

# Why a West Coast Upgrader Makes Sense – Meeting Asia Half Way

## Today's View

Enbridge has proposed to build a blended bitumen upgrader to Canada's West Coast, with Kitimat being the likely end point. Kinder Morgan (Terasen) indicates it has a similar project under consideration. Current plans for both are to ship blended bitumen from Canada to new markets, primarily in Asia and, specifically, to China.

China is investing significantly in Alberta Oilsands, as they have been investing in purchasing assets in other international locations. It would appear that there is a Chinese national strategy is to secure long term supplies of hydrocarbons to energize their economy and to do so at SUPPLY COST. [This is a significant differentiation from free market economies such as the U.S. which appears to be headed for a long term reliance on imported hydrocarbons at MARKET PRICE.]

The Chinese are also investing heavily in developing oil sands upgrading technology and, along with it, highly skilled scientists and engineers needed to design and operate such facilities. In this regard the strategy seems to be an attempt to not only assure a long term supply at a supply cost, but to do so at the very low supply cost of blended bitumen. If successful – and with the size of the investments, the number of engineers and researchers being trained, the comparatively lower labor and other construction costs in China there is no reason why they won't – they will be taking the value-added from upgrading the bitumen into the Chinese economy as well

While Alberta / Canada stands to develop another secure and growing market for its bitumen with China (and other growing Asian economies), there is a risk that we will be leaving a lot of value on the table. Hence the welcome proposals to build more upgraders in Alberta with the possibility of a new world scale refinery and petrochemical complex.

But what then of the proposed pipeline to the West Coast? Does it become a products pipeline for a range of products such as diesel and middle distillates in a batch mode? Or does it make sense to continue with plans for a diluted bitumen pipeline and to build an upgrader (and possibly a future refinery and petrochemical complex on) at the West Coast terminus of the pipeline

## The West Coast Upgrader Option

There are several important advantages to locating an upgrader / refinery / petrochemical complex on the West Coast.

- 1) A broader range of products could be manufactured to meet the needs of a broader range of target markets:
  - a. Some diluted bitumen could be shipped to Asia;
  - b. Medium sour feedstock could be shipped to California to make up for declining volumes of North Slope crude
  - c. Sweet synthetic could be shipped to refineries in Asia without capacity to handle either heavy ends or sulphur
  - d. Finished product should be shipped direct to markets along the Canada / U.S. west coasts as well as markets in Asia
  
- 2) While a West Coast upgrader fed by diluted bitumen from Alberta (DilBit, SynBit or other) does not reduce the demand for diluent needed to pump Bitumen to the West Coast, diluent from the portion of bitumen upgraded can be separated for recycle plus some additional diluent could be manufactured in the upgrading for back shipping to Alberta.

- 3) An ocean-side location can allow for the construction of very large process vessels and modules at remote locations and transported by ocean going barge to Kitimat – thereby relieving the pressures on western Canada construction labour and fabrication facilities and, at the same time, reducing the cost of assembled modules.
- 4) Separate out diluent for shipping back to Alberta via a diluent / condensate pipeline, thereby reducing the net diluent requirement vs. shipping diluted bitumen by tanker [By rail this would require 2 to 3 unit trains of 110 cars per day or a fleet of between 1200 and 1500 cars]
- 5) Co-products could also reach a variety of markets:
  - a. Petrochemical feedstocks could be segregated for shipment to a range of markets or, possibly, to feed a local petrochemical complex
  - b. Sulphur could be prilled for direct loading onto bulk freighters destined for Asia / India without the need for storage, shipping by rail, offloading, storage and re-loading to the ocean going vessel.
  - c. Petroleum coke could similarly be direct loaded for shipment to locations where this is still an acceptable fuel.
- 6) Should there be a successful offshore natural gas discovery off British Columbia, then Kitimat region might make a logical landfall terminus. Similarly, if there is the need for an LNG receipt terminal on Canada's west coast then it too might fit into the Kitimat complex. Both could take advantage of a pipeline corridor which tied into existing pipeline hubs in north east B.C. or in Alberta with subsequent ties to markets across North America. If designed for dense phase, the same pipelines could be used to transport liquids rich gas either from offshore or imported LNG (one of the problems with much of international LNG is that it is too liquids rich for most North American pipelines) for extraction and as a source for Alberta's petrochemical industry.
- 7) And perhaps most importantly, significant "value added" stays in Canada, rather than migrating to Asia.

### **The Outcome of the West Coast Upgrader:**

Operating in synergy with Alberta's existing combination of marketing a range of oil sands derived products from blended bitumen through upgraded products to refined end products AND in harmony with future growth in both upgrading and refining capacity in Alberta, a West Coast Upgrader can provide an additional element of flexibility and opportunity to capture added value from the growing production from the oilsands.

If bitumen production reaches 3 million barrels per day by 2015 as projected by some and if there is a constraint of about 1 million bpd of blended bitumen that can be absorbed by existing North American refineries then a range of options is needed to process the remaining 2 million barrels per day. If product is to be shipped off Canada's west coast, then an upgrader / refinery / petrochemical complex may make a valuable contribution to the mix of solutions.

### **Key Success Elements:**

- The British Columbia government "catching" the vision – perhaps Alberta and B.C. "sharing" the vision
- A multi-line pipeline corridor from an Alberta hub to Kitimat
  - Well planned and executed consultation with First Nations – ONCE!
  - Corridor with the potential to accommodate (at least) a diluted bitumen line, a "return" diluent / condensate line, a products pipeline, an "import" natural gas pipeline
- Championing of Kitimat as a major industrial hub by the local communities

- Any necessary harbor / navigation system upgrades to accommodate the increase in shipping traffic