

February 16, 2011

Bitumen refinery agreement promotes value-added development

Heartland project supports carbon capture for enhanced conventional oil recovery

Edmonton... The Alberta government has successfully negotiated contracts for two projects that will advance upgrading and refining of bitumen in Alberta, increase supplies of diesel fuel and enhance Alberta's position as a secure supplier of clean energy.

The first project with the North West Upgrading / Canadian Natural Resources Limited (CNRL) Partnership will lead to construction of a new bitumen refinery in Alberta's Industrial Heartland, northeast of Edmonton, as part of the government's bitumen royalty-in-kind (BRIK) initiative.

For the second project, the Alberta government and Enhance Energy Inc. have agreed to terms and conditions specific to the first major carbon capture and storage (CCS) project in the province. Enhance will build the Alberta Carbon Trunk Line (ACTL), a pipeline which will deliver carbon dioxide (CO₂) captured from the refinery, to be used for enhanced oil recovery from existing conventional oil fields.

"This new refinery and CO₂ pipeline will significantly advance Alberta's capacity for refining bitumen into value-added products and increase recoveries from Alberta's conventional oil reserves," said Premier Ed Stelmach. "These projects underline Alberta's commitment to responsible, cleaner energy production."

Construction of Phase One of the bitumen refinery is targeted for completion in mid 2014. It will process for market 37,500 barrels daily of Crown bitumen in addition to 12,500 barrels per day of bitumen from Canadian Natural Resources Limited (CNRL). The refinery will process the Crown's bitumen for a processing fee which will result in the Crown receiving higher revenues created by the higher-priced refined bitumen products. The two projects will create about 10,000 jobs during construction, plus associated spinoff employment.

During this first stage, the refinery will produce more than 5.5 million litres/day of ultra-low sulphur diesel while capturing over three thousand tonnes of CO₂ daily. Enhance Energy will then transport the CO₂ via the 240-km ACTL pipeline to conventional oil recovery projects throughout central Alberta where it will be injected into oil reservoirs to make the tough-to-extract oil flow more freely.

"These projects are a win-win for Albertans," Energy Minister Ron Liepert said. "They represent a major step forward in producing value-added products while at the same time

reducing greenhouse gas emissions. The potential of the enhanced conventional oil recovery ensures on-going jobs, investment and activity in surrounding communities.”

Alberta’s Carbon Capture and Storage Development Council estimated in 2009 that sufficient enhanced oil recovery capacity exists in Alberta to potentially store 450 megatonnes of CO₂ and produce an additional 1.4-billion barrels of oil from conventional reservoirs throughout the province, potentially generating up to \$25 billion in additional provincial royalties and taxes. Approximately 18 per cent of conventional reserves in place are recovered using current technology. Injecting solvents, such as CO₂ into the reservoirs can increase total recovery rates to 26 per cent.

The Government of Alberta announced its intention in 2008 to collect oil sands bitumen royalty volumes in-kind to encourage upgrading, refining and petrochemical development in Alberta. A Request for Proposals to purchase or process 75,000 barrels per day of Crown owned bitumen was issued in July 2009 and negotiations began with the partnership in May 2010.

As the steward of the resource for Albertans, the Alberta government is entitled to take its royalty share of bitumen production in-kind, as it currently does for conventional oil production. Bitumen royalty in-kind and other value-added initiatives add value to the bitumen resource, diversify Alberta’s economy, increase resource revenues and create jobs in the province.

The Alberta government has committed \$2 billion to reduce greenhouse gas (GHG) emissions through carbon capture and storage. The projects developed with support from the funding program and industry will help the province be at the forefront of developing clean energy technology. The four projects, including the ACTL supported through Alberta’s CCS program are expected to reduce GHG emissions by five-million tonnes per year beginning in 2015.

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Backgrounder: North West Upgrading/CNRL Partnership, BRIK and Enhance Energy

For more information on BRIK visit: <http://www.energy.alberta.ca/BRIK.asp>

The BRIK agreements can be found at:

Processing agreement - <http://www.energy.alberta.ca/Org/pdfs/BRIKagreement2Process.pdf>

Marketing agreement - <http://www.energy.alberta.ca/Org/pdfs/BRIKagreement2Market.pdf>

Media inquiries may be directed to:

Bob McManus
Communications
Alberta Energy
780-427-1083

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North West Upgrading CNRL Partnership

- This agreement covers phase one of a potential three phase 150,000 barrels per day (bbd) bitumen refinery located in Alberta's Industrial Heartland.
- Phase One, 50,000 barrels per day to be complete by mid 2014 to produce products such as:
 - 36,000 bbd of ultra-low sulphur diesel (159 litres/barrel = 5.72 million litres);
 - 18,000 bbd of naphtha; and
 - 14,000 bbd diluent.
- Captures 3,500 tonnes/day CO₂ in the first phase (1.27 million tonnes/year).
- Estimated Phase One refinery construction cost: \$5 billion.
- Employment:
 - On-site construction, equipment fabrication at shops and modularization yard fabrication: will create 8,000 jobs, starting in the fourth quarter of 2011; and
 - Engineering - including engineers, support personnel and designers - will average 600 people for two years starting in the second quarter of 2011.
- It is estimated that this activity will contribute \$4.6 billion to Alberta's economy and an additional \$408 million in tax revenues for the Alberta government.
- The project will generate \$922 million in federal government and \$53 million in local government revenues.
- The refinery will be constructed in modules, utilizing expertise and capacity available in the Edmonton area.
- North West Upgrading Inc. is a private, Calgary-based company founded in 2004.
- CNRL is a publicly traded company headquartered in Calgary that is one of the largest producers of heavy oil in Canada.

Bitumen royalty-in-kind (BRIK)

- BRIK gives the Crown right to collect oil sands bitumen in place of cash royalties, which can then be used to encourage upgrading, refining and petrochemical development in Alberta.
- BRIK is aimed at:
 - Fostering value-added oil sands development;
 - Enhancing the bitumen market in Alberta; and
 - Maximizing the value of Crown barrels received.
- A Request for Proposals (RFP) to purchase or process up to 75,000 barrels of in-kind bitumen on behalf of the province was issued in July 2009 and closed in January 2010.
- Subsequent RFPs could follow every two to three years depending on market conditions.
- The Province could have up to 400,000 barrels of bitumen royalty-in-kind available by 2030.

Enhance Energy Inc.'s Alberta Carbon Trunk Line (ACTL)

- The ACTL will receive CO₂ from the North West/CNRL refinery and a further 1,600 tonnes/day from the Agrium Fertilizer plant near Redwater.
- The CO₂ will be shipped via the ACTL to east-central Alberta for use in enhanced oil recovery.

- The ACTL project is receiving \$495 million under the Government of Alberta's *Carbon Capture and Storage Funding Act*.
- Estimates are that injecting CO2 will help producers recover additional oil from conventional oilfields in east central Alberta that will have the potential to generate up to \$15 billion in royalties for Albertans.
- The company estimates 2,000 people will be employed during the construction of the pipeline.
- Engineering and procurement are currently underway and construction is set to begin in 2012.

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