

THE SYNCRUDE OPERATION

Syncrude is one of the largest operators in Canada's growing oil sands industry, with a 34-year history of responsible operations and ongoing innovation.

Based in Fort McMurray, Alberta, Syncrude operates technologically-advanced oil sands mines, extraction and upgrading facilities, as well as utilities plants. A large research and development facility in Edmonton supports operations and has pioneered many of the technologies used today in the industry. Current production capacity is 350,000 barrels per day of high quality light, sweet crude oil, and cumulative production now exceeds 2.2 billion barrels.

The Syncrude Project is a Joint Venture undertaking among Canadian Oil Sands Partnership #1 (36.74%), Imperial Oil Resources (25%), Mocal Energy Limited (5%), Murphy Oil Company Ltd. (5%), Nexen Oil Sands Partnership (7.23%), Sinopec Oil Sands Partnership (9.03%), and Suncor Energy Oil and Gas Partnership (12%).

This report is a comprehensive discussion of the environmental, social and economic impacts of Syncrude's business activities during 2010 and 2011. This is our eighth sustainability report, which will be published on an annual basis going forward. More information about Syncrude and access to past reports, including our most recent 2008-09 edition, can be found through the contacts listed at the end of the [Corporate Information chapter](#).



Proposed Site

Surveys and core sample drilling help us to gain better understanding of the oil sands resource on undeveloped leases, its quality and distance from the surface. Environmental assessments are also completed to provide a complete picture of local ecosystems, vegetation and geographical features to inform future reclamation. The oil sands found on Syncrude's leases are accessed via mining operations. Syncrude does not operate in situ facilities.

Stakeholder and Customer Consultation

Syncrude consults with a wide range of interested groups and individuals about our plans. The input and expectations of stakeholders are integral to the decisions we make today and how we plan for the future. Furthermore, Syncrude and its owners work continuously to understand present and future requirements for refinery customers that process our Syncrude Crude Oil blend. These requirements are influenced by regulators and by end-use customers.

Research and Development

Science and technology provide the keys to unlocking the potential of the oil sands resource and improving our performance. In this area, Syncrude leads the way with one of the few dedicated corporate R&D programs in the oil sands industry. We are among the top 50 corporate R&D spenders in Canada, investing about \$60 million annually in the pursuit of new and better ways and currently hold 137 active Canadian and U.S. patents. More than 100 scientists and technologists work at our Research and Development Centre in Edmonton, and many more are engaged in research at a fundamental level through their work at universities and research institutes.

Purchase of Goods and Services

Syncrude helps sustain local and regional economies through the purchase of goods and services. In 2010/11, non-energy procurement amounted to about \$8.1 billion. Governments also benefit through Syncrude's payment of taxes and royalties—\$2.5 billion in 2010/11 and \$14.7 billion since 1978.

Construction and Operations

Whether it's fabrication, new construction or ongoing maintenance activities, we directly and indirectly employ many thousands of people across the country. In fact, Syncrude is one of the largest employers of Aboriginal people in Canada. Syncrude is seen as an employer of choice in the region, with 89 percent of job offers accepted. Syncrude has also been recognized as one of Alberta's top 50 employers and named one of the nation's top employers for new Canadians and young people.

Utilities

Utilities produce steam, electricity and air, and treat the water, required to run plant operations. Syncrude is a net exporter to the Alberta power grid, producing more electricity than it uses.

Mining

Shovels and trucks remove muskeg, overburden and earth overlying the oil sands at Syncrude's Mildred Lake and Aurora sites. This material is put aside for reclamation activities. Shovels and trucks mine the oil sand, which is mixed with warm water to create a slurry that is pumped by pipeline to our extraction facilities.

Extraction

The slurry is fed into separation vessels, where the bitumen floats to the surface as froth. This froth is diluted with naphtha and fed into centrifuges, which spin out water and solids. Finally, the naphtha is removed, leaving clean bitumen, which is piped to our upgrading operation.

Upgrading

The cleaned bitumen goes into one of Syncrude's three fluid cokers or a hydrocracker, where it is thermally cracked into hydrocarbon gases, naphtha and gas oils. The hydrocarbon gases are treated for use as refinery fuel. The naphtha and gas oils are further treated and blended into high quality light, sweet crude oil.

Delivery of Crude Oil

Syncrude Crude Oil becomes the property of the Joint Venture owners upon being shipped from our site. The oil is transported by pipelines to refineries throughout North America, where it is turned into gasoline and diesel fuels, jet fuels and chemical feedstocks. Syncrude is not responsible for marketing our product.

Mine Completion and Land Formation

After mining is complete, work starts to reclaim the land. Overburden, sand and/or tailings fill up former mines. Geotechnical engineers guide the design of the landscape while placement of muskeg, peat and organic matter from the forest floor are transferred from future mine areas.

Reclamation

Vegetation specialists manage native plants, shrubs and trees to recreate diverse boreal forest ecosystems. About a quarter of our footprint has either been fully reclaimed or is undergoing reclamation. Around six million tree and shrub seedlings have been planted in these areas. Syncrude is the first oil sands operator to receive government certification for reclaimed land. Certification was received in 2008 for a 104-hectare area known as Gateway Hill, which was planted in the early 1980s.