Our commitment

Imperial Oil Limited’s success depends on our ability to maintain an open dialogue with, and ongoing support from local communities and stakeholders. Our social licence to operate and continued responsible growth as a company means we must balance the supply of rising global energy demands with the appropriate environmental protection. The company continues to reduce environmental effects of oil sands development through research and the application of innovative technologies. Our near- and long-term business success depends on delivering the highest standards of integrity in all that we do. Integrity is a commitment to do the right things, every time – in safety, environmental performance, business ethics and community engagement.
Proposed development

The Aspen Project (Aspen) is an in situ steam assisted gravity drainage (SAGD) oil sands project in Alberta, proposed by Imperial. The figure below shows the lease area for Aspen on which the regulatory application is based.

Project details

Estimated Production

Aspen will be developed in three phases, each with 45,000 barrels per day of initial production. It is expected that eventual annual production capacity, with engineering modifications, will be approximately 162,000 barrels of bitumen per day.

Estimated Schedule

Imperial, as project owner and operator, submitted the in situ regulatory application and related environmental assessment to the Alberta Energy Regulator and Alberta Environment and Sustainable Resource Development in December 2013. The regulatory application seeks approval under the Oil Sands Conservation Act, and environmental approvals under the Alberta Environmental Protection and Enhancement Act and the Alberta Water Act.

Pending regulatory and other necessary approvals, it is anticipated that the initial phase of Aspen could begin construction by 2017 and production by 2020. Based on the resource characteristics and proposed recovery method, Aspen has an expected lifespan of about 40 years.

Potential Project Schedule*

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*represents three phases of development; schedule subject to change pending regulatory approval, corporate sanction and market conditions.

Imperial Oil Limited

Imperial Oil Resources Ventures Limited (Imperial) is a wholly owned affiliate of Imperial Oil Limited. After more than a century, Imperial Oil Limited continues to be an industry leader in applying technology and innovation to responsibly develop Canada’s energy resources. As Canada’s largest petroleum refiner, a major producer of crude oil and natural gas, a key petrochemical producer and a leading fuels marketer from coast to coast, our company remains committed to the highest standards across all areas of our business.

Nobody Gets Hurt.

We are relentless in our focus on safety because, at Imperial, nothing is more important.
SAGD Recovery

Aspen is Imperial Oil Limited’s first development project proposing to apply SAGD technology to recover bitumen from oil sands. The project proposes to recover bitumen from oil sands located in the McMurray formation, approximately 250 metres below ground surface. The depth and characteristics of the resource are best suited for an in situ recovery method using a SAGD process.

Imperial Oil Limited has a long research history with SAGD technology. In 1978, the company piloted the first SAGD well at Cold Lake, Alberta and patented the technology in 1982. Today, more than 100 billion barrels of oil in the Athabasca oil sands are accessible through in situ SAGD recovery.

Project Facilities

Multiple SAGD horizontal well pairs will be drilled from each well pad. The well pads are connected to the central processing facilities through a pipeline network that delivers steam to the wells for injection into the reservoir, and transports the steamed bitumen mixture to the central facilities for processing.

All phases of project development will use central processing facilities to separate the components of the bitumen, water and gas mixture produced from the steamed reservoir. The water and gas produced are used for additional steam generation. Water softening processes will facilitate reuse of as much produced water as possible. On-site sources for make-up water are currently being evaluated.

Diluent is used to help the bitumen flow through the pipeline. Different diluent blending options are still being considered for Aspen’s recovered bitumen. The product is then transported through a pipeline network system to refineries and market distributors.

The central processing facility areas will include:
• bitumen processing facilities;
• produced and process water recycling;
• gas turbines for power and steam cogeneration;
• operations buildings; and
• waste management facilities.
An Environmental Impact Assessment (EIA) is a process used to identify, evaluate and report the potential environmental and socioeconomic effects of a project. Imperial completed an EIA for Aspen as part of its regulatory application.

Scope

Aspen’s EIA includes:

• a project description, including geology, resource base, recovery process and facilities;
• the environmental setting in which the project will occur;
• the effects that the project is expected to have including concerns received from Aboriginal and public engagement activities in regards to:
  > air quality
  > noise
  > hydrogeology
  > hydrology
  > surface water quality
  > fisheries and aquatic resources
  > soils, terrain and surficial geology
  > vegetation and wetlands
  > wildlife
  > biodiversity
  > land and resource use
  > traditional land use
  > historical resources
  > health effects
  > socioeconomic effects
• the mitigation measures to offset or enhance effects; and
• the management and monitoring plans proposed to manage residual effects.

Evaluation of Effects

The assessment of project effects is based upon predicted changes in local or regional characteristics of a selected environmental or socioeconomic indicator. These indicators are considered representative of the larger environment.

Mitigation Measures

A key component of the EIA is to develop mitigation measures that will be used to reduce or eliminate potential adverse effects or enhance potential positive effects. Some examples of Aspen’s planned mitigation measures include:

• engineering designs to reduce emissions and effects of industrial noise;
• avoidance of the Richardson Caribou Range;
• use of common corridors for roads and pipelines to reduce disturbances;
• placement of buffers between facilities and watercourses;
• recycling of produced water to reduce groundwater use;
• engagement of stakeholders and Aboriginal groups through the life of the project; and
• opportunities for Aboriginal and local workforce and business participation.

For a full listing of mitigation measures, see Aspen’s Regulatory Application: Volume 1, Attachment 12.

Summary of Residual Effects

The EIA predicted residual effects will be low to moderate, provided that appropriate mitigation and monitoring measures are implemented. Volume 1, Table 13-1 summarizes predicted residual effects in each category in the Application Case (baseline conditions with the effects of the project added). Volume 1, Table 13-2 summarizes predicted residual effects in the Planned Development Case (potential cumulative effects that may result from the interaction of several projects or activities within the region).

For comprehensive details and summaries of all EIA components and project effects, see Volume 2 of Aspen’s Regulatory Application.

Constraints Mapping

The EIA approach included the use of constraints mapping – mapping of environmentally sensitive areas. Early in the project design process, key environmental factors were identified and mapped. The project design team used those maps to locate project facilities away from environmentally sensitive areas.
Environmental management

Imperial is committed to environmental management as a key part of its business. This includes integrating environmental considerations in business planning, facilities and project design, operating processes, and training programs. The company’s current development projects and operations incorporate extensive environmental design and protection measures to mitigate effects on water, land and air quality. Stakeholder and Aboriginal group input is important to adequately assess potential environmental effects and develop appropriate mitigation measures for the project. Imperial strongly encourages feedback throughout the consultation process in order to properly identify and address comments and concerns. In addition, a variety of ongoing public forums provides all stakeholders and Aboriginal groups with opportunities to review and provide input to the company’s environmental performance and future developments.

Reclamation

Construction and development of the in situ project facilities for Aspen will require changes to the on-lease landscape. It is anticipated that access to the lease area will change and current use will be affected. As such, Imperial is committed to completely understanding the local land use of the project area, and working with community members to reduce effects and plan for timely reclamation. The reclamation approach proposed is to restore the areas on lease that are considered surplus during the life of the project. It is Imperial’s intent to engage stakeholders and Aboriginal groups in reclamation planning so that, to the extent practical, reclaimed lands will have land use capability and available access.

Socioeconomic benefits

Engaging and supporting the communities where we operate. Creating long-term economic and social benefits, as well as developing lasting relationships with stakeholders built on mutual trust and respect, are integral to our business strategy.

Imperial continues to utilize and build upon regional socioeconomic information for Aspen. On-going consultation with community members in proximity to the proposed development is essential to understanding potential socioeconomic effects and benefits of this project.

As part of the EIA process, Imperial completed a Socioeconomic Impact Assessment to examine the social and economic effects that could result from construction and operation of Aspen. The assessment includes effects on: the economy, Aboriginal benefits, population, traffic, education, housing, utilities, health, recreation, and social and protective services.

Imperial expects benefits to include:
- Support of local and regional business development by preferring to use, on a competitive basis, qualified local and regional materials and service suppliers with high safety and environmental performance standards.
- Continued business and employment advertisement through the Regional Economic Development Link (RED Link) and Northeastern Alberta Aboriginal Business Association (NAABA) internet posting services.
- Training and capacity building opportunities to support local employment and long-term workforce development.
- Estimated average workforce required for construction of the three phases will average approximately 450 people per year. During project operations, the workforce needed will be approximately 200 people per year.

Revenue, taxes and royalties will provide additional benefits to the municipal, provincial and federal government:
- Royalties paid to the Province of Alberta over the life of the project are estimated to be approximately $14.4 billion.
- The governments of Canada and Alberta are estimated to receive respectively more than $3.7 billion and $2.5 billion in direct tax revenue over the life of the project.
- The project expects to pay about $40 million per year in property taxes to the Regional Municipality of Wood Buffalo for the duration of project operations.
Contact information

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Inquiries related to the proposed project are welcome, and should be directed to:

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Information received from ongoing engagement activities will be considered and, where appropriate, incorporated into final project design, mitigation and monitoring programs.

For more details on the Aspen Project application, including the EIA and socioeconomic benefits, please go to www.imperialoil.ca/aspen

Purpose

This document is formatted to provide an overview of proposed plans for the Aspen project, to identify the project location in relation to oil sands projects and communities in the region, and to capture a current understanding of potential environmental effects and socioeconomic benefits. Additional information will be shared as the project progresses.

Disclaimer

This document contains forward-looking information on future production, project start-ups and future capital spending. Actual results could differ materially due to changes in project schedules, operating performance, demand for oil and gas, commercial negotiations or other technical and economic factors.