The background of the entire page is a photograph of a dense forest of tall evergreen trees, likely pine or spruce, with dark green needles and thin trunks.

Oil sands

Report card 2010 | **Statoil Canada**



Statoil



About Statoil

Statoil is an international energy company with operations in 34 countries. Building on more than 35 years of experience in oil and gas production on the Norwegian continental shelf, we are committed to accommodating the world's energy needs in a responsible manner, applying technology and creating innovative business solutions. We are headquartered in Norway with 20,000 employees worldwide, and are listed on the New York and Oslo stock exchanges.

In 2010, Statoil Canada's oil sands operations consisted of the Leismer Demonstration Project in the Athabasca Oil Sands region of Alberta, Canada. The Leismer Demonstration Project serves as a learning platform for Statoil's future development plan for our Kai Kos Dehseh oil sands leases. The leases comprise 1,129 square kilometres of land located in the Athabasca region of Alberta and are estimated to contain more than 2 billion barrels of recoverable resources.

About this report

Statoil has extensive experience in sustainability reporting for our Norwegian and international assets that meets the requirements of the internationally recognized Global Reporting Initiative. Our reports are audited by an independent third party. At Statoil Canada, we are committed to this standard of reporting for our oil sands activities, which will expand and improve as our operations grow.

As part of our commitment to deliver open and clear communication about our performance, Statoil Canada has prepared the 2010 Oil Sands Report Card, our first oil sands report. It highlights key performance indicators of our operations and details activities undertaken to improve our performance as we continue to develop our Kai Kos Dehseh leases.

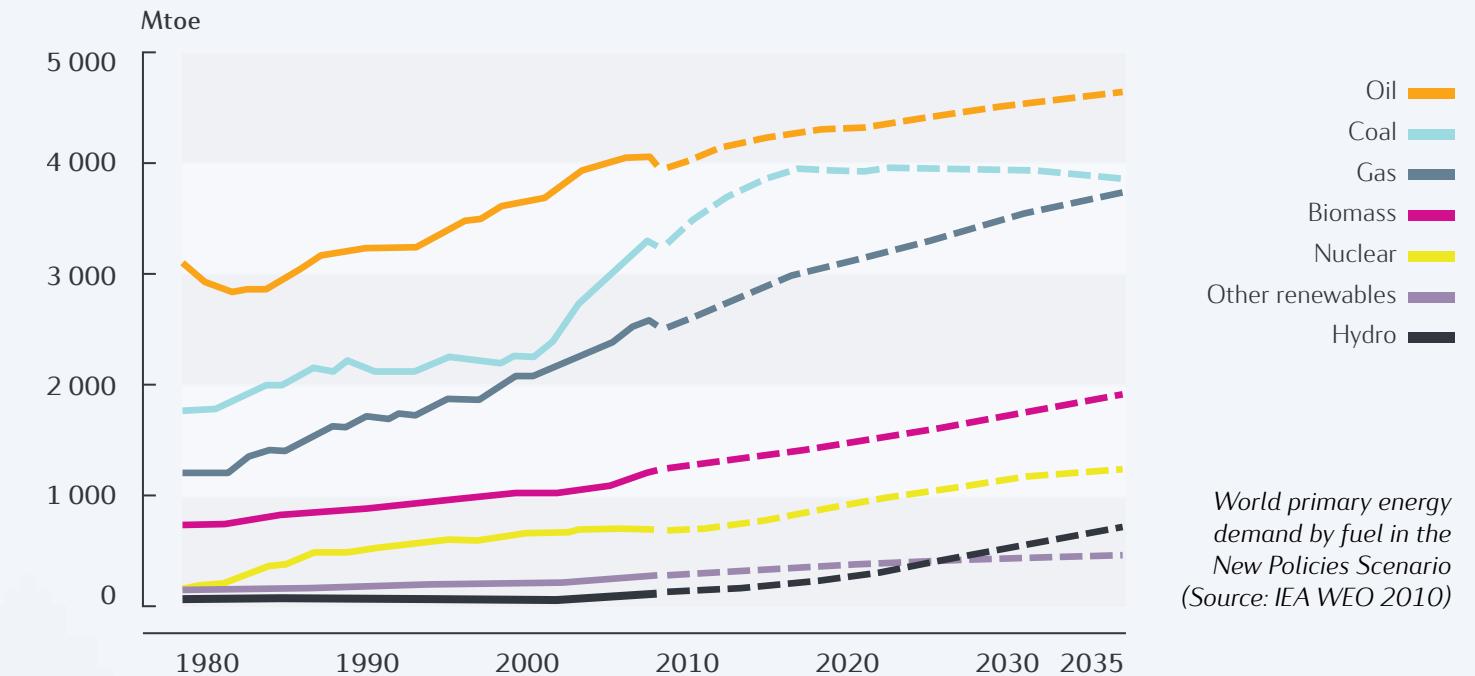


World energy future includes

Canada's oil sands

World energy demand is growing. According to the International Energy Agency (IEA), global energy demand will increase by 36 per cent between 2008 and 2035 or 1.2 per cent each year. Ninety-three per cent of the increase will feed the growing economic engines of China, India and other developing nations as they modernize and industrialize.

Renewable energy such as wind, solar and biofuels as well as nuclear will play a greater role in the world's energy mix. However, over the next 25 years oil will continue to be the dominant world energy source followed by coal and natural gas, even in the IEA's New Policies Scenario that assumes all countries' climate policies and commitments are implemented.



Unconventional oil helps fill the supply gap

Supplies of conventional oil are declining. To help fill this gap and meet increases in energy demand, by 2035 the IEA expects unconventional oil to meet 10 per cent of all world oil demand compared with less than three per cent today.

There are many sources of unconventional oil but the largest deposit is the Canadian oil sands. Canada's total oil reserves, both conventional and oil sands, at 178 billion barrels, are second only to Saudi Arabia with 260 billion barrels.

Environmental challenges can be mitigated

Like all sources of unconventional oil, the Canadian oil sands are more difficult, more expensive and require more energy and other resources to extract and process, than conventional oil. As a result, producing and refining bitumen from the oil sands emits more greenhouse gas than conventional oil.

Producing more energy while reducing greenhouse gas emissions is a dilemma facing all governments, industry and, ultimately consumers. While the economic, environmental and technical dynamics of the oil sands

are challenging, Statoil believes technology is the key to unlocking the potential of this resource while reducing its impact on the climate, air, water and land.

Experience in a carbon-constrained world

Since 1991, we have successfully operated in Norway's carbon-constrained business environment, paying in excess of US\$50 per tonne on carbon dioxide emitted by carbon-tax-regulated operations.

Working in a carbon-constrained world has been challenging, but clearly not impossible. As an energy producer this challenge has sparked the development of technical solutions that directly reduce our greenhouse gas emissions and encouraged us to take on broader initiatives such as capturing and storing carbon dioxide emissions. In addition to our two operated carbon capture and storage (CCS) projects at Sleipner and Snøhvit, we established a Carbon Dioxide Test Centre (TCM) at our Mongstad refinery with the Norwegian authorities and other industrial partners scheduled to begin operations in late 2011 or early 2012.

We believe our experience in technological innovation will enable us to meet and overcome the complexities we encounter in Statoil Canada's oil sands business.

Statoil and the oil sands



Our leases contain more than two billion barrels

In 2007, Statoil acquired North American Oil Sands Corporation (NAOSC) and operatorship of the Kai Kos Dehseh (KKD) leases. The KKD comprise 1,129 square kilometres of land located in the Athabasca region of Alberta.

Our KKD leases are estimated to contain more than 2 billion barrels of recoverable resources, and we plan to produce more than 200,000 barrels per day from these leases for thirty years or more.

In November 2010, a 40 per cent interest in the Kai Kos Dehseh leases was sold to PTT Exploration and Production of Thailand. Statoil will continue to operate all project facilities, related infrastructure and project development.

Leismer demonstration project

The Leismer Demonstration Project (LDP) is the first phase of Statoil Canada's oil sands development plan. The LDP facility has a capacity of approximately 18,800 barrels per day of bitumen.

Since the oil on our leases is located deep beneath the earth's surface, it will be developed *in situ* (Latin for *in place*) using Steam Assisted Gravity Drainage (SAGD) technology. SAGD is the principle *in situ* recovery method applied commercially in the Athabasca oil sands.

SAGD involves drilling two parallel wells vertically and then horizontally into the reservoir. The upper well is used to inject steam into the reservoir to heat the bitumen, which is too thick to flow naturally. After several months of steam injection, the bitumen becomes liquid enough to drain by gravity into the lower well and is pumped to the surface.

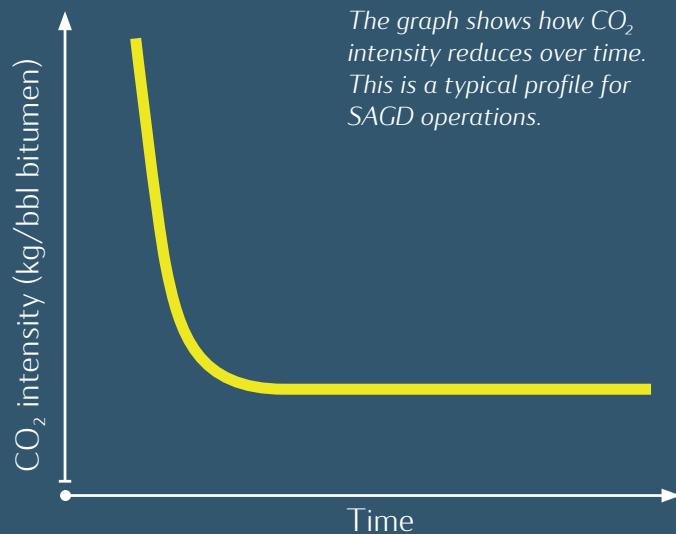
At Leismer, steam was first injected in September 2010 with first oil production in Q1, 2011. We expect to reach production capacity within 24 months. Continued development of our leases will occur in phases to build our understanding of this resource and benefit from our findings.

Our 2010 performance

Factors affecting our performance

Our 2010 numbers represent the initial phase of our Leismer Demonstration Project. From September to December 2010, steam was injected at 15 well pairs before small amounts of oil were produced at the end of 2010. This is typical of SAGD operation startups where there is very high consumption of energy at the beginning of the project compared to the amount of bitumen produced. This affects the steam/oil ratio (SOR), one of the key indicators used to assess efficiency of SAGD operations; namely, how many barrels of water (as injected steam) needed to produce one barrel of bitumen.

As expected, Leismer's SOR for 2010 is high — and correspondingly so are CO₂ emissions per barrel of bitumen — but it is declining and will continue to do so as bitumen production increases.



Key Performance Indicators (KPIs)	2010	2009	2008
Bitumen production			
Bitumen production barrels	84087	-	-
barrels per day (bbl/d)	801	-	-
Energy consumption			
Natural gas consumption 1000 m ³	28 499	-	-
Electricity consumption GWh	40.40	-	-
Flare gas consumption 1000 m ³	484	-	-
Air			
CO ₂ emissions tonnes	56 373	-	-
kg/bbl bitumen	670	-	-
SO ₂ emissions tonnes	~ 0	-	-
NO ₂ emissions tonnes	46.80	-	-
Water			
Fresh water use m ³	171 938	-	-
bbl/bbl bitumen	12.86	-	-
Produced water recycle %	44.2	-	-
Disposal water m ³	57 658	-	-
bbl/bbl bitumen	4.31	-	-
Land			
Seedlings planted	62 850	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.

Why the Canadian oil sands?



The Canadian oil sands provide access to huge, long-term oil reserves in a politically stable and highly regulated environment. The majority — 77 per cent — of the world's oil reserves are now owned or controlled by national governments. Of the remaining 23 per cent accessible to the private sector, 51 per cent are in the Canadian oil sands.

Stable canadian supply

The Canadian oil sands are already a major contributor to the world's energy supply. Of the 2.8 million barrels per day of oil Canada produced in 2010, about 1.5 million barrels per day came from the oil sands. In comparison, Canada exported about 1.9 million barrels per day to the United States, making up more than 15 per cent of that country's crude oil imports.

Established regulatory regime

Canada is politically stable and internationally recognized for its business reliability and high technical standards. The oil sands are being developed under a comprehensive regulatory regime. The Canadian federal and Alberta provincial governments and regulatory bodies oversee all aspects of oil sands operations, monitoring impacts on air, land, water, wildlife and local communities.

Proposed oil sands projects must undergo rigorous regulatory scrutiny that includes a public consultation process before a decision is made to approve a project. Once approval is granted, oil sands operators must submit a detailed annual report of their technical, environmental and community activities that meets the terms of their license and all applicable federal and provincial regulations.

Our commitment to improve environmental performance

Statoil's goal is to become an industry leader in environmentally and socially responsible in situ oil sands development: reducing greenhouse gas intensity, water consumption and land disturbance while making a positive contribution to the communities in which we operate.

Our technology plan

We have developed a Technology Plan comprised of techniques, technologies or processes that will increase bitumen recovery, improve the economics and reduce the carbon dioxide intensity of our operations. The plan has a strong focus on research and development over the next five years, largely facilitated by our Statoil Heavy Oil Technology Centre in Calgary.

CAD\$30 million per year for R&D

Under the plan, Statoil will spend roughly CAD\$30 million (approximately 200 million NOK) annually for researching and developing methods aimed at improving oil sands energy efficiency and recovery while reducing the environmental footprint of our operations. The cost of actual pilots and field demonstrations to ensure these technologies are suitable for wider use in the field is expected to be orders of magnitude higher.

As a recent entrant to the oil sands, Statoil is focused on technologies that improve:

- understanding of reservoir geology and fluids
- bitumen recovery in challenging reservoirs
- drilling techniques and well integrity
- facilities optimization and energy efficiency
- environmental footprint

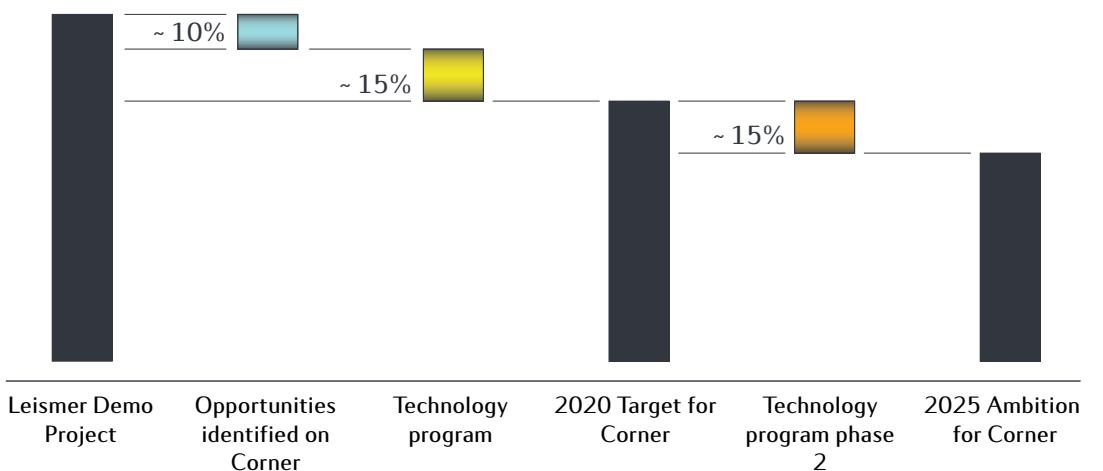
Goal to reduce CO₂ intensity by 25% by 2020

Through technology developments Statoil's sustainability goal is to:

- reduce carbon dioxide intensity by 25 per cent by 2020 for SAGD, applied to our next development, the Corner project;
- reduce water intensity by 45 per cent over 10 years for SAGD;
- further develop the Technology Plan with an ambition to reduce carbon dioxide intensity by 40 per cent by 2025 through the application of novel technology.

CO₂ intensity

The graph shows the targets and ambitions for reducing the CO₂ intensity with the Leismer Demonstration Project (LDP) serving as the baseline. The actual LDP baseline will be established during 2011 and 2012 as production ramps up towards design capacity.



Sustainable development activities

Air

- Since 2008, we have been an anchor member of the Integrated CO₂ Network (ICO₂N). ICO₂N is an industry group working on technical and regulatory issues related to the development of CCS in the oil sands industry.
- We have been a partner in the Heartland Area Redwater Storage Project (HARP) since 2008. The current phase consists of drilling a data well and designing a 100,000-tonnes/year CO₂ injection pilot. The plan calls for injecting CO₂ into the Redwater Reef aquifer.
- Statoil is participating in the Praxair oxyfuel project, which will determine how existing SAGD steam generators can be fired with oxygen instead of air to improve our ability to capture CO₂ emissions. Oxyfuel technology has the potential to be lower cost and have environmental advantages over other CO₂ capture technologies.

Land

- A third party wildlife research program has been conducted that used dogs to locate wildlife scat from a large study area to analyse population densities and stress levels among moose, caribou and wolves. The program provides scientifically based and statistically defendable population estimates.
- We are continuing a tree-planting program, which reclaims land affected by our development to its natural state sooner than required by government regulation. By planting trees at test-well sites and along seismic lines, the land will be rehabilitated sooner than if left until the end of the project.
- Statoil is seeking and proposing alternatives to building conventional all weather roads for intermittent use. The use of temporary roads will reduce the need for road fill and lead to more rapid re-establishment of native vegetation when projects are decommissioned.

Water

- A groundwater monitoring program has been developed and is being implemented to assess the effects of thermal oil recovery on the mobility and attenuation of naturally occurring trace elements including arsenic. The results of the monitoring program will be used to verify the findings of an environmental risk assessment and to help ensure operations are not adversely affecting groundwater quality or the surrounding watershed.
- Empress Formation Resistivity Imaging. Electrical Resistivity Tomography (ERT) is a technique for mapping the distribution of subsurface electrical resistivity in a cross-sectional format. By conducting a field program at set time intervals, Statoil can monitor the changes within the formation due to changes in pore fluid temperature as a result of operations. In evaluating the time series data, Statoil can map the propagation of the thermal front within the Empress Formation. This information is used in conjunction with the study on thermally mobilized trace elements (arsenic) that Statoil is conducting.
- A program will be developed to monitor both the quality and quantity of surface water running through our leases. Although this is not a regulatory requirement, establishing a monitoring program is aligned with Statoil's environmental policies and meets local stakeholder concerns. The results will provide greater understanding of the aquatic health of the surface waters in our lease area.

Technology plan

- A solvent co-injection pilot is being planned for the Leismer Demonstration Project for early 2012. Injecting condensate with steam into the reservoir has the potential to reduce steam requirement by 10 to 25 per cent, with a corresponding reduction in CO₂ emissions.

- Other technologies are also being tested at the LDP, such as high-temperature electric submersible pumps, completion alternatives and operating strategies. Novel technologies and practices will be piloted when they are ready to be field-tested.

Oil sands leadership initiative

A network of oil sands operators joined together to improve the environmental, social and economic performance of developing Canada's oil sands resources by establishing the Oil Sands Leadership Initiative or OSLI.

In March 2010, the CEO's of ConocoPhillips Canada, Nexen, Suncor, Statoil Canada and Total E&P Canada signed a formal charter that will guide OSLI's direction and activities in the oil sands. During the fall of 2010 Shell also joined the OSLI partnership.

The companies will collaborate by sharing best practices; co-operating in the assessment, development and implementation of new technologies and practices; leveraging resources for optimum benefit; and working with regional stakeholders to achieve greater and faster performance improvements than they would have done working on their own.

OSLI has five working groups that meet regularly to map out potential areas of mutual interest and define projects:

- Water Management
- Land Stewardship
- Sustainable Communities
- Communication
- Technology Breakthrough



Communities

Consulting with local communities

As part of the regulatory approval process for all oil sands developments, companies are required to consult with individuals, communities, agencies and other industries that could be potentially affected by development.

Statoil Canada works closely with the communities near our operations. Working with various local advisory committees, we aim to ensure our activities cause as little disruption as possible. Through these committees, we receive important information and constructive feedback, which allows us to create better plans, improve our methods and determine how community members are affected by our activities.

In this way, we can mitigate the potential impacts of our activities on individuals and communities.

In addition to meeting government regulatory requirements for consultation, Statoil also engages local communities through a variety of other ways, such as business opportunities and social investment programs.

Local business opportunities

Statoil is committed to providing local communities access to employment and business opportunities at our operations. As part of this commitment, we opened the Local Opportunities Centre two kilometres west of the Leismer Road/Highway 881 junction in Fall 2009, to reduce barriers to employment and encourage business opportunities with Statoil. About 140 local businesses worked for us in 2010, and Statoil spent more than \$80 million in our identified local communities. ConocoPhillips joined us in this initiative in 2010.

- Through the Local Opportunities Office, Statoil will increase our level of local business engagement and vendor participation, and improve HSE standards.
- We assist local vendors in achieving certification with ISNetworld, an independent business certification service used by Statoil and other operators to ensure local businesses meet HSE standards and regulations.

Statoil's education and training programs support our local employment goals and help communities work toward creating sustainable businesses and long-term career opportunities.

Our programs include:

- Safe behaviour training
- Professional driver improvement training
- Health, Safety and Environment (HSE) training
- Portage College: Power Engineering, culinary arts and other apprenticeship programs
- Drilling rig training and employment
- Summer student program

Statoil also has a community investment program that supports the well-being of people, schools and seniors in the surrounding communities. Every year we sponsor a number of programs in local communities with the goal of creating meaningful short- and long-term social benefits.

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 2010 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
- interviews with reporting responsible to assess the process of defining and collating the Report
- 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.

Conclusions

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, April 8th 2011
ERNST & YOUNG AS



Terje Klepp
State authorised public accountant

Statoil Canada Ltd.
3600, 308 - 4th Ave SW
Calgary, AB T2P 0H7
Canada
www.statoil.com

