

Climate Change

Energy East Consultations Part Two January 2015



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

Overview

Study objective: To assess how TransCanada's proposed Energy East project would affect global GHG emissions:

1. Review existing studies on how pipelines affect global GHG emissions; and
2. Conduct modeling to estimate the impact of the Energy East project.

This presentation will:

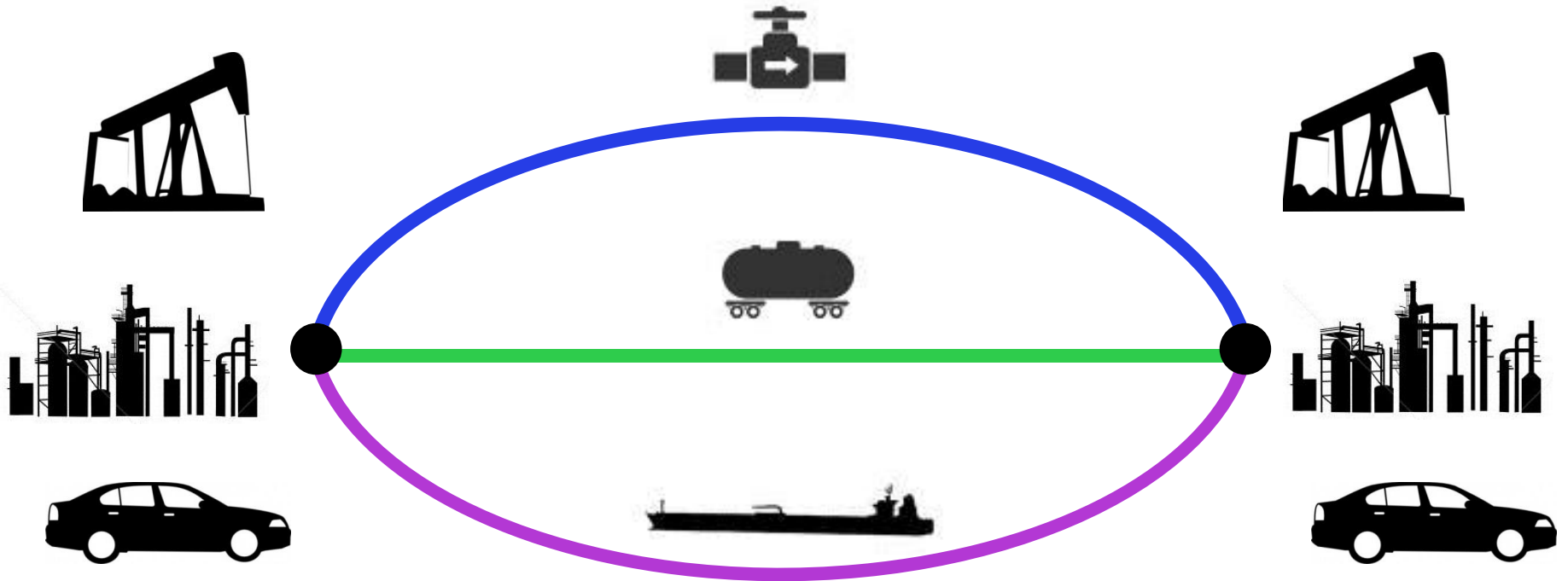
- Provide highlights from the modeling;
- Compare our results to other estimates; and
- Conclude with key findings.



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

Approach: The OILTRANS model



Final demand for refined petroleum products (“tank-to-wheels”) in each market is sensitive to price (i.e., consumption declines with an increase in price).

Wells to tank



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

Approach: Method

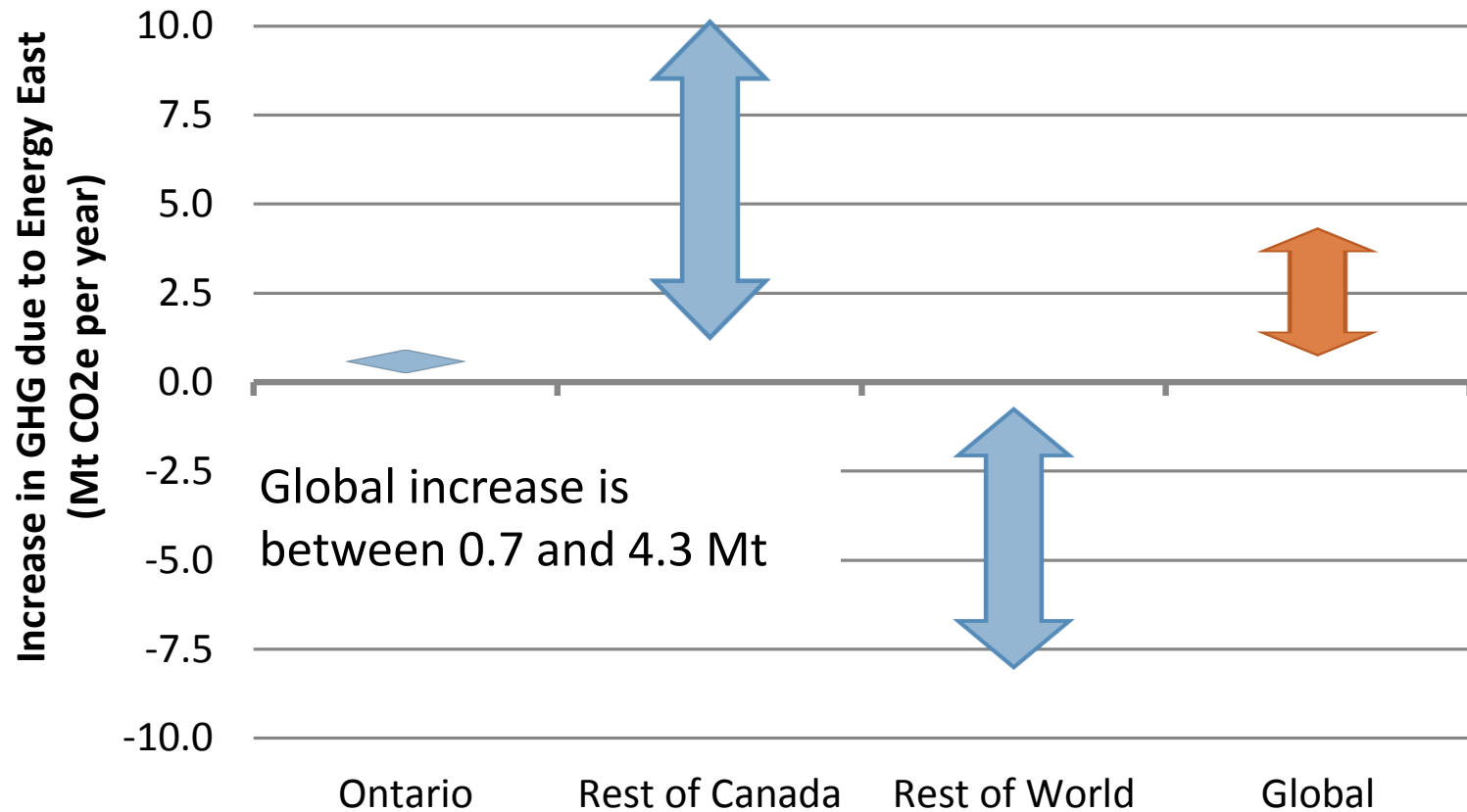
- Simulated the global oil market from 2015 until 2035.
- Examined different “scenarios”. These scenarios varied:
 - Whether other pipelines from Western Canada are approved; and
 - How responsive the consumers of refined petroleum products are to prices.
- Simulated each scenario twice: once with and once without the Energy East pipeline.
 - The difference is attributed to the approval of the pipeline.



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

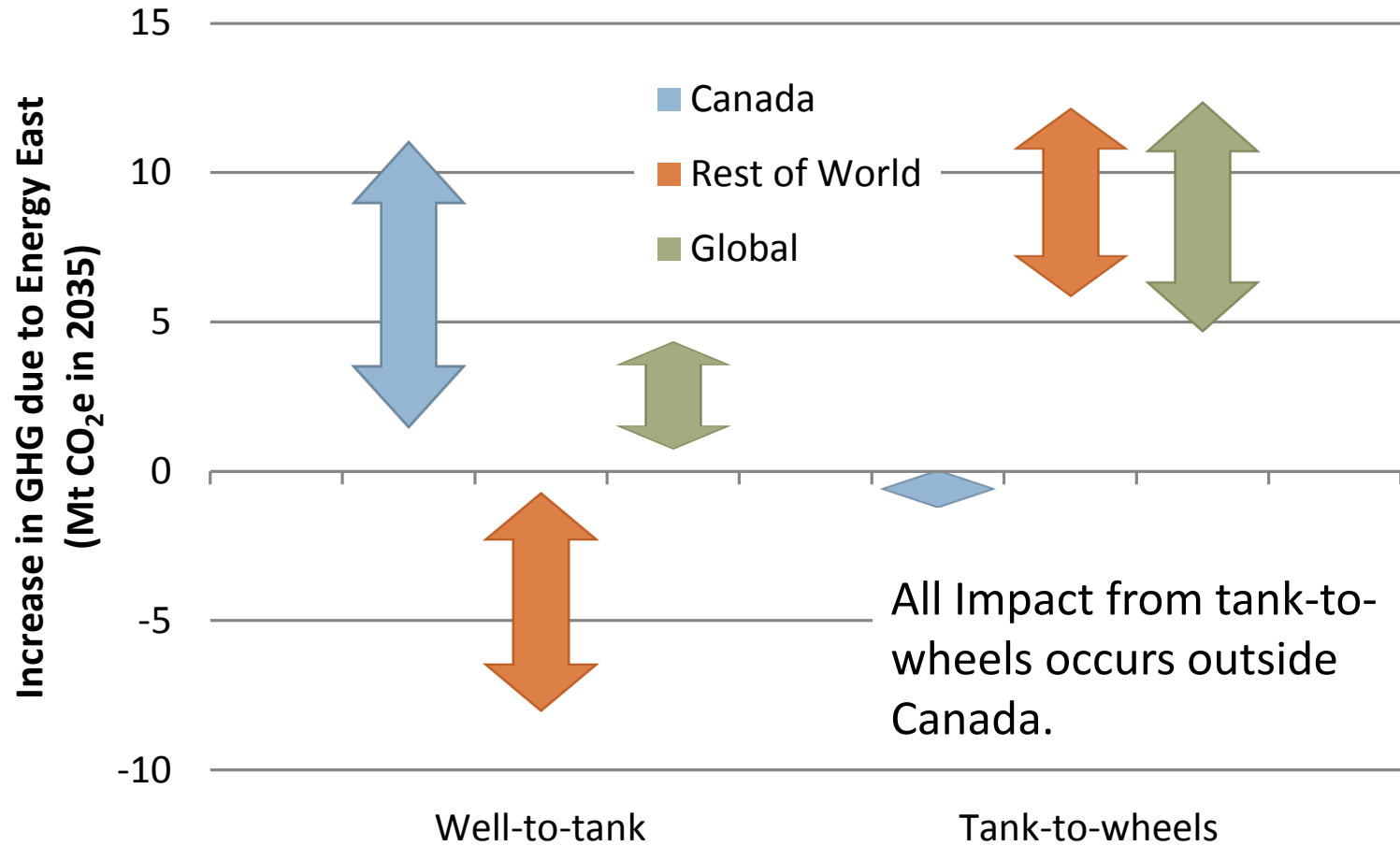
GHG impact from well-to-tank



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

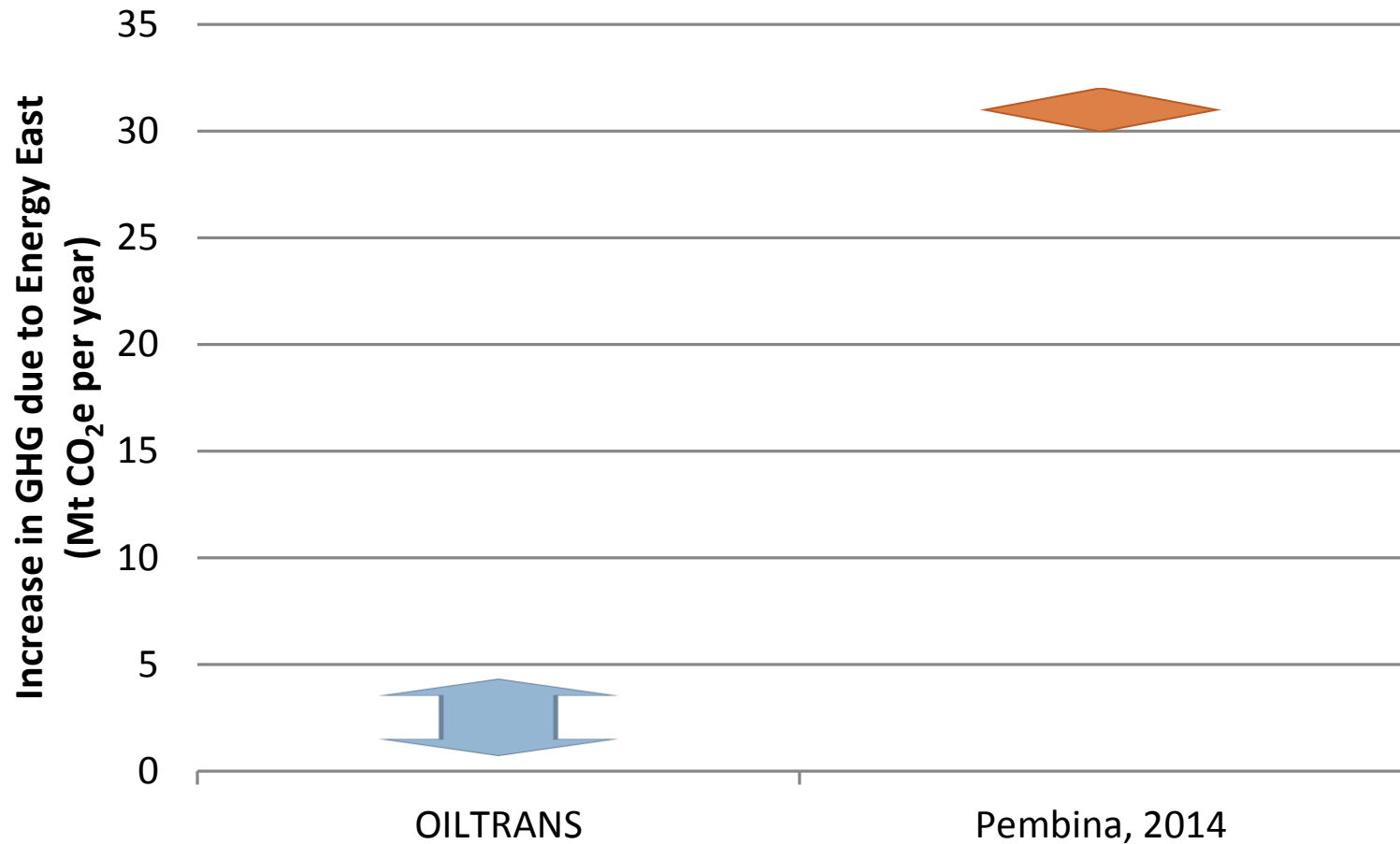
GHG impact from tank-to-wheels



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

Comparison to other research (well-to-tank)



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

Is rail available to transport crude?

- This analysis suggests that rail transport would expand rapidly in the absence of new pipelines.
- The rate of the expansion is significantly lower than the:
 - Experience in other jurisdictions (Bakken resource in North Dakota);
 - Expansion that has already occurred in Alberta.



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

Key Findings

1. Impacts on Ontario are minimal
2. Most impacts (from well-to-tank) occur in the Rest of Canada
3. Emissions decline in the rest of the world, offsetting most of the increase in Canada (from wells-to-tank)
4. Impact from tank-to-wheels could be important. It occurs outside exclusively Canada.



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario



Thank-you!
Questions are welcome

Jotham Peters

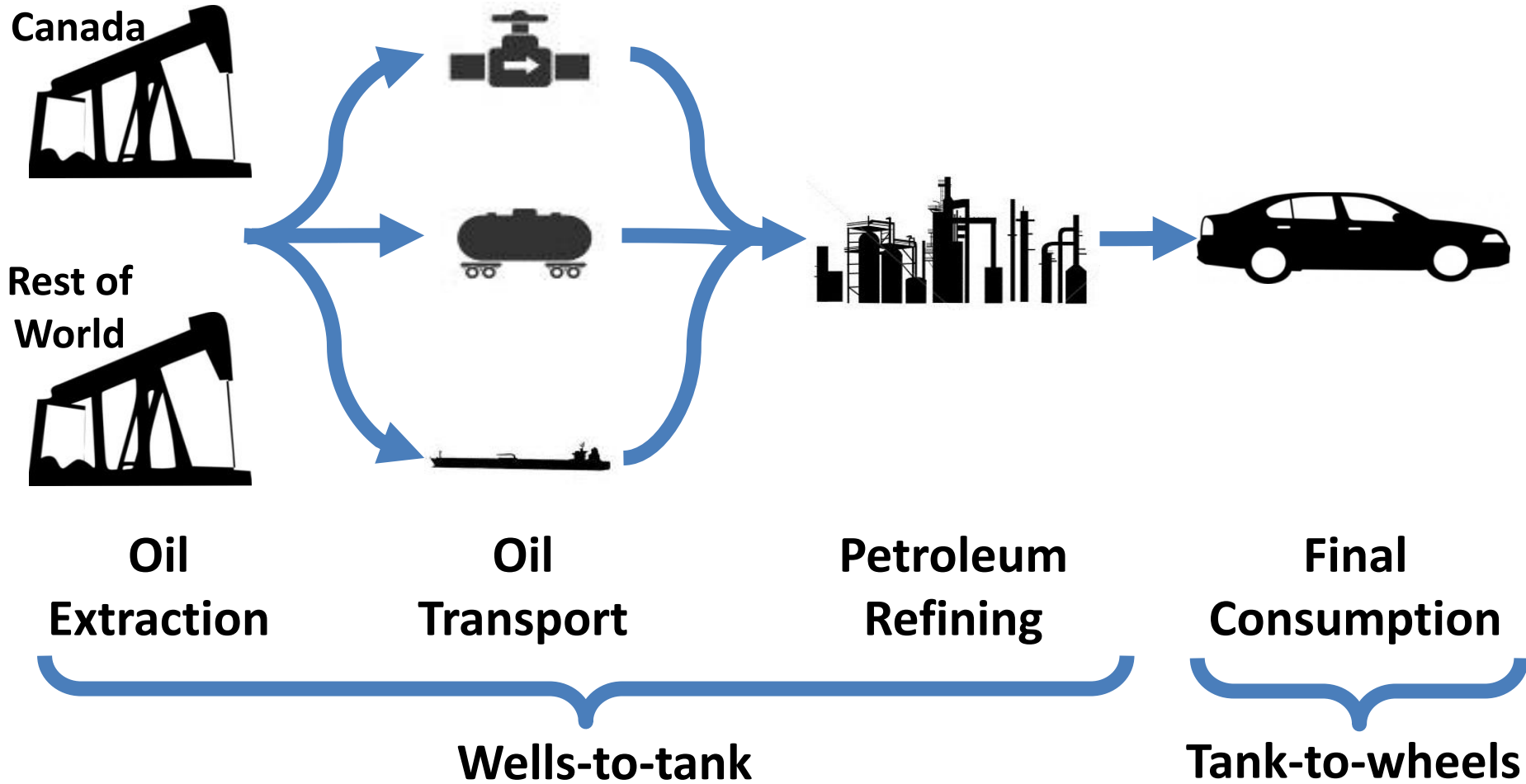
www.NaviusResearch.com



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

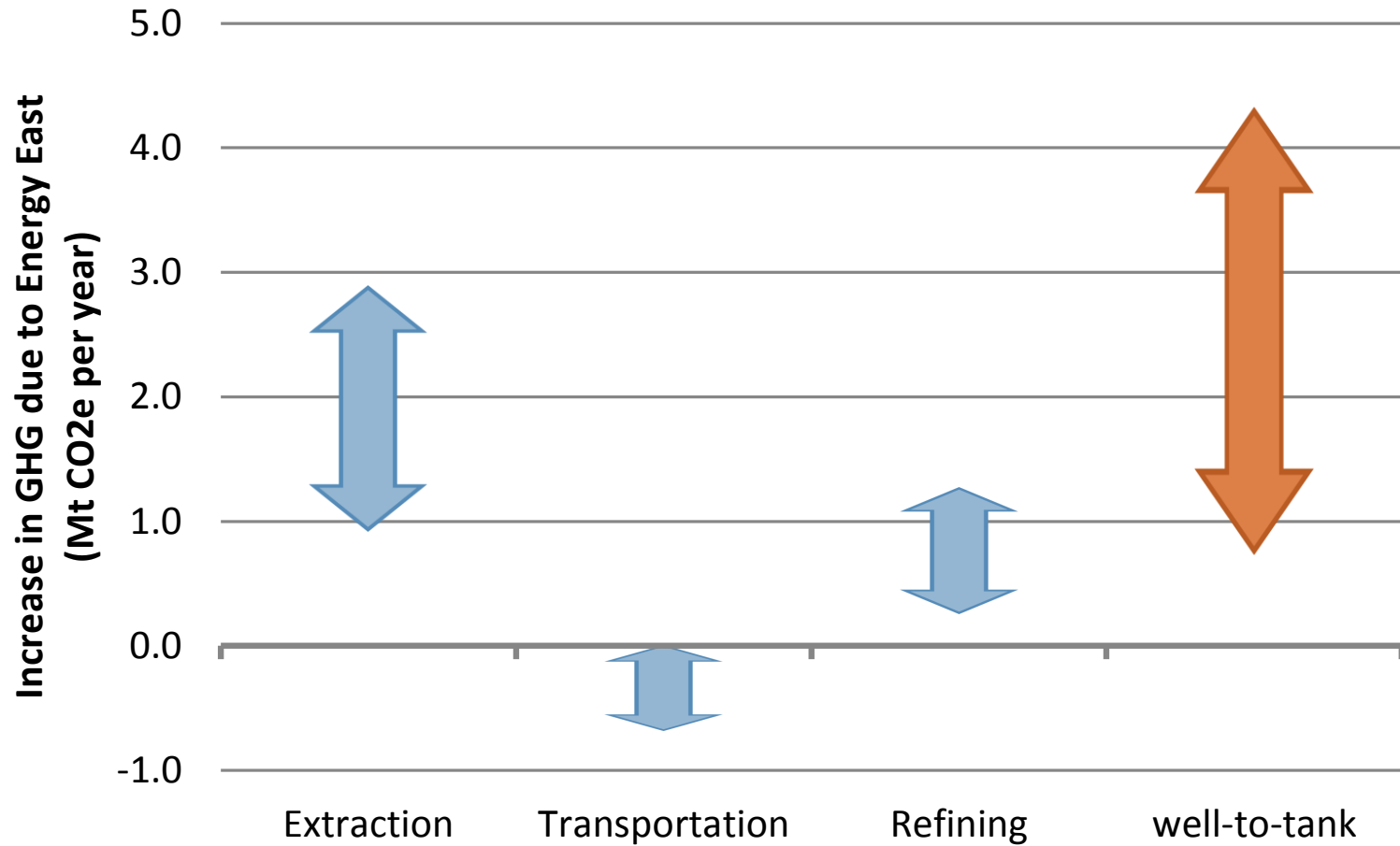
Approach: The OILTRANS model



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

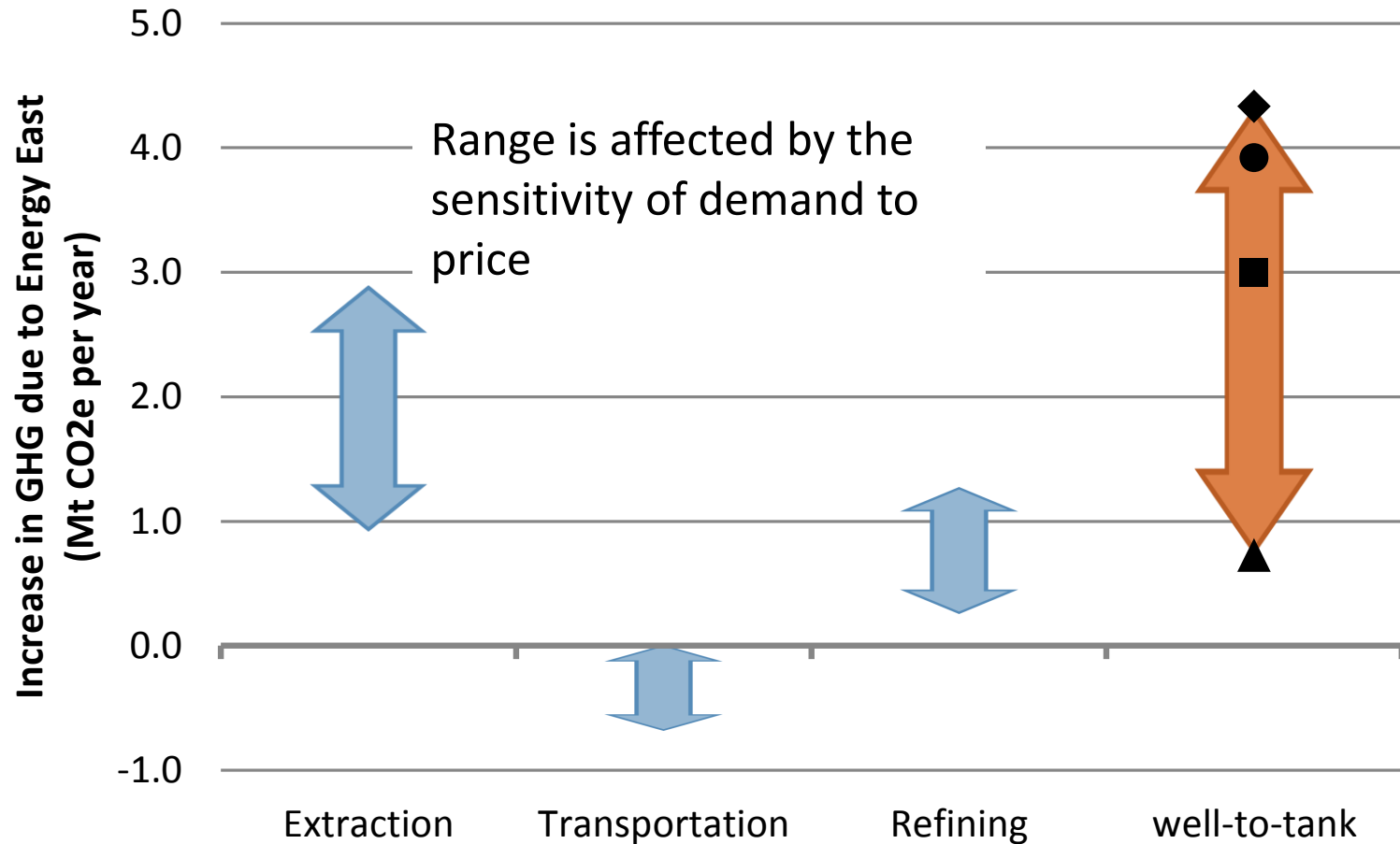
Global GHG from well-to-tank



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

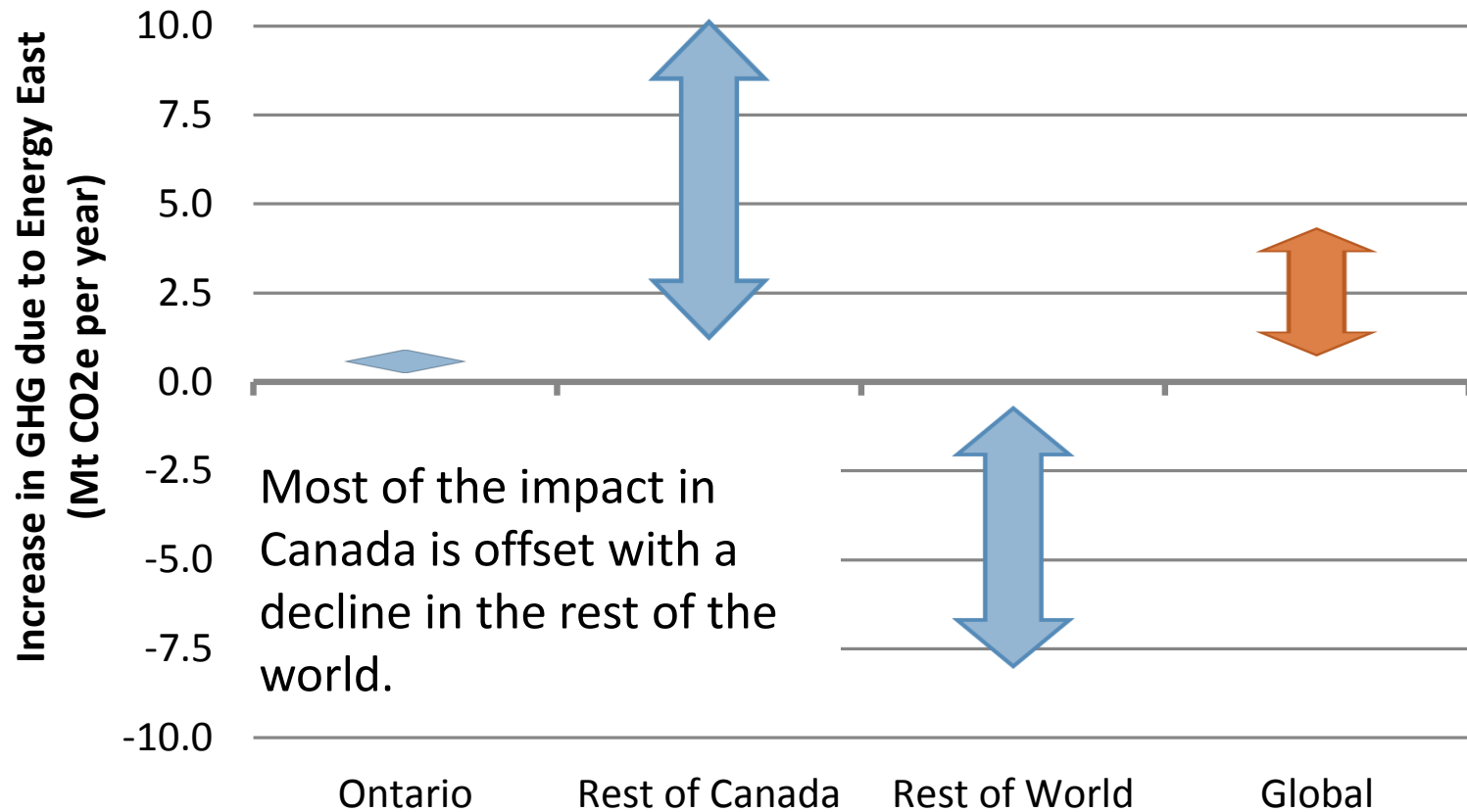
Range in global GHG impact



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario

Location of GHG impact (well-to-tank)



OEB Energy East Consultation and Review

Ontario Energy Board
Commission de l'énergie de l'Ontario