08	1.13	--	--	--
New employee hires	%	Z	G4-LA1					
• Male	%		G4-LA1	89	94	77.4	100	100
• Female	%		G4-LA1	11	6	22.6	0	0
• Age less than 30	%		G4-LA1	37.4	37.9	38.7	0	100
• Age 30 to 50	%		G4-LA1	50.5	46.6	56.5	50	0
• Age greater than 50	%		G4-LA1	12.1	15.5	4.8	50	0
Employee turnover	%		G4-LA1	11.3	12.6	7.3	5.4	3.5
• Male	%		G4-LA1	10.9	12.6	7.2	4.9	3.1
• Female	%		G4-LA1	13.9	12.7	8.3	12.5	9.5
• Age less than 30	%		G4-LA1	8.5	12.8	5.8	14.5	0
• Age 30 to 50	%		G4-LA1	14.4	13.9	7.6	3.9	1.7
• Age greater than 50	%		G4-LA1	6.8	9.6	8.1	3.1	9.4
Workforce								
Suncor employees	#		G4-10	635	566	587	391	373
• Full-time	#		G4-10	626	555	574	390	372
• Part-time	#		G4-10	6	8	12	1	0
Temporary/casual	#		G4-10	3	5	1	0	1
Long-term contractors	#		G4-10	128	22	19	75	20
Workforce unionized	%		G4-11	31.8	46.8	38.7	55.5	56.6
Equal opportunity and workforce diversity		AA						
Aboriginals	%	AA	G4-LA12	2.8	3	2.6	3.3	4.0
Visible minorities	%	AA	G4-LA12	6	6.9	6.5	2.6	2.9
Persons with disabilities	%	AA	G4-LA12	0.9	0.2	0.2	0	0.3
Women	%	AA	G4-LA12	12.5	12.7	12.3	6.1	5.6
Men	%	AA	G4-LA12	87.5	87.3	87.7	93.9	94.4
Age less than 30	%		G4-LA12	22.4	24.9	20.6	15.9	11.5
Age 30 to 50	%		G4-LA12	53.7	52.1	56.4	59.3	62.7
Age greater than 50	%		G4-LA12	23.1	22.1	23.0	24.8	25.7
Diversity in management								
Employees in management	%		G4-LA12	20.3	21.2	18.4	18.2	22.3

Women in management	%	G4-LA12	10.1	11.7	10.2	8.5	4.8
Persons with disabilities in management	%	G4-LA12	0	0.8	0	0	0
Age less than 30 in management	%	G4-LA12	2.3	2.5	0.9	1.4	1.2
Age 30 to 50 in management	%	G4-LA12	60.5	54.2	57.4	60.6	63.9
Age greater than 50 in management	%	G4-LA12	37.2	43.3	41.7	38.0	34.9

In Situ social footnotes

V A lost-time injury requires medical attention and results in an employee being absent from work on the next regularly scheduled workday or any subsequent workday. Lost-time injury frequency is the number of such injuries per 200,000 hours worked, divided by the number of exposure hours.

W Recordable injuries include lost-time injuries as well as medical aid injuries. Medical aid injuries require medical attentions but do not result in an employee being absent from work. Recordable injury frequency is the sum of lost time and medical aid injuries per 200,000 hours worked, divided by the number of exposure hours.

X Compares In Situ full-time base wage to the province of Alberta's minimum wage ($12.20/hour in 2016).

Y Beginning in 2014, this indicator is reported Suncor-wide.

Z Any externally-hired regular full-time or regular part-time employee whose permanent start date falls within the reporting period.

AA Certain operating regions prohibit collecting information on gender, therefore data presented here may not be reflective of our entire workforce due to data availability.

Workforce diversity is calculated based on information provided voluntarily by employees. Indicators referring to ethnicity and disability reflect only those employees who consented to release of this information.

Exploration & Production

Our Exploration & Production (E&P) business segment consists of:

- offshore operations off the east coast of Canada, and in the North Sea
- onshore assets in North America, Libya and Syria (Note: Suncor's operations in Syria were suspended indefinitely in 2011 due to political unrest in the country. Production in Libya has been substantially shut-in due to political unrest, with the timing of a return to normal operations remaining uncertain).

Performance data* is reported for our operated E&P assets in the following regions:

- East Coast Canada
- North America Onshore

* Year-over-year differences in E&P regional sustainability data are affected by merger and asset divestment activities.

North America Onshore

North America Onshore performance data reports on our operated North America Onshore assets, primarily in Western Canada. Social data is reported with East Coast Canada.

On Sept. 26, 2013, Suncor completed the divestiture of the majority of its conventional natural gas business in Western Canada. Environmental performance data for 2013 and 2014 reflects this divestiture.

Expand all | Collapse all

Environment[1]

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Production								
Processed volume	million barrels of oil equivalent/year	A	OG1	47	33.2	1.32	1.14	1.09
Processed volume	million cubic metres (m^3) of oil equivalent/year	A	OG1	7.5	5.27	0.21	0.18	0.17
Air emissions								
Greenhouse gas (GHG)	thousand tonnes CO_2e	B	G4-EN15 G4-EN16	995	630	42.46	20.13	21.1
GHG emissions intensity	tonnes CO_2e /m^3 production		G4-EN18	0.13	0.12	0.20	0.11	0.12
Sulphur dioxide (SO_2)	thousand tonnes	C	G4-EN21	3.6	2.4	0	0	0
SO_2 emissions intensity	kilograms (kg) / m^3 production		G4-EN21	0.48	0.46	0	0	0
Nitrogen oxides (NO_x)	thousand tonnes	D	G4-EN21	6.9	5.2	0.39	0.21	0.21

NO_x emissions intensity	kg/m^3 production		G4-EN21	0.93	0.99	1.81	1.14	1.24
Volatile organic compounds (VOCs)	thousand tonnes	E	G4-EN21	0.45	0.34	0.01	0.01	0.01
• Benzene	tonnes		G4-EN21	12.6	8.5	1.59	0.7	0.5
VOC emissions intensity	kg/m^3 production		G4-EN21	0.06	0.06	0.05	0.03	0.04
National Pollutant Release Inventory (NPRI) on-site releases	thousand tonnes	F	G4-EN21	13	0.55	0.20	0.20	0.21
Total gas flaring	million m^3	G	OG6	10.2	4.9	0.49	0.18	0.58
Flared gas intensity	m^3/m^3 production		OG6	1.5	0.9	2.29	0.99	3.34
Energy consumption								
Total energy use	million gigajoules (GJ)	H	G4-EN3 G4-EN4	11.8	7.59	0.50	0.30	0.32
• Direct energy use	million GJ	I	G4-EN3	11.5	7.31	0.50	0.29	0.32
• Indirect energy use	million GJ	I	G4-EN4	0.3	0.28	0	0	0
Energy intensity	GJ / m^3 production		G4-EN5	1.58	1.44	2.35	1.63	1.88
Energy saved through conservation and efficiency improvements	thousand GJ		G4-EN6	36	26	0	0	0
Water use								
Total water withdrawal	million m^3		G4-EN8	0.54	0.66	0.06	0	0
Water withdrawal intensity	m^3/m^3 production		G4-EN8	0.07	0.13	0.26	0	0
Water returned	million m^3		G4-EN22	0	0	0	0	0
Water consumption	million m^3			0.54	0.66	0.06	0	0
Water consumption intensity	m^3/m^3 production			0.07	0.13	0.26	0	0
Produced water	million m^3	J	OG5	1.77	1.03	0.01	0.01	0
Waste management								
Total hazardous waste generated	thousand tonnes	K	G4-EN22	4	3.5	0.06	0.01	0.01
• Hazardous waste incinerated	tonnes		G4-EN22	19.5	17.4	2.65	0	0

• Hazardous waste deep well injected	tonnes	L	G4-EN22	85.6	0	0	0	0
• Hazardous waste landfilled	tonnes		G4-EN22	91.5	2,313.5	5.35	1.38	0
• Hazardous waste otherwise disposed	tonnes		G4-EN22	3,764.7	1,182.5	51.0	1.24	0
• Hazardous waste recycled, recovered or reused	tonnes	K	G4-EN23	--	--	9.67	10.77	7.73
Total non-hazardous waste generated	thousand tonnes	M	G4-EN22	178.3	49.7	2.45	0.31	0
• Non-hazardous waste incinerated	tonnes		G4-EN22	0	0	0	0	0
• Non-hazardous waste deep well injected	tonnes		G4-EN22	549.1	512.9	0	0	0
• Non-hazardous waste landfilled	tonnes		G4-EN22	148,980.30	26,105.80	2,322.83	88.25	0
• Non-hazardous waste otherwise disposed	tonnes		G4-EN22	28,800.00	23,041.90	129.8	0	0
• Non-hazardous waste recycled, recovered or reused	tonnes	K	G4-EN22	--	--	--	225	0.61
Drilling waste disposed or treated	tonnes	N	OG7	465	9,832.30	1,974.16	55	0
Waste reused, recycled or recovered (off-site)	tonnes	K	G4-EN23	164.8	210.8	--	--	--
Land disturbance and reclamation								
Total number of producing wells	#	O		4,902	67	30	28	25
Suncor-operated producing wells	#	P		4,797	63	23	25	21
Shut-in or suspended production wells	#	Q		1,339	27	15	16	18

Wells undergoing reclamation	#	R	G4-EN13	270	0	11	11	12
Reclamation certificates received	#		G4-EN13	2	0	0	0	0
Compliance		S						
Regulatory contraventions	#	S	G4-EN29	32	32	8	0	0
Regulatory fines	$	T	G4-EN29	12,080	0	0	0	0
Reportable spills	#	U	G4-EN24	15	13	2	0	0
Spills to watercourses	#		G4-EN24	0	0	0	0	0
Total volume of spills	m^3		G4-EN24	204.85	68.85	20.03	0	0
Air quality exceedances	#		G4-EN29	4	1	1	0	0
Environment, Health & Safety (EH&S) management								
Projects to reduce GHG emissions and reductions achieved	thousand tonnes CO_2e per year		G4-EN6	24,937.43	1,561.00	0	0	0

North American Onshore environment footnotes

1 Reported North America Onshore data reflects assets owned throughout the reporting year, as well as divested assets up to their date of sale. In 2013 and 2014 we divested the majority of our conventional natural gas business in western Canada (including Wilson Creek in 2014), therefore performance data reflects significant decreases.

A Processed volume is the total amount of hydrocarbons processed at Suncor-operated facilities. This includes production owned by other companies and processed at Suncor-operated facilities. Processed volume is used to calculate intensities.

Barrels of oil equivalent and cubic metres of oil equivalent may be misleading indicators of value. See "Advisories".

B Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions within which each facility is required to report its GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exist then the most applicable and accurate methods available are used to quantify each emission source.

C Total SO_2 emissions from Suncor-operated facilities. This total includes emissions from operated facilities required to report under regulatory reporting programs as well as those facilities not required to report under regulatory programs. 2013 emissions for divested properties were reported from Jan. 1 to Sep 26, 2013.

D Total NO_x emissions from Suncor-operated facilities. This total includes emissions from operated facilities required to report under regulatory reporting programs as well as those facilities not required to report under regulatory programs. 2013 emissions for divested properties were reported from Jan. 1 to Sep 26, 2013.

E Total VOCs emissions from Suncor-operated facilities. This total includes emissions from operated facilities required to report under regulatory reporting programs as well as those facilities not required to report under regulatory programs.

F There was a decrease in NPRI releases in 2013 compared to 2012 as Suncor is not required to report facilities not operated as of Dec. 31 of the reporting year for NPRI.

G As a result of divestment that occurred in 2013, data for solution gas flaring and other flaring sources was unobtainable.

H Total energy is equal to the sum of direct and indirect energy.

I Direct energy is primary energy consumed on-site by Suncor-operated facilities. Indirect energy includes imported electricity, steam, heating and cooling duty from third parties.

J Produced water is all formation and other water brought to the surface during the normal course of our natural gas production process.

K Prior to 2014, waste that was reused, recycled and recovered was not included in the totals for hazardous and non-hazardous waste generated and was reported separately as an aggregated total. Beginning in 2014, in order to provide more detail of the waste streams created due to our operations, we have included this category of waste in total hazardous waste generated.

L This is variable year-to-year, based on operations conducted.

M An increased volume of non-hazardous waste generated in 2012 is primarily due to remediation and reclamation activities, including biopile removal.

N Inclusive of drilling mud waste from drilling operations. This value has not been captured in the hazardous waste generated and non-hazardous waste generated values. Value increased in 2013 reflective of drilling that halted in 2012 due to the Altares incident in B.C.

O Both public and regulatory agency databases were mined and compared with Suncor wells with associated yearly production volumes. The number of producing wells decreased significantly in 2013 due to a large divestment of assets in late 2013.

P The number of Suncor producing wells decreased significantly in 2013 due to the large divestment of assets in late 2013 and is reflective of ownership at Dec. 31, 2014.

Q A shut-in well is taken out of production by shutting off flow at the wellhead, often with the expectation of resuming production in the future. A suspended well is a shut-in well on which additional subsurface isolation procedures have been performed, and which is usually taken out of production due to poor economics. If a suspended well is not brought back into production, it is taken out of service as per regulatory requirements. The inactive and suspended well lists from the Western Canadian regulatory agencies (Alberta Energy Regulator, Government of Saskatchewan Energy and Resources, and British Columbia Oil and Gas Commission) were utilized in determining this total.

The number of shut-in wells decreased significantly in 2013 due to the large divestment of assets in 2013.

R For the purpose of the Report on Sustainability, the number of wells undergoing reclamation include abandoned sites in the care and custody of North America Offshore Surface, Land, Logistics and Construction Liability Management group that are categorized (i.e., site status) as Phase I, Phase II, Remediation and Reclamation. Sites categorized with the status Pre-Screening were not included. Further explanation of each category is detailed in Suncor's Draft Remediation - Reclamation Framework document. These are sites we are actively working on in some form or another, with the end goal being closure/obtaining closure through a reclamation certificate or alternative certification. See "Advisories".

S The downward trend in compliance data in 2013 and 2014 is reflective of maturing our operational discipline and the reductions of our operations in this business segment, due to divestment activity.

A regulatory contravention is an environmental incident that breaches a regulatory limit (prescribed threshold required by legislation, approval or permit from a regulatory authority) or requirement (any law, act, regulation, license, standard, approval, directive and/or permit applicable to Suncor's activities) and that triggers formal regulatory reporting.

T Regulatory fines associated with late production accounting filings.

U Reportable spills are defined in accordance with federal and provincial regulations.

Economic

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Tax and royalty credits earned	$ millions	V	G4-EC4	12.4	18.9	0.8	0.3	0
Purchases								
Goods and services	$ millions			327	228	103	11	3
Goods and services purchased in or from:								
• Canada	$ millions			326	227	102	11	3
• Local businesses and suppliers	$ millions	W	G4-EC9	311	214	--	--	--

North America Onshore economy footnotes

V For 2012 and 2013, includes the Deep Gas Royalty Holiday Program and Alberta Royalty Tax Credit. For 2014, includes the Deep Gas Royalty Holiday Program only; Alberta Royalty Tax Credit is not included because the amount is not expected to be material due to minimal drilling activity

W Local businesses and suppliers are those established in the region of operations (2012 to 2014 data includes Alberta and British Columbia operations). Beginning in 2014, local spend is only reported on a Suncor-wide basis.

East Coast Canada

East Coast Canada, a business area of our Exploration & Production (E&P) segment, focuses on offshore operations off the east coast of Canada.

Environmental data is from our operated assets and therefore the only data included is that from our Terra Nova floating production storage and offloading (FPSO) vessel.

Expand all | Collapse all

Environment[1]

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Production								
Net production	million barrels of oil equivalent (BOE) / year	A	OG1	8.47	13.77	16.73	13.13	12.08
Net production	million cubic metres (m^3) of oil equivalent / year	A	OG1	1.35	2.19	2.66	2.09	1.92
Air emissions								
Greenhouse gas (GHG)	thousand tonnes carbon dioxide equivalent (CO_2e)	B	G4-EN15 G4-EN16	391.36	521.83	642.39	548.43	560.43
GHG emissions intensity	tonnes CO_2e/m^3 production		G4-EN18	0.29	0.24	0.24	0.26	0.29
Sulphur dioxide (SO_2)	tonnes	C	G4-EN21	1.31	3.34	6.35	4.39	11.06

SO_2 emissions intensity	kilograms (kg) / m^3 production		G4-EN21	0	0	0	0	0.01
Nitrogen oxides (NO_x)	thousand tonnes	D	G4-EN21	1.46	2.03	2.39	2.07	2.22
NO_x emissions intensity	kg / m^3 production		G4-EN21	1.09	0.93	0.90	1.00	1.16
Volatile organic compounds (VOCs)	thousand tonnes	E	G4-EN21	1.5	1.2	0.24	0.64	0.12
• Benzene	tonnes		G4-EN21	0.15	0.18	0.62	0.18	0.20
• Toluene	tonnes		G4-EN21	0.25	0.38	1.74	0.40	0.49
• Ethylbenzene	tonnes		G4-EN21	0.05	0.08	0.48	0.09	0.11
• Xylene	tonnes		G4-EN21	0.1	0.16	1.59	0.16	0.20
VOC emissions intensity	kg / m^3 production	E	G4-EN21	1.12	0.54	0.09	0.31	0.06
National Pollutant Release Inventory (NPRI) on-site releases	tonnes	F	G4-EN21	3,551	3,903.86	3,499.53	3,435.57	2,892.44
Flared gas	million m^3		OG6	47.35	53.68	76.65	58.03	42.65
Flared gas intensity	m^3 / m^3 production	G	OG6	35.16	24.5	28.76	27.81	22.22
Energy consumption								
Total energy use	million gigajoules (GJ)	H	G4-EN3 G4-EN4	4.8	6.46	8.49	6.87	7.09
• Direct energy use	million GJ	I	G4-EN3	4.8	6.46	8.49	6.87	7.09
• Indirect energy use	million GJ	I	G4-EN4	0	0	0	0	0
Energy intensity	GJ / m^3 production		G4-EN5	3.56	2.95	3.19	3.29	3.69
Energy saved through conservation and efficiency improvements	million GJ	J	G4-EN6	0	0	0	0	0
Water use								
Total water withdrawal	million m^3	K	G4-EN8	14.07	24.14	26.20	22.63	25.64
Water withdrawal intensity	m^3/m^3 production		G4-EN8	10.44	11.02	9.83	10.84	13.36
Water returned	million m^3	L	G4-EN22	10.46	17.92	18.25	16.48	17.22
Water consumption	million m^3	M		3.61	6.22	7.95	6.15	8.42
Water consumption intensity	m^3 / m^3 production			2.68	2.84	2.98	2.95	4.39
Produced water	million m^3	N	OG5	2.24	3.84	5.02	4.63	5.35

Waste management								
Total hazardous waste generated	thousand tonnes	O	G4-EN23	0.14	0.45	2.07	0.24	0.12
• Hazardous waste incinerated	tonnes		G4-EN23	67.4	123	159	101	21
• Hazardous waste landfilled	tonnes		G4-EN23	59.3	52	42	80	71
• Hazardous waste otherwise disposed	tonnes		G4-EN23	14.11	278.7	89	22	25
• Hazardous waste reused, recycled and recovered	tonnes	O	G4-EN23	--	--	1,780	32	6
Total non-hazardous waste generated	thousand tonnes		G4-EN23	1.85	2.7	3.12	2.42	0.23
• Non-hazardous waste incinerated	tonnes		G4-EN23	0	0	0	0	0
• Non-hazardous waste landfilled	tonnes		G4-EN23	1,854.40	2700	3,090	2,357	135
• Non-hazardous waste otherwise disposed	tonnes		G4-EN23	0	0	0	0	0
• Non-hazardous waste reused, recycled and recovered	tonnes	O	G4-EN23	--	--	29	60	94
Waste reused, recycled and recovered (off-site)	tonnes	O	G4-EN23	22.9	1,434.30	--	--	--
Compliance								
Regulatory contraventions	#	P	G4-EN29	19	13	14	14	4
Regulatory fines	$		G4-EN29	0	0	0	0	0
Reportable spills	#	Q	G4-EN24	6	12	12	13	4
• Spills to natural water bodies	#		G4-EN24	6	12	12	13	4
Total volume of spills	m^3	R	G4-EN24	2.33	7.57	7.80	3.74	1.77
Air quality exceedances	#		G4-EN29	0	0	0	0	0
Industrial wastewater limit exceedances	#		G4-EN29	2	1	1	1	0
Environment, Health & Safety (EH&S) management								
Environmental capital expenditures	$ millions	S	G4-EN31	0	0	6.17	5.22	3.93

East Coast Canada environment footnotes

1 In 2014 Terra Nova returned to normal operations after a maintenance shut-down in 2013, which resulted in higher production in 2014.

A Total amount of product sold. Net production is used to calculate intensities. Terra Nova production only includes oil sales, not flaring or internally produced fuel.

Barrels of oil equivalent and cubic metres of oil equivalent may be misleading as an indicator of value. See "Advisories".

B Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions each facility is required to report its GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exists, then the most applicable and accurate methods available are used to quantify each emission source. Decreases in 2015 GHG emissions relative to 2014 are attributed to increased planned and unplanned maintenance activities in 2015.

C The increase in SO_2 emissions from 2012 to 2013 was due to the off-station turnaround conducted in 2012, a return to full operations in 2013, in addition to the increase in sulphur content in the reservoir. The decrease in 2015 relative to 2014 resulted from a change in the boiler fuel source.

D There was an increase in NO_x emissions in 2013 relative to 2012, due to the extended off-station turnaround during 2012. Full operations were resumed in 2013 resulting in higher production.

E In 2013, there was a decrease in total VOCs and VOC emissions intensity relative to 2012, due to the installation of the hydrocarbon blanketing system in the cargo tanks. The increase in 2015 is due to lower efficiency of the hydrocarbon blanketing system in the cargo tanks compared to 2014.

F The increase in overall NPRI emissions for 2013 relative to 2012 was attributable to the extended off-station turnaround that occurred in 2012. In 2015, there were more VOCs, contributing to an increase in NPRI emissions, relative to 2014.

G The decrease in flared gas intensity for 2013 relative to 2012 was due to an increase in production resulting from return to normal operations after the turnaround in 2012.

H Total energy is equal to the sum of direct and indirect energy.

I Direct energy is primary energy consumed on-site by Suncor-operated facilities. For Suncor's East Coast operations, direct energy includes diesel and natural gas consumption for heat and power generation on the Terra Nova FPSO, as well as natural gas consumed in flaring operations. There is no electrical power imported from the local grid as our operated properties are offshore platforms; therefore, the indirect energy is 0.

J This metric reports reductions in energy consumption as a result of conservation and efficiency initiatives, if applicable.

K For East Coast operations, water withdrawal includes freshwater bunkered to the FPSO potable water tanks for domestic use on the facility. All freshwater is transferred by vessel, and taken from the city of St. John's domestic water system. It also includes topside seawater intake flow used for process cooling and water injection for production purposes. There was an increase in seawater withdrawal in 2013 relative to 2012 due to the extended off-station turnaround that occurred in 2012.

L Water returned includes both freshwater and seawater, and the destination of this return is the Atlantic Ocean.

M Water consumption increased in 2013 relative to 2012 due to the extended off-station turnaround that occurred in 2012.

N Produced water is all formation and other water brought to the surface during the normal course of the production process.

O Prior to 2014, waste that was reused, recycled and recovered was not included in the totals for hazardous and non-hazardous waste generated and was reported as an aggregated total. Beginning in 2014, in order to provide a more detailed depiction of the waste streams created due to our operations, we have included this category of waste in both hazardous and non-hazardous total waste generated.

P A regulatory contravention is an environmental incident that breaches a regulatory limit (prescribed threshold required by legislation, approval or permit from a regulatory authority) or requirement (any law, act, regulation, licence, standard, approval, directive and/or permit applicable to Suncor's activities) and that triggers formal regulatory reporting.

Q Reportable spills are defined in accordance with federal and provincial regulations.

R Includes both hydrocarbon and non-hydrocarbon spills.

S The environmental expenditures consist of, but are not limited to, expenditures for environmental monitoring, environmental assessments, waste disposal, emissions treatment, external services for environmental services, research and development, produced water clarifying chemicals and emergency response services. It does not include personnel and base business costs.

Economic[2]

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Purchases								
Goods and services	$ millions	T		894	727	816	606	410
Goods and services purchased in or from:								
• Canada	$ millions			659	614	721	324	251
• Local businesses and suppliers	$ millions	U	G4-EC9	787	594	--	--	--

East Coast Canada economy footnotes

T Goods and services purchases exclude Syria and Libya and is most representative of our East Coast Canada operations, but due to data availability is inclusive of our other international and offshore activity, including non-operated assets.

U Local businesses/suppliers are those established in the region of operations (Newfoundland, Nova Scotia, United Kingdom and Norway). Beginning in 2014, local spend is reported on a Suncor-wide basis only.

Social[3]

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Health and safety								
Employee lost-time injury frequency		V	G4-LA6	--	--	0	0.22	0
Contractor lost-time injury frequency		V	G4-LA6	--	--	0	0.16	0.2
Employee recordable injury frequency		V	G4-LA6	--	--	0.18	0.22	0
Contractor recordable injury frequency		V	G4-LA6	--	--	0.40	0.16	0.41
Fatalities		V	G4-LA6	--	--	0	0	0
Employee relations								
Employees receiving performance reviews	%		G4-LA11	100	100	100	100	100

Training and development	$ thousands	W	G4-LA9	435	956	2,008	157	0
Ratio of lowest wage to minimum wage	%	X	G4-EC5	1.3	2.4	2.4	2.6	2.4
Ratio of average wage to minimum wage	%	X	G4-EC5	5.6	6.6	6.4	5.3	5.2
Ratio of jobs offered to jobs accepted	%	Y		1.22	1.13	--	--	--
New employee hires:		Z	G4-LA1					
• Male	%		G4-LA1	73.5	66.7	80.0	92.3	58.3
• Female	%		G4-LA1	26.5	33.3	20.0	7.7	41.7
• Age less than 30	%		G4-LA1	29.4	22.2	8.6	30.6	25.0
• Age 30 to 50	%		G4-LA1	52.9	68.9	82.9	53.8	75.0
• Age greater than 50	%		G4-LA1	17.6	8.9	8.6	15.4	0
Employee turnover:	%		G4-LA1	17.3	4	9.2	11.7	8.6
• Male	%		G4-LA1	17	4.1	7.4	12.1	8.0
• Female	%		G4-LA1	6.4	3.6	15.3	11.5	7.7
• Age less than 30	%		G4-LA1	21.2	6.1	3.2	4.8	4.8
• Age 30 to 50	%		G4-LA1	19.3	3.9	12.4	12.6	5.3
• Age greater than 50	%		G4-LA1	12.4	2.9	4.6	11.2	14.0
Workforce								
Suncor employees			G4-10	367	317	448	360	342
• Full-time			G4-10	356	306	437	351	333
• Part-time			G4-10	10	10	10	9	9
• Temporary/casual			G4-10	1	1	1	0	0
• Long-term contractors			G4-10	30	43	56	75	22
Workforce unionized	%		G4-11	0	0	15	18.9	19.6
Equal opportunity and workforce diversity		AA						
Aboriginals	%	AA	G4-LA12	0.05	0.3	0.9	1.1	1.8
Visible minorities	%	AA	G4-LA12	6.5	7.6	4.0	3.9	2.9
Persons with disabilities	%	AA	G4-LA12	0.5	0.3	0.7	0.6	0.09
Women	%	AA	G4-LA12	25.6	26.2	21.9	16.9	19
Men	%	AA	G4-LA12	72.2	69.4	75.0	78.3	76.3
Age less than 30	%		G4-LA12	9	10.4	6.9	5.8	6.1
Age 30 to 50	%		G4-LA12	53.7	56.2	59.6	61.9	60.5
Age greater than 50	%		G4-LA12	37.3	33.1	34.2	32.2	33.3

Diversity in management	% in management							
Employees in management	%		G4-LA13	19.6	29	19.6	21.7	28.1
Women in management	%		G4-LA13	12.5	14.1	17.0	16.7	10.4
Persons with disabilities in management	%		G4-LA13	0	0	0	0	1
Age less than 30 in management	%		G4-LA13	0	0	0	0	0
Age 30 to 50 in management	%		G4-LA13	45.8	48.9	58	61.5	58.3
Age greater than 50 in management	%		G4-LA13	54.2	51.1	42	38.5	41.7

East Coast Canada social footnotes

3 Beginning in 2014, health and safety, employee relations, and workforce data reported here includes our entire Exploration & Production (E&P) business segment, including East Coast Canada, North America Onshore, and non-operated international & offshore assets.

V Beginning in 2014, health and safety data reported here represents our E&P business segment, including East Coast Canada and North America Onshore. In previous years, this had been included under North America Onshore performance data, but due to significant divestments in our conventional natural gas business in 2013 and 2014, this data is reported with East Coast Canada.

A lost-time injury requires medical attention and results in an employee being absent from work on the next regularly scheduled workday or any subsequent workday. Lost-time injury frequency is the number of such injuries per 200,000 hours worked, divided by the number of exposure hours.

Recordable injuries include lost-time injuries as well as medical aid injuries. Medical aid injuries require medical attentions but do not result in an employee being absent from work. Recordable injury frequency is the sum of lost time and medical aid injuries per 200,000 hours worked, divided by the number of exposure hours.

W Fees for professional development courses taken by Suncor employees.

X Compares full-time base wage to the province of Alberta's minimum wage ($12.20/hour in 2016). Beginning in 2014, Alberta's minimum wage was used across our operations for this metric for comparison purposes.

Y Beginning in 2014, this indicator is reported Suncor-wide.

Z Any externally-hired regular full-time or regular part-time employee whose permanent start date falls within the reporting period.

AA Certain operating regions prohibit collecting information on gender; therefore data presented here may not be reflective of our entire workforce due to data availability.

Workforce diversity is calculated based on information provided voluntarily by employees. Indicators referring to ethnicity and disability reflect only those employees who consented to release of this information.

Refining & Marketing

We operate facilities in the Refining & Marketing (R&M) business segment in Alberta, Ontario, Quebec and Colorado. R&M also includes emissions data from Suncor's Canadian terminals and pipelines, which account for a small percentage of the total R&M numbers and are deemed to be negligible. Suncor Montreal Sulphur Plant data is also included from the purchase date in July, 2014. Suncor Energy closed the sale of our Petro-Canada Lubricants Inc. (PCLI) in early 2017, but performance from our lubricants facility is represented up to and including 2016. Data from these R&M facilities are consolidated here for reporting purposes.

Expand all | Collapse all

Environment

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Production								
Net production	million cubic metres (m^3) saleable yield / year	A	OG1	27.21	27.09	26.91	27.37	26.98
Air emissions								
Greenhouse gas (GHG)	thousand tonnes carbon dioxide equivalent (CO_2e)	B	G4-EN15 G4-EN16	5,420	5,406	5,467	5,438	5,410
GHG emissions intensity	tonnes CO_2e / m^3 production		G4-EN18	0.2	0.2	0.2	0.2	0.2
Indirect (Scope 3) GHG emissions	thousand tonnes CO_2e	C	G4-EN17	1,473	1,523	1,369	1,462	1,526
Sulphur dioxide (SO_2)	thousand tonnes	D	G4-EN21	5.77	6.13	5.86	5.36	7.63
SO_2 emissions intensity	kilograms (kg) / m^3 production		G4-EN21	0.21	0.23	0.22	0.20	0.28

Nitrogen oxides (NO_x)	thousand tonnes		G4-EN21	4.53	4.55	4.00	3.83	3.72
NO_x emissions intensity	kg / m^3 production		G4-EN21	0.17	0.17	0.15	0.14	0.14
Volatile organic compounds (VOCs)	thousand tonnes		G4-EN21	4.25	4.68	4.38	4.37	4.33
• Benzene	tonnes		G4-EN21	46.37	46.48	40.09	39.62	36.22
• Toluene	tonnes		G4-EN21	123.86	115.85	116.91	104.31	95.53
• Ethylbenzene	tonnes		G4-EN21	10.51	10.16	9.63	10.03	9.22
• Xylene	tonnes		G4-EN21	62.27	58.91	59.42	57.30	56.06
VOC emissions intensity	kg / m^3 production		G4-EN21	0.16	0.17	0.16	0.16	0.16
National Pollutant Release Inventory (NPRI) on-site releases	thousand tonnes	E	G4-EN21	20.01	20.84	20.32	19.79	20.80
Flared gas	million m^3		OG6	71.9	100.7	101.87	110.12	105.16
Flared gas intensity	m^3/m^3 production		OG6	2.64	3.72	3.79	4.02	3.90
Energy consumption								
Total energy use	million gigajoules (GJ)	F	G4-EN3 G4-EN4	83.23	84.37	86.18	88.07	85.83
• Direct energy use	million GJ	G	G4-EN3	71.5	72.5	74.03	75.99	74.65
• Indirect energy use	million GJ	G	G4-EN4	11.71	11.83	12.14	12.08	11.46
Energy intensity	GJ / m^3 production		G4-EN5	3.1	3.1	3.2	3.2	3.18
Electricity imports	million gigajoules		G4-EN3	6.08	6.25	5.97	5.07	6.21
Electricity import intensity	GJ / m^3 production		G4-EN3	0.22	0.23	0.22	0.23	0.23
Steam imports	million gigajoules		G4-EN3	5.63	5.59	6.17	5.76	5.24
Steam import intensity	GJ / m^3 production		G4-EN3	0.21	0.21	0.23	0.21	0.19
Energy saved through conservation and efficiency improvements	thousand GJ		G4-EN6	1,387.18	515.45	200.78	640.38	605.26
Water use								
Total water withdrawal	million m^3		G4-EN8	82.33	77.83	83.05	91.17	90.66
• Surface water withdrawal	million m^3	H	G4-EN8	70	64.72	71.33	79.27	78.46
• Groundwater withdrawal	million m^3		G4-EN8	0.6	0.6	0.3	0.3	0.3

• Municipality, city or district water withdrawal	million m^3	I	G4-EN8	3.07	2.95	2.44	3.18	3.05
• Treated wastewater from external organizations	million m^3	J	G4-EN8	2.7	1.54	1.29	1.51	1.37
• Industrial run-off water withdrawal	million m^3	K	G4-EN8	5.95	8.02	7.67	6.89	7.44
Total water withdrawal intensity	m^3 / m^3 production		G4-EN8	3.03	2.87	3.09	3.33	3.36
Water returned	million m^3		G4-EN22	65.46	61.39	72.21	73.88	76.24
Water consumption	million m^3	K		16.87	16.44	10.92	17.28	14.42
Water consumption intensity	m^3 / m^3 production	K		0.62	0.61	0.41	0.63	0.53
Water discharge quality								
Oil and grease	tonnes		G4-EN22	24.52	16.81	14.84	16.76	18.54
Total suspended sediment	tonnes		G4-EN22	360.24	116.47	118.60	117.97	143.41
Phenol	tonnes		G4-EN22	0.08	0.25	0.34	0.19	0.15
Ammonia	tonnes		G4-EN22	14.47	6.56	7.84	6.66	11.49
Waste management		L						
Total hazardous waste generated	thousand tonnes	L	G4-EN23	1,317.07	1,239.30	1,283.91	1,062.27	1,058.50
• Hazardous waste incinerated	tonnes		G4-EN23	1,977.62	1,245.08	2,940.08	2,244.37	3,535.54
• Hazardous waste deep well injected	tonnes	M	G4-EN23	1,302,958.00	1,231,221.23	1,232,852.00	961,873.43	962,747.47
• Hazardous waste landfilled	tonnes	L	G4-EN23	7,205.94	1,907.53	734.19	3,265.96	8,781.34
• Hazardous waste otherwise disposed	tonnes	L	G4-EN23	4,932.98	4,925.45	5,248.60	3,920.04	3,067.64
• Hazardous waste recycled, recovered or reused	tonnes	L	G4-EN23	–	–	42,134.50	90,964.36	80,371.12
Total non-hazardous waste generated	thousand tonnes	L	G4-EN23	84.7	44.7	48.70	46.13	50.24
• Non-hazardous waste incinerated	tonnes		G4-EN23	145.05	158.1	174.00	660.00	486.34
• Non-hazardous waste deep-well injected	tonnes	N	G4-EN23	460.98	2,496.24	1,210.00	801.00	872.30
• Non-hazardous waste landfilled	tonnes		G4-EN23	39,475.28	16,672.11	22,785.54	26,239.54	26,558.38

• Non-hazardous waste otherwise disposed	tonnes	O	G4-EN23	18,173.55	25,407.47	3,241.22	3,587	1,420.82
• Non-hazardous waste recycled, recovered or reused	tonnes	L	G4-EN23	–	–	21,287.77	14,841.59	20,901.10
Waste reused, recycled, or recovered (off-site)	thousand tonnes	L	G4-EN23	69.16	55.23	–	–	–
Waste reused, recycled, or recovered (on-site)	thousand tonnes	L	G4-EN23	21.48	9.49	–	–	–
Products and services								
Ethanol blended into gasoline	thousand m^3	P	G4-EN27	979	828	1,000	1,027	1,135
Sulphur content of gasoline	parts per million (ppm)	Q	OG8	25.8	25.3	18.7	15.7	15.3
Compliance								
Regulatory contraventions	#	R	G4-EN29	18	23	13	19	2
Regulatory fines	$ thousands	S	G4-EN29	2,354	130	2,257	894	264.8
Reportable spills	#		G4-EN24	99	103	107	91	60
Total volume of reportable spills	m^3		G4-EN24	71.78	2,082.02	124	1,208.54	22.11
Air quality exceedances	#		G4-EN29	81	43	45	65	49
Water effluent exceedances	#		G4-EN29	0	0	2	5	2
Leaks from underground storage systems	#		G4-EN24	0	0	0	0	1
Environment, Health & Safety (EH&S) management								
Environmental capital expenditures	$ millions		G4-EN31	59.24	68.45	32.7	32.17	51.30

Refining & Marketing environment footnotes

A On a business unit level, net production is reported where interplant transfers have been identified and removed from the facility production total. This value is calculated by adding each of the Refining & Marketing (R&M) saleable yield production volumes, minus the transfers between R&M facilities. Terminals, Pipelines and the Montreal Sulphur Plant do not contribute to R&M production (denominator for GHG intensity), only absolute GHG emissions (numerator for GHG intensity) due to the definition of the corporate wide production metric.

B Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions within which each facility is required to report its GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exists, then the most applicable and accurate methods available are used to quantify each emission source.

R&M emissions are inclusive of emissions from the pipeline from Oil Sands to the Edmonton Refinery as well as the pipelines from Firebag to Oil Sands and Fort Hills to Oil Sands. In addition, R&M emissions include emissions from the Burrard terminal and the Montreal Sulphur Plant (purchased in 2014). These emission sources are broken out separately from other R&M sites in the 2015 GHG Performance section, classified as "Other".

For the Edmonton refinery, GHG emissions and emission intensity values are consistent with Suncor's Specified Gas Emitters Regulation (SGER) Bill 3 reported Total Annual Emission (TAE) values, with the exception that total indirect emissions have been included here. The production metric used for the SGER emissions intensity is different than what is used here. SGER production is a Refinery Activity Index based value and the production used for our Report on Sustainability is saleable yield. For our operations in Quebec and Ontario, the data is consistent with the guidelines for those provinces which are aligned with Western Climate Initiative. The only exception applies to provincial reports for our facilities in Ontario and Quebec which use the Intergovernmental Panel on Climate Change's (IPCC's) third assessment global warming potentials (GWPs). Our 2013-2017 Reports on Sustainability use IPCC's fourth assessment GWPs. For our Commerce City refinery, the data is consistent with the guidelines for the EPA's Mandatory Reporting Rule, with the exception of the emissions reported in Sub-part MM.

Scope 2 indirect emissions include those associated with the purchases of electricity, steam, heat, and cooling. Emissions are calculated based on actual supplier data where possible and published literature where supplier data is unavailable. Prior to 2014, emissions associated with the purchase of hydrogen had been included as an indirect Scope 2 source; however, it was brought to our attention that industry best practice is to include these emissions as an indirect Scope 3 source and therefore they have been removed from all reported data points and included in the indirect Scope 3 GHG category.

Carbon dioxide sold by the facilities is reported under indirect Scope 3 to be consistent with Ontario and Quebec regulatory guidance. Hydrogen purchased from third parties is also included in this category. These values are reported under indirect Scope 3 emissions in this table and in our Suncor-wide performance data.

C Indirect Scope 3 GHG emissions reported here include emissions related to purchased hydrogen and CO_2 streams that are sold to third parties. In 2013 it was brought to our attention that industry best practice for disclosing emissions associated with the purchasing of hydrogen should be classified as a Scope 3 indirect source as they do not fall under the Scope 2 indirect emission categories of purchased electricity, purchased steam, purchased heating or purchased cooling. Therefore purchased hydrogen emissions are reported as a Scope 3 source and have been removed from the Scope 2 indirect emissions category.

D The SO_2 emissions calculation methodology underwent a number of data and process improvements in 2012, which improved the understanding of site conditions for specific facilities.

E Data includes terminal emissions. More information about the Toxic Release Inventory (TRI) can be found on the Environmental Protection Agency website. Beginning in 2015, TRI releases are no longer reported in our Report on Sustainability.

F Total energy is equal to the sum of direct and indirect energy.

G Direct energy is primary energy consumed on-site by Suncor-operated facilities; consumption includes refinery fuel gas, purchased natural gas and other internally produced fuels.

Indirect energy includes imported electricity, steam, heating, and cooling duty.

H Surface water:
- Sarnia: Estimated water withdrawal from the St. Clair River
- Edmonton: North Saskatchewan River
- Montreal: Beginning in 2010, water withdrawal from the St. Lawrence River is metered.
- Mississauga: Estimated water withdrawal from Lake Ontario

I Water purchased from municipality for domestic use with the exception of Commerce City where it is used for both domestic and process.

J Edmonton: Wastewater from Goldbar municipal treatment plant.

K Industrial run-off includes water withdrawn. This run-off volume is included as water returned or water consumed, as applicable to each facility. Water return destination for Refining & Marketing operations varies by facility (North Saskatchewan River, St. Lawrence River, Lake Ontario, St. Clair River and Sand Creek).

L Volume of waste varies from year to year due to periodic equipment maintenance including:
- changing catalyst in reactors and waste water treatment tank
- lagoon cleanouts
- operation shutdowns
- location-specific recycling programs

Prior to 2014, waste that was reused, recycled and recovered was not included in the totals for hazardous and non-hazardous waste generated and was reported as an aggregated total. Beginning in 2014, in order to provide a more detailed breakdown of the waste streams created due to our operations, we have included this category of waste in both hazardous and non-hazardous total waste generated.

M Hazardous waste to deep well injection is dependent on throughput volume, which influences water use.

N Beginning in 2012, experimentation of sending downhole water to external wastewater treatment plant required injection of non-compatible water downhole.

O Changes in water management strategy were made in 2012 that resulted in the creation of a waste stream that had not previously required active management. These changes were in place for all of the 2013 reporting year and thus contributed to a higher value for this metric in comparison to the previous year.

Beginning in 2014, waste water is no longer reported in waste disposal but is captured under the water return category of this report.

P Refineries that blend ethanol into gasoline are Sarnia, Montreal, Commerce City and Edmonton.

Q The volume is an annual average for Sarnia, Commerce City, Montreal and Edmonton refineries. Historically, data was calculated as the weighted average.

R A regulatory contravention is an environmental incident that breaches a regulatory limit (prescribed threshold required by legislation, approval or permit from a regulatory authority) or requirement (any law, act, regulation, licence, standard, approval, directive and/or permit applicable to Suncor's activities) and that triggers formal regulatory reporting.

S Data includes regulatory fines related to environmental contraventions paid during the stated year:
The total fines paid in 2016 by our R&M business was $264,800.

T Professionals dedicated to environment, health or safety matters. Professional Services Agreements (PSAs) and non-positioned contractors are not included in this total. Beginning in 2015, this indicator is reported on a Suncor-wide basis.

Economic[1]

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Tax and royalty credits earned	$ millions		G4-EC4	4.7	1.9	3.3	2.3	2.2
Investments								
Capital and exploration expenditures	$ millions		G4-EC1	644	890	1,021	821	685
Purchases								
Goods and services	$ millions			1,715	2,309	2,815	2,638	2,130
Goods and services purchased in or from:								
• Canada	$ millions			1,302	1,845	2,356	2,103	1,632
• Local businesses and suppliers	$ millions	T	G4-EC9	1,354	1,821	2,290	2,071	1,603

Refining & Marketing economy footnotes

1 For complete disclosure of financial information, see our 2016 Annual Report (PDF, 161 pp. 1.73 MB)

T Local is defined as spend with businesses/suppliers based in Ontario, Quebec, Alberta and Colorado. Data includes all local spend from Suncor's Refining & Marketing operations.

Social

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Health and safety		U						
Employee lost-time injury frequency		V	G4-LA6	0	0.15	0.05	0.06	0.09
Contractor lost-time injury frequency		V	G4-LA6	0.09	0.19	0.09	0.07	0.09
Employee recordable injury frequency		W	G4-LA6	0.15	0.36	0.25	0.26	0.21
Contractor recordable injury frequency		W	G4-LA6	0.42	0.67	0.50	0.54	0.43

Fatalities			G4-LA6	0	0	0	0	0
Employee relations								
Employees receiving performance reviews	%		G4-LA11	100	100	100	100	100
Training and development	$ thousands	X	G4-LA9	4,943	3.833	3,745	1,401	1,341
Ratio of lowest wage to minimum wage		Y	G4-EC5	1.2	2.1	1.19	2.2	2.1
Ratio of average wage to minimum wage		Y	G4-EC5	4.6	4.8	5.0	4.7	4.3
Ratio of jobs offered to jobs accepted		Z		1.01	1.02	–	–	
New employee hires:		AA	G4-LA1					
• Male	%		G4-LA1	70.5	81.6	79.8	79.8	79.7
• Female	%		G4-LA1	29.5	18.4	20.2	20.2	20.3
• Age less than 30	%		G4-LA1	41	40.2	34.8	48.1	39.9
• Age 30 to 50	%		G4-LA1	52.1	54	55.3	48.8	51.0
• Age greater than 50	%		G4-LA1	6.9	5.4	9.9	3.1	9.1
Employee turnover:	%		G4-LA1	3.6	1.3	1.7	3.0	6.2
• Male	%		G4-LA1	3.9	1.2	1.7	2.9	6.2
• Female	%		G4-LA1	0.6	1.8	1.5	3.2	6.3
• Age less than 30	%		G4-LA1	4.6	3.2	2.2	4.1	4.7
• Age 30 to 50	%		G4-LA1	4.1	1.7	4.3	3.7	2.7
• Age greater than 50	%		G4-LA1	2.6	0.3	1.7	1.4	12.7
Workforce								
Suncor employees	#	BB	G4-10	3,145	3,255	3,567	3,416	3,403
• Full-time	#		G4-10	3,083	3,178	3,492	3,356	3,330
• Part-time	#		G4-10	9	10	58	19	26
• Temporary/casual	#		G4-10	53	67	138	41	47
Long-term contractors	#	BB	G4-10	407	399	354	313	82
Workforce unionized	%		G4-11	40.3	35.4	37.3	38.2	38.6
Equal opportunity and workforce diversity		CC						
Aboriginals	%	CC	G4-LA12	1.3	1.1	0.9	0.8	1.2
Visible minorities	%	CC	G4-LA12	8.3	11.3	10.9	10.5	12.4
Persons with disabilities	%	CC	G4-LA12	1.2	1.1	0.9	0.8	0.9
Women	%	CC	G4-LA12	19.2	18.8	20	20	20.9
Men	%	CC	G4-LA12	79.8	79.1	80.0	80	79.1
Age less than 30	%		G4-LA12	9.7	10.4	11.0	10.7	10.7
Age 30 to 50	%		G4-LA12	53.3	52.6	55.2	54.8	56.3
Age greater than 50	%		G4-LA12	36	34.8	34.2	33.2	33.0

Diversity in management								
Employees in management	%		G4-LA12	15.2	15.5	15.9	16.3	16.2
Women in management	%		G4-LA12	18.4	19.4	20.0	20.0	19.4
Persons with disabilities in management	%		G4-LA12	1.5	1.4	1.1	0.9	1.1
Age less than 30 in management	%		G4-LA12	1.7	2	1.6	1.6	1.6
Age 30 to 50 in management	%		G4-LA12	58.5	58.2	58.3	57.2	57.1
Age greater than 50 in management	%		G4-LA12	39.8	39.6	40.1	41.2	41.3

Refining & Marketing social footnotes

U Our U.S. operations use the Occupational Health and Safety Administration (OSHA) definitions to classify their injuries, which differ slightly from Canadian standards. For the most part, OSHA is a more rigorous classification standard than current Canadian standards. Beginning in 2014, Refining & Marketing (R&M) health and safety data reported here includes our St. Clair ethanol plant.

V A lost-time injury requires medical attention and results in an employee being absent from work on the next regularly scheduled work day or any subsequent work day. Lost-time injury frequency is the number of such injuries per 200,000 hours worked, divided by the number of exposure hours.

W Recordable injuries include lost time injuries as well as medical aid injuries. Medical aid injuries require medical attentions but do not result in an employee being absent from work. Recordable injury frequency is the sum of lost time and medical aid injuries per 200,000 hours worked, divided by the number of exposure hours.

X Fees for professional development courses taken by Suncor employees.

Y Compares full-time base wage to the province of Alberta's minimum wage ($12.20/hour in 2016). Beginning in 2014, Alberta's minimum wage was used across our operations for this metric for comparison purposes.

Z Beginning in 2014, this indicator is reported Suncor-wide.

AA Any externally-hired regular full-time or regular part-time employee whose permanent start date falls within the reporting period.

BB Employee is defined as regular full-time, regular part-time, students, casuals or temporary employees. Leaves, other than long-term disability, such as maternity, paternity, personal leave, as well as short-term disabilities, are considered active and are included.

Historical U.S.A. data long-term contractors include contractors at the refinery, based on full-time equivalent staff in the Denver office.

CC Certain operating regions prohibit collecting information on gender, therefore data presented here may not be reflective of our entire workforce due to data availability.

Workforce diversity is calculated based on information provided voluntarily by employees. Indicators referring to ethnicity and disability reflect only those employees who consented to release of this information.

Renewable energy

Our renewable energy interests include:

- Five operational wind power facilities across Canada
- The St. Clair ethanol plant in Ontario

Performance data is reported for renewable energy assets we operate*, including:

- St. Clair ethanol plant
- Wind energy (consolidated data for wind power facilities operated by Suncor)

* For the purposes of this report, data for the St. Clair ethanol plant and wind energy has been reported separately from Refining and Marketing Canadian operations.

St. Clair ethanol plant

We operate the St. Clair ethanol plant, Canada's largest ethanol facility, which opened in 2006 in the Sarnia-Lambton region of Ontario.

Beginning in 2014, health and safety data for the St. Clair ethanol plant is reported in the Refining & Marketing (R&M) performance data.

Expand all | Collapse all

Environment

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Production								
Net ethanol production	million cubic metres (m^3) of oil equivalent / year	A	OG1	0.25	0.25	0.25	0.26	0.25
Net ethanol production	million litres of ethanol product / year		OG1	412.51	414.98	412.45	417.91	414.39
Air emissions								
Greenhouse gas (GHG)	thousand tonnes carbon dioxide equivalent (CO_2e)	B	G4-EN15 G4-EN16	167.12	169.52	164.76	168.94	166.09
GHG emissions intensity	tonnes CO_2e / m^3 production		G4-EN18	0.66	0.67	0.65	0.66	0.65

Indirect (Scope 3) GHG emissions	thousand tonnes CO_2e	C	G4-EN17	36.3	22.2	13.27	25.49	44.35
Biomass GHG emissions	thousand tonnes CO_2e / m^3 production		G4-EN15 G4-EN16	331.17	347.57	354.20	290.05	268.54
Biomass GHG emissions intensity	tonnes CO_2e / m^3 production		G4-EN17	1.31	1.37	1.40	1.13	1.06
Sulphur dioxide (SO_2)	tonnes		G4-EN21	63.15	61.77	61.90	62.65	62.88
SO_2 emissions intensity	kilograms (kg) / m^3 production		G4-EN21	0.25	0.24	0.25	0.24	0.25
Nitrogen oxides (NO_x)	tonnes		G4-EN21	115.38	117.06	117.49	120.51	119.50
NO_x emissions intensity	kg / m^3 production		G4-EN21	0.46	0.46	0.47	0.47	0.47
Volatile Organic Compounds (VOCs)	tonnes	D	G4-EN21	180.93	184.21	185.86	185.16	179.61
• Benzene	tonnes		G4-EN21	0.03	0.03	0.03	0.03	0.03
• Toluene	tonnes		G4-EN21	0.05	0.06	0.06	0.06	0.06
• Xylene	tonnes		G4-EN21	0.02	0.02	0.02	0.02	0.02
VOC emissions intensity	kg / m^3 production		G4-EN21	0.72	0.72	0.74	0.72	0.71
NPRI on-site releases	tonnes		G4-EN21	574.93	574.8	576.95	583.03	577.23
Energy consumption								
Total energy use	million gigajoules (GJ)	E	G4-EN3 G4-EN4	3.39	3.44	3.45	3.54	3.53
• Direct energy use	million GJ	E	G4-EN3	3.15	3.2	3.21	3.29	3.27
• Indirect energy use	million GJ	E	G4-EN4	0.24	0.24	0.24	0.24	0.27
Energy intensity	GJ / m^3 production		G4-EN5	13.42	13.55	13.67	13.82	13.92
Water use								
Total water withdrawal	million m^3		G4-EN8	1.06	1.05	1.04	1.08	1.07
• Water withdrawal (water purchased from municipality)	million m^3		G4-EN8	1.06	1.05	1.04	1.08	1.07
Water withdrawal intensity	m^3 / m^3 production		G4-EN8	4.18	4.12	4.10	4.22	4.23
Water returned	million m^3		G4-EN22	0.12	0.09	0.11	0.14	0.14

Water consumption	million m^3			0.94	0.96	0.93	0.94	0.93
Water consumption intensity	m^3 / m^3 production			3.71	3.77	3.66	3.68	3.68
Water discharge quality								
Oil and grease	tonnes		G4-EN22	0.36	0.29	0.31	0.24	0.31
Waste management		F						
Total hazardous waste generated	thousand tonnes	F	G4-EN23	0.004	0.03	0.06	0.03	0.04
• Hazardous waste incinerated	tonnes	G	G4-EN23	3.66	29.91	5.32	32.32	40.42
• Hazardous waste otherwise disposed or treated	tonnes	G	G4-EN23	--	--	50.87	0.11	0.45
• Hazardous waste reused, recycled or recovered	tonnes	F	G4-EN23	--	--	5.52	0	0
Total non-hazardous waste generated	thousand tonnes	F	G4-EN23	0.32	0.46	0.89	0.66	0.98
• Non-hazardous waste landfilled	tonnes	G	G4-EN23	316.11	459.94	871.97	608.53	899.47
• Non-hazardous waste reused, recycled or recovered	tonnes	F	G4-EN23	--	--	18.39	34.37	77.95
• Non-hazardous waste incinerated	tonnes	F	G4-EN23	--	--	--	0.21	0
• Non-hazardous waste incinerated	tonnes	F	G4-EN23	--	--	--	14.00	0
Waste reused, recycled and recovered (off-site)	tonnes	F	G4-EN23	14.01	18.38	--	--	--
Compliance								
Regulatory contraventions	#	H	G4-EN29	0	0	10	4	2
Regulatory fines	$ thousands		G4-EN29	0	0	0	0	0
Reportable spills	#		G4-EN24	0	0	0	0	0
• Spills to natural water bodies	#	I	G4-EN24	0	0	0	0	0

Total volume of reportable spills	m^3		G4-EN24	0	0	0	0	0
Air quality exceedances	#		G4-EN29	0	0	0	0	0
Industrial wastewater limit exceedances	#	J	G4-EN29	0	0	1	0	0
Environment, Health & Safety (EH&S) management								
Environmental capital expenditures	#	K	G4-EN31	–	–	–	0.26	0.11

St. Clair ethanol plant environment footnotes

A Total net production refers to ethanol production from the St. Clair ethanol plant, converted to cubic metres of oil equivalent, on an energy basis.

Cubic metres of oil equivalent may be misleading as an indicator of value. See "Advisories".

B Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions each facility is required to report its GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exists, then the most applicable and accurate methods available are used to quantify each emission source. GHG emissions are consistent with what is reported to the Ontario government. The only exception is the use of the Intergovernmental Panel on Climate Change's (IPCC's) third assessment global warming potentials (GWPs). Our 2013-2017 Reports on Sustainability use IPCC's fourth assessment GWPs.

The St. Clair ethanol plant's wastewater treatment system, Bio-Methanator, produces methane bi-product that is sent to its dedicated flare, the Bio-Methanator Flare. The calculated emissions from this source are based upon ICM's (ICM Inc. designed the St. Clair ethanol plant) and additional derived emission factors, and assumed hours of operations as designed by ICM. The CO_2e emissions from the Bio-Methanator Flare are included in the total GHG emissions and accounts for less than 0.10% of the total GHG emissions. The flare volumes from this source aren't reported in our Report on Sustainability as the Bio-Methanator Flare emissions contributions are extremely low (0.10%) and are calculated based upon conservative assumptions.

C Indirect Scope 3 GHG emissions reported here include emissions related to CO_2 streams that are sold to third parties. Note that this value has fluctuated year over year depending on supplier demand.

D Ethylbenzene is tracked and reported as per NPRI obligations, but not reported as a line item here as the threshold is too low.

E Total energy is equal to the sum of direct and indirect energy.

Direct energy is primary energy consumed on-site by Suncor-operated facilities; consumption includes natural gas.

Indirect energy includes imported electricity, steam, heating and cooling duty from third parties.

F Prior to 2014, waste that was reused, recycled and recovered was not included in the totals for hazardous and non-hazardous waste generated and was reported as an aggregated total. Beginning in 2014, in order to provide a more detailed breakdown of the waste streams created due to our operations, we have included this category of waste in both hazardous and non-hazardous total waste generated. In 2015, we added the categories of: non-hazardous waste incinerated and non-hazardous waste otherwise disposed, as a result of further refining our waste streams.

G In general, waste volumes are dependent on activities conducted at site and can vary from year to year.

Hazardous waste is primarily generated from clean-out of trucks arriving at the ethanol plant. Volume is dependent on the condition of these trucks.

Reductions in 2012 were a result of process improvement with a contracted trucking company. In 2013, two spills of ethanol mixed with rainwater to the tank farm containment area contributed to a larger amount of hazardous waste generated. In 2014, hazardous waste volumes were influenced by the cleanup and disposal of a sulfuric acid tank leak into its containment area.

H In 2014, there were 10 contraventions related to the site's thermal oxidizer and minimum operating temperature limit prescribed in the site's Environmental Compliance Approval. Corrective actions were instituted on site including additional administrative and equipment controls, and scheduled system upgrades planned for implementation in 2017. The contraventions in 2015 and 2016 were also related to the thermal oxidizer.

I Spills that enter the St. Clair River directly, or spills into collection systems that exceed downstream treatment capabilities and result in the release of substances into the St. Clair River.

J In 2014, there was a monthly exceedance of the Table 1 Effluent Limit for total phosphorous limit of 1.0 mg/L as outlined in the site's Environmental Compliance Approval. Corrective actions were instituted which led to site improvements, more effective responses to changes in parameters, and a decrease in the average phosphorous levels in the stormwater management pond.

K Beginning in 2015 we started reporting our environmental capital expenditures for the St. Clair ethanol plant.

Economic

Filter display

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Investments								
Capital and exploration expenditures	$ millions		G4-EC1	1	1	3	1	3

Wind energy

Suncor is involved in five operational wind power facilities. Performance data presented here only reflects facilities operated by Suncor.

Expand all | Collapse all

Environment[1]

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2013	2014	2015	2016
Production							
Net production	MWh	A	OG3	326,953	320,720	313,283	106,912
Air emissions							
Greenhouse gas (GHG)	thousands tonnes CO_2e	B	G4-EN15 G4-EN16	0.16	0.48	0.39	0.05
Sulphur dioxide (SO_2)	tonnes		G4-EN21	0	0	0	0
Nitrogen oxides (NO_x)	tonnes		G4-EN21	0.11	0.12	0.09	0
Volatile organic compounds (VOCs)	tonnes		G4-EN21	0.01	0.01	0	0
Energy consumption							
Total energy use	million GJ	C	G4-EN3 G4-EN4	-1.17	-1.15	-1.12	-0.38
• Direct energy use	million GJ	C	G4-EN3	0	0	0	0
• Indirect energy use	million GJ	C	G4-EN4	-1.18	-1.15	-1.12	-0.38

Water use							
Total water withdrawal	m^3	D	G4-EN8	128	260	170	27
Waste management							
Non-hazardous waste generated	tonnes	E	G4-EN23	<1	0	0	0
Compliance							
Regulatory contraventions	#		G4-EN29	0	0	0	0
Regulatory fines	$ thousands		G4-EN29	0	0	0	0
Reportable spills	#		G4-EN24	0	0	0	0
Total volume of spills	m^3		G4-EN24	0	0	0	0
EH&S management							
Environmental capital expenditures	$ millions		G4-EN31	0	0	0	0

Wind environment footnotes

1 For the purposes of this report, only environmental performance data from Suncor operated facilities has been included. In 2014, this was Kent Breeze and Wintering Hills for full year operation. 2015 data includes Adelaide and partial year for Kent Breeze and Wintering Hills, up to their date of sale. 2016 data only represents operational data from Adelaide (see 2016 GHG Performance for more information)

A Total net production refers to electrical production, in megawatt hours, from Suncor operated wind facilities:

Total net production from these facilities is not adjusted for ownership. Electrical production is not included in the Suncor corporate wide production metric at this time due to the definition of this metric.

B Greenhouse gas (GHG) emissions are calculated using a facility-specific methodology which utilizes various reference methodologies that have been accepted by the relevant jurisdictions each facility is required to report its GHG emissions. Methodology has been followed where a jurisdiction has a prescribed one and if none exists, then the most applicable and accurate methods available are used to quantify each emission source. Beginning in 2014 until its sale in 2015, electricity use for the Wintering Hills facility has been accounted for. 2012 and 2013 emissions are slightly lower as only Kent Breeze electricity use was included. No credit is taken for generated wind offsets.

C Total energy is equal to direct and indirect energy.

Direct energy is primary energy consumed on-site by Suncor-operated facilities, which includes natural gas consumed in backup generators.

Indirect energy includes electricity consumed for field offices. Electricity that is sold to provincial grids is converted to an equivalent amount in GJs and deducted from the total indirect energy. This explains why Wind's indirect energy is reported as a negative value since the wind operations export more electricity than they consume.

D Water withdrawal for our operated wind facilities is comprised of water purchases from municipality for domestic purposes, and is subject to variability.

E Non-hazardous waste for our operated wind facilities is primarily composed of domestic landfill waste.

Major Projects

The Major Projects business area is responsible for providing project management, procurement and construction expertise for large growth projects across the company. Performance data for Major Projects is limited to selected indicators.

Expand all | Collapse all

Environment

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Compliance								
Regulatory contraventions	#	A	G4-EN29	2	13	0	2	2
Regulatory fines	$	B	G4-EN29	0	0	0	0	0
Total volume of reportable spills	cubic metres (m^3)		G4-EN24	0.63	1.06	0	3.41	0.37

Major Projects environmental footnotes

A A regulatory contravention is an environmental incident that breaches a regulatory limit (prescribed threshold required by legislation, approval or permit from a regulatory authority) or requirement (any law, act, regulation, licence, standard, approval, directive and/or permit applicable to Suncor's activities) and that triggers formal regulatory reporting.

B Data includes regulatory fines related to environmental contraventions paid during the stated year.

Economic

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Purchases								
Goods and services	$ millions	C		2,755	2,098	2,236	1,984	4,044
Goods and services purchased in or from:								
• Canada	$ millions	C	G4-EC9	2,632	1,972	2,010	1,720	3,608

Major Projects economic footnotes

C Goods and services purchased from local and Aboriginal businesses are reported in Suncor-wide performance data. Purchases in Canada represent a sub-set of the total goods and services purchased.

Social

Filter display

In the "Footnote" column, click on the down-arrow symbol to display the footnote.

Indicator	Unit	Footnote	GRI Disclosures	2012	2013	2014	2015	2016
Health and safety								
Employee lost-time injury frequency		D	G4-LA6	0	0	0	0	0
Contractor lost-time injury frequency		D	G4-LA6	0.09	0	0.64	0	0.03
Employee recordable injury frequency		E	G4-LA6	0	0	0	0	0
Contractor recordable injury frequency		E	G4-LA6	0.83	1.07	0.61	0.58	0.36
Fatalities			G4-LA6	0	0	0	0	0

Major Projects social footnotes

D A lost time injury requires medical attention and results in an employee being absent from work on the next regularly-scheduled workday or any subsequent workday. Lost time injury frequency is the number of such injuries per 200,000 hours worked, divided by the number of exposure hours.

E Recordable injuries include lost time injuries as well as medical aid injuries. Medical aid injuries require medical attention but do not result in an employee being absent from work. Recordable injury frequency is the sum of lost time and medical aid injuries per 200,000 hours worked, divided by the number of exposure hours.

GRI content index

> This Report on Sustainability has been prepared in accordance with the Global Reporting Initiative (GRI) G4 guidelines 'Core' option and uses the Oil and Gas Sector Disclosures.

Additionally, our 2017 Communication on Progress, detailing our commitment and implementation of the United Nations Global Compact (UNGC) principles has been integrated throughout this report.

The tables below provide information about:

- G4 standard disclosures and material issues (aspects) covered in this report
- UNGC principles addressed
- where to find additional information, either within this report, or other public disclosures, and
- G4 standard disclosures that have been externally assured

Read more about:

- GRI
- UNGC

General standard disclosures

These general standard disclosures describe our organization and sustainability reporting processes.

Expand all | Collapse all

Strategy and analysis

General	Link or direct answer	External	UNGC

Standard Disclosures		Assurance	
G4-1	• CEO message • Vision and strategy	-	
G4-2	• Building Bridges • Climate change • Economic (All sections) • Contribution to the economy • Environment (All sections) • Sustainability goals • Managing enterprise risk • Social (All sections)	-	

Organizational profile

General Standard Disclosures	Link or direct answer	External Assurance	UNGC
G4-3	Suncor Energy Inc.	-	
G4-4	Our operations	-	
G4-5	Calgary, Alberta Canada	-	
G4-6	Our operations	-	
G4-7	Our operations	-	
G4-8	Our operations	-	
G4-9	Our operations [Performance data > Economic > Revenues, market capitalization]: • Suncor-wide [Performance data > Social > Suncor employees and contractors]: • Suncor-wide	-	
G4-10	Total workforce by employment type, contract, and region, and gender by total workforce, by location are reported in the following pages in this report: [Performance data > Social > Suncor employees and contractors]: • Suncor-wide • Oil Sands • In Situ • East Coast Canada • Refining & Marketing No data management system is currently in place to report all employment types by gender (contractors). We anticipate fully reporting this indicator in 2018.	-	6
G4-11	[Performance data > Social > Workforce unionized]: • Suncor-wide • Oil Sands • In Situ • East Coast Canada • Refining & Marketing For additional information related to our employees and collective agreements, see our Annual Information Form dated March 1, 2017, p. 26 (PDF, 98 pp., 357 KB)	-	3
G4-12	Contribution to economy	-	
G4-13	Performance data	-	
G4-14	Vision and strategy	-	
G4-15	• Land and biodiversity • Partnerships and collaboration • Public policy participation	-	

G4-16	Partnerships and collaboration	-	

Identified material aspects and boundaries

General Standard Disclosures	Link or direct answer	External Assurance	UNGC
G4-17	Suncor Energy Inc. Annual Report 2016, pp. 22-24 (PDF, 5 pp. 358 KB) For more information about the entities not covered in this report, refer to the performance data page(s).	-	
G4-18	Materiality review	-	
G4-19	Materiality review	-	
G4-20	• Materiality review • Performance data	-	
G4-21	• Materiality review • Performance data	-	
G4-22	Any re-statements of information provided in earlier reports and reasons for re-statements can be found throughout the performance data pages and accompanying footnotes for specific indicators that have been restated.	-	
G4-23	Significant changes from previous reporting periods in scope, boundary or measurement methods can be found on the performance data page as well as introductory statements for specific business segment performance data pages.	-	

Stakeholder engagement

General Standard Disclosures	Link or direct answer	External Assurance	UNGC
G4-24	Social responsibility	-	
G4-25	Social responsibility	-	
G4-26	• Materiality review • Social responsibility	-	
G4-27	• Air quality • Climate change • Land and biodiversity • Materiality review • Tailings management • Water use	-	

Report profile

General Standard Disclosures	Link or direct answer	External Assurance	UNGC
G4-28	January 1 – December 31, 2016	-	
G4-29	July, 2016	-	
G4-30	Annual	-	
G4-31	1-866-SUNCOR-1 (1-866-786-2671) or email us	-	

G4-32	'In accordance' – Core • GRI content index • Performance data	-	
G4-33	An independent third-party has provided assurance on selected key performance indicators for our Report on Sustainability. The assurance report and indicators that were reviewed can be found on the performance data page.	-	

Governance

General Standard Disclosures	Link or direct answer	External Assurance	UNGC
G4-34	Corporate governance For additional information about our corporate governance structure, and committees of the Board, refer to Schedule C: Corporate Governance Summary of our 2017 Management Proxy Circular (PDF, 111 pp., 888 KB).	-	
G4-35	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary - Risk Oversight, pp. C-3 to C-4) Additionally, a Strategic Issues Management Process is in place to effectively manage our strategic issues. The process identifies, monitors and manages key environmental, economic and social issues most critical to our business and our external stakeholders and sets up a governance system to oversee the management of the issues.	-	
G4-36	We have several senior leadership positions whose roles include sustainability oversight in the organization, including: • Executive Vice President, Business Services (directly reports to the CEO) • Vice President, Sustainability & Communications • General Manager, Sustainability	-	
G4-37	Social responsibility For additional information about stakeholder feedback with our Board of Directors, refer to our 2017 Management Proxy Circular (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary – Communications/Disclosure Policy and Stakeholder Feedback, p. C-4)	-	
G4-38	Suncor Energy Inc. Annual Information Form dated March 1, 2017 (PDF, 98 pp., 357 KB) (Directors and executive officers, pp. 71-76)	-	
G4-39	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule D: Position description for independent board chair)	-	
G4-40	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary, pp. C-11 to C-13)	-	
G4-41	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary – Conflicts of Interest, p. C-9)	-	
G4-42	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule F: Board Terms of Reference – Part IV: Mandate of the Board of Directors, pp. F-4 to F-6)	-	
G4-43	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary – Orientation and Continuing Education, pp. C-7 to C-9) Additionally, our Board of Directors receive periodic reports from our Vice President, Sustainability & Communications. The Environment, Health, Safety & Sustainability Committee of the Board also receives quarterly updates and stewardship on our priority sustainability issues.	-	
G4-44	The Board completes an annual self-evaluation. For details, see the Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 11 pp., 888 KB)(Schedule C: Corporate Governance Summary – Assessment of Directors, pp. C-12 to C-13) Specific information about topics reviewed and action plans that are developed are confidential and not reported.	-	
G4-45	The Board oversees Suncor's Enterprise Risk Management Program. For details, see the Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary –	-	

	Risk Oversight, pp. C-3 to C-5)		
G4-46	The Board oversees Suncor's Enterprise Risk Management Program. For details, see the Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary – Risk Oversight, pp. C-3 to C-5)	-	
G4-47	The Board oversees Suncor's Enterprise Risk Management Program. For details, see the Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Schedule C: Corporate Governance Summary – Risk Oversight, pp. C-3 to C-5)	-	
G4-48	Our Executive Leadership Team, including the CEO, review and approve this report prior to publication.	-	
G4-49	Issues of concern are elevated through the Strategic Issues Management Process to a senior leadership governance body. The Environment, Health, Safety & Sustainable Development committee of the Board also reviews the effectiveness to which we achieve objectives pertaining to the environment, health, safety and sustainable development. This committee also receives a quarterly update and stewardship on our priority sustainability issues	-	
G4-50	Throughout 2016, key issues focused on climate change, water and First Nations issues. In depth discussions, goal setting and initiatives to address these issues have been ongoing and will continue to evolve.	-	
G4-51	Executive pay For more information, see the Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Board of Directors Compensation and Executive Compensation, pp. 17-58)	-	
G4-52	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Board of Directors Compensation and Executive Compensation, pp. 17-58)	-	
G4-53	Suncor Energy Inc. Management Proxy Circular 2017 (PDF, 111 pp., 888 KB) (Advisory Vote on Approach to Executive Compensation, p. 16)	-	

Ethics and integrity

General Standard Disclosures	Link or direct answer	External Assurance	UNGC
G4-56	Ethical business conduct	-	10
G4-57	Ethical business conduct	-	10
G4-58	Ethical business conduct	-	10

Specific standard disclosures

These specific standard disclosures provide context for our management of and performance related to issues identified through our materiality review process.

Expand all | Collapse all

Category: Economic

DMA and Indicators	Link or direct answer *[Performance data section > Data category > Indicator]* *• Company total and/or by business area*	Omissions	External Assurance	UNGC
	Aspect: Economic performance			
G4-DMA	Economic		-	
G4-EC1	[Performance Data > Economic > Economic value generated and distributed]:		-	

	• Suncor-wide • Oil Sands • Refining & Marketing • St. Clair ethanol plant [Performance Data > Social > Community Investment]: • Suncor-wide			
	• Building bridges • CEO message • Climate change action plan • Environment • Social responsibility • Suncor's 2017 CDP Climate Change response, (pp. CC5 and CC6) (PDF, 104 pp., 638 KB)			
G4-EC3	Suncor Energy Inc. Annual Report 2016, (pp. 110-113) (PDF, 54 pp., 358 KB)		-	
	• _____			
	Aspect: Market Presence			
G4-DMA	Economic		-	
G4-EC5	[Performance Data > Social > Ratios of lowest and average wage to minimum wage]: • Oil Sands • East Coast Canada • Refining & Marketing		-	
	Aspect: Indirect Economic Impacts			
G4-DMA	Economic		-	
G4-EC7	• Community investment • Contribution to economy		-	
	• Contribution to economy • Partnering with Aboriginal businesses			
	Aspect: Procurement Practices			
G4-DMA	Economic		-	
G4-EC9	[Performance Data > Economic > Purchases]: • Suncor-wide For more information regarding spending on locally based suppliers, view our Economic page.		-	
OG1	[Performance Data > Environment > Production]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant		Yes Performance Data	

Category: Environmental

DMA and Indicators	Link or direct answer *[Performance data section > Data category > Indicator]* *• Company total and/or by business area*	Omissions	External Assurance	UNGC

	Aspect: Energy			
G4-DMA	Environment		-	
G4-EN3	[Performance Data > Environment > Energy use]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant • Wind energy Suncor's 2017 CDP Climate Change Response, (pp. CC11) (PDF, 104 pp., 638 KB)		-	7, 8
G4-EN4	[Performance Data > Environment > Energy use]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant • Wind energy Suncor's 2017 CDP Climate Change Response, (pp. CC11) (PDF, 104 pp., 638 KB)		-	8
G4-EN5	[Performance Data > Environment > Energy use]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant		-	8
G4-EN6	[Performance Data > Environment > Reduction in energy consumption]: • In Situ • North America Onshore • East Coast Canada • Refining & Marketing		-	8,9
G4-EN7	• Renewables • Technology development		-	8,9
OG2	Suncor's 2017 CDP Climate Change Response, (p. OG6.1 and OG6.2) (PDF, 104 pp., 638 KB)		-	8,9
OG3	[Performance Data > Environment > Production]: • Wind energy		-	8,9
	Aspect: Water			
G4-DMA	Environment		-	
G4-EN8	[Performance Data > Environment > Water withdrawal]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant • Wind energy		Yes Performance Data	7, 8
G4-EN9	Water stewardship Suncor's 2017 CDP Water Response, (pp. CC1.2a, CC5.1 and CC5.1a) (PDF, 46 pp., 340 KB)		-	8
G4-EN10	Water use [Performance Data > Environment > Average annual water recycling rate]: • In Situ		-	8

	Aspect: Biodiversity			
G4-EN11	[Performance Data > Environment > Land holdings for potential and approved development]: • Oil Sands • In Situ Additional information: • Land and biodiversity		-	8
G4-EN12	[Performance Data > Environment > Total land disturbed]: • Oil Sands • In Situ Additional information: • Land and biodiversity		Yes Performance Data	8
G4-EN13	[Performance Data > Environment > Land reclaimed]: • Oil Sands • North America Onshore • In Situ Additional information: • Reclamation		Yes Performance Data	8
OG4	Land and biodiversity			
	Aspect: Emissions			
G4-DMA	Environment		-	
G4-EN15	[Performance Data > Environment > GHG emissions]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant • Wind energy Additional information: • 2016 GHG performance • Suncor's 2017 CDP Climate Change Response, (pp. CC8-CC10) (PDF, 104 pp, 638 KB)		Yes Performance Data	7, 8
G4-EN16	[Performance Data > Environment > GHG emissions]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant • Wind energy Additional information: • 2016 GHG performance • Suncor's 2017 CDP Climate Change Response, (pp. CC8-CC10) (PDF, 104 pp., 638 KB)		Yes Performance Data	7, 8
G4-EN17	[Performance Data > Environment > GHG emissions]: • Suncor-wide		-	7, 8
G4-EN18	[Performance Data > Environment > GHG emissions]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant		Yes Performance Data	8
G4-EN19	• Climate change action plan • Suncor's 2017 CDP Climate Change Response, (pp. CC3.2 and CC3.3) (PDF, 104 pp., 638 KB)		-	8, 9
G4-EN20	[Performance Data > Environment > Ozone depleting substances]:		-	7, 8

	• Oil Sands			
G4-EN21	[Performance Data > Environment > SO_2,NO_x and VOC emissions]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant		-	7, 8
	Aspect: Effluents and waste			
G4-DMA	Environment		-	
G4-EN22	[Performance Data > Environment > Water discharge quality]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant These reported water effluent discharges are planned and the water quality parameters must be analyzed and reported as per regulatory requirements. Unplanned water discharges are rare in normal operating conditions. We currently report the number of unplanned water discharge events as well as the number of effluent/wastewater limit exceedances for applicable business units (reported to regulators).	This information is currently unavailable. We are looking into collecting data to report the quantity and quality of unplanned water discharge events and whether water discharges are reused by another organization and expect to fully report on this indicator in the near future, when collection and tracking information becomes available.	-	8
G4-EN23	[Performance Data > Environment > Hazardous and non-hazardous waste generated]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant Additional information: • Tailings management		-	8
G4-EN24	[Performance Data > Environment > Spills]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant		-	8
G4-EN26	• Land and biodiversity • Tailings management • Water stewardship • Water quality monitoring		-	8
OG5	[Performance Data > Environment > Produced water]: • In Situ • North America Onshore • East Coast Canada		-	
OG6	Flared volumes are reported on the following pages: [Performance Data > Environment > Flared gas]: • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing Suncor's 2017 CDP Climate Change Response, (pp. OG7.6a) (PDF, 104 pp., 638 KB)	We do not report vented gas as it is not material due to the operational practices we have in place to limit venting, such as vapour recovery units that are used on some of our storage tanks.	-	
OG7	[Performance Data > Environment > Drilling waste]: • In Situ		-	

	• North America Onshore			
	Aspect: Products and services			
G4-DMA	Environment		-	
G4-EN27	[Performance Data > Environment > Ethanol blended into gasoline]: • Refining & Marketing Petro-Canada retail stations sell gasoline containing up to 10% ethanol in most markets. In addition, Petro-Canada fuels are Top Tier certified. Use of Top Tier qualified gasolines promotes cleaner engines, reduced emissions and optimal fuel economy. At our upgrader and all of our refining facilities, we have introduced ultra-low sulphur diesel (15 parts per million (ppm) sulphur or less) production to meet Canadian legislative requirements. Suncor supplies renewable content in diesel fuel, meeting a 2% federal mandate, a 4% mandate in British Columbia, 2% mandate in Ontario, and 2% mandates in Alberta, Saskatchewan and Manitoba. Renewable diesel fuel reduces carbon monoxide as well as particulate emissions, which contribute to smog. We also have a biodiesel mixing facility at our Fort McMurray facility (ATT Terminal), seasonally supplying the mine and the local market with up to 5% biodiesel. Note that the mine operates on ultra-low sulphur diesel with sulphur content of less than 15 ppm.		-	7-9
	•			
	Aspect: Compliance			
G4-DMA	Environment		-	
G4-EN29	[Performance Data > Environment > Regulatory contraventions and fines]: • Suncor-wide • Oil Sands • In Situ • North America Onshore • East Coast Canada • Refining & Marketing • St. Clair ethanol plant • Major Projects		-	8
	Aspect: Overall			
G4-DMA	Environment		-	
	• _____			
	Aspect: Environmental grievance mechanisms			
G4-DMA	Environment		-	
G4-EN34	In 2016, 63 grievances, mostly related to environmental impacts, were documented through our formal grievance mechanism. Most concerned turbine noise from wind power projects in Southern Ontario. All of the grievances have been addressed and many have been resolved. Although all have been addressed, some may still be in progress and on their way to being resolved.		-	8

Category: Social

Expand all | Collapse all

Sub-category: Labour practices and decent work

DMA and Indicators	Link or direct answer *[Performance data section > Data category > Indicator]*	Omissions	External Assurance	UNGC

	• *Company total and/or by business area*			
	Aspect: Employment			
G4-DMA	Our employees		-	
G4-LA1	[Performance Data > Social > New employee hires and employee turnover]: • Suncor-wide • Oil Sands • In Situ • East Coast Canada • Refining & Marketing		-	6
G4-LA2	Information about our approach to compensation and benefits can be found on our careers page at Suncor.com		-	
G4-LA3	[Performance Data > Social > Return to work and retention rates]: • Suncor-wide		-	6
	Aspect: Labour/management relations			
G4-DMA	Our employees		-	
G4-LA4	Skilled Labour		-	3
	Aspect: Occupational health and safety			
G4-DMA	Our employees		-	
G4-LA5	Suncor's workforce at Oil Sands, In Situ, Exploration & Production and Refining & Marketing that include operations are represented in formal joint management-worker health and safety committees. These committees address health and safety concerns and provide guidance on required next steps.		-	
G4-LA6	[Performance Data > Social > Injury frequencies and fatalities]: • Suncor-wide • Oil Sands • In Situ • East Coast Canada • Refining & Marketing Occupational disease claims are also reported internally as well as to the regulators for the applicable jurisdiction. Suncor also reports internally on incidence rates for non-occupational illnesses through our Integrated Disability Management program on an enterprise-wide level as well as by business unit.		Yes Performance Data	
G4-LA7	Our operations are not in regions where our employees might inherently be at high risk to communicable diseases such as HIV/AIDS, malaria or tuberculosis, or other serious diseases. Read more about our approach to occupational health and wellness		-	
G4-LA8	Skilled Labour		-	
	Aspect: Training and education			
G4-DMA	Our employees		-	
G4-LA9	[Performance Data > Social > Training and development]: • Suncor-wide • Oil Sands • East Coast Canada • Refining & Marketing	Data for the average hours of training per employee per year is currently unavailable. We recently transitioned to a new learning management system (LMS), allowing us to design, plan, deliver and track employee learning activities across the organization. We are determining how this solution will allow us to report more on this indicator in the near future.	-	6

G4-LA11	[Performance Data > Social > Employees receiving performance reviews]: • Suncor-wide • Oil Sands • In Situ • East Coast Canada • Refining & Marketing		-	6
	Aspect: Diversity and equal opportunity			
G4-DMA	Our employees		-	
G4-LA12	Directors and executive officers can be found in our Annual Information Form dated March 1, 2017 (PDF, 98 pp., 357 KB) (pp. 71-76) Employees by employee category are reported in the following performance data pages of this report: [Performance Data > Social > Minority group, gender and age indicators]: • Suncor-wide • Oil Sands • In Situ • East Coast Canada • Refining & Marketing		-	
	Aspect: Equal remuneration for women and men			
G4-LA13	[Performance Data > Social > Percentage of basic salary (women to men)]: • Suncor-wide		-	6

Sub-category: Society

DMA and Indicators	Link or direct answer *[Performance data section > Data category > Indicator]* *• Company total and/or by business area*	Omissions	External Assurance	UNGC
	Aspect: Indigenous Rights			
OG9	• Aboriginal Relations • Social responsibility		-	
	Aspect: Local communities			
G4-DMA	Social responsibility		-	
G4-SO1	• Social responsibility • Partnering with Aboriginal businesses		-	1
G4-SO2	Social responsibility		-	
OG10	Social responsibility		-	
OG11	[Performance Data > Environment > Land disturbance & reclamation]: • In Situ • North America Onshore Additional information: • Reclamation		-	
	Aspect: Anti-corruption			

G4-SO3	Ethical business conduct Risks around bribery and corruption related to our foreign operations can be found in our Annual Information Form dated March 1, 2017 (PDF, 98 pp., 357 KB) (p. 64-65)		-	10
	• Economic • Ethical business conduct Training specific to the prevention of improper payments is provided on a targeted basis to certain individuals in high-risk jobs and jurisdictions. Certain third party business associates are also provided with anti-corruption training, based on assessed risk.			10
G4-SO5	No unlawful bribery or corruption incidents were recorded in 2016, nor were any such actions brought against Suncor.		-	10
	Aspect: Public policy			
G4-DMA	Public policy participation		-	
	[Performance Data > Economic > Political donations]: • Suncor-wide In past years, Suncor has made minimal political donations in areas where we operate, where permitted by law. Contributions since 2012 are disclosed on the lobbying and disclosure page of this report. As of June 1, 2016, Suncor no longer makes political contributions as a matter of policy, except in exceptional circumstances.			
	Aspect: Anti-competitive behaviour			
G4-DMA	Economic		-	
G4-SO7	Ethical business conduct No regulatory enforcement actions were initiated for anti-competitive conduct against Suncor in 2016. Suncor's business code of conduct provides that Suncor shall in the conduct of its business (a) avoid all practices and activities that are a violation of any provision of competition law, and (b) support and encourage the maintenance of a competitive economy.		-	
	Aspect: Compliance			
G4-DMA	Economic		-	
	Aspect: Asset integrity and process safety			
OG13	Process safety		-	

Sub-category: Product responsibility

DMA and Indicators	Link or direct answer *[Performance data section > Data category > Indicator]* *• Company total and/or by business area*	Omissions	External Assurance	UNGC
OG14	[Performance Data > Environment > Net production] • St. Clair ethanol plant [Performance Data > Environment > Ethanol blended into gasoline] • Refining & Marketing	We currently do not have formal processes in place that establish sustainability criteria for the biofuels we produce or purchase. Sustainability criteria for our produced/purchased biofuels aren't material for Suncor and therefore are not reported.	-	8,9

Advisories

Advisories

Forward-looking statements

Suncor's 2017 Report on Sustainability contains certain forward-looking statements and forward-looking information (collectively, "forward-looking statements") within the meaning of applicable Canadian and U.S. securities laws. Forward-looking statements in Suncor's 2017 Report on Sustainability include references to: Suncor's mission, vision and strategies, including to strive to be the low-cost competitor in its sector without compromising environmental performance, deliver long term value for shareholders, unlock the full value of its resources, deliver triple bottom line sustainability in environmental performance, social responsibility and creating a strong economy, keep costs down, and increase reliability; Suncor's goal to decrease overall greenhouse gas ("GHG") emissions intensity of its production of oil and petroleum products by 30% by 2030, the social goal relating to increasing the participation of Aboriginal Peoples in energy development and strengthening Suncor's relationships with Aboriginal Peoples of Canada, and Suncor's intention to create a long-term goal relating to water conservation; the expected impact of achieving these goals; the expectation that technology will keep Suncor competitive and allow Suncor to grow its business; expectations regarding the sale of a combined 49% interest in the East Tank Farm development to Fort McKay First Nation and Mikisew Cree First Nation; the focus of Suncor's Exploration and Production business, Suncor's expectations (including potential outcomes and benefits) and plans around technologies being developed, tested, introduced in Suncor's operations or considered for use, including technologies related to decarbonization, in situ technologies, including the next generation SAGD platform, remote monitoring, control and support, solvent and surfactant assisted SAGD recovery, radio frequency heating techniques, electromagnetically assisted solvent extraction, non-condensable gas co-injection, direct contact steam generation and produced water treatment, CO_2 capture, surface mining technologies, including paraffinic froth treatment, less aqueous extraction, froth treatment tails, autonomous haulage systems and permanent aquatic storage, land reclamation, wireless badges, wireless gas detection monitors, flaring and tailings management; timelines and plans relating to technology development and testing; the expectation that technology will result in oil sands crudes being both a low cost and low carbon source of crude; the projection that Suncor's oil sands mining projects will produce a reliable, long-term energy supply while leveraging technology to minimize environmental and social impacts; Suncor's aim to bend the curve on the company's absolute GHG emissions; expectations for the Energy Management System; potential replacement of petroleum coke fired boilers and benefits thereof; potential benefits of investment in cogeneration; possible initiatives that could be undertaken to achieve Suncor's sustainability goals; Suncor's strategy to be an industry leader in sustainable development by continued performance improvements in air emissions, water withdrawals, land reclamation and energy efficiency; Suncor's plan to remain resilient in a world transitioning to a lower carbon energy system; the goal to achieve a competitive rate of return over the

life of Suncor's assets; the expectation that even under a scenario that represents a rapid shift away from liquid fuels, none of Suncor's existing assets are at risk of being stranded and the company is positioned to continue to deliver strong shareholder value; the belief that a substantial amount of oil will be required for decades; the view that diesel demand will remain strong; Suncor's goal to continue to reduce costs and carbon intensity; the expectation that first oil from the Fort Hills project will be achieved in the fourth quarter of 2017; the expectation that the Fort Hills project will have a nameplate capacity of 194,000 barrels per day of bitumen and that this will add over 3 million tonnes of CO_2e to Suncor's operated GHG emission profile; expectations for tailings management at Fort Hills; potential future wind and solar power projects in Alberta and Saskatchewan; expectations for renewable power development; Suncor's carbon price outlook and the estimated impact thereof; expected impacts of changing regulations; expectations for the Water Technology Development Centre and the timeline for opening it; expectations for future water use; expectations for Suncor's wastewater plant; land reclamation goals; tailings management plans; future project spending; Suncor's aim to deliver competitive and sustainable returns to shareholders by focusing on capital discipline, operational excellence, long-term profitable growth and leveraging Suncor's competitive differentiators; Suncor's 2017 capital spending plan; Suncor striving to profitably operate and develop its oil sands resources, optimize value through integration, achieve industry-leading unit costs in each business segment and be an industry leader in sustainable development; Suncor's enterprise-wide value driving goals; the expectation that first oil from the Hebron project will be achieved in late 2017; the expectation that future growth projects will be staged to preserve invested capital; the expectation that the East Tank Farm development will support market access for Fort Hills bitumen; workforce expectations and plans; personal and process safety initiatives; and estimates of future absolute GHG emissions and emissions intensity. Some of the forward-looking statements and information may be identified by words like ''expected'', ''anticipated'', ''will'', ''estimates'', ''plan'', ''scheduled'', ''intended'', ''believes'', ''projected'', ''indicates'', ''could'', ''focus'', ''vision'', ''mission'', strategy'', ''goal'', ''outlook'', ''proposed'', ''target'', ''objective'', ''continue'', ''should'', ''may'', ''aim'', ''strives'', ''would'', ''potential'', ''committed'', ''opportunity'' and similar expressions.

Forward-looking statements are based on Suncor's current expectations, estimates, projections and assumptions that were made by the company in light of information available at the time the statement was made and consider Suncor's experience and its perception of historical trends, including expectations and assumptions concerning: the accuracy of reserves and resources estimates; commodity prices and interest and foreign exchange rates; the performance of assets and equipment; capital efficiencies and cost-savings; applicable laws and government policies, including royalty rates and tax laws; future production rates; the sufficiency of budgeted capital expenditures in carrying out planned activities; the availability and cost of labour and services; the satisfaction by third parties of their obligations to Suncor; and the receipt, in a timely manner, of regulatory and third-party approvals. Forward-looking statements are not guarantees of future performance and involve a number of risks and uncertainties, some that are similar to other oil and gas companies and some that are unique to Suncor. Suncor's actual results may differ materially from those expressed or implied by its forward-looking statements, so readers are cautioned not to place undue reliance on them.

Risks, uncertainties and other factors that could influence the financial and operating performance of all of Suncor's operating segments and activities include, but are not limited to, changes in general economic, market and business conditions, such as commodity prices, interest rates and currency exchange rates; fluctuations in supply and demand for Suncor's products; the successful and timely implementation of capital projects, including growth projects and regulatory projects; competitive actions of other companies, including increased competition from other oil and gas companies or from companies that provide alternative sources of energy; labour and material shortages; actions by government authorities, including the imposition or reassessment of taxes or changes to fees and royalties; the ability and willingness of parties with whom we have material relationships to perform their obligations to us; outages to third party infrastructure that could cause disruptions to production; the occurrence of unexpected events such as fires (including forest fires), equipment failures and other similar events affecting Suncor or other parties whose operations or assets directly or indirectly affect Suncor; the potential for security breaches of Suncor's information technology and infrastructure by computer hackers or cyberterrorists, and the unavailability or failure of such systems to perform as anticipated as a result of such breaches; our ability to find new oil and gas reserves that can be developed economically; the accuracy of Suncor's reserves, resources and future production estimates; market instability affecting Suncor's ability to borrow in the capital debt markets at acceptable rates; maintaining an optimal debt to cash flow ratio; the success of the company's risk management activities using derivatives and other financial instruments; the cost of compliance with current and future environmental laws, including climate change laws; risks and uncertainties associated with closing a transaction for the purchase or sale of an oil and gas property, including estimates of the final consideration to be paid or received, the ability of counterparties to comply with their obligations in a timely manner and the receipt of any required regulatory or other third party approvals outside of Suncor's control; risks associated with land claims and Aboriginal consultation requirements; risks relating to litigation; and the accuracy of cost estimates, some of which are provided at the conceptual or other preliminary stage of projects and prior to commencement or conception of the detailed engineering that is needed to reduce the margin of error and increase the level of accuracy. The foregoing important factors are not exhaustive.

Suncor's Management's Discussion and Analysis for the first quarter of 2017 dated April 26, 2017 and its Annual Information Form, Form 40-F and Annual Report to Shareholders, each dated March 1, 2017, and other documents it files from time to time with securities regulatory authorities describe the risks, uncertainties, material assumptions and other factors that could influence actual results and such factors are incorporated herein by reference. Copies of these documents are available without charge from Suncor at 150 6th Avenue S.W., Calgary, Alberta T2P 3E3, by calling 1-800-558-9071, or by email request to info@suncor.com or by referring to the company's profile on SEDAR at sedar.com or EDGAR at sec.gov. Except as required by applicable securities laws, Suncor disclaims any intention or obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Non-GAAP measures

Certain financial measures in Suncor's 2017 Report on Sustainability – namely funds from operations, operating earnings (loss), Oil Sands operations cash operating costs per barrel and discretionary free cash flow – are not prescribed by Canadian generally accepted accounting principles (“GAAP”). These non-GAAP measures are defined and reconciled in Suncor's Management's Discussion and Analysis for the year ended December 31, 2016.

These non-GAAP financial measures do not have any standardized meaning and therefore are unlikely to be comparable to similar measures presented by

other companies. These non-GAAP financial measures are included because management uses the information to analyze business performance, leverage and liquidity, and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with GAAP.

Reclamation

Reclamation at Suncor is a carefully monitored process with two distinct components: (i) transformation of the area, including tailings ponds, into a solid material that can support vegetation, wildlife and landscape restoration, which includes landform design and soil placement; and (ii) re-vegetation in a way that the reclaimed landscape can support vegetation and wildlife as a self-sustaining ecosystem. When Suncor claims that it has reclaimed land or plans to reclaim land, the reclaimed land will have met or is intended to meet the two distinct components identified in this paragraph.

BOEs

Certain natural gas volumes have been converted to barrels of oil equivalent (boe) on the basis of one barrel to six thousand cubic feet. Any figure presented in boe may be misleading, particularly if used in isolation. A conversion ratio of one barrel of crude oil or natural gas liquids to six thousand cubic feet of natural gas is based on an energy equivalency conversion method primarily applicable at the burner tip and does not necessarily represent a value equivalency at the wellhead. Given that the value ratio based on the current price of crude oil as compared to natural gas is significantly different from the energy equivalency of 6:1, utilizing a conversion on a 6:1 basis may be misleading as an indication of value.

Cubic metres of oil equivalent and are calculated on the basis of one boe to 0.159 standard cubic metres. As cubic metres of oil equivalent are based on a conversion involving boe, all values are subject to the same limitations as boe, noted above.

Suncor

References to “Suncor”, “we”, “our” and “the company” in Suncor’s 2017 Report on Sustainability mean Suncor Energy Inc., its subsidiaries, partnerships and interests in associates and jointly controlled entities, unless the context otherwise requires.

Partnerships

The use of “partnership” throughout Suncor’s 2017 Report on Sustainability does not necessarily mean a partnership in the legal context.