**SUNCOR ENERGY INC.** 

# SUNCOR'S CLIMATE REPORT: RESILIENCE THROUGH STRATEGY



# **ABOUT THIS REPORT**

Suncor has an extensive history of reporting on our performance in our annual Report on Sustainability, submissions to several third-party indices and climate change reporting organizations and our Annual Information Form/Form 40-F.

We appreciate that shareholders and other stakeholders may benefit from further information on how Suncor is addressing the challenge of climate change.

This report is intended to provide investors, and in particular, socially responsible investors, with Suncor's perspective on our energy future. It includes information on our leadership on climate change policy advocacy and innovation as well as explores the challenges and opportunities associated with climate change and the transition to a lower carbon economy.

This stand-alone report has been published in response to a shareholder resolution passed at Suncor's 2016 Annual General Meeting. Future reporting will be incorporated into Suncor's 2018 and successive Reports on Sustainability.

# LETTER FROM THE PRESIDENT AND CEO



It often seems that energy conversations are characterized by shouting between those who would fiercely defend status quo and those who would forge an entirely new way. But, there is a coherent path to the future that includes both traditional and new sources of energy. In a world of rising energy demand, it is not a choice between one or the other; we will need many forms of energy. In fact, many would argue that the wealth and economic stability created by traditional sources of energy is necessary to pave the way for Canada to transition to a low carbon economy. However, the intense polarization that characterizes current dialogue is not productive and the risk is that it may hold up progress for decades. Leadership is needed to unify a global vision of an energy future that is progressive, yet practical.

Energy production and consumption exist in a broad and complex social, financial, and political system that will determine the pace and scale of the energy system transformation. As a major supplier of energy to Canadians and globally, we have a responsibility to navigate strategically between the aspirational and the realistic. Carbon risk is just one of many strategic and operational risks of our business. It is an inherently risky business to find, produce and process oil products. Various risks include price, technical, supply of materials, labour, economic, geo-political as well as the health and safety of employees and the protection of the environment.

This is the first time that we have produced a stand-alone report on climate and strategy. The process in itself has been valuable. We do support transparent and clear-headed carbon risk disclosure. We do not see a picture of doom and gloom for our industry. We do believe that oil demand will likely start to peak within 20-30 years at a level that is higher than today and although demand will decline thereafter, we expect oil will still be needed for decades. However, we do test our business strategy under a scenario where policy and technology cause oil demand destruction sooner and still see Suncor continuing to deliver value to shareholders. In this disclosure, we aim to provide investors and other stakeholders with insight into how we see the energy transition unfolding, our strategy through that transition and the options that we are building for the future. We expect that we will update this report as part of our Report on Sustainability in coming years and in so doing, continue to challenge our own thinking and assumptions about the global energy future.

Suncor will continue to play a role advocating for climate policy leadership for Alberta and Canada – ensuring that Canada, a resource producing jurisdiction, has a place at the global table to influence collective action on the global challenge of climate change.

Sincerely,

Steven W. Williams

president and chief executive officer

#### **EXECUTIVE SUMMARY**

As Canada's leading integrated energy company, we have an important role to play in improving our environmental performance while delivering energy and shareholder value.

#### Mitigating emissions

Energy cost is one of Suncor's biggest production inputs and contributes to our business' emissions. We're striving to reduce emissions intensity through a new performance goal which is expected to drive operational energy and fuel efficiency improvements and accelerate the adoption of new technology development.

# Innovation for the future

In addition to investment in collaborative and venture capital structures, Suncor invests more than \$150 million annually in research and technology to optimize current assets and develop next generation facilities. We believe that next generation technology and energy innovation will move from incremental to transformational change at a pace and scale that has not been seen before.

# **Assessing risk**

Suncor undertakes a corporate-wide process to identify, assess and report on significant risks, which in 2016 included carbon pricing as a principal risk. Our assessment is supported by a Carbon Price Outlook, which highlights regulations and their expected trajectory, as they apply to our assets. Suncor's assessment draws on forecasts from agencies such as the International Energy Agency (IEA) and IHS Markit for our long term, post-2035 energy outlook.

# Integrating carbon risk into decision making

Our investments and capital decisions are tested against a range of variables, including our Carbon Price Outlook, to ensure a competitive rate of return over the asset life. These price outlooks are one way to ensure we plan effectively for potential future business environments, including scenarios that envisage accelerated demand reduction for our products.

# The energy system of tomorrow

The World Business Council for Sustainable Development has framed the 2050 challenge as "nine billion people not just living on the planet, but living well and within the limits of the planet."

As the energy system transitions away from carbon intensive sources of energy, we expect hydrocarbon fuels will continue to be needed to help meet increased global energy demand over the next 50 years.

We use scenario planning to assess the future and believe that the "autonomy" scenario best represents the technology and policy context that would be essential to meet "450 ppm." However, all of our scenarios point to the need for us to continue to aggressively lower costs and carbon intensity throughout our business. This is not only good for the environment but we believe it is also good for business.

### Business strategy for a changing future

We believe a clear outlook on where the industry is headed and key short and long term influencers is essential as we adjust to technology that has opened up new oil supply sources and changed the supply cost curve.

In terms of oil sands, our long term reserve base sharply reduces exploration costs and risk. The unique characteristics of the resource provide resiliency to continue to deliver value to shareholders in a carbon-constrained future.

Over the past few years, we've made major strides in reliability and exploiting location and logistics synergies.

Downstream, we expect to see a modest decline in demand for gasoline in North America over the next 10 years, accelerating towards 2030, given enhanced fuel efficiency standards and alternate fuels adoption.

Hybrid, plug-in hybrid and electric vehicles are expected to become cost effective additions to the passenger vehicle fleet and will, along with fuel efficiency standards, contribute to moderating long-term gasoline demand. Alternative fuels to replace diesel for heavy duty fleets, marine, and rail are currently more costly and less efficient.

However, we believe cost, consumer familiarity, and carbon competitiveness driven by improvements in internal combustion engines mean liquid fuels will remain the primary fuel source of vehicle mobility for many years to come.

Natural gas is expected to continue to play a critical role in bridging to a low carbon future, particularly in transitioning power generation away from coal. Suncor continues to review and assess market outlook and market access to determine the appropriate timing for development of its natural gas asset in British Columbia's Montney field.

Suncor entered the renewable power generation business in 2002 to participate in this growing energy sector.

Through the addition of cogeneration power, we are also the fifth largest independent power producer in Alberta and expect to continue to develop generation capacity to support our own needs while supporting the development of lower carbon intensity power grids.

# **Carbon policy and impacts on Suncor**

The decisions we make are influenced by public policy in the areas where we operate. As a result of the ratification of the Paris Accord, we expect that governments around the world will be focused on new technology, energy pathways and policy frameworks required to achieve a stable and responsible transition to a lower carbon energy system while meeting rising global demand for energy.

## Facility resilience to extreme weather events

Many of Suncor's facilities routinely operate in extreme temperatures and facilities are built to withstand extreme weather events.

# **OUR PERSPECTIVE ON CLIMATE CHANGE**

The World Business Council for Sustainable Development has framed the 2050 challenge as "Nine billion people not just living on the planet, but living well and within the limits of the planet." The goal of the energy system, in this context, is to deliver to nine billion people safe, affordable energy that minimizes carbon emissions.

Energy is the backbone of the economy and delivers much of our well-being and high guality of life, in addition to heating our homes and powering manufacturing. The ability to move goods across the continent to markets and for people to be able to travel and work relies on robust, affordable transportation systems. Given what energy delivers each day, it is critical to maintain the integrity of the physical system and, understanding that energy is also part of a bigger financial and social system, maintain user utility and investor confidence.

There is general consensus that limiting the impact of climate change requires that the global average increase in temperature remain below 2 C, relative to pre-industrial levels. Suncor supports the national commitments to reduce carbon emissions consistent with this objective that were made in accordance with the Paris Agreement reached in 2016. To achieve this objective, there must be significant advances in technology, a shift in consumer choice and the development of new energy systems over the next 25-50 years.

As the energy system transitions away from carbon intensive sources of energy, it is clear that hydrocarbon fuels will continue to be needed to help meet global energy demand over the next 50 years, particularly in developing economies. All types of energy will be needed and no single solution or pathway will meet the challenge. The pathways to a diversified and robust energy system require embracing, and getting the best out of, both traditional and new sources of energy.

# **LEADERSHIP IN CLIMATE POLICY**

Suncor believes that industry has a key role in developing climate change policy and publicly advocates for a broadbased carbon levy, equitably applied to both energy producers and consumers, as the most effective, practical and cost efficient policy design.

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 supports Canada's Ecofiscal Commission in broadening the discussion of carbon pricing into the realm of practical policy application. The Commission brings together economists to inform the critical discussion about the ecofiscal reform that Canada's future requires.

Recently, Suncor was part of a process for building a consensus on a path forward for Alberta's climate plan. At the time it was announced, Suncor came together with four of Canada's largest oil sands producers and leading environmental advocacy groups to publicly support the Alberta Climate Leadership Plan which is the most ambitious in North America and sets a global precedent of being the first resource producing jurisdiction to cap the total emissions from a resource basin.

We believe the policy provides the certainty to help producers responsibly develop the oil sands while also addressing global concerns about climate change. We further believe that leading climate change policy applied to our sector will play a part in restoring confidence in the energy industry necessary to advance pipeline and market access decisions.



#### Advancing the energy dialogue

Transitioning an energy system is as much a social and cultural shift in how people think about and use energy as it is a technological and infrastructure shift. Through the Suncor Energy Foundation, Suncor supports organizations that educate Canadians on the energy system. We're also working to promote an understanding of the changing energy realities of the 21st Century and raise awareness among Canadians of the role that their choices and lifestyles play in emission reduction.

## **MITIGATING EMISSIONS**

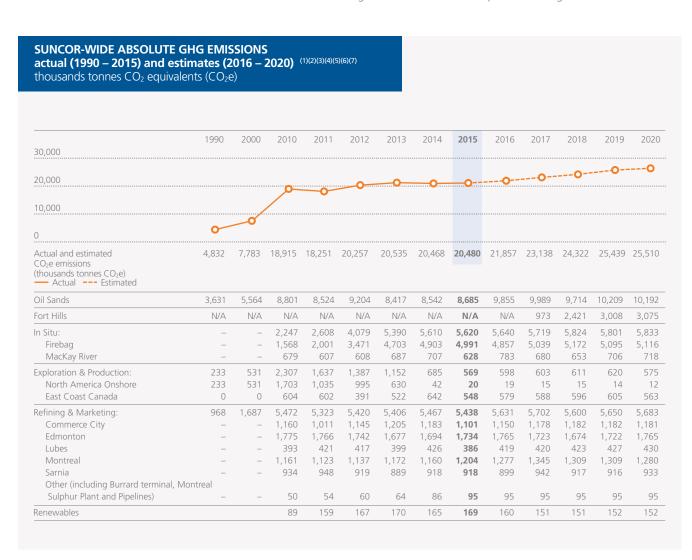
Energy cost is one of Suncor's largest production inputs and therefore there is a natural business incentive to reduce overall energy use and emissions. An Energy Management System (EMS) at our refineries and oil sands facilities sets and monitors benchmarks, providing real time energy balance data to operators and allowing them to correct and optimize energy inputs on a continuous basis. Suncor's focus on operational excellence and reliability, as well as the introduction of new technology has reduced the greenhouse gas (GHG) intensity of our oil sands Base Plant by 55% since 1990.

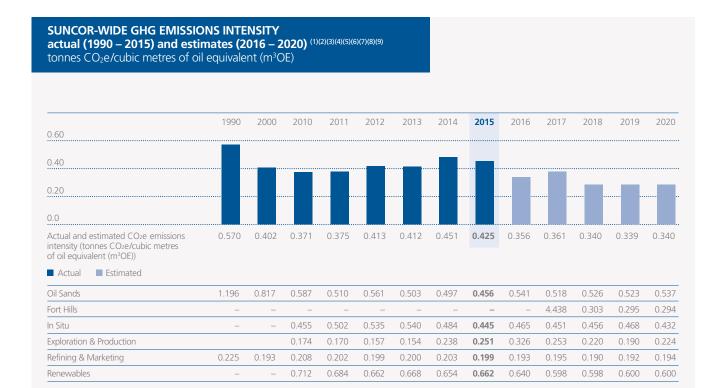
### Integrating a new performance goal

"Our aspiration is to harness technology and innovation to set us on a transformational pathway to a low carbon energy system. We will measure our progress by reducing the total emission intensity of the production of our oil and petroleum products by 30% by 2030." This is an ambitious goal – one that we know will not be achieved without integrating carbon risk considerations into all aspects of our business. The goal is expected to drive operational, energy and fuel efficiency improvements, accelerate the development and implementation of new technology, as well as encourage the evaluation of potential low carbon business opportunities.

To meet future global demand, Suncor continues to grow production and, with each incremental barrel, absolute emissions increase. Our goal metric is an intensity goal, focusing on lowering emissions per unit of production – in this case, per barrel of oil. Meeting this goal would allow us to increase production to meet expected demand while developing the technologies that, in the longer run, will turn our absolute emissions trajectory downwards.

Operational metrics critical to meeting the goal are part of the corporate scorecard and the initiatives required to meet the goal cascade into annual performance goals.





- (1) Estimates are based on current production forecasts 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 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 CO2e 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 CO2e. 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 CO2 as an indirect scope 3 instead of an indirect scope 2.
- (5) Data for 2009 and future years include the full-year emissions for all Petro-Canada operated properties acquired in the 2009 merger, even though the merger did not close until Aug. 1, 2009. This is to allow for a consistent comparison to past and future years. (For certain business units, combined Suncor / Petro-Canada data is provided for some years prior to 2009 but this is not reflected in the Suncor-wide rollup reported here.
- (6) The Suncor-wide emissions intensity uses Net Production, which is the sum of Net Facility Production minus all internal intra- and inter-BU product transfers, to remove any double counting. The sum of the BU intensities will therefore not equal the Suncor-wide intensity. Forecasted emission intensities do not subtract product transfers because the data depends on commercial and markets conditions and is therefore not available for forecasted trends.
- (7) 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. The emission total for this source for 2014 was 59,149 tonnes CO2e. 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.
- (8) The Other category includes Burrard terminal in all reported years, Pipelines starting in 2010 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).
- (9) 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 CO2e emissions per unit of production in cubic metres).

#### LOW CARBON INNOVATION

Suncor pioneered oil sands development. Our early investment in technology helped unlock the potential of the oil sands. Today, new technology and innovative thinking remains fundamental to how we do business.

First generation processes for extracting and processing bitumen are energy intensive. In the challenge lies the opportunity; the carbon intensity of the extraction and production processes is a result of the energy needed to extract and process the product. Rethink the technology, fuels and process and it's possible to change the carbon intensity. Just as importantly, reducing energy inputs decreases a major cost of production.

We invest more than \$150 million annually in research and development as part of a robust technology strategy to optimize current asset and develop next generation facilities. In some cases, we lead research and development of new technologies. Additional investment occurs when we collaborate through consortiums or third parties. We believe that next generation innovation for energy technologies will move from incremental to transformational change at a pace and scale that has not been seen before.

#### Low carbon in situ production

Our current technology for in situ production, Steam Assisted Gravity Drainage or SAGD, employs parallel pairs of horizontal wells to recover the bitumen. The top well distributes steam to heat the reservoir, allowing the bitumen to flow to the lower well where it can be pumped to the surface. One of the challenges of SAGD is that the reservoir is typically heated to 200 C or more to get the bitumen to flow, consuming a significant amount of natural gas, and necessitating large amounts of water handling and treatment for steam production.



Our **SAGD LITE (Less Intensive Technically Enhanced)** program aims to lower our steam-to-oil ratio (SOR) through the co-injection of steam and surfactants, solvents or non-condensable gas. A reduction of the steam-to-oil ratio in excess of 15% would enable more efficient oil recovery while using less energy and water – with minimal associated costs or environmental footprint at our existing facilities.

In 2015, we successfully executed pilot projects testing surfactant technology and extended one to a larger technology demonstration in 2016.

Another innovative approach to in situ technology is **electromagnetically assisted solvent extraction**, or **EASE**. Instead of using steam to heat the bitumen, radiofrequency electromagnetic energy – similar to a home microwave oven – may be used to heat the water already in the reservoir and then the reservoir itself. Adding a solvent further lowers bitumen viscosity, which is expected to enable production at economic rates. We are reviewing a field demonstration at our Dover Site to demonstrate the viability of this process.

In partnership with the Nsolv Corporation, in 2013 we started field-testing a condensing solvent extraction technology known as the **Nsolv™** process. This 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 way steam does. But because this solvent also dilutes and mobilizes the bitumen, reservoir temperatures do not need to be raised above 60 C, with the potential to require up to 80% less energy. This potential energy reduction could have a significant impact on greenhouse gas emissions.

If commercially successful, these in situ technologies offer potentially significant benefits over conventional SAGD technology, including:

- reducing energy requirements by up to 75%, which would reduce both costs and GHG emissions;
- leaving asphaltenes in the reservoir, producing a lighter oil, with lower GHG footprint when refined into gasoline and other products;
- greatly reducing or eliminating process water needs, including water treatment and handling equipment; and
- significantly reducing the size and complexity of the surface facility, reducing both capital costs and land footprint.

## Paraffinic Froth Treatment in mining.

While our oil sands Base Plant uses a first generation extraction process called Naphthenic Froth Treatment, our new Fort Hills mine will use a process called Paraffinic Froth Treatment (PFT). The bitumen product we obtain using this partial upgrading process has been upgraded to a better quality as we cut approximately 10% of the bottom of the barrel – which is essentially composed of low value heavy asphaltene molecules and mineral solid particles. Rejecting the portions of heavy hydrocarbon closer to source is expected to reduce both the diluent required for transportation and the energy and hydrogen needed to upgrade and refine the bitumen. This higher quality oil sands product can be processed at a wider range of refineries.

#### **Autonomous haul trucks**

Following successful preliminary trials in 2013-14, Suncor is currently doing a commercial scale evaluation of autonomous haulage systems (AHS) in a controlled area of an existing mine site. AHS use GPS and perception technologies to allow driverless mine haul trucks to navigate terrain. AHS technology offers several potential environmental advantages over existing truck haul operations, including fuel and emission reduction opportunities.

## Collaborating for innovation

Innovation is a process that is best served by inviting the smartest minds and brightest talent to collaborate.

Venture capital funding supports entrepreneurs to advance their ideas to commercialization and build businesses to market their technology world-wide. An example of this is **Evők Innovations**, a unique partnership between the BC Cleantech CEO Alliance and two Canadian energy companies, Cenovus and Suncor.

Canada's Oil Sands Innovation Alliance (COSIA) – an example of process innovation in action – has brought 12 companies together to pool expertise and intellectual property in improving the industry's environmental performance and solving the "issues of the commons". Crowd sourcing through projects such as the NRG COSIA Carbon XPrize attracts the brightest minds from around the world to Canada's energy technology challenges.

# INTEGRATION OF CARBON RISK INTO OUR DECISION MAKING PROCESSES

In 2016 carbon risk was included as one of the company's principal risks. A principal risk is generally considered to be an exposure that has the potential to materially impact Suncor's ability to meet or support its strategic objectives. Besides undergoing an annual Board review as a principal risk, carbon risk is also brought forward to the Environment, Health, Safety and Sustainable Development Committee of the Board for oversight.

Each year, a Carbon Price Outlook is developed, taking into account existing regulations and the expected trajectory of those regulations as they apply to our assets. Suncor draws on independent and credible forecasts from agencies such as the IEA and IHS Markit for our long term energy outlook.

Investments and capital decisions are tested against a range of variables, including our Carbon Price Outlook, to ensure an expectation of a competitive rate of return over the asset life.

While the carbon price plays a role, the underlying crude oil price is the major driver of the investment return. A low crude oil price could be the result of a context where oil demand has been eroded through carbon policy or alternative transportation fuels and is believed to be an appropriate proxy for overall carbon risk to a project's economics. Our annual 10 year business planning process requires our businesses to run a planning case assuming a continuing low price environment. Each business is required to demonstrate that it is expected to be able to continue to meet an acceptable rate of return, including funding its sustaining capital and enabling Suncor to maintain its dividend. If the business cannot meet these objectives, it is required to outline the steps that are needed to achieve this.

Our internal management model for project and asset development incorporates a review of climate change implications at the first two gate reviews, prior to a commitment of significant resources, and ensures that all climate change risks and opportunities are well understood. The process allows for analysis of technical options, but also the regulatory and external stakeholder context to be recognized in decision making.

## THE ENERGY SYSTEM OF TOMORROW

In our base case energy outlook, we take the following broad trends into consideration:

- As we consider forecasted population growth, the increasing need for energy in developing economies and the aspiration for a better quality of life, we see the global demand for energy increasing steadily. Much of this increase is expected to come from developing countries in Asia, the Middle East, Latin America and Africa.
- We expect a continuation of the trend towards decoupling economic growth and carbon emissions as new technologies and renewable energy starts to fundamentally change the energy mix.
- National emission reduction commitments made in Paris in November 2015 will drive both carbon pricing and complementary policy frameworks that are expected to accelerate energy efficiency and emission reduction technology and incent broader scale adoption of alternative low carbon energy.
- We expect oil demand will continue to grow to 2040 due to population growth, urbanization and increased living standards, but oil is expected to decline as a percentage of the global energy consumption mix.
- Given natural declines and the relatively short reserve replacement cycle for oil, simply staying at current production levels, much less meeting increased demand, will require investment in new production from global shale, deep-water and oil sands reserves – a major challenge, given the reduction in capital investment due to depressed commodity prices in recent years.
- We expect that supply cost will continue to be moderated by industry efforts to optimize production and reduce costs as well as broad-based raw material input cost reductions and technological advances.

The value in the International Energy Agency's "450 ppm scenario" is that it has squarely set climate change as a recognized environmental limit to growth and it provides the basis for building a shared global, aspirational vision of a future energy system. As a result, we are starting to see credible global efforts at "squaring the circle" to achieve the outcome, determining the broader technology and policy pathways that are necessary to deliver energy to a growing global population, while at the same time mitigating climate change.

While it is clearly intended as a limit on cumulative global emissions, the "450 ppm scenario" is often translated as a limit on oil production. Limiting emissions will be achieved at an energy system-wide level in the most appropriate way for each region or jurisdiction. There are no single or simple solutions to this challenge. The phase out of coal will be a major part of this, as will gains in energy efficiency and the technologies that reduce carbon intensity across the energy system, including in oil production and consumption.

We recognize that the global effort to mitigate climate change introduces uncertainty into the range of outcomes for energy. In addition to our crude oil and refined products outlooks, we use three long-term energy futures scenarios<sup>1</sup>, all of which are equally plausible and will affect our operating environment and business strategy in markedly different ways. Signposts and milestones are monitored to identify critical shifts in the external context. Signposts include changes in global energy demand and supply mix, political and economic indicators, climate data and policy trends, and in the transportation sector also include technology advances and consumer trends.

Each scenario has an implied crude oil price range and climate change regulatory impact. All three reflect the current global aspiration towards reducing carbon emissions; what differentiates the scenarios is the context, pace and scale at which that comes about.

Of these scenarios, Autonomy is the scenario that we consider best represents the technology and policy context that would be essential to meet the aspiration of limiting cumulative emissions to "450 ppm".

All three scenarios point to long term resilience being a function of aggressively lowering both costs and the carbon intensity of the entire value chain.

The scenarios are reviewed annually by Executive Management and the Board of Directors to assess the robustness of the business and growth strategy and identify strategic directions. We expect this process, which started in 2015, to develop as a useful tool for stress testing our business on a number of key dimensions.

<sup>(1)</sup> These scenarios are substantially based on scenarios used by IHS Markit and adapted for our business in collaboration with IHS Markit.

# SUNCOR USES THE FOLLOWING SCENARIOS\*

## **Autonomy**



Rapid technological and societal change transform the energy landscape.

Millennial shift – focus on sustainability and collaboration, sustainable urbanization.

Falling costs and improved reliability of clean energy allow developing countries to bypass large scale hydrocarbon-based energy infrastructure.

Natural gas is a transitional fuel for power generation, but after 2030 increasingly renewable power generation fuels a largely electrified energy system.

Break through battery technology development supports growth in electric vehicles.

Oil's role in geo-politics is substantially diminished contributing to a generally stable geo-political environment.

Stable moderately strong economy.

Carbon intensive industries face high regulatory costs and requirements.

No new export pipelines are built out of the Athabasca Oil Sands region.

# **Energy markets impact**

Abundant and cost effective supply of energy coupled with moderation and eventual decline in demand, particularly in transportation, drives oil prices to stay low in the long term.

Oil exploration and production slows as investment moves to other sectors, reducing but not choking supply.

High cost supply falls off fast.

Oil is still required and continues to provide a significant share of the world's energy need.

# **Expected impact on Suncor**

No existing assets are stranded.

Existing long-life assets continue to produce, funding their own sustaining capital or modest growth capital requirements for incremental production expansion.

New oil sands growth projects are challenged and unlikely to proceed.

Oil sands continues to provide a stable dividend base while growth options in other resource basins are considered.

Only the top tier refineries will remain profitable – Suncor's downstream maintains a focus on reliable, efficient and low-cost operations.

# **Rivalry**



Improving standard of living and greater personal wealth, particularly in China.

Expanding use of advanced technologies increases demand for energy.

Population growth, urbanization and growing middle class drive energy demand – diverse supply required to satisfy demand, with intense competition for market share between energy sources.

Shift of economic power to millennials with the desire and means to address pollution and climate change.

Geo-political landscape remains tense and strong global economic growth shifts global influence.

Technology advancements allow access to greater oil reserves, with unconventional supply growing.

Natural gas and LNG play a larger role in transportation.

Strong growth in renewable energy.

Carbon intensive industries face high regulatory costs and strict standards.

# **Energy markets impact**

High global energy demand fed by diverse energy supply.

Refined products still dominate transportation fuels, but are losing market share to alternative fuels.

Fuel efficiency standards and technological innovation moderate growth in refined product demand.

Oil and natural gas are increasingly costly to produce and the oil price continues to trend upwards with some cyclical downturns.

## **Expected impact on Suncor**

No existing assets are stranded.

High price and market access enable robust oil sands growth and further investment in improved extraction techniques.

Continued focus on carbon footprint reduction through capital projects, technology development and efficient operations.

Increased natural gas prices accelerate development of Suncor's gas resources.

Competitive downstream provides robust returns and enables physical integration of oil sands crude.

<sup>\*</sup> These scenarios are substantially based on scenarios used by **IHS Markit** and adapted for our business in collaboration with IHS Markit.

# Vertigo



Continued conflict and geo-political instability.

International trend towards isolation and self-preservation with energy security a key concern.

Economic volatility, unbalanced wealth distribution, overall weaker GDP growth.

Air quality, traffic congestion lead to smaller, higher efficiency vehicles and some electric vehicle adoption.

Extreme weather events lead to social unrest.

Investor risk aversion and tight capital markets constrain both technology advancement and high capital projects.

Pipeline projects constrained by stakeholder protests and investor risk aversion.

Unstable, boom/bust energy market.

Environmental progress and climate change mitigation takes a back seat to economic concerns.

# **Energy markets impact**

Fossil fuels remain the primary source of affordable energy and dominate the global energy mix.

The price of oil recovers from current levels but fluctuates widely with rapid shifts in demand and supply.

Slower economic growth and technological progress limit the proliferation of electric and other alternative fuel vehicles, energy mix does not change significantly.

Slower economic growth limits growth in energy, oil and refined product demand.

# **Expected impact on Suncor**

No existing assets at risk of being stranded.

Long life assets able to deliver free cash flow through commodity price volatility, enabling Suncor to maintain competitive returns to shareholders.

Integrated model helps smooth oil price cycles.

Growth projects rigorously tested to ensure ability to deliver returns in volatile oil price environment.

Financial strength is leveraged to consolidate assets at the bottom of the cycle.

# **BUSINESS STRATEGY FOR A CHANGING ENERGY FUTURE**

Our industry is in the midst of a major structural adjustment due in large part to technology that opened up new oil supply and reduced the supply cost curve. As the industry adjusts in an effort to emerge stronger and leaner, a clear outlook on where the industry is headed and the key influencers in both the short and longer term is essential.

#### Oil sands

Suncor's oil sands operations are a concentrated unconventional oil play. Our perspective of the future tells us that now, more than ever, is the time to know where our competitive advantage lies and to play to that advantage.

We have been an operator in the Athabasca oil sands for 50 years and the majority of our production comes from the oil sands. There is strategic advantage in having a top tier resource base of some of the highest quality reservoirs in the Athabasca oil sands region and substantial scale of operations in the region. Furthermore, our fully integrated value chain allows us to extract full value for our resource.

By operating multiple, large oil sands facilities in this region, we are able to exploit location and logistics synergies between the facilities, allowing us to drive efficiencies, reduce energy costs and optimize the handling of water, waste, and tailings.

Over the past few years, we have made major strides towards being a top tier operator through increased facility reliability. Oil Sands operations' cash operating costs<sup>2</sup> have fallen from \$39.05/bbl in 2011 to \$24.95 in Q4 of 2016.

## Stranding the resource – threat or opportunity?

Much has been said about stranded assets and reserves in relation to carbon risk.

We talk about stranding oil resources as an opportunity, referring to leaving low value hydrocarbons in the ground due to the high environmental impact or cost of producing them. This does not suggest that Canadian operators should walk away from leases or projects. It means that our project planning process reviews information about the ore quality, the geology and the hydrogeology of the reservoir, the regulatory environment and our reclamation and closure plans to assess whether there are areas of the reservoir we may choose not to produce. Also, extraction technologies under development today could literally allow us to leave the heavy hydrocarbon chains in the ground, producing a lighter product that requires less processing further down the value chain.

The oil sands resource belongs to the people of Alberta and regulations are currently written to reflect resource scarcity. Suncor has advocated changing current regulations that require us to extract more than is warranted by environmental impact or economic cost.



Recent market conditions have provided opportunities to assemble a larger base of top tier reserves. Our acquisition during 2016 of two additional equity positions in the Syncrude ioint operation has increased our ownership to almost 54%. This counter-cyclical investment increases our production at a very attractive cost per flowing barrel relative to a greenfield project of a similar scope and nature.

This acquisition does indirectly increase our exposure to carbon pricing. Suncor has achieved a significant improvement in energy intensity at our own Base Plant mine and upgrader through debottlenecking and improving reliability. By increasing our position in Syncrude, we have the opportunity to leverage our relationship with an experienced operator with a strong technology program to further advance energy efficiency.

We test our oil sands business and growth strategy against three long term energy scenarios. Under each of these scenarios, including our most aggressive decline in oil demand, we believe a substantial amount of oil will be required for decades. Meeting that demand at either low, or highly volatile, oil prices will be a challenge.

In this environment, operators with short life reserves will find it increasingly difficult to finance exploration and development programs to replace declines, let alone grow production. The more commercially successful alternative energy sources become, the more capital they will draw from traditional energy markets, and the less likely we are to see substantial new crude oil supply come to market.

While often characterized as being 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 major advantage under a scenario of either declining demand for crude oil and a correspondingly lower oil price, or an extended period of uncertainty and volatility

<sup>(2)</sup> Non-GAAP measure. See the Advisories.

in investment and commodity markets. Our long term reserve base presents minimal finding and exploration costs or risk. The nature of the resource requires high upfront capital investment to develop a project, but once the initial infrastructure is in place, the reservoir can be incrementally developed over a long period of time, without exploration risk, or the high capital requirements of a new project. Oil sands facilities are more comparable to manufacturing operations. Once operating, they are built to last 40+ years with a steady output. Production does not rapidly peak and decline, so each new incremental expansion results in production growth. Once high upfront capital costs are depreciated, a facility can continue to operate for potentially another 30 years with low operating costs and sustaining capital requirements only.

Over the next 10 years, we believe technology will deliver the advances to make oil sands crudes both a low cost and a low carbon source of crude. The unique characteristic of the oil sands resource positions us to continue to deliver substantial value for shareholders under each of these scenarios.

#### Market access for our bitumen

Market access to global refineries allows Canada to receive full value for its product.

No single pipeline will affect Suncor's ability to execute our growth plans for the future. While we firmly believe that pipelines represent the safest and most environmentally sound way to transport product, even if further delays in pipeline projects occur, we have sufficient available transportation logistics, including rail capacity, to move our production to market.

We are pleased that the federal government has announced its approval for two pipeline projects and will work to support the consultation processes required to advance these projects.

#### Transportation fuels in a carbon constrained future

While we expect that our upstream crude oil production will continue to supply global oil markets, our downstream and marketing business is more exposed to North American refined product supply and demand dynamics.

Governments at all levels in Canada are seeking to diversify transportation fleets to lower carbon fuels and, as a result, the transportation fuelling landscape is expected to change over time. Reducing GHG emissions from the transportation sector is arguably one of the toughest challenges, in that transportation is fundamental to economic productivity and because liquid petroleum fuels are available at a relatively low cost and high energy density.

Our internal refined products outlook is that gasoline demand will peak in North America. High oil prices in 2007/8 had an impact on driver habits and broad based carbon levies on fuels in a number of Canadian provinces and US states will further incent fuel efficiency. We see demand for gasoline moderating over the next 10 years, accelerating towards 2030 as light vehicle fuel efficiency standards take effect and alternative fuels adoption widens. We see no near term demand destruction for distillates in North America. In the longer



term, we believe diesel will remain the predominant fuel for heavy haulage, marine, and rail and we see demand growth with increasing economic activity. Heavy duty vehicle fuel efficiency standards and biodiesel blending are expected to offset strong demand growth that may otherwise be driven by economic growth.

Enormous strides in fuel efficiency have been made to date through ambitious regulation and by consumer uptake of more efficient light duty vehicles. Between 2000 and 2010, fleet emissions in Canada decreased from 193 grams per kilometre to 166 g/km, a drop of 14 percent. As the vehicle fleet continues to turn over in the next decade, fleet average emissions are projected to reach 97 g/km by 2025<sup>3</sup>. While it is unclear what course the United States will take on vehicle efficiency standards going forward, there is technical potential to meet even more ambitious fuel efficiency standards. The advances in technology to capture waste heat, computerized engine optimization, as well as the development and use of lighter weight materials mean that, on the basis of fuel use per km traveled, the internal combustion engine of the future will, we believe, not only be cost competitive, but also very carbon competitive with alternative fuels.

In our view, hybrid, plug-in hybrid and electric vehicles will become cost effective additions to the passenger vehicle fleet and will, along with fuel efficiency standards, contribute to moderating growth in long-term global gasoline demand. Alternative fuels to replace diesel for heavy duty fleets, marine, and rail are currently more costly and less efficient.

We believe that cost, carbon competitiveness and consumer utility and familiarity with liquid fuels mean that liquid fuels will remain the primary fuel source of vehicle mobility for many years. The most effective action that we can take is to continue to reduce the emissions intensity of our liquid fuels.

One way to do this is through biofuel blending. Suncor owns and operates the largest ethanol plant in Canada which provides the ethanol we blend into our gasoline. Heavy haul trucks, aviation and marine fuels of the future will require advanced biofuel blending.

http://www.pollutionprobe.org/pathways-initiative/

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 or adapt it for our business. This involves funding outside companies whose technology ideas align with the strategic needs of our operations or businesses.

Strategically, advancing biodiesel technology for wider use in cold climates allows us to leverage our view that diesel demand will remain strong. We have the longer-term optionality to optimize our integrated asset infrastructure through investing to switch or supplement existing refining capacity to process biofuels and drop in biological crude components should such investments make sense from a value creation perspective.

Over the longer term if gasoline demand declines while distillate demand grows or remains flat, refineries will need to shift the ratio of their gasoline to distillate output. Reconfiguring a refinery to produce more distillate requires capital and the economics of distillate production require large, complex refineries that run on heavy crude feedstock. Those refineries that are unable to make the investment, due to size, scale, age or crude diet, will need to reduce capacity and we expect that would lead to continued rationalization of refining capacity on the continent. As older and less efficient refineries close, the supply balance will support refining margins. We believe that the refineries that will survive will be those that have the flexibility to process cheaper crude feed stocks, are well-located for domestic and export markets, have sound cost management and a strong focus on energy efficient and reliable operations. Suncor's refineries are well-positioned to meet this trend.

Our approach to our marketing and distribution business entails a cautious evaluation of options for the future. In the guest to diversify fuelling options, several lower carbon options such as LNG, CNG, hydrogen and electric vehicles are being promoted. We believe that the market does not have the capacity for multiple choices and it is not clear yet which technology will see the greatest consumer adoption.

Suncor is currently piloting electric vehicle charging at retail stations on a small scale to learn more about the commercial viability of a charging service.

## Fuel technology

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.

#### **Natural** gas

In the early part of this decade, Suncor sold lower quality natural gas assets that were not directly supplying our oil sands operations. This was largely motivated by a strategy of cash generation and a view that natural gas prices would stay in a down cycle for an extended period.

Natural gas is expected to play a critical role in bridging to a low carbon future, particularly in transitioning power generation away from coal. For this reason, Suncor maintains a substantial natural gas resource in British Columbia's Montney field. We continue to review and assess market outlook and market access to determine the appropriate timing for development of this asset



# Offshore oil production

Suncor has an interest in every major development offshore of Canada's east coast. Suncor operates Terra Nova and has interests in the Hibernia, White Rose and Hebron projects. We are also a non-operating partner in the Buzzard and Golden Eagle fields in the UK North Sea and have recently expanded our options in this area through the purchase of a participating interest in the Rosebank pre-development opportunity. With diligent management of produced methane, offshore crude oil is generally among the lowest carbon intensity sources of crude globally.

# Low carbon and renewable power generation

Our energy scenarios tell us that a key pathway towards decarbonization of the energy system is to substantially increase low carbon and renewable power generation capacity and then electrify a greater percentage of the energy system.

Suncor entered the renewable power generation business in 2002 to begin participating in this growing energy sector – building today's oil sands resources while also bringing along new sources of energy for tomorrow. Since 2002, we have developed 8 wind projects totalling 395 MW. Today we have 187 MW of wind generation, with 2 proposed wind projects in Alberta and are exploring the opportunity to develop the first utility-scale solar photovoltaic facilities in Alberta to complement our experience in developing, constructing and

operating wind power projects. This activity also provides emission credits that can be used to offset the emissions in our oil sands operations.

As climate regulation is implemented across jurisdictions, renewable power benefits from greater scale which can improve technology, efficiency, lower the cost and improve economics. Equipping wind and solar sites with battery storage to optimize the facility's integration to the power grid could further improve effectiveness. An enabling factor will be market design that allows for dynamic interaction between a renewable, but intermittent, power source and base load sources like cogeneration.

The requirement for steam at crude oil extraction and processing facilities creates the opportunity for high efficiency cogeneration that provides steam and power to our facilities and delivers surplus power to the grid at a carbon intensity that is lower than any other hydrocarbon based generation. For an energy system in transition, the value of cogeneration is high; in addition to providing an effective base load to manage the intermittency of wind and solar power, cogeneration can

economically replace coal generation with much lower carbon intensity power. We are also evaluating investing in further cogeneration capacity.

With both renewable and cogeneration capacity, Suncor is the 5th largest independent power producer in Alberta, providing approximately 700 MW to its own sites and exporting approximately 500 MW to the Alberta grid.

We are a substantial consumer of power and expect to continue to develop our generation capacity firstly to meet our own needs at the lowest cost and at the lowest possible carbon intensity, while at the same time supporting the development of lower carbon intensity power grids.

The Alberta Climate Leadership Plan proposes to phase out coal generation by 2030 and will replace two thirds of that capacity with renewable energy. Suncor expects to remain a renewable power developer, owner and/or operator. We expect that there will be opportunities in this market in the future and that we will be well-positioned to take advantage of them.

# CARBON POLICY AND IMPACTS ON SUNCOR

Post-ratification of the Paris Accord, we expect that the focus of governments globally will be on the technology pathways and policy frameworks required to achieve a stable and responsible transition to a low carbon energy system at the same time as meeting rising global demand for energy.

Our carbon price outlook incorporates existing regulations and their expected trajectory, as they apply to our business. Investments are sensitivity tested under a range of carbon assumptions specific to that investment.

#### **Canadian federal government**

A proposed federal government pan-Canadian carbon price framework would require each province to implement a carbon price regulation with an overall stringency that is equivalent to a minimum price of \$10/tonne, rising to \$50/tonne over the next 5 years. Provinces may use the revenue as necessary for the unique circumstances of the region, including protecting carbon intense, trade exposed industries.

## Alberta

In Alberta, from 2017, an economy-wide price of \$30/tonne on carbon is intended to influence demand for carbon based energy. To protect the competitiveness of Alberta tradeexposed industries, output-based credits will be allocated to each facility up to a yet to be determined performance benchmark. The performance benchmark will penalize higher carbon intensity assets, whether a function of reservoir geology, fuel choice or efficiency and will incent technology to reduce the carbon intensity across all facilities and particularly more challenging reservoirs.

The Alberta Climate Leadership Plan includes a precedentsetting 100 MT emissions limit by 2030 on oil sands

development. Emissions from the production of power through cogeneration are excluded from this limit, as is an incremental 10 MT of upgrading capacity. As a limit on emissions, rather than production, it allows production to grow as long as the total emissions of the basin remain under the limit. The emissions limit is expected to accelerate the innovation required to reduce both carbon and cost in the oil sands industry.

#### **Ouebec and Ontario**

Suncor's refineries in Quebec and Ontario are regulated under a cap and trade program linked to the Western Climate Initiative (WCI). Regulated refining facilities receive an allowance allocation that aligns with a benchmark performance and takes into account competitiveness in a trade-exposed context. Fuel suppliers are required to purchase allowances to cover the tail pipe emissions of all fuel sold, the cost of which is expected to be largely passed to the consumer, thus acting as a carbon price on fuel consumption.

# Impact of Canadian climate change regulations

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.

# Transportation fuels policies in Canada

Transportation emissions are a significant percentage of total emissions in Canada. Jurisdictions across the country are considering policy mandates and incentives for alternative fuels, as well as major public transit and urban planning initiatives intended to reduce the carbon intensity of transportation.

British Columbia implemented a low carbon fuel requirement regulation in 2010. Under this regulation, fuel suppliers are required to meet a provincial fuel pool carbon intensity target through blending incremental renewable fuel or investing in alternative fuels infrastructure. Federal and provincial renewable fuel standards mandate blending of ethanol into gasoline, and biodiesel into diesel.

In addition, the federal government has recently proposed implementing a national Clean Fuels Standard.



## **FACILITY RESILIENCE TO EXTREME WEATHER EVENTS**

Suncor assesses specific risks to its physical assets in light of various potential operational hazards to which those assets may be subject, including the risk of extreme weather events, which are possible in the course of operations in the areas where we operate. Suncor manages these risks through facility design and operational procedures. We also maintain insurance for damage to, or loss of, assets as well as production interruption.

## **Temperature extremes**

Many of Suncor's facilities routinely operate in an annual temperature range of -40 to +40 C and facilities are built to withstand extreme weather events. Prolonged periods of extreme cold could force these facilities to shut down for periods of time to ensure worker safety and prevent undue stress on equipment. Prolonged periods of extreme heat may lead to production cuts if adequate supply of cooling water is not available. Suncor's refineries at Montreal and Sarnia have access to extremely large bodies of cooling water, so are far less exposed to this risk.

## **Hurricanes and icebergs**

Suncor's Terra Nova installation, off the coast of Newfoundland, operates on the edge of the Named Atlantic Windstorm Zone, an area that is subject to hurricanes and icebergs. The risk of hurricane season is managed through a continuous weather tracking service that monitors storm systems in the North Atlantic. There is also a risk in the region of floating icebergs causing damage to our installations. This risk is managed through the design of facilities and a continuous monitoring system tracking iceberg locations. Where the course of an iceberg cannot be altered, an emergency response system allows for the floating platform to be disengaged and moved to safer water, protecting the asset but resulting in production disruption.

## **Precipitation and droughts**

Most of Suncor's operated facilities are not in stressed watersheds where the availability of water, or severe restrictions on water withdrawals, could compromise its ability to operate. Limits to oil sands water withdrawal during winter low flow periods are managed through on-site water storage where facility design permits. Our Commerce City Refinery is located in a water-stressed region and a potential curtailment of water supply would require bringing in water by pipeline or truck. Water management is a priority at Suncor, driving industryleading innovation at our facilities to reduce, recycle, re-use and return water.

There is also a risk of seasonal flooding in certain areas in which Suncor operates, which is managed through contingency plans to protect facilities that include backup generators and pumps to drain critical operating units and equipment.

#### **Advisories**

All financial figures in this document are in Canadian dollars, unless otherwise noted.

Forward-Looking Information – This document contains certain forward-looking information and forward-looking statements (collectively referred to herein as "forward-looking statements") within the meaning of applicable Canadian and U.S. securities laws. Forward-looking statements in this document include: expectations regarding demand for oil, natural gas, distillates, gasoline, diesel and other energy sources; expectations for Suncor's financial and operating performance; statements about Suncor's emissions intensity reduction goal and the impact thereof; expectations relating to technology, including, amongst others, technology being developed or tested by Suncor and its partners; expectations regarding lowering costs and carbon intensity; expectations relating to hybrid, plug-in hybrid and electric vehicles; expectations for the development of power generation capacity; expectations relating to laws and government policy and the impact thereof; expectations as to how to limit the impact of climate change; estimates of Suncor's future greenhouse gas emissions and emissions intensity; expectations for capital investment into oil production; expectations for supply cost; long-term energy future scenarios used to test Suncor's business and growth strategy and the expected impact of the scenarios on Suncor; opportunities for advancing energy efficiency involving Syncrude; expectations for fleet emissions and internal combustion engines in the future; expectations relating to refineries; the expected role of natural gas in transitioning to a low carbon future; expectations relating to increasing low carbon and renewable power generation capacity and electrifying a greater percentage of the energy system on decarbonization of the energy system; and the estimated impact of our carbon price outlook. Some of the forward-looking statements may be identified by words like "expect", "will", "estimates", "plans", "intended", "believe", "projects", "could", "focus", "vision", "goal", "outlook", "proposed", "objective", "co

Forward-looking statements are based on Suncor's current expectations, estimates, projections and assumptions that were made by the company in light of its 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, tax laws, and laws and policies relating to climate change; 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; the receipt, in a timely manner, of regulatory and third-party approvals; assumptions relating to demand for oil, natural gas, distillates, gasoline, diesel and other energy sources; the development and performance of technology; population growth and dynamics; assumptions relating to long-term energy future scenarios; and Suncor's carbon price outlook.

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.

Suncor's most recently filed Annual Information Form/Form 40-F and Annual Report to Shareholders 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 email request to invest@suncor.com; by calling 1-800-558-9071; 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 – Oil Sands operations cash operating costs per barrel is not prescribed by Canadian generally accepted accounting principles ("GAAP"). For the fourth quarter of 2016, this non-GAAP measure is defined and reconciled in Suncor's Report to Shareholders for the Fourth Quarter of 2016 dated February 8, 2017. For 2011, this non-GAAP measure is defined and reconciled in Suncor's Management Discussion and Analysis for the year ended December 31, 2013 dated February 24, 2014. This non-GAAP measure does not have any standardized meaning and therefore is unlikely to be comparable to similar measures presented by other companies. This non-GAAP measure is included because management uses the information to measure Oil Sands operating performance, and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with GAAP.



Suncor Energy Inc. 150 - 6 Avenue S.W., Calgary, Alberta, Canada T2P 3E3 T: 403 296 8000

For further information on Suncor's environmental, economic and social performance, please see our Report on Sustainability on our web site at www.suncor.com.