



# Hydrocarbon Upgrading

## Industry at a Glance

Alberta's oil sands contain the third largest recoverable reserves of oil in the world after Saudi Arabia and Venezuela. This represents a safe and secure source of oil supply for both domestic and international markets. There are abundant opportunities in resource extraction and value-added investments based on the oil sands resource. It is estimated that bitumen production from Alberta's oil sands will reach 3 million barrels per day by 2020 with the potential for a significant portion of this to be upgraded to higher value finished products in the province.

The Government of Alberta encourages the development of innovative technology and processes in our energy industry to improve operational efficiencies, enhance project competitiveness and responsibly manage the environment.

### Fast Facts

- Alberta oil sands have proven reserves of over 170 billion barrels of bitumen resource that can be economically extracted using current technologies.
- Alberta produces 2 million barrels per day (bpd) of crude oil of which about 75% is raw bitumen from oil sands.
- A large portion of Alberta's bitumen production is upgraded to a lighter, more valuable synthetic crude oil (SCO) that is provided to domestic and international refineries for further processing.
- Alberta's oil sands underlie 140,200 square kilometers (54,132 square miles) and are spread over three regions of northern Alberta: Cold Lake, Athabasca and Peace River.

## Refining Alberta's Energy Advantage

Our vast reserves and the characteristics of the oil sands present unique and enormous opportunities for integrated development in downstream products, service and supply sectors. Our province's goal is to create a world-class, integrated hydrocarbon processing hub in Alberta, based on our energy resources. Eco-industrial integration can generate substantial cost savings, new business opportunities, and reduce the overall industrial environmental footprint.

The Government of Alberta recognizes the need for strategies that ensure the long term competitiveness of our energy and chemical industries. The Government works closely with local companies to develop actions that will enhance our position in the global market and continue to grow our opportunities into the future.

### **Provincial Energy Strategy and Alberta's Oil Sands Strategy**

The Government of Alberta has announced two important strategies that set the direction for how the Government will deliver on its commitment to add value to the oil sands and energy resources in the Province:

- Alberta's *Provincial Energy Strategy* (<http://www.energy.alberta.ca/Initiatives/strategy.asp>) sets the stage for value-added oil sands development by stating, Alberta should "Extend Our Role along the Value Chain," and
- The *Oil Sands Strategy* (<http://treasuryboard.alberta.ca/ResponsibleActions.cfm>) outlines the actions needed to make this happen.

### **Hydrocarbon Upgrading Task Force (HUTF)**

In cooperation with industry, the Government of Alberta established the Hydrocarbon Upgrading Task Force (HUTF) to assess the business case for value-added processing of bitumen in the Province. The HUTF commissioned a number of studies that demonstrate the technical and economic viability for new investment in refining and petrochemical production in Alberta as well as the markets for these products.



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## Value-added Integration Opportunities

Alberta's Industrial Heartland (AIH) is an area that covers 582 square kilometres northeast of Edmonton, Alberta. This area is home to the largest concentration of petroleum refineries and chemical processing plants in Canada. Because of the concentration of heavy industry in the area, the location is ideal for enhancing integration opportunities.

- The integration of facilities maximizes the efficient use of resources resulting in cost-savings and higher valued products for sale to downstream markets.
- Synergies exist in an integrated facility, allowing for waste streams to be used as feedstock for plants within the complex and for the sharing of services and site-specific infrastructure. This leads to greater environmental benefits, such as lower total emission levels and less water demand.

## Bitumen Royalty-in-Kind (BRIK)

As the resource owner, the Government of Alberta is entitled to take its royalty share of bitumen production as physical barrels rather than in cash payments. The Government's bitumen royalty volumes will be a significant and growing source of reliable hydrocarbon feedstock for value-added processing in Alberta. More information about bitumen royalty-in-kind is available at <http://www.energy.alberta.ca/BRIK.asp>

## Incremental Ethane Extraction Policy (IEEP)

The Government's proactive approach to promoting the value-added upgrading of Alberta's hydrocarbon resources is demonstrated by the Incremental Ethane Extraction Policy (IEEP) which provides incentives through royalty credits to encourage greater production of ethane and to promote value-added petrochemical production. More information about the IEEP is available at <http://www.energy.alberta.ca/OurBusiness/Petrochemicals.asp>

## How we Can Help

The Alberta Government can provide your company with industry intelligence and business resources in the hydrocarbon upgrading sector. We can help you:

- Understand the challenges and opportunities of hydrocarbon processing in Alberta;
- Build strategic alliances with local and international partners and;
- Connect you with local business development officials.

## Industry Resources

Visit the Energy Resources homepage at [www.albertacanada.com/energy](http://www.albertacanada.com/energy) to learn about:

- Industry facts and opportunities
- Policies and regulations
- Key stakeholders and industry associations
- News and events

## Contact Information

For further information about Alberta's Hydrocarbon Upgrading sector, please contact:

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