2011

Oil Sands Report Card

Statoil Canada

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This is Statoil

Worldwide

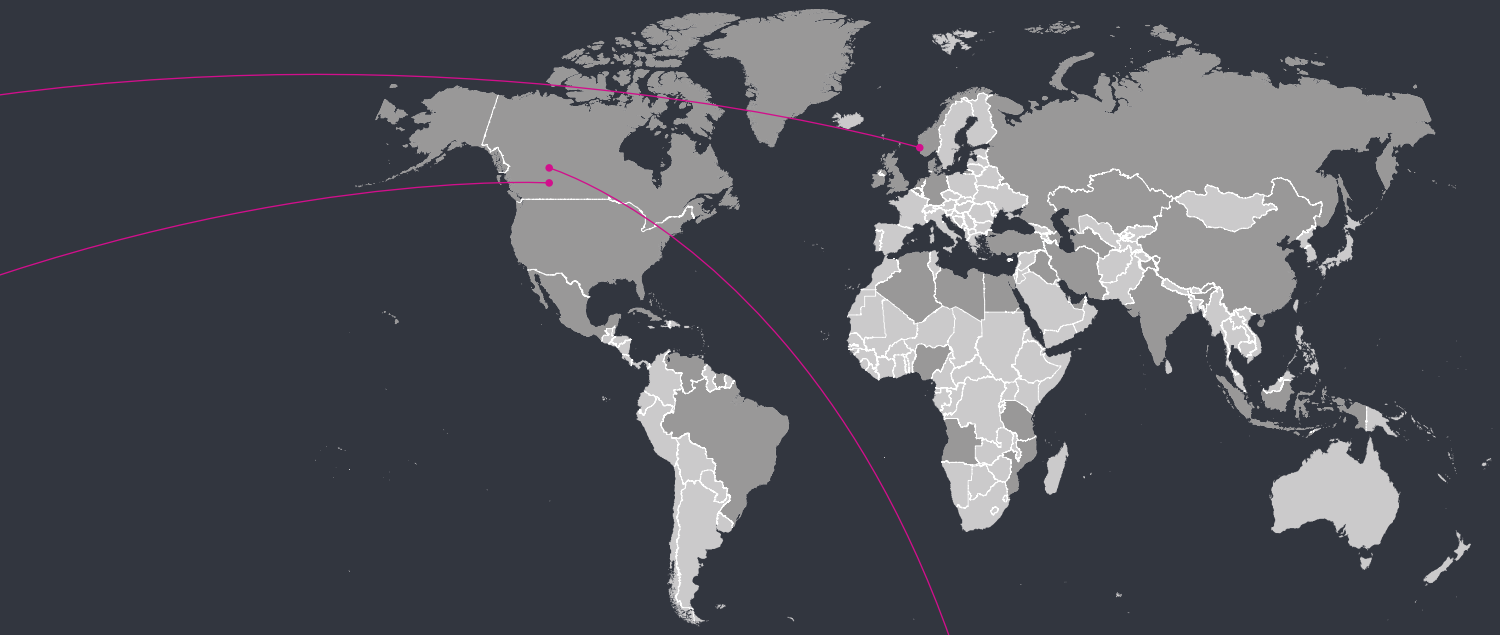
Statoil is a technology-driven global energy company focused on upstream oil and gas production. We have more than 20,000 employees working in 36 countries. Statoil is committed to meeting the world's energy needs in a responsible manner, using existing and new technologies to create innovative solutions.

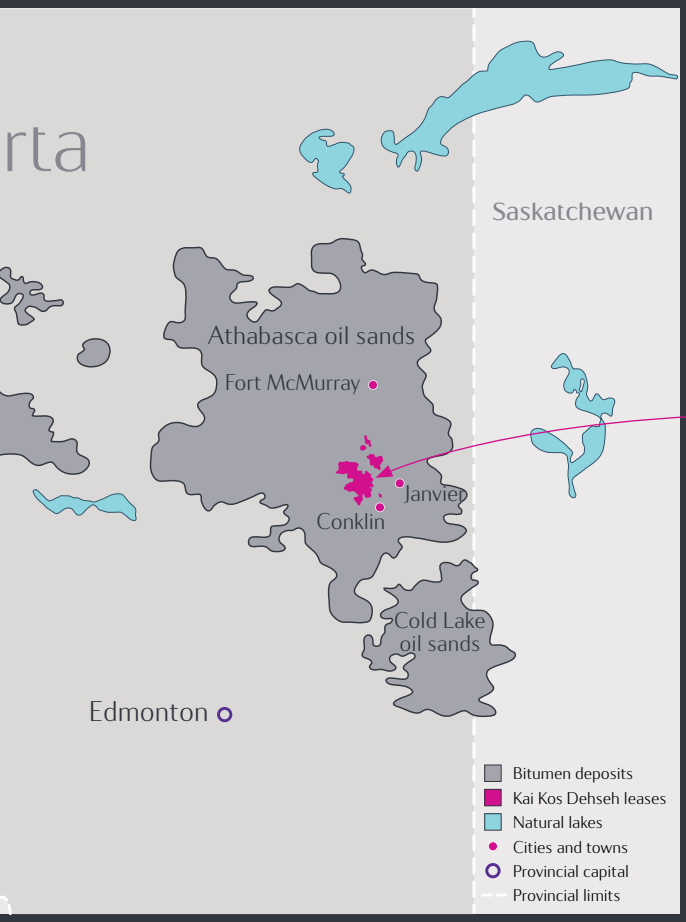
Statoil has more than 35 years' experience on the Norwegian Continental Shelf and has helped develop this area into one of the world's leading petroleum-producing regions. The world's largest offshore operator, Statoil has a leading position in crude oil sales and is the second largest gas exporter to Europe. Statoil is also a world leader in carbon capture and storage (CCS) and carbon dioxide (CO_2) efficiency in oil and gas production.

Canada

Statoil's Canadian operations include strategic holdings in the Athabasca Oil Sands Region of northern Alberta and licences offshore Newfoundland. Our offshore interests include two crude oil-producing fields, Hibernia (Statoil share: 5%) and Terra Nova (Statoil share: 15%), and two development projects, Hebron (Statoil share: 9.7%) and Hibernia Southern Extension Unit (Statoil share: 10.5%).

Headquartered in Calgary, Alberta, Statoil Canada Ltd. has more than 500 employees.





What are oil sands?

Oil sands are grains of sand covered with water, bitumen and clay. Bitumen is a thick black mixture of hydrocarbon, which is why oil sands are often incorrectly referred to as tar sands. Tar is a man-made substance derived from petroleum or coal, while bitumen occurs naturally.

Oil sands

In Alberta, Statoil holds a 60 per cent interest in the Kai Kos Dehseh (KKD) oil sands lease, with the remaining 40 per cent interest held by PTT Exploration and Production (PTTEP) of Thailand. Statoil operates the project facilities, related infrastructure and project development of the KKD lease. KKD oil sands are buried so deep, they can only be developed in situ, or underground, using a combination of drilling and thermal technologies.

Statoil's oil sands facilities consist of the Leismer Demonstration Plant. Leismer is a commercial-scale integrated test facility that produces bitumen. Initially, Leismer conducted tests and research at a pilot project level. Based on the success of these efforts, in 2011 Leismer began applying its work to commercial-scale bitumen production. Leismer uses the most commercially successful in situ technology available today, called Steam Assisted Gravity Drainage (SAGD).

08

Understanding bitumen

Bitumen is a naturally occurring thick hydrocarbon. At 10 C, Alberta's raw bitumen is as solid as a hockey puck and cannot be transported in pipelines or processed in conventional refineries. Statoil's bitumen is heated by steam and diluted with light oil liquid so it can then be transported and refined as the basis for many fuels.

Oil Sands Report Card

2011

The Oil Sands Report Card 2011 is Statoil Canada's second report on our oil sands activities. In this document we discuss efforts undertaken at our Leismer Project. Although Leismer is in its early stages, we are committed to delivering open and transparent information about our performance and project development.

In this report, we detail our efforts in 2011 in key environmental areas including air, water, land, biodiversity, wildlife, and local communities. We define performance indicators and activities that will improve our performance as we continue to test new methods of responsibly developing our Kai Kos Dehseh oil sands lease.

Statoil Canada is committed to reporting its oil sands performance following sustainability standards and the voluntary Global Reporting Initiative (GRI). Statoil has extensive experience with GRI, which we use in corporate sustainability reporting for our Norwegian and international assets. As part of the GRI process, Ernst & Young AS, provides an independent third party audit of our reports.

Image description:
Storm water pond for gathering rain and melting snow at Leismer.

From the President

At Statoil Canada we celebrated first commercial-scale bitumen in 2011. Our Leismer Project reached this important milestone while achieving top industry performance for the startup of a Steam Assisted Gravity Drainage operation, when measured against industry benchmarks.

Leismer's performance demonstrates that our step-wise approach to oil sands development is working, and each step taken has resulted in improvements over previous industry efforts. This approach is based on intensive research and development, and work on new processes and technologies that are pilot-tested and then fine-tuned before being applied to commercial-scale production.

Due to the extent and scope of our work, we have reached out to organizations within and beyond the oil sands industry to tap into the brightest minds and most innovative ideas. We have created critical partnerships and collaborative alliances to accelerate the improvements required to move SAGD technology to the next level, which should raise the bar for environmental, economic and social performance throughout the industry.

Our most important partnership is with PTT Exploration and Production of Thailand, which has a 40 per cent interest in our Kai Kos Dehseh lease. This partnership came into effect January 1, 2011, and Statoil looks forward to a long-term relationship with PTTEP.

Statoil is also a founding member of the Oil Sands Leadership Initiative (OSLI), a group of six companies collaborating in non-competitive areas to find solutions to technical, environmental, social and economic issues facing oil sands development. We are excited about the progress OSLI has made, and its continued evolution as this group connects with other industries, academics and governments.

We believe we can always improve by working together and incorporating the expertise of others into our activities. For Statoil, it's all about learning, sharing and contributing.

Such a learning experience occurred in 2011, when Statoil was charged with contravening the terms or conditions of its licence to withdraw water, which constitutes an offence under the Alberta Water Act. Statoil accepted responsibility for the contravention, and is working on an education program for Statoil employees and the industry at large on water diversion and compliance, and best practices with the relevant legislation and regulations. (See Water Licence Contravention page 33.)

Statoil maintains a clear sense of responsibility and accountability to the environment and the communities where we work. In this, our second Oil Sands Report Card, we detail the wide range of activities undertaken in 2011 to reduce the impacts of our operations on air, water, land, biodiversity, and local communities. We understand that communication is a two-way street and we encourage you to talk to us. Simply fill in the comment form at the back of this document and tell us what we can do to improve our oil sands performance, or email us at oilsands@statoil.com.

We look forward to hearing from you.

Lars Christian Bacher
President
Statoil Canada Ltd.

Energy realities

Oil demand increases

More energy will be needed over the next 25 years to support the world's expanding population and growing global economy.

The International Energy Agency (IEA) predicts energy demand will jump by one-third from 2010 to 2035, as the world's population increases by 1.7 billion people, and the global economy grows by an average of 3.5 per cent per year.[1] Most of the increase in energy demand will be driven by emerging economies outside the Organization for Economic Co-operation and Development (OECD). These countries will account for 90 per cent of the growth in population and energy demand, as well as 70 per cent of increased economic output.[2]

According to the IEA, oil will continue to be the primary source of the world's transportation fuels in 2035. Oil demand (excluding biofuels) is expected to increase by 15 per cent to 99 million barrels per day (bpd) in 2035, up from 87 million bpd in 2010.[3]

All of the net increase in oil demand will come from the transportation sector of non-OECD countries. Although some regions of the world will experience major gains in fuel efficiency and alternative vehicle technologies, the IEA notes there is "limited potential for substitution for oil as a transportation fuel" by 2035.[4]

Unconventional oil helps meet world demand

Meeting rising global oil demand is complicated by the fact that depletion of existing conventional oil fields will cause a decline in oil that is easy to produce. Just to compensate for this decline in conventional oil will require gross capacity additions of 47 million bpd — twice the current total oil production of all Organization of the Petroleum Exporting Countries in the Middle East.[5] In addition to filling this gap, more oil will be required to meet demand growth.

Unconventional oil is a necessary part of the world's energy mix. Global unconventional oil production will rise to 10 million bpd in 2035, up from 2.6 million bpd in 2010.[6]

Production from the Canadian oil sands will rise to 4.5 million bpd in 2035, up from 1.5 million bpd in 2010.[7]

World primary energy demand by scenario

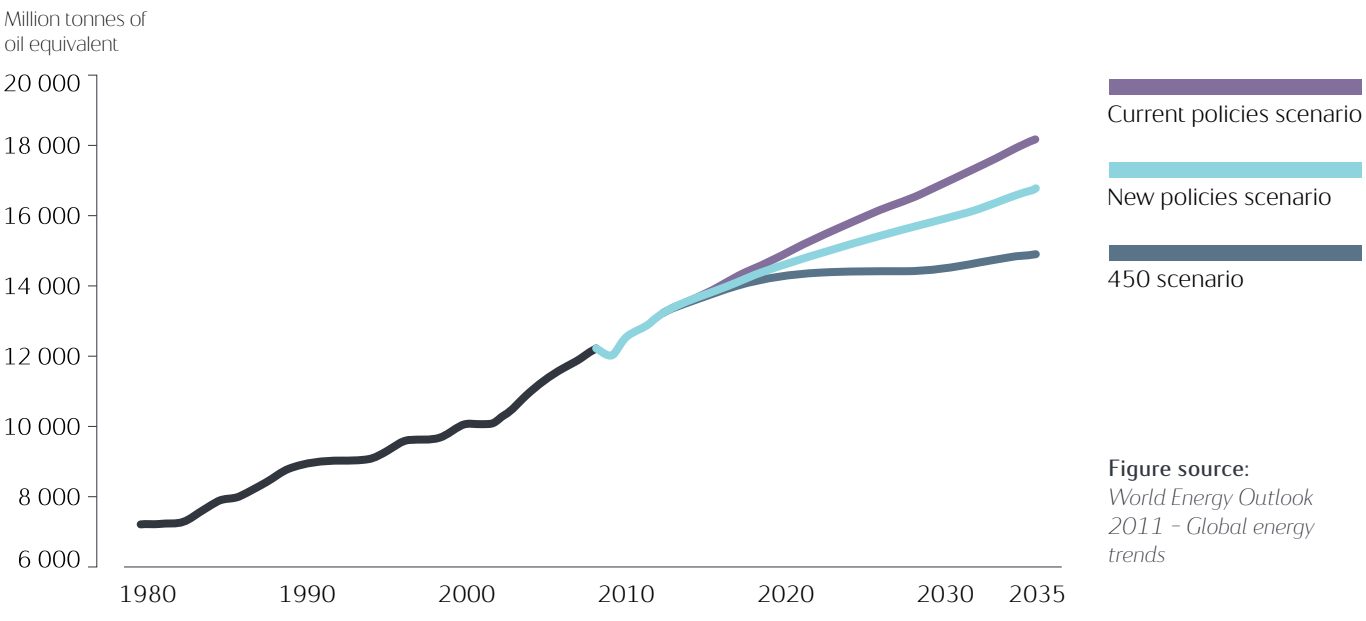


Figure source: *World Energy Outlook 2011 - Global energy trends*

Canadian oil sands third largest proven oil reserve

The Canadian oil sands will play a significant role in meeting the world's energy needs. The oil sands are the third largest estimated proven oil reserve in the world after Saudi Arabia and Venezuela.[8] Located in northern Alberta, the oil sands contain proven reserves of 170 billion barrels of bitumen that are considered economically recoverable using today's technologies.

The Canadian oil sands are a huge, long-term investment opportunity in a politically stable, highly regulated environment. The oil sands already play a major role in meeting global energy demand, with production of 1.5 million bpd in 2010.[9] To put that number in perspective, in 2010 Canada exported approximately 2.0 million bpd to the United States, roughly 21 per cent of total U.S. crude oil imports.[10]

Like all sources of unconventional oil, the Canadian oil sands are challenging to develop. Oil sands are more expensive, more difficult and require more energy to extract than conventional oil. These facts have raised national and international concerns about the environmental, social and economic implications of oil sands development.

In situ oil sands development is relatively new, and extraction technologies require further research, development and field testing to reduce energy use, water consumption, land footprint and greenhouse gas (GHG) emissions.

Extracting bitumen

Oil sands are extracted using two methods: mining or in situ. Oil sands located close to the surface are mined using large mechanical shovels to dig the oil sands, and trucks to transport the ore to processing facilities. Only about 20 per cent of Alberta's oil sands can be extracted this way.

Eighty per cent of Alberta's oil sands are located deep underground and are recovered in situ, which involves drilling wells into the reservoir and injecting steam to heat the reservoir until the bitumen flows and can be moved to the surface. In situ oil sands development has a much smaller land footprint than oil sands mining.

Footnotes

1 International Energy Agency, World Energy Outlook, 2011, page 39.
2 Ibid.
3 International Energy Agency, World Energy Outlook, 2011, page 41.
4 Ibid.
5 Ibid.
6 International Energy Agency, World Energy Outlook, 2011, page 122.
7 International Energy Agency, World Energy Outlook, 2011, page 126.
8 Alberta Energy, Oil Sands, http://www.energy.gov.ab.ca/OurBusiness/oilsands.asp.
9 Canadian Association of Petroleum Producers.
10 Canadian Association of Petroleum Producers.

Statoil and the oil sands

Two billion barrels of recoverable oil

Statoil has a 60 per cent interest in the Kai Kos Dehseh lease following the sale of a 40 per cent interest to PTT Exploration and Production of Thailand, effective January 1, 2011. The KKD lease comprises 1,129 square kilometres (279,053 acres) of land located in the Athabasca Oil Sands Region of northeastern Alberta. The lease is estimated to contain more than two billion barrels of recoverable resources, with the ability to produce more than 200,000 bpd over the next 30 years.

The oil on our lease is located at such depths that it can only be extracted in situ. We are using a combination of drilling and thermal technologies called Steam Assisted Gravity Drainage, the most common commercial method used to develop in situ oil sands. SAGD involves drilling wells in stacked, parallel pairs, one for injecting steam and the other for producing the oil. SAGD has a much smaller land footprint than surface mining operations.

Oil sands production

Our first oil sands operation is the Leismer Project. Leismer is a commercial-scale integrated test facility, which means it pilots new technologies and processes that, starting in 2011, are being applied to commercial-scale volumes of bitumen. Leismer consists of 23 SAGD well pairs drilled from four well pads. Leismer's startup of commercial-scale bitumen production occurred while achieving industry-leading performance standards for SAGD startups, as measured against industry benchmarking studies. The benchmark studies were for bitumen production per well and steam-oil ratio or SOR, which indicates the number of barrels of water (as injected steam) used to produce a barrel of bitumen.

Start-up process efficiencies, plant reliability and well operations contributed to this performance. We are proud of this achievement, which demonstrates our learnings.

Several new projects have been defined that support Leismer's current processing levels, and will also increase bitumen production to maximum design levels. Plans are in place to expand Leismer in two phases, which will include increasing the number of well pads and steam generation capacity. Statoil has received approval from Alberta regulators to increase Leismer's licensed capacity to 40,000 bpd bitumen production. A second project, Corner, also received approval for up to 40,000 bpd.

Research and development

Leismer was constructed for research and development work, which will be conducted throughout the facility's life cycle. Initially, Leismer focused on small-scale pilot projects, which allowed Statoil to gain experience in day-to-day SAGD operations before moving to commercial-scale production in 2011 and, eventually, to full-field development of our KKD lease. This step-wise approach has increased our knowledge base and will allow for the successful expansion of Leismer and development of Corner.

Regulation and transparency

Canada's federal and provincial governments have established a robust regulatory process that includes applications and public hearings. It typically takes two to four years to receive approval for an oil sands project. In Canada, provincial governments regulate resources and resource extraction. Alberta Environment, Alberta Energy, and the Energy Resources Conservation Board regulate oil sands development in the province. Depending on the type of approvals required, the federal government could be involved in issuing federal permits and authorization to oil sands projects that are within provincial jurisdiction.

The Canadian regulatory system is open and transparent. Individuals and groups who are potentially directly and adversely affected are able to challenge a project. Public consultation is also a regulatory requirement of both the federal and Alberta governments and regulatory agencies.

Industry benchmarking steam oil ratio for SAGD start-up

Statoil's startup of the Leismer Demonstration Project was the most efficient SAGD start-up to date. The oil sands industry is maturing and the lessons from previous SAGD startups were the foundation to Statoil's successful startup. Our Steam Oil Ratio was significantly more efficient than the industry's historic average, with an SOR of 62 per cent compared to historic benchmarks. Our production per well was almost 50 per cent higher than the historic benchmark average.

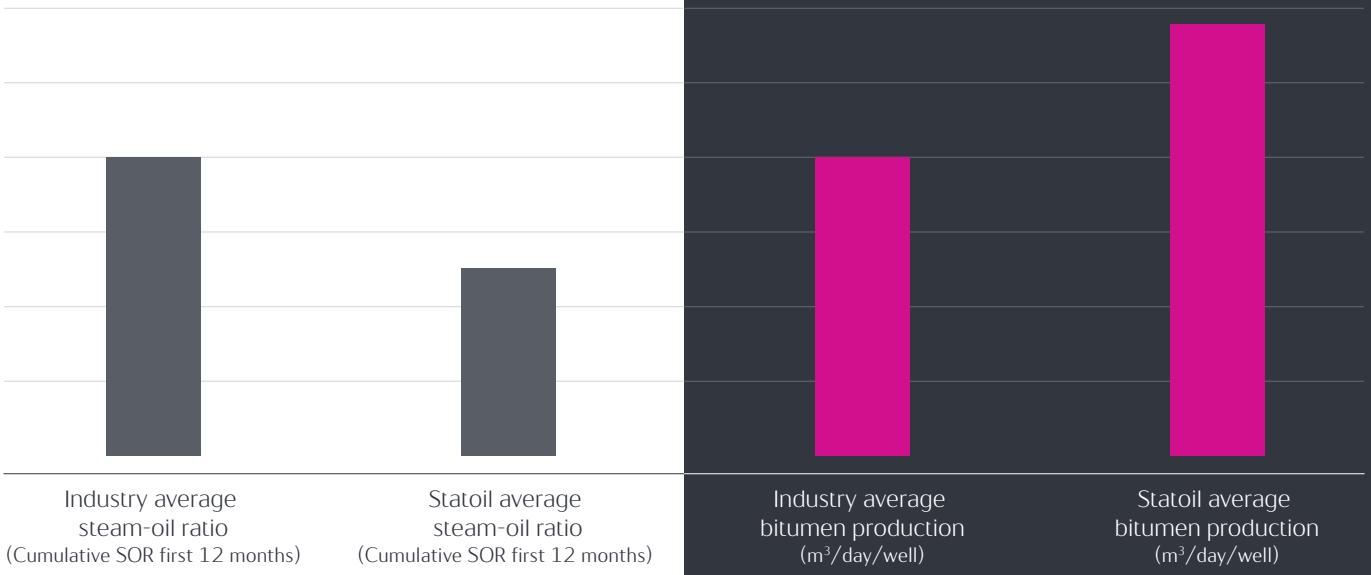
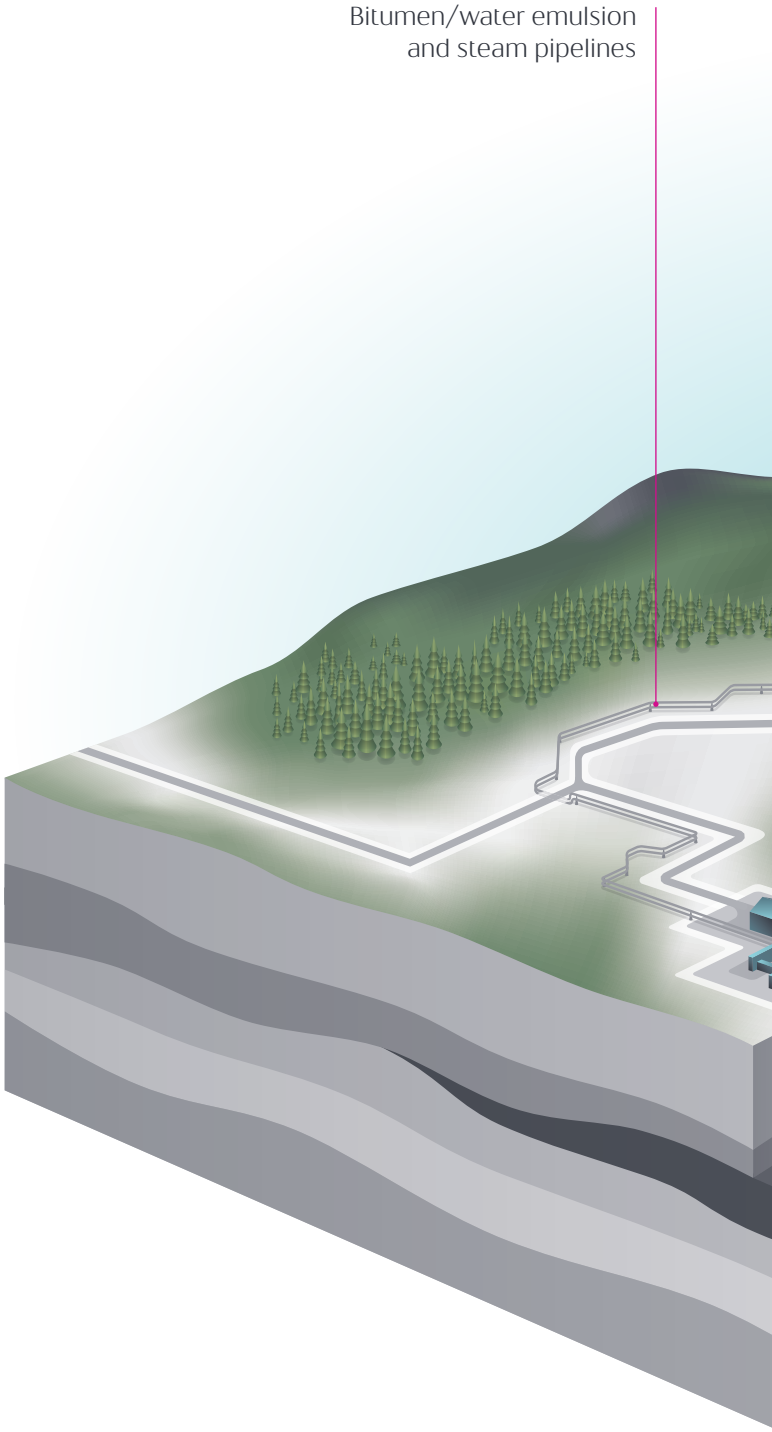
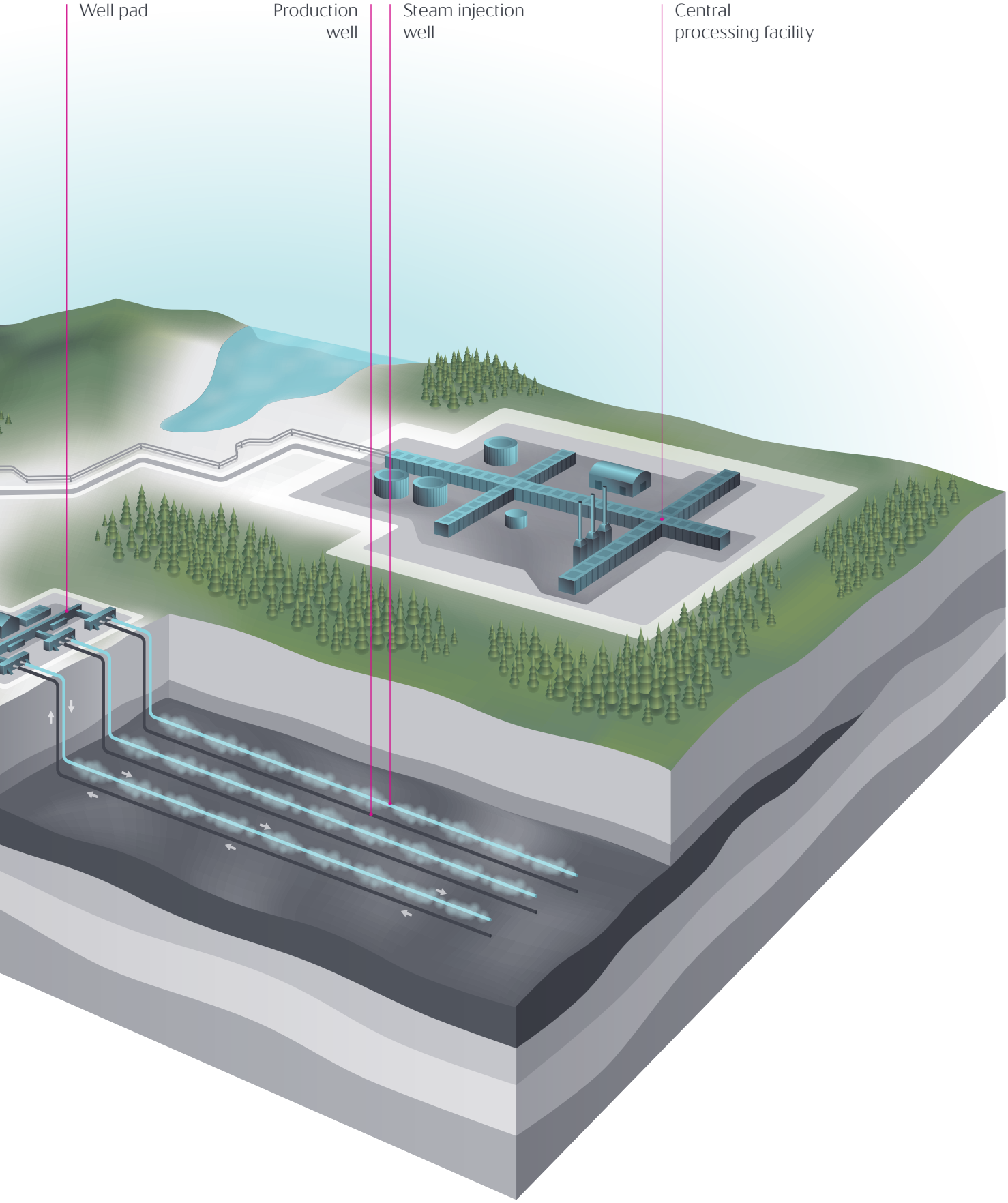


Figure source: *IHS Energy. Accumap Database*
Note: *Based on the first 12 months of steam injection, compared to 10 previous SAGD startups.*

SAGD explained

The most commercially successful method of in situ bitumen recovery is Steam Assisted Gravity Drainage. In SAGD, two stacked parallel wells are drilled vertically to reach the reservoir before turning and drilling horizontally across the reservoir. Steam is injected into the top well until the bitumen begins to flow into the lower well and can be moved to the surface. Several pairs of SAGD wells are typically drilled from one well pad.




Well pad
Production well
Steam injection well
Central processing facility

Learn, share and contribute

Given the complexity of oil sands development, Statoil is using a model of collaboration and partnerships to accelerate innovation and adoption of new technologies that will reduce the environmental and social impacts of our operations. Statoil itself has a learning-based culture that promotes information sharing between departments and regions of our international operations.

PTTEP partnership

On January 1, 2011, PTT Exploration and Production of Thailand became a partner in our Kai Kos Dehseh lease. We look forward to working with PTTEP, which has 40 per cent ownership of KKD. PTTEP is aligned with our step-wise approach to oil sands development, which involves conducting pilot tests on a small scale, and using those learnings to move to commercial-scale tests prior to full-field development. PTTEP will support the extensive research and development efforts being conducted at Leismer.

Partnerships and joint ventures are becoming more common in the oil sands industry since they allow individual organizations to lower their financial risk exposure on capital-intensive megaprojects that have a life cycle of more than 30 years.

OSLI

Statoil is also reaching out to other oil sands companies through our involvement in the Oil Sands Leadership Initiative. Statoil is a founding member of OSLI, a network of six companies working collaboratively in non-competitive areas to accelerate the development of innovative technologies and processes that improve the environmental, social and economic performance of in situ and mining development.

OSLI was launched in March 2010, when the CEOs of Statoil Canada, ConocoPhillips Canada, Nexen Inc., Suncor Energy Inc., and Total E&P Canada signed a formal charter that guides OSLI's direction and activities in the oil sands. Shell Canada signed in 2011.

The network is focused on improving performance, with more than 50 joint projects in various stages of development. These projects are driven by representatives from OSLI companies who sit on four working groups that meet regularly to map out potential areas of mutual interest and define projects.

OSLI's vision is to achieve world-class environmental, social and economic performance in developing the oil sands resource.

Outreach

As part of Statoil's core value of openness and commitment to sharing information about our oil sands activities, in 2011 we hosted more than 50 tours to our Alberta oil sands operations. These tours included members of the media and representatives from non-governmental organizations, including Greenpeace Norway, Bellona, and the World Wildlife Fund, in addition to government officials and politicians.

Environmental ambitions

Statoil has established ambitious goals to reduce the carbon dioxide intensity, water intensity and land footprint of our oil sands operations while making socio-economic contributions to the communities in which we operate.

Given the interconnection between environmental and economic issues, a win for the environment is a win for project economics. For example, reducing our consumption of the natural gas used to produce steam for the SAGD process will cut costs and CO_2 emissions. Reducing our water requirements will decrease the need for expensive treatment and recycling processes and facilities. Clearly, there is a strong business case for enhanced environmental performance.

We believe our environmental ambitions can be achieved by accelerating innovation, and collaborating with our peers in non-competitive areas. We are committed to establishing Statoil as an industry leader in environmentally and socially responsible development of our oil sands leases.

Our ambitions

Statoil has established the following ambitions for our SAGD developments:

- achieve 25 per cent reduction in carbon dioxide intensity by 2020;
- further develop the Oil Sands Technology Plan with an ambition to reduce carbon dioxide intensity by 40 per cent by 2025;
- achieve 45 per cent reduction in water intensity over 10 years.

Intensity is an industry measurement used to determine the amount of carbon dioxide or water used to produce a barrel of bitumen from the oil sands.

Oil sands technology plan

Statoil recognizes that technology is a key to the sustainable development of the oil sands. We have established an Oil Sands Technology Plan, a strategic five-year road map for our Kai Kos Dehseh lease. The plan identifies technologies that will reduce costs while simultaneously increasing bitumen production. This, in turn, will improve project economics and enable Statoil to meet our carbon dioxide and water intensity ambitions, as well as contribute to reducing our overall environmental footprint. The need to address landscape disturbance, local ecological footprint and biodiversity is also acknowledged in the plan.

The $30-million Oil Sands Technology Plan is updated annually. It covers the full range of technology development stages since not all are at the same level of readiness. Some technologies are in the early stages of research and development while others are ready for piloting.

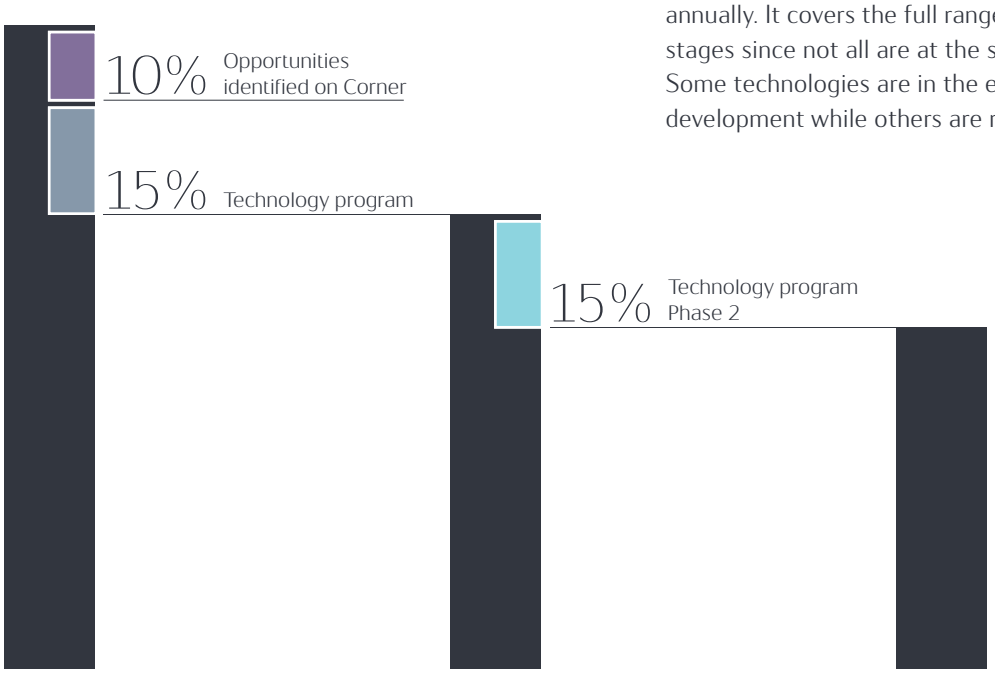


Figure description:
Using new technologies and innovative processes, Statoil's goal is to achieve a 25 per cent reduction in carbon dioxide intensity by 2020. We plan to further develop our Technology Plan with an ambition to reduce carbon dioxide intensity by 40 per cent by 2025.

Measuring success

The technical community has established several standardized measurements to assess oil sands performance.

Steam-oil ratio (SOR)

The first is the steam-oil ratio, which indicates how many barrels of water (as injected steam) are required to produce a barrel of bitumen. Since every reservoir is different, the average industry SOR fluctuates from two to four. That means it takes the equivalent of two to four barrels of water, in the form of steam, to produce one barrel of bitumen. Up to 90 per cent of the water used to make the steam is recycled produced water.

It is important to note that SOR will not steadily decline over the life of the project, but will rise and fall depending on the phase of SAGD development. For example, at the beginning of a SAGD project, high volumes of steam are injected over several months to heat the cold reservoir. Steam injection occurs with little or no bitumen production, which sends the SOR soaring. The SOR declines as production increases; however, it may rise again due to production declines or when more steam injection is required with additional production wells.

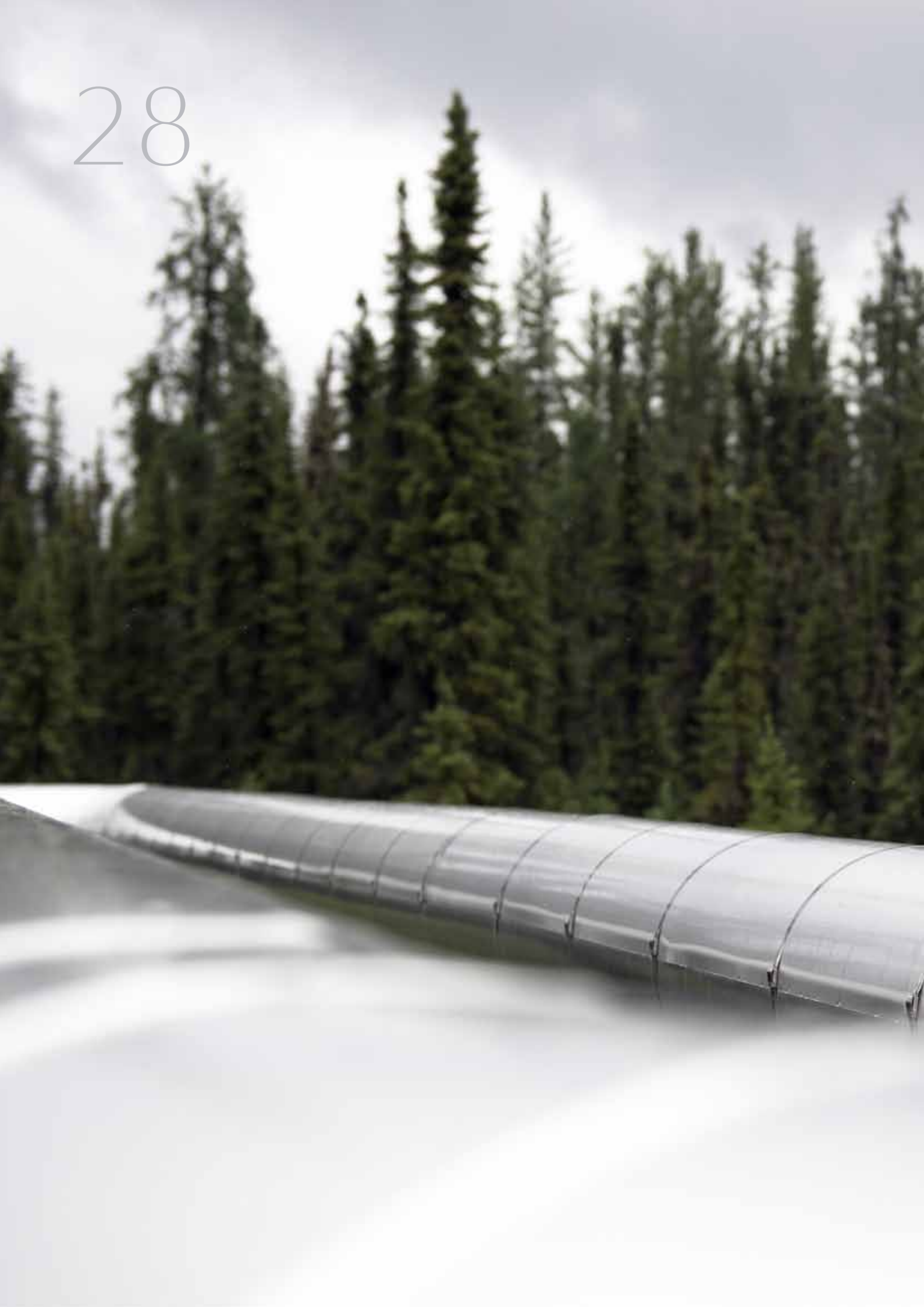
Greenhouse gas (GHG) intensity

This is another industry measurement used to determine the amount of carbon dioxide (a GHG emission) released during the production of a barrel of bitumen. It is among the most accurate methods of measuring performance improvements since total CO_2 output rises with production increases. The intensity number calculated by producers includes only the emissions released during the production of bitumen. It does not include emissions related to upgrading or refining, or end use in transportation vehicles, which are typically compiled to determine life cycle emissions. Extensive work on life cycle emissions has determined that more than 75 per cent of emissions result from the consumption of refined fuels, and that 25 per cent or less come from extracting oil.[11]

Like SOR numbers, GHG intensity numbers also fluctuate. Statoil sets overall goals for the life cycle of a SAGD project. However, GHG intensity will not steadily decline, but will rise and fall throughout the project life cycle, depending on reservoir requirements.

Footnote

[11] IHS CERA, Oil Sands, Greenhouse Gases and US Oil Supply, page 9, http:/www2.ihscera.com/docs/Oil_Sands_Energy_Dialogue_0810.pdf.



Sustainable
development activities

Statoil is in the oil sands business for the long term and, as a result, we believe our current and future operational and commercial success are critically linked to our ability to manage environmental and social challenges in an effective and responsible manner.

Our business policies and requirements apply to all our operations, as well as to all staff and contractors involved in those operations. Our partners and suppliers are also expected to have standards consistent with our governing documents. By adhering to sound standards for health, safety and environment, business ethics and social responsibility, we identify risks at an early stage and take responsible action to manage them.

In this section, we discuss our overall approach to managing environmental and social impacts in 2011.

Air

In June 2011, Statoil began continuous monitoring of ambient air quality at the fenceline of the Leismer Project to provide a real-time reading of air quality. This is in addition to passive monitoring undertaken since December 2010, which provides a cumulative result over a month-long period rather than a real-time reading.

The continuous monitoring station records wind speed and direction as well as concentrations of hydrogen sulphide, sulphur dioxide and nitrogen dioxide as specified under Alberta's Ambient Air Quality Objectives (AAAQOs), which provide government-set objectives for various airborne substances. The Alberta objectives are used by companies in:

- air dispersion modelling;
- determination of facility design parameters such as stack heights; and
- comparisons with ambient air monitoring results.

The continuous monitoring station is temporary and will be in place until March 31, 2012, monitoring for three months per year thereafter as specified by our Environmental Protection and Enhancement Act (EPEA) approval.

In 2011, Statoil also joined the Wood Buffalo Environmental Association (WBEA), which monitors the air quality in the Regional Municipality of Wood Buffalo. Statoil supports the development of a southern WBEA network.

Initial results from our 2011 air monitoring program are well below the limits set in the AAAQOs.

CO_2 emissions

Statoil believes innovation and collaboration are necessary to bring about the step change in oil sands development that will significantly reduce the CO_2 intensity of in situ operations.

Our Heavy Oil Technology Centre is working in conjunction with our Leismer Project and our Heavy Oil Group in Norway, to develop new technologies and processes to achieve significant reductions in CO_2 intensity. To guide our efforts, we have established the following two ambitions:

- achieve a 25 per cent reduction in carbon dioxide intensity by 2020; and
- further develop the Oil Sands Technology Plan with an ambition to reduce carbon dioxide intensity by 40 per cent by 2025.

These ambitions will be achieved using a number of different technologies currently being advanced by government, industry and collaborative groups.

Carbon capture and storage (CCS) in Alberta

The Canadian and Alberta governments are investigating carbon capture and storage. Both are providing financial support to four projects where CCS would be most effective. Although current CCS technologies are considered to be too expensive for existing SAGD operations, future phases of our oil sands development will be built "carbon-capture ready" in preparation for new CCS in situ technologies.

Statoil is involved in ICO_2N, a consortium studying how best to advance CCS technology. We are also partnering with four major oil sands operators in a demonstration project to find a cost-effective method of capturing CO_2 from the once-through steam generators typically used at SAGD operations. This work is receiving financial support from the Alberta government's Climate Change and Emissions Management Corporation, which manages the Climate Change and Emissions Management Fund.

Statoil has been involved with three consortia conducting research on storing CO_2 in deep saline aquifers or using it in enhanced oil recovery operations in the industrial regions of Alberta. Our Canadian participation in CCS projects benefits from our vast experience with CCS technology at our Sleipner and Snohvit operations, and a European Carbon Dioxide Test Centre now under construction at Mongstad, all in Norway.

Water and the SAGD process

After the first year of startup, the SAGD process typically involves injecting steam into the reservoir, for a steam-oil ratio of two to four. Steam condenses in the reservoir, and up to 90 per cent is recovered as produced water, and then reused. The rest of the water remains in the reservoir.

Produced water is treated so it can be reused many times in the bitumen recovery process. To prevent salts from building up in the recycle water, a small amount of water is removed and disposed of in a deep saltwater formation. The water lost to the reservoir and disposal stream is made up with non-saline groundwater.

Surface water

In summer 2011, Statoil initiated a surface water monitoring program in the Leismer and Corner lease areas. We established multiple sample locations strategically placed along the shores of streams, rivers and lakes in these areas. Sample locations around our Leismer lease include Thornbury Lake, May River, Christina River, and a number of unnamed rivers and lakes. In the Corner lease area our sample locations include Pony Creek and Egg Lake, as well as other unnamed rivers and lakes.

In addition to the water quality and quantity sampling sites, we will also collect snow samples in late winter to determine if air emissions are entering the watershed through accumulations in snowmelt. Results from the 2011 summer and fall samples will be available in 2012. The first full year of the monitoring program will occur in 2012.

Statoil has also recently joined the Regional Aquatic Monitoring Program (RAMP), and will work with other in situ operators in the development of a southern network of monitoring stations.

Groundwater

In addition to previous observation wells, Statoil drilled and installed a deep monitoring well off Pad 4 in 2011. The wells are equipped with instruments that continuously monitor any changes in groundwater quality and temperature around the SAGD wells.

While drilling these wells, Statoil obtained some of the first core samples of sand and gravel from the Empress Formation, an extensive, regional water aquifer. Analyses of these samples have improved our understanding of the geological and chemical composition of this important aquifer.

To improve our ability to monitor subsurface changes, we also completed the second year of electrical resistivity tomography surveys around Pad 1. This technology is being evaluated to determine if thermal-related changes in groundwater can be detected from the surface. If successful, it will allow Statoil to monitor larger subsurface areas more quickly, and at a lower cost than can be achieved with monitoring wells alone.

Statoil is an active participant in two regional groundwater working groups, one led by the Government of Alberta, and the other under the Cumulative Environmental Management Association (CEMA). CEMA is a multi-stakeholder group that includes representatives from local communities,

Aboriginal groups, non-governmental organizations, industry and government. The two working groups are helping to steer the development of a scientifically rigorous regional groundwater monitoring and management system within the Athabasca Oil Sands Region.

Alternative brackish water source

Over the past five years, Statoil has been evaluating an alternate brackish water source for Leismer, called the Clearwater B Aquifer. Brackish water has a higher salinity and can have higher mineral content. However, it can be treated and used to make up for water that is lost in the reservoir and disposed of to reduce saline buildup. Using brackish water will reduce Leismer's use of non-saline groundwater to make up for water losses. Our original regulatory application proposed using brackish water from the McMurray formation; however, this source cannot be used due to negative impacts on our resource recovery.

Changes in water disposal

Statoil is installing a new reduced liquid discharge system that will recover more process water and reduce the amount of waste water that requires disposal. This, in turn, will reduce the amount of water that needs to be added to the system to make up for water losses.

The reduced liquid discharge system will concentrate the waste water stream to a level suitable for trucking to a licensed disposal facility. By concentrating the waste stream, the system will recover more water that is now sent for disposal, reducing water losses and freshwater make-up water requirements.

The reduced liquid discharge system has been discussed with stakeholders, and is contained in an amendment to the original Leismer water scheme now before Alberta's Energy Resources Conversation Board. Regulatory approval is expected in 2012.

Water licence contravention

Statoil prides itself on setting high standards for environmental stewardship. But during a period in 2008/2009, the company fell short of our own standards, and in a few instances, our regulatory requirements. As a result, Statoil was charged with contravening the terms or conditions of its licence to withdraw water, which constitutes an offence under the Alberta Water Act.

Our Responsibility

Statoil accepted responsibility for the contravention and was assessed a total penalty of C$190,000. Of that penalty, C$5,000 was allocated as a fine and C$185,000 allocated to finance an educational e-learning program, which will provide information and direction on water diversion and proper compliance with the relevant legislation and regulations. We believe that the creative sentencing process will lead to the development of best practices for regulatory compliance in the area of responsible water management within industry.

Statoil has developed improved practices to ensure our employees and contractors understand the terms of our Water Act licence and avoid any future contraventions.

What Happened

The contraventions occurred on Statoil's KKD lease, near Conklin, Alberta, between December 15, 2008 and May 29, 2009, and involved:

- underestimating water withdrawal from an approved location by 3,675 cubic metres;
- withdrawing water from two water holes not specifically included in our licence;
- using an intake screen with a larger opening than authorized (8 millimetres [mm] rather than 2.54 mm); and
- not properly measuring water diversion according to licence requirements.

There was no pollution or negative impact on aquatic life. The water, termed surface water because it is drawn from rivers and lakes, is primarily used during winter drilling campaigns to freeze ice roads and well pads for the transportation and installation of heavy equipment. Statoil does not use surface water in its oil sands production process.

Water Technology Development Centre

A Water Technology Development Centre is being created to improve the economics and reduce the environmental impact of the most expensive and operationally complex elements of in situ operations — water treatment and recycling. By working collaboratively, the Oil Sands Leadership Initiative will pilot-test more technologies than can be individually evaluated by each OSLI company. While accelerating the development and commercialization of technologies needed to improve water treatment and recycling, the centre will manage risks and costs, and speed the return on investment.

The centre will provide the ability to test new technologies on "live" process fluids. This is critically important to mitigating the inherent risk of implementing new technologies. The facility will allow this to occur faster and easier than could be accomplished at an operating facility.

A compelling business case has been established for the centre and an experienced technical team has been selected. The conceptual design phase and cost estimate are now complete, and engineering design work will be finalized in 2012.

High-priority technologies that have been identified for potential testing are designed to:

- reduce SAGD's water footprint, including water consumption, energy use and solid waste production;
- improve the reliability of water recycling technology; and
- reduce the cost of water recycling.

Successful technologies must meet the centre's objectives without environmental burden shifting, which means causing negative environmental impacts in other areas. Improvements are needed in the reliability and cost of water recycling/ treatment technologies since these processes make up about two-thirds to three-quarters of the total capital investment in surface facilities for SAGD operations.

Land and biodiversity

Biodiversity beginnings

Statoil has undertaken and supported a variety of research and monitoring initiatives to address biodiversity objectives related to habitat disturbance and regional fragmentation of ecosystems. Biodiversity, regarded as variability among ecosystems, ecosystem components and species, can diminish in areas where land use activities intensify, such as northern Alberta where forestry, and oil and gas development is increasing. While most of Statoil's interest in biodiversity relates to regional wildlife populations, such as our wildlife scat research on monitoring woodland caribou, we are also working to enhance biodiversity through reforestation and wetland reclamation.

We have recently begun participating in the Sustainable Ecosystem Working Group of the Cumulative Environmental Management Association. Statoil is also a member of the Alberta Biodiversity Monitoring Initiative, which addresses sustainable ecosystem issues and conducts biodiversity monitoring in Alberta. We also participated with OSLI in activities aimed at finding new technologies and developing research to better estimate wildlife populations.

In 2011, Statoil undertook an aquatic bio-indicator research and development program, which identified three locally important aquatic species to be used as indicators to monitor local environmental change in the Christina River Basin. The program is designed to understand the species population structure, genetic variability and to provide benchmarks for future comparisons in the Christina River. This enables Statoil to monitor the conditions and change within the aquatic ecosystem.

Woodland caribou

In December 2011, the results of a Statoil-funded research project were published in the peer-reviewed "Frontiers of Ecology and the Environment." The study assessed the health and population of woodland caribou in a portion of the East Side Athabasca River caribou range.
Using dogs to detect wolf, moose and caribou scat in winter, the project found that the caribou population is more than double the number originally estimated, and that deer — not caribou — are the dietary preference of wolves. This information will be used to help manage human activity in caribou zones.

The study involved 3,400 samples of scat collected over three winters in 2006, 2007 and 2009. By analyzing hormone levels in the scat, researchers established a link between human activity and the stress levels of caribou, which affects their nutritional levels. As part of this

work, Statoil sponsored the development of laboratory analytical techniques to determine pregnancy rates, and concentrations of polycyclic aromatic hydrocarbons (a pollutant released by fossil fuel combustion) from caribou scat, as well as scat sample preservation techniques.

Woodland caribou in the oil sands region are designated as "threatened" under Alberta's Wildlife Act and Canada's Species at Risk Act. This means they are likely to "become endangered if limiting factors are not reversed." Statoil will continue our research and monitoring initiatives to better understand caribou population dynamics and functional ecosystem relationships to help mitigate these threats. We will also continue to prepare our annual Caribou Protection Plan.

Threats to Alberta's woodland caribou populations include hunting by predators and humans, vehicle collisions, disease and land use activities such as oil and gas development, forestry and human settlement. Clearing trees for oil and gas activities (seismic, access, facilities, etc.) can create linear paths that allow for greater access by humans and predators, disturbing caribou habitat.

Site reclamation

The reclamation of sites disturbed by oil sands exploration and development is a regulatory requirement for approval of major projects in Alberta. To fulfill these requirements, Statoil has initiated land reclamation activities in some of its project areas on an ongoing and progressive basis. The approach is to reclaim these lands in a manner that results in a return of land capability equivalent to what existed prior to the project.

Statoil planted over 182,000 tree seedlings in summer 2011, more than doubling the total number of trees previously planted. The seedlings — all white spruce — were planted on oil sands exploration well sites. Statoil is now developing its 2012 program, which will likely see a shift from planting a single tree species to a mixture of trees and shrubs.
Statoil has also undertaken research with coarse woody debris treatments along linear clearances. The pilot study follows guidelines set out by Alberta Sustainable Resource Development, and involves the spreading or rolling back of logs and slash material from linear clearing operations. The pilot aims to demonstrate that where there has been an accumulation of coarse woody debris in disturbed areas, a resulting organic soil layer promotes new vegetation, species diversity, soil moisture retention, and new woody plant growth, all contributing to site reclamation.

Collaboration in reclamation

Statoil also participates in OSLI's Land Stewardship Working Group. This group has initiated a number of programs that are taking a regional approach to restoring lands affected by human activities, including oil and gas development.
A geospatial database/modelling project will show oil sands operators what reforestation and reclamation work undertaken today will look like 10, 20 and even 50 years into the future. Other projects of this group are aimed at the restoration and protection of woodland caribou and caribou habitat.

Community activities


Statoil
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Statoil

Community engagement

Statoil is committed to meeting its economic and environmental objectives while promoting healthy, sustainable communities in the areas in which we operate.

Statoil's KKD lease is located in northern Alberta, which is home to many small, remote First Nations and Métis communities. The Canadian Constitution recognizes the rights of Aboriginal peoples of Canada, including First Nations, Métis and Inuit.

We respect the rights of First Nations and Métis communities located within the KKD project area, and are committed to mitigating any potential adverse impacts created by the project. Statoil continues to consult with Aboriginal people and other relevant stakeholders to ensure project information is available, and concerns are effectively addressed. The federal and provincial regulatory bodies require public consultation and participation.

We engage in ongoing consultation with affected Aboriginal communities, and this process allows us to communicate our development plans. By creating a dialogue that allows communities to express concerns about the potential impacts of our proposed developments, Statoil has the opportunity to avoid, minimize or mitigate potential impacts and project concerns.

Local economic contribution

Statoil is committed to doing business with and employing local people who meet our pre-qualification requirements. We conduct **Doing Business with Statoil** presentations in local communities to provide information on work opportunities and Statoil's pre-qualification requirements. We want to give willing local businesses and individuals every opportunity to work for Statoil during various stages of our development in a manner that is competitive, efficient and safe.

We have implemented several initiatives to improve opportunities for local participation in the development and operation of Statoil's oil sands projects. We recognize that partnerships with local communities, industry peers and governments are critical to the success of building a skilled labour force and long-term economic growth opportunities.

Statoil established the Local Opportunity Centre, situated at Conklin Corner in northern Alberta, in fall 2009. This employment and business resource centre is helping Statoil, and its industry peers, build a skilled workforce and supplier network. At the same time, it provides local vendors with access to training and business development tools, and ensures that contractors can tap into information about current and future business opportunities with Statoil and other companies in the area.

Our Local Opportunity Centre won the 2011 Responsible Canadian Energy Award for Social Performance. This award recognizes members of the Canadian Association of Petroleum Producers who have demonstrated exceptional performance in their commitment to responsible development. The Local Opportunity Centre was also selected as one of the three finalists for the 2011 World Petroleum Council Excellency Awards for Social Responsibility.

Statoil has joined forces with industry, not-for-profit organizations and the government to pilot a regional mobile business incubator (MBI) facility that will provide essential business support services to local entrepreneurs along the Highway 881 corridor in northeastern Alberta. This 300-kilometre corridor links the major oil sands centre of Fort McMurray with the smaller regional hub of Lac La Biche. The facility will assist local businesses and individuals in meeting the challenges of working with industry, and provide industry with access to high-quality local services.

Building on the success of the Local Opportunity Centre, the MBI will help local entrepreneurs connect with the right opportunities, develop the necessary business skills to take on and maintain contracts, and maximize their participation in the area's economic opportunities, including Statoil's own oil sands operations. Additionally, sharing resources with like-minded industry peers demonstrates Statoil's leadership and commitment to support the development of local business capacity.

Employment, training and education

In 2011, Statoil Canada partnered with several regional Aboriginal organizations and both provincial and federal levels of government to develop an education, training and employment initiative to assist people in local communities to develop the knowledge, skills and abilities they need to take advantage of employment opportunities offered by Statoil as well as other area producers.

OSLI sustainable communities

Statoil is a participating member in the Oil Sands Leadership Initiative's Sustainable Communities Working Group, which is researching and developing ways of building long-lasting relationships between local communities and industry. By emphasizing a shared community/industry future, we are exploring how sustainable communities learn, grow and thrive over the long term. Fostering the development of a safe, healthy and sustainable community by investing in youth engagement and leadership development is one of the main goals of this initiative.

Factors affecting our performance

Our 2011 KPIs represent a shift from our initial startup phase to commercial-scale production. As the wells mature and bitumen production increases, energy consumption per barrel of bitumen decreases. This is reflected in a better steam-oil ratio and an improved CO_2 emissions intensity. As new production is brought online, SOR and CO_2 emissions intensity may fluctuate.

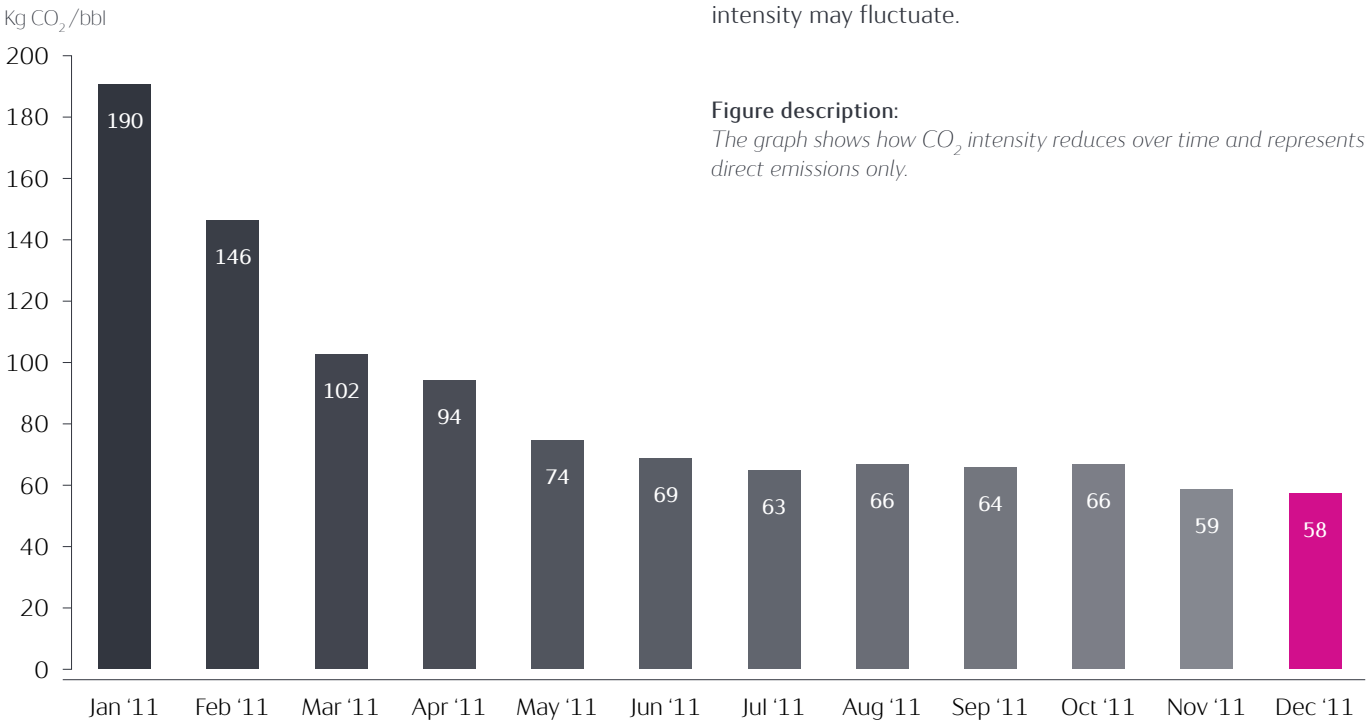

Figure description:
The graph shows how CO_2 intensity reduces over time and represents direct emissions only.

Key Performance Indicators (KPIs)

Bitumen production	2011	2010[1]	2009
barrels	3 685 738	85 015	-
barrels per day (bpd)	10 098	697	-
Energy consumption			
Natural gas consumption 1000 m^3	131 982	25 964	-
Net electricity consumption GWh	48.95	13.48	-
Flare gas consumption 1000 m^3	90	484	-
Air			
CO_2 emissions			
tonnes	267 993	51 404	-
kg/bpd bitumen	72.71	605	-
SO_2 emissions tonnes	48.84	0.43	-
NO_x emissions tonnes	158.75	32.20	-
Water			
Fresh water use			
m^3	357 611	171 938	-
bbl fresh water/bpd bitumen	0.61	12.72	-
bbl steam/bpd bitumen (SOR)	2.65	19.96	-
Produced water recycle %	79.61	9.80	-
Disposal water			
m^3	160 715	58 193	-
bbl disposal water/bpd bitumen	0.27	4.31	-
Land			
Seedlings planted	182 250	62 853	32 000

All KPIs refer to production, consumption and emissions related to SAGD operations only. Indirect emissions from production of imported products or services (i.e. electricity generation, accommodation and transportation) or exploration and drilling are not included.

[1] 2010 performance data has been updated to reflect improvements in accounting systems.

Independent
assurance report

ERNST & YOUNG

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Medlemmer av Den norske Revisorforening

Independent assurance report

To the management of Statoil Canada Ltd

Scope of engagement
We have been engaged by the management of Statoil Canada Ltd to prepare an independent assurance report of the *Statoil Canada 2011 Oil Sands Report Card* (the Report).

Statoil Canada Ltd's management is responsible for selecting the information, collecting the data for presentation and preparing the Report. Our task is to issue a statement on the Report based on our work.

Reporting criteria
As a basis for this assurance engagement, we have used relevant criteria in the sustainability reporting guidelines of the Global Reporting Initiative (GRI). We consider these reporting criteria to be relevant and appropriate to review the Report.

Work performed
Our work is performed in accordance with SA 3000 (ISAE 3000), "Assurance engagements other than audits or reviews of historical financial information". The standard requires that we plan and execute procedures in order to obtain limited assurance that the Report as a whole is free of material misstatements. In such an engagement, less assurance is obtained than would be the case had an audit-level engagement been performed.

Our review has involved the following activities:

- evaluation of the report content against reviews performed as part of the assurance of Statoil's sustainability report and HSE accounting
- obtaining and considering evidence to support the assertions and claims made in the Report
- in-depth review of selected data presented in the Report
- evaluation of the overall presentation of the Report, including the consistency of the information, based on the above-mentioned criteria

Our review has not included assessing the implementation of policies.

We believe that our procedures provide us with an appropriate basis to conclude with a limited level of assurance on the Report.

Conclusion
Nothing has come to our attention that causes us to believe that the information in the Report does not comply with the above mentioned reporting criteria.

Oslo, March 6th, 2012
ERNST & YOUNG AS

Terje Klepp
State Authorized Public Accountant

We are interested in your feedback

We would like to hear from you and hope that you will share your thoughts and ideas on how we may improve our oil sands business and Oil Sands Report Card. Please enter your comments in the space below or send them by email to: oilsands@statoil.com

Comments/questions:

Please provide us with your contact information so that we may reply to your questions or provide you with additional information.

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