



SHELL CANADA UPGRADER
Public Disclosure



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This Public Disclosure document describes Shell Canada's general plans for bitumen processing facility development in the Scotford area. Shell is committed to working with stakeholders in Scotford area communities to ensure that development is responsibly and professionally conducted, and benefits the local communities, as well as Albertans and the Canadian economy through employment, contracting and service and supply opportunities.

Shell Canada's Oil Sands business is held by a wholly owned partnership, Shell Canada Energy, which holds a 60 per cent interest in the Athabasca Oil Sands Project (AOSP), a joint venture that consists of the Muskeg River Mine located north of Fort McMurray in northern Alberta, the Scotford Upgrader near Edmonton, Alberta. Shell Canada Energy also has in situ bitumen operations at Peace River and Hilda Lake in Alberta.

SUMMARY

With significant lease holdings in the Athabasca, Cold Lake and Peace River oil sands deposits, Shell Canada (Shell) plans to increase its upgrading capacity by 400,000 barrels per day (bbl/d) over the long term.

SHELL'S CURRENT SCOTFORD UPGRADER

The current Scotford Upgrader is a 155,000 bbl/d bitumen upgrading facility located in Strathcona County, near Fort Saskatchewan, Alberta. The Alberta Energy and Utilities Board has recently approved this facility for expansion up to 290,000 bbl/d.

In 2006, the Athabasca Oil Sands Project (AOSP) Joint Venture owners (Shell Canada, Chevron Canada Limited and Western Oil Sands L.P.) approved Scotford Upgrader Expansion 1, a 100,000 barrel-a-day expansion of the Scotford Upgrader.

The current Scotford Upgrader uses hydrogen-addition technology to upgrade the bitumen from the Muskeg River Mine into a wide range of synthetic crude oils. A significant portion of the current Scotford Upgrader output is sold to the Scotford Refinery with the balance of the synthetic crude being sold to the general marketplace.





The current Scotford Upgrader uses hydrogen-addition technology to upgrade bitumen into a wide range of synthetic crude oil products.

PLANNING FOR THE FUTURE

This Public Disclosure document provides information regarding Shell's general plans for future development in the Scotford area. In addition to its Scotford area plans, Shell is also evaluating other heavy oil upgrading and refining options.

Shell's plans include two elements:

AOSP Diluent Recovery Units (DRU) – facilities recovering the light hydrocarbon process diluent associated with AOSP Joint Venture bitumen production. These facilities will provide any participating Joint Venture Owner with their share of a clean bitumen product in the Scotford area. The recovered diluent will be returned via pipeline to the mining operations.

Shell Upgrading – Shell plans to increase its upgrading capability in the Scotford area by 400,000 barrels per day through a series of phases or 'building blocks'. Future upgrading facilities will focus on processing Shell's share of future AOSP bitumen production as well as bitumen from Shell's in situ oil sands developments.

While the utmost care has been taken to detail Shell's expansion plans for upgrading facilities in the Scotford area, the information presented in this document is subject to change. The development plans and exact timing for these upgrading projects depends on the timing and outcome of respective regulatory processes, the ability to meet sustainable development criteria, market conditions and economic feasibility, final project costs, and ongoing consultation with key stakeholders.



PROJECT OVERVIEW

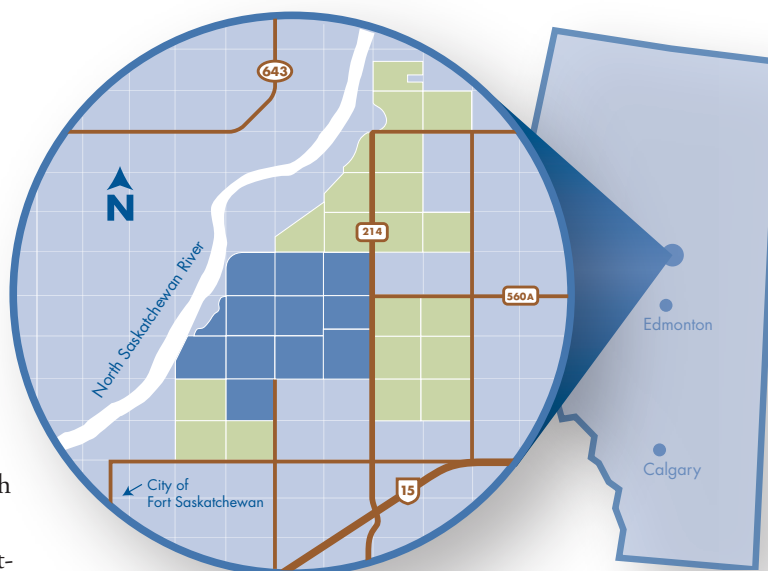
In April 2005 Shell Canada outlined plans to expand upgrading capacity in a series of phases or “building blocks,” each sized at approximately 100,000 barrels a day.

In addition to the previously approved Scotford Upgrader Expansion 1, Shell is proposing four additional 100,000 barrel-per-day upgrader project phases. Each of the new upgrading phases or “building blocks” will consist of bitumen processing facilities and other related infrastructure. The bitumen processing facilities will be similar in design to the current Scotford Upgrader. Shell is also evaluating the gasification of heavy oil products for the production of hydrogen and power.

In addition to the new Shell upgraders, additional AOSP Joint Venture facilities are also being considered. These facilities would recover the light hydrocarbon process diluent associated with AOSP Joint Venture bitumen production. The product would be a clean bitumen suitable for blending into a variety of market products or for further upgrading. The new Shell upgraders would upgrade Shell’s share of AOSP Joint Venture bitumen production along with bitumen from other supply sources, such as Shell in situ development.

This Public Disclosure document is the first step in the regulatory review process for Shell’s long-term development plans in the Scotford area. The Alberta Energy and Utilities Board is the primary regulatory agency responsible for determining whether these facilities are in the public interest. Alberta Environment determines whether these facilities have been designed in an environmentally acceptable way.

The new facilities will be located in Strathcona County, approximately 5 kilometers northeast of Fort Saskatchewan, in the vicinity of the existing Scotford Refinery and the current Scotford Upgrader. The site is located within Alberta’s Industrial Heartland, an area already designated for heavy industrial use. The projects will leverage existing external infrastructure, such as roads, water supply, facilities, pipelines and rail links.



PROJECT AREA MAP

- Approved Existing Scotford Complex
- Proposed Upgrader Development Areas

As required, Alberta Environment will seek public input on Shell’s draft Terms of Reference (TOR) for an Environmental Impact Assessment (EIA), which will be included with the application filed with the Alberta Energy and Utilities Board in 2007.

Shell will continue to work with regulators and the community in the coming months to ensure that its plans are incorporated into regional and local infrastructure planning.

PROCESS DESCRIPTION

The new upgraders will use hydrogen-addition technology to upgrade the high viscosity “extra heavy” crude oil (bitumen) from the oil sands into a wide range of synthetic crude oils.

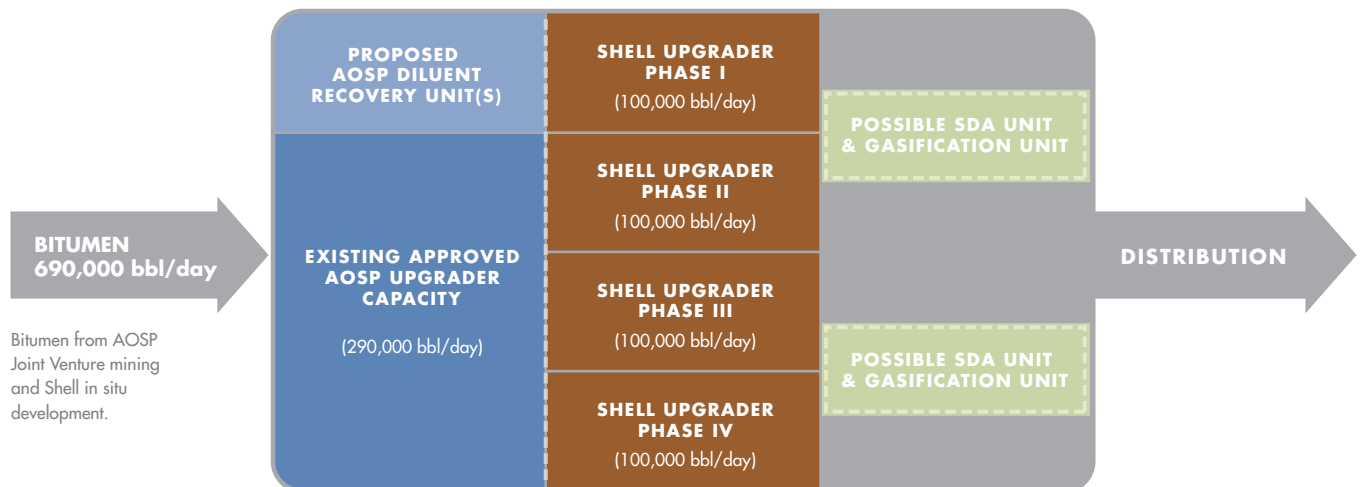
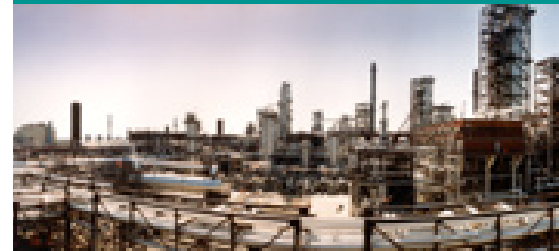
Each 100,000-barrel-per-day project phase includes the following infrastructure and related facilities:

- Atmospheric and Vacuum Unit
- Residual Hydroconversion Unit and Integrated Hydrotreating
- Hydrogen Manufacturing Unit*
- Sulphur Recovery and Handling
- Supporting utilities and infrastructure

Some phases may also include a Sulphur Deasphalting Unit and a Gasification* Unit.

*CO₂ capture ready – see p.12, Environment Section

SHELL PLANS TO INCREASE
UPGRADING CAPACITY BY
400,000 BARRELS A DAY



PROCESS DESCRIPTION

A ATMOSPHERIC & VACUUM UNIT

The atmospheric and vacuum unit uses a moderate temperature, low-pressure process to separate the bitumen into its constituent hydrocarbon elements. Distillate products removed from the bitumen are pumped to the residue hydro conversion unit.

B RESIDUE HYDROCONVERSION UNIT AND INTEGRATED HYDROTREATING

The residue hydroconversion unit operates under high temperature and pressure to improve the quality of the bitumen, converting it to lighter, higher value hydrocarbon components. Sulphur and nitrogen are later removed in the hydrotreating unit to further improve the quality of the product.

C HYDROGEN MANUFACTURING UNIT

The hydrogen-manufacturing unit produces the high purity hydrogen required as part of the conversion of bitumen to high quality petroleum products.

D SUPPORTING UTILITIES AND INFRASTRUCTURE

Each upgrader phase will include the required utilities and off-site facilities, including raw water treatment, wastewater treatment, cooling and utility waters, effluent management systems, flares, and tank farm.

E SULPHUR RECOVERY & HANDLING

Sulphur is recovered from the bitumen in the upgrading process. Recovered sulphur can be converted into liquid sulphur and transported by rail car to market for distribution.

Sulphur forming, handling and storage equipment is being considered for the upgrader projects, enabling Shell to process and move the sulphur to broader markets. These facilities will cool the liquid sulphur produced from upgrading and form it into solid pellets. Sufficient on-site sulphur storage at Scotford

will be provided to accommodate liquid and solid sulphur, as well as to allow short-term interruptions in the transportation network.

F SOLVENT DEASPHALTING UNIT

In conjunction with gasification, the solvent deasphalting unit processes atmospheric residue from the residue hydroconversion units or from the bitumen, producing streams of both lighter oil and asphaltenes. The deasphalted oil from the unit can either be further refined or blended directly into Shell's synthetic crude products. Asphaltenes from the unit can be either blended into fuel oil products or sent for gasification (see Gasifier below).

G GASIFICATION

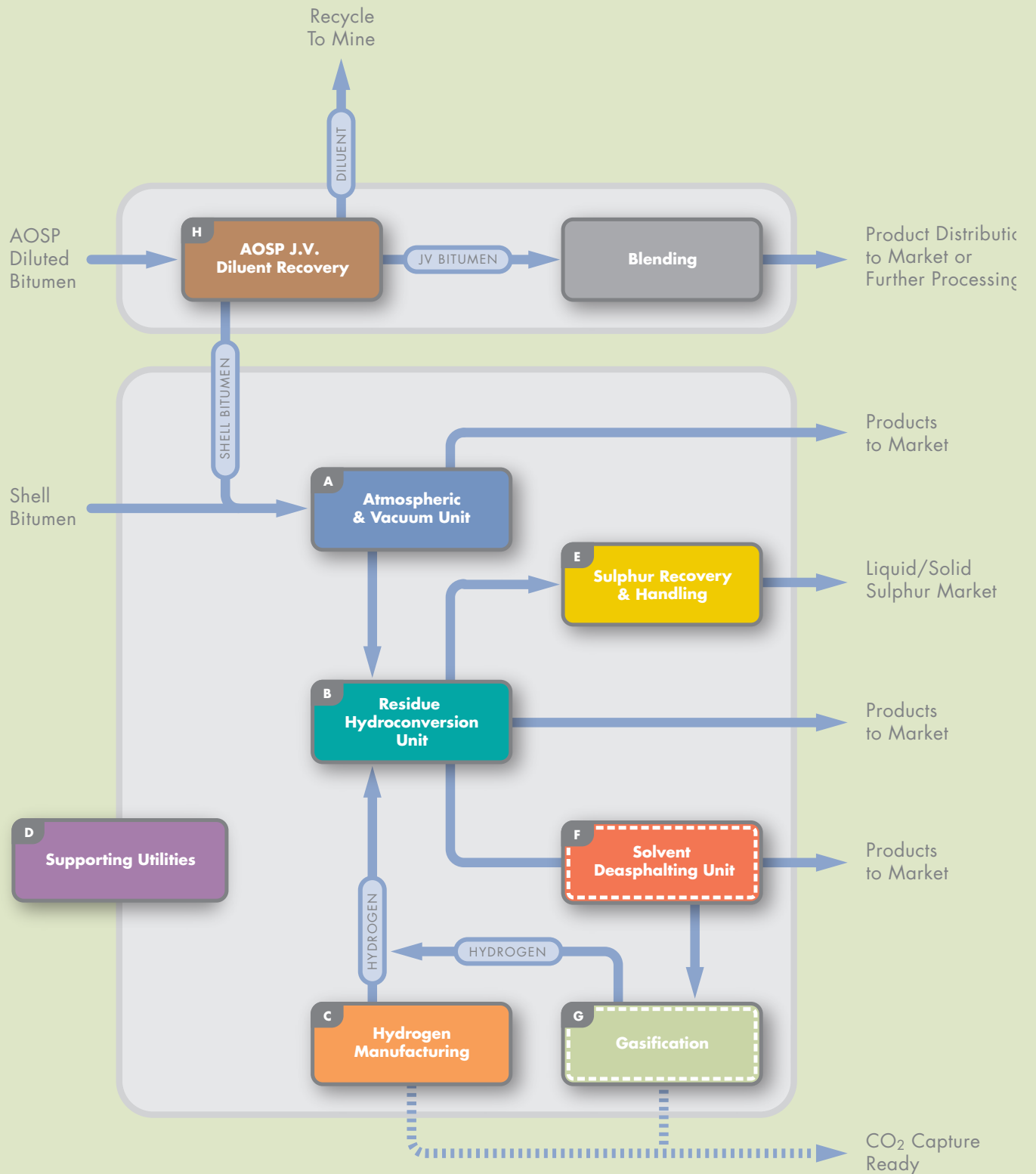
Shell is also considering including gasification unit(s) in association with the upgrader projects to produce hydrogen and fuel gas. Gasification maximizes the use of the heaviest bitumen components, called asphaltenes, providing a more complete use of the bitumen resource and reducing dependence on natural gas. This will be designed so CO₂ capture facilities can be added without major equipment changes (see p.12 environment).

H AOSP DILUENT RECOVERY UNITS

In the AOSP bitumen production process light hydrocarbon diluent remains in the bitumen so that the bitumen can be transported by pipeline. This diluent needs to be recovered from the bitumen and recycled.

To recover the light hydrocarbon diluent, the diluent recovery unit heats the diluted bitumen mixture, vapourizing the light hydrocarbon diluent product, which is then cooled into a liquid and returned to the mine for reuse.

The diluent recovery unit produces a clean bitumen product that is appropriate for either blending or further processing.





REGULATORY REVIEW

PROPOSED SHELL UPGRADERS TIMELINE

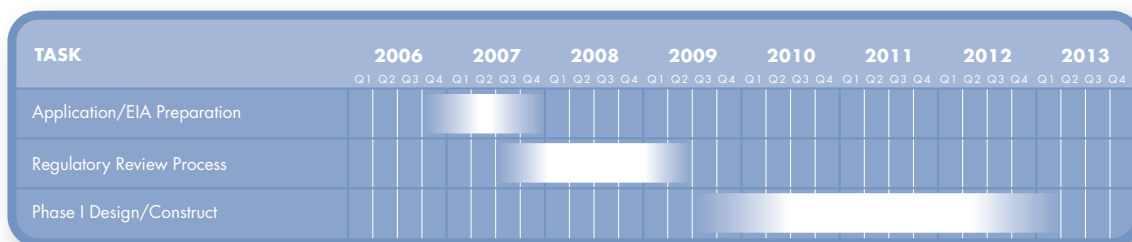
This Public Disclosure document is the first step in the regulatory review process for Shell Canada's long-term developments in the Scotford area. The Alberta Energy and Utilities Board is the primary regulatory agency responsible for determining whether these facilities are in the public interest. Alberta Environment determines whether these facilities have been designed in an environmentally acceptable way.

We anticipate that in early 2007 Alberta Environment will ask the public to comment on a Draft Terms of Reference (TOR) for the Environmental Impact Assessment (EIA) of this project. Once finalized, the TOR will identify for the community, for stakeholders and for Shell the information required by regulatory agencies to assess the environmental aspects of the project.

Shell is working to prepare regulatory submissions for this project, and public consultations will continue through 2007 and 2008. Shell, the Alberta Energy and Utilities Board, and Alberta Environment will continue to seek public input at various stages throughout the regulatory review process.

While the utmost care has been taken to detail Shell's expansion plans for upgrading facilities in the Scotford area, the information presented in this document is subject to change. The development plans and exact timing for these upgrading projects depends on the timing and outcome of respective regulatory processes, the ability to meet our sustainable development criteria, market conditions and economic feasibility, final project costs, and ongoing consultation with key stakeholders.

Shell expects to file regulatory submissions for long-term upgrader development plans in 2007. Subject to Alberta Energy and Utilities Board and Alberta Environment approval, construction could start in late 2009. The timeline for future project phases will depend on a variety of regulatory, project and market factors.



The timeline for future project phases will depend on a variety of regulatory, project and market factors.



ENVIRONMENT

THE WAY WE WORK

Shell's commitment to sustainable development is integrated throughout the life of a project - from design and operations through to reclamation. This commitment has resulted in the implementation of several new practices that have reduced overall air emissions, water use and waste production.

The first oil sands operation to receive ISO 14001 registration (an internationally recognized standard) for its environmental management practices, Shell continues to look for new ways to improve energy efficiency and the environmental performance of operations, while continuing to evaluate design options for the proposed expansions.

ENVIRONMENTAL SETTING AND ASSESSMENT

The current Scotford Upgrader is located in an area that has been designated for heavy industrial use. As such, the facility and the synergies that have developed with existing area industry conform to current municipal land use plans.

The land being assessed for the upgrader projects and diluent recovery units is located in the immediate vicinity of the current Scotford Upgrader. The majority of the land has been previously used for agricultural and rural residential development.

Shell will evaluate possible sources of process water, including supply from the North Saskatchewan River or potentially recycled water from other industrial or municipal facilities.



Shell will provide high-efficiency SO₂ emission recovery infrastructure to meet regulatory requirements and guidelines.

Shell's commitment to the principles of sustainable development and environmental management is an integral part of these projects. Social and environmental responsibility will be key considerations in the design, construction, and operation.

Inherent in our approach to environmental management is our compliance with legislated requirements and our commitment to engage regional communities, the government and the public.

The regulatory process and subsequent opportunities for public input begin with the Environmental Impact Assessment (EIA) Draft Terms of Reference. The EIA report is an important document that assists the community, stakeholders, regulators and Shell to understand and assess the environmental effects associated with the proposed expansion construction, operation and reclamation.

ENVIRONMENT *(cont'd)*

Shell will prepare a detailed EIA for the planned developments, one that builds on the EIA work completed for Scotford Upgrader projects in 1998 and 2005. The EIA will focus on the areas of:

- Air quality
- Human health
- Surface water and ground water
- Socio-economics
- Noise

TECHNOLOGY AND SUSTAINABLE DEVELOPMENT

The planned Shell upgraders intend to use a number of technologies designed to enhance overall environmental performance, including:

- Residual Hydroconversion (hydrogen-addition upgrading technology)
- Shell Claus Offgas Treatment (high efficiency sulphur recovery)
- Gasification (reducing dependence on natural gas)
- CO₂ capture readiness

Implementation and use of CO₂ capture technologies depends on the establishment of appropriate government policy and supporting framework, as well as project economics.



STAKEHOLDER ENGAGEMENT

Shell remains committed to working with neighbours and community organizations to provide appropriate information about its projects, including information regarding technology and environmental performance, as well as potential impacts, benefits and opportunities resulting from the expansion projects.

Throughout this ongoing consultative process, Shell's focus will be to identify and address any concerns and issues that may arise. Shell will continue to involve our neighbours in decisions that affect them, with the objective of finding solutions that all parties view as positive and sustainable over the long term.

Shell's consultation principles:

- **Shared process** – design consultation programs based on public input, taking into consideration local knowledge in areas where Shell operates or plans to operate.
- **Respect** – respect individual values and act as a good neighbour. Consultation recognizes the legitimacy of peoples' concerns and the valuable input they can provide.
- **Timeliness** – start consultation early. Provide social and environmental information along with resources to ensure that the public and regulators are informed when participating in the consultation process.
- **Communications** – consult closely with communities and interested parties affected by the project and regulatory process. Gather and listen to feedback and work with people to resolve any concerns that might be identified.
- **Relationships** – establish and maintain long-term relationships with key stakeholders through interaction, working teams and general involvement in the project.
- **Responsiveness** – adapt plans based on stakeholder input and provide feedback on how input has affected plans and decisions.
- **Accountability** – trust that representatives of interest groups are accountable to the organizations they represent.



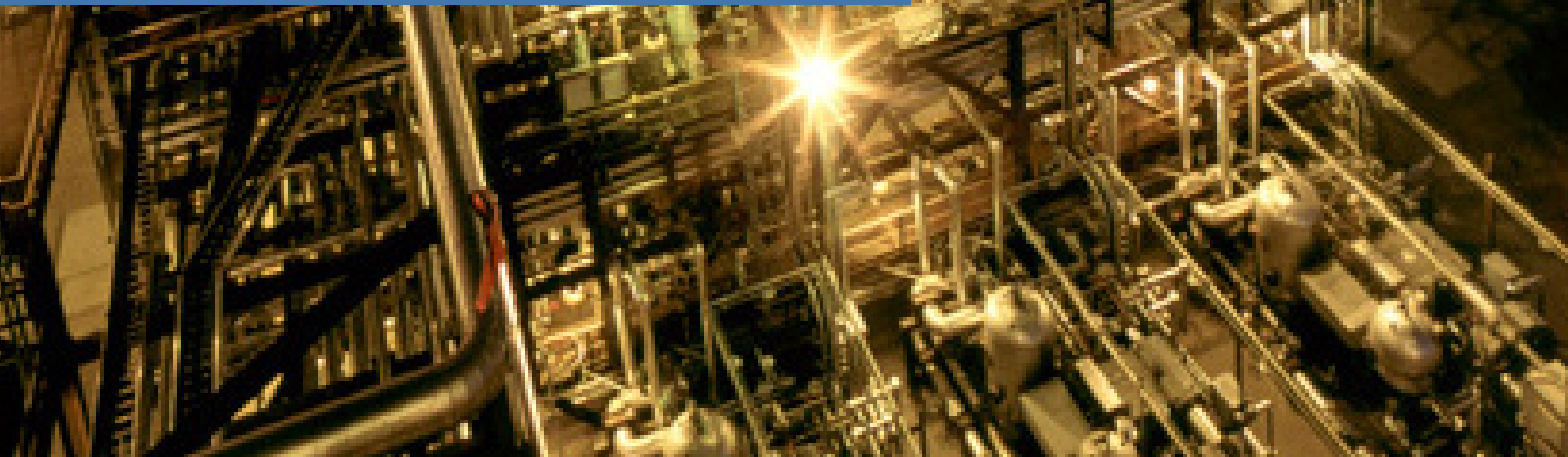
Meetings, community newsletters, a regularly updated website (shell.ca) and a toll-free phone line support Shell's communication and consultation efforts.



ECONOMIC BENEFITS

Based on previous developments, Shell estimates that roughly 80 per cent of all money spent on goods and services for the upgrader development will be spent in Canada.

At the peak of construction each project phase is expected to employ approximately 3,000 to 4,000 construction workers, and add 350 to 450 highly skilled, full-time permanent positions when it becomes operational.



CONTACT INFORMATION

For further information about Shell's upgrader projects, please contact 1-800-250-4355, or the following:

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