Pipelines, netbacks and trade - the value of pipelines to the oil sands

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Key Points

- Infrastructure is crucial for future oil sands viability, especially under low(er) prices;
- Infrastructure demands in Canada have changed, as have prices and potential netbacks - the prize is not as big as it once was;
- Policy changes (C-69, etc.) are not asking for the impossible on climate change tests - in fact, they’re not really asking for much at all;
What do we mean when we talk about netbacks?

Data via Bloomberg, graph by Andrew Leach
Why is Alberta oil fetching low prices? Not enough pipeline capacity to meet demand

Source: NEB Data, graph by Andrew Leach.
Why is Alberta oil fetching low prices? Lower value crude

The market has changed since 2014 in many ways.

Source: NEB Data, graph by Andrew Leach.
We are short pipe capacity

Source: NEB Data, graph by Andrew Leach.
The consequences of too little pipeline capacity are now clear.
The consequences of too little pipeline capacity are now clear.

![Graph showing spot oil prices, implied bitumen values, and Alberta diluted bitumen differentials]

*Source: Data via Bloomberg, graph by Andrew Leach*
But it’s not just capacity that matters

Source: CAPP
A Digression on PADDs

Petroleum Administration for Defense Districts

- PADD 1: East Coast
  - PADD1A: New England
  - PADD1B: Central Atlantic
  - PADD1C: Lower Atlantic
- PADD 2: Midwest
- PADD 3: Gulf Coast
- PADD 4: Rocky Mountain
- PADD 5: West Coast
Let’s not just focus on capacity as markets matter too

Source: Data via EIA, graph by Andrew Leach
US is producing more, importing less
US is producing more, importing less

Source: EIA API, graph by Andrew Leach.
US is producing more, importing less.

**US Imports and Exports of Crude Oil and Petroleum Products**

- **Imports of Crude Oil and Petroleum Products** (pink line)
- **Exports of Crude Oil and Petroleum Products** (blue line)
- **Net Imports of Crude Oil and Petroleum Products** (yellow line)

**Source:** EIA API, graph by Andrew Leach.
Crude flow in the US has shifted: used to be in and north, now it’s south and out

Source: EIA API, graph by Andrew Leach.
Complex Capacity Matters to Oil Sands Value

Downstream Charge Capacity of US Refineries by Region and Process

- East Coast (PADD 1)
- Midwest (PADD 2)
- Gulf Coast (PADD 3)
- Rocky Mountain (PADD 4)
- West Coast (PADD 5)

Source: EIA API, graph by Andrew Leach.
Emissions across the economy

1990-2016 Provincial GHG Emissions

Source: Environment Canada National Inventory Data, graph by @andrew_leach
Targets, not policies

Canada's GHG Emissions, Projections and Future Targets
The Global Challenge is Steep
The Challenge Ahead for Oil Sands

Source: Environment Canada National Inventory Data, graph by @andrew_leach
The Challenge Ahead for Oil Sands

![Graph showing oil sands emissions by sector from 1990 to 2016.](source: Environment Canada Inventory Data, graph by Andrew Leach.)
The Challenge Ahead for Oil Sands

Canada's GHG Emissions, Projections and Future Targets


- Historical Emissions (1990-2016)
- 2020 Target
- Pan Canadian Framework Projection (2018)
- 2030 Target
- 2050 Target
What does C-69 really do?

- Changes the rules for major projects with respect to impact assessment;
- Introduces the Canadian Energy Regulator (CER) which will replace the regulatory functions of the NEB;
- Updates both impact assessment and regulatory functions to include a climate change test;
- Makes everyone REALLY nervous.
A digression on climate change - how much insurance do you want to buy?

![Probability of Exceeding 2 °C by Representative Concentration Pathway](source)

*Median model predictions and ranges, SSP2*

*Source: Hertmann et al. IAMC 1.5°C Scenario Explorer and Data hosted by IIASA. Integrated Assessment Modeling Consortium & International Institute for Applied Systems Analysis, 2018. Release 1.0. doi: 10.22022/SPR15/08-2018 15429 url: data.ene.iiasa.ac.at/ambiente-1.5o-explorer  Graph by Andrew Leach*
RCP scenarios translate into temperature trajectories
Let’s name the scenarios to make this easier.
RCP scenarios translate into emissions trajectories
Now, let’s narrow this down to a couple of scenarios.
What do these mean for oil demand?

**Primary Energy from Oil, IPCC Models**

*Median model predictions and ranges, SSP2*


Graph by Andrew Leach
What do these mean for oil demand?

**Primary Energy from Oil, IPCC Models**

*Median model predictions and ranges, SSP2*

C-69: The Canadian Energy Regulator

When approving a pipeline...

183(2) The Commission must make its recommendation taking into account in light of among other things, any Indigenous knowledge that has been provided to the Commission and scientific information and data all considerations that appear to it to be relevant and directly related to the pipeline including:

- the environmental effects, including any cumulative environmental effects;
- the availability of oil, gas (...) to the pipeline;
- the existence of actual or potential markets
- the extent to which the effects of the pipeline hinder or contribute to the Government of Canada’s ability to meet its environmental obligations and its commitments in respect of climate change;
- any relevant assessment referred to in section 92 93 or 95 of the Impact Assessment Act; and (l) any public interest that the Commission considers may be affected by the issuance of the certificate or the dismissal of the application.
Conclusion

- Oil sands projects will, definitely be more valuable with pipelines than without;
- Does that mean that global emissions will, definitely, be higher with pipelines than without? No.;
- Serious global action on climate change will, almost assuredly, mean no further oil sands expansion and (dis)orderly wind-down of the oil sands industry over decades;
- The good news, again: these are the risks that our oil industry is used to dealing with, as is the NEB/CER process. Let it work - don’t tie its hands.
Contact info

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If not oil sands then what?

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Global field-level upstream carbon intensity supply curve (2015)


If not oil sands then what?