

BP and Oil Sands

Frequently Asked Questions

Why is BP developing the Canadian oil sands?

BP has a clear strategy to invest to grow exploration and production profitably through a portfolio of leadership positions in the world's most prolific hydrocarbon basins. Canada's oil sands more than qualify, being second only to Saudi Arabia in terms of proven reserves.

Secondly, BP creates value through the application of technology and capability to drive performance and operating efficiency. In-situ steam assisted gravity drainage (SAGD) is a process and technology which we believe offers substantial opportunity for further development and improvement.

Also through BP's Mid-West US refineries there is a distinctive opportunity to create a balanced portfolio of upstream production and downstream conversion which will allow BP to participate in the available margin across the whole value chain.

Is there a need for Canadian oil sands?

The global requirements for energy for the next 20/30 years are such that hydrocarbons are still going to have a dominant role in meeting that energy demand. The specific challenge for oil will be to replace supply from the decline of today's mature fields and meet additional demand. BP estimates that the oil industry will be required to bring 50 to 60 million barrels a day of new production on stream by 2030 – double the level of output from the entire Middle East today.

The challenge for all countries is to address the parallel issues of energy security and climate change. All sources of energy will be needed to meet this demand in a responsible way. With reserves second only to Saudi Arabia, Canada's oil sands represent a significant and stable source of oil supply to enhance energy security and diversity, particularly for North America.

How much of BP's current production is sourced from oil sands?

BP does not yet have any oil sands production – first production from Sunrise is estimated to be 2014.

How is the oil excavated? Is an open cast mine used?

The three projects – Sunrise, Kirby and Terre de Grace - will use in-situ steam assisted gravity drainage (SAGD). This technique injects steam into the reservoir, warms the oil and allows it to be produced to the surface where it is piped directly to the refinery. This will enhance efficiency and performance, and reduce the physical footprint of the project. An example of a SAGD well pad is show below:



We expect that, by working with our partners and using BP's expertise in applying technology to oil and gas production, we would be able to make efficiency improvements in in-situ extraction technologies.

BP will not be involved in mining.

What is the Sunrise project?

Sunrise is a world-class bitumen deposit, with estimated resources in excess of 3 billion barrels.

BP has taken a 50% share in the Sunrise oil sands field in Alberta, operated by Husky Energy. A final investment decision with respect to the project's first phase, with a capacity of 60,000 barrels per day, is expected in late 2010 leading to first production in 2014.

Sunrise will be developed using SAGD.

The joint venture with Husky Energy allows for an integrated approach to the development of Sunrise. Husky is the operator of Sunrise in the upstream, and BP is the operator of the Toledo refinery in the downstream.

What are Kirby and Terre de Grace?

Kirby is an undeveloped oil sands interest that BP Canada has held for several decades. It will be considered for development in conjunction with Devon Energy, using SAGD technology. Devon will assume operatorship and take a 50% share in Kirby.

Terre de Grace is another undeveloped lease area in which BP holds a 75% operated interest with Value Creation Inc., of Alberta. This will also be considered for development using SAGD technology.

Is extraction from oil sands more carbon-intensive than conventional oil?

Recent studies which measure emissions from production through to consumption found the greenhouse gas emissions (GHG) from oil sands are 5 to 15% higher than the average crude oils consumed in the United States. The same studies also note that GHG emissions from oil sands can be higher, equal to, or lower than conventional crude oils given that there is a wide range of emissions in both oil sands and conventional crudes. Our current project estimates indicate that the in situ diluent bitumen which is to be the product of Sunrise is expected to be in the 5 to 15% range.

We believe there is potential for further improvements and together with our Joint Venture partners, we continue to develop and test improvements in SAGD technology. We will incorporate technologies and operating practices that will improve the project's energy use and greenhouse gas emissions. BP has particular strengths in improving large scale reservoir performance, in reservoir management and wells technologies, and it is these skills which we will bring to our projects. Examples where our technological expertise could be applied include single producer infill wells; 4D seismic interpretation to support steam chamber management; down-hole injection control to improve steam placement.

A good demonstration of the technological opportunities available can be seen in the falling steam oil ratio. In the last decade, the best-in-class steam oil ratio, which measures the amount of steam required to produce each barrel of oil, has moved from six in the early developments down to nearly two today. Our goal which we believe is achievable is to

make this lower.

Is BP investing in a source of oil which will be uneconomic by increased regulations and by the vagary of the oil price?

All of BP's projects have to be evaluated against various assumptions of oil price and changes in the regulatory and fiscal environments in the countries in which BP is operating. New investments are required to integrate a cost of carbon at \$40 per tonne CO₂ into both the engineering design as well as the commercial evaluation. This acts as an incentive to promote energy efficiency in the engineering design as well as a sensitivity to ensure that projects will remain commercially robust as carbon is priced either through regulation or legislation.

BP supports emissions trading mechanisms as a means of putting a value on carbon in order to make appropriate investment decisions.

What is the break-even oil price for Sunrise?

Current estimates indicate that the average break-even price for Canadian oil sands projects range somewhere between \$45-70 a barrel (e.g. See Wood Mackenzie 2009 study 'The cost of Canada's oil sands: the calm after the storm?'). Sunrise is competitive in this range.

BP has the ability to further mitigate commercial risk through its unique strategic position in the integrated value chain. This allows the company to directly refine production in its mid-west refining position and capture available margin in the downstream conversion.

While the integrated case for BP is not dependent on a specific oil price or margin, BP's current view of oil prices assumes a broad range of \$60 to \$90 per barrel out to 2015 and requires all projects to offer an acceptable rate of return at \$60 per barrel. All investments in Canadian Oil Sands will be required to meet these basic criteria and we are confident that the current approach to development will be able to do so.

How will you source water for the project? Will the rivers be affected?

Water plays an important role in SAGD projects. More than 90% of the water required for steam generation will be continuously recycled. The water that cannot be recycled will be disposed in deep underground aquifers for permanent storage, and replaced by water from underground non-potable aquifers. The Sunrise project is being designed so that no water

from the Athabasca River or its tributaries will be used for operations nor will any waste water be discharged to it.

SAGD does not require tailing ponds.

How will the landscape be post Sunrise?

With full field development of the entire resource over the next 40-50 years, the total physical footprint of Sunrise will be about 5% of the lease area. Seventeen percent of this footprint will involve previously disturbed sites. At any given time, the actual surface disturbance should not exceed 3% of the lease area - the remainder will be untouched or under progressive reclamation. Husky has already reclaimed an area used in the appraisal stages of the project – and have received certification of the reclamation as required under Alberta law.

As there is no mining there will be no tailing ponds.

What are the effects on the indigenous communities?

In 2003, as part of early project planning, Husky initiated consultation activities in the region with stakeholders including First Nations and Métis stakeholders. The consultation process is ongoing and extends across a wide geographic area as much as 100kms away from the project site. The project team continues to share information with stakeholders through face-to-face meetings, community based advisory committees where appropriate as well as project updates and newsletters.

As the project operator, Husky has been proactive in building relationships with local stakeholders. As the project proceeds Husky will be working to facilitate the realization of meaningful business and economic benefits for local and aboriginal groups.

BP will ensure that this good practise is extended to Kirby and Terre de Grace.

Will there be more oil sands projects for BP?

BP will continue to build positions in quality reservoirs where technology can best be leveraged in service of efficiency. The link to BP's US Mid-West refineries which are well positioned to refine heavy Canadian crudes is important, and in due course a broad balance of production and conversion capacity would likely be an advantaged portfolio proposition.

Will BP provide a specific report from the Board on the Sunrise Project?

The BP board supports the strategy to move into oil sands in a way that optimises the use of BP's technology in a responsible way.

The Company has clear policies and processes for taking individual investment decisions which consider multiple sensitivities and varying risks including those of a regulatory, environmental and social nature. They are also tested against a range of oil prices and an internal price of carbon. The BP Board keeps these processes under review and audits project delivery.

In responding to the resolution, BP has provided a detailed response to the issues raised in the shareholder resolution. We have also provided further relevant information on our website and have held extensive direct meetings with stakeholders and shareholders during which we have had more detailed discussion on our response. We believe that there is no reason to select Sunrise for a special review.

We will continue to provide updates and reports through our established reporting mechanisms. BP's main channel for communicating overall on environmental and social performance is the BP Sustainability Review (both online and print). Material social and environmental issues relating to changes to this and other projects will be highlighted in this annual, externally assured review. BP Canada also maintains a webpage at www.bp.com/canada which contains information on our Canadian operations. Commencing in 2011, BP Canada will produce an annual Sustainability Report.