Presentation to the

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Good Morning. My name is Peter Howard and I am the President and CEO of the Canadian Energy Research Institute (CERI) located in Calgary, Alberta, Canada.

The Canadian Energy Research Institute is an independent not for profit research institute specializing in the analysis of energy economics in the energy production, transportation and consumption sectors. The central goal of CERI is to bring the insights of scientific research, economic analysis and practical experience to the attention of government policy-makers, business sector decision-makers, the media and the general public. CERI is funded by the Government of Canada, the Government of the Province of Alberta, the Canadian Association of Petroleum Producers (CAPP) and the Small Explorers and Producers Association (SEPAC).

CERI has published several reports that deal with the economic analysis and short- to medium-term forecasts of hydrocarbon production from the Canadian Provinces and Territories including conventional oil, conventional gas, coalbed methane, unconventional gas, oil sands, LNG, and natural gas liquids (NGLs). These reports are available on CERI's website and are the basis of my comments today.

With respect to liquid hydrocarbons, in 2011 Canada's average daily production was:

From Western Canada:

• Conventional Light Crude	562,000 bbls/day
• Condensate (C5+)	128,000 bbls/day
• Conventional Heavy Crude	422,000 bbls/day
• Upgraded Bitumen (SCO)	846,000 bbls/day
• Non-Upgraded Bitumen	759,000 bbls/day

From Eastern Canada:

• Conventional Light Crude	272,000 bbls/day
Total	**2,989,000 bbls/day**

In 2011 Canada's average daily exports were 2,138,000 bbls per day with 98% of those volumes going to the United States.

CONVENTIONAL OIL AND OIL SANDS

Canada's conventional oil production (light and heavy) peaked in the mid-70s at 2,200,000 bbls/day and has been on a steady decline since that point in time until recently. In 2010/2011 the year over year production rate increased. The reason: applying horizontal drilling technology to old oil fields to access bypassed oil and increase the recoverable oil percentage. During those years the number of oil directed wells increased from 1,647 wells in 2008 to 3,109 in 2010 and 4,339 in 2011 with horizontal wells accounting for 60% of the total. CERI's conventional oil model is forecasting a conservative increase in conventional oil of 200,000 bbls/day by 2015 and an optimistic increase of 300,000 bbls/day.

The Alberta oil sands currently produce, on average, 1,618,000 bbls/day (2011) with 60% sourced from mining operations and 40% from in situ operations. Production ramp-ups and debottlenecking efforts over the next 2 years will expand production to 2,200,000. By 2013, an additional 408,000 bbls/day is scheduled to be connected from projects that are currently under construction and due on stream prior to 2015. Additional volumes of 1,300,000 bbls/day have been approved by the regulator and are awaiting start of construction. Also, there is another 1,300,000 bbls/day from projects that are waiting for approval by the regulator and a further 1,000,000 bbls/day from projects that have been announced. Total potential from the oil sands is 5,300,000 bbls/day. In other words, there is up to 2,500,000 bbls/day of oil sands production that is considered land-locked and is looking for a pathway to either an existing market or a new market.

The current capacity of the export pipelines from the WCSB from an operational point of view is 3,450,000 bbls/day. Add to this, two projects announced by Enbridge to increase the capacity of line 67 and 61 by an additional 200,000 bbls/day by 2014. Total export capacity in 2015 and forward will be 3,650,000 bbls/day.

In 2012, the Trans Mountain Pipeline System connecting Alberta to Vancouver was oversubscribed by 60% over the summer months. By 2016, CERI has forecasted that the export pipelines connecting Alberta to the United States will be approaching an oversubscribed situation. Some possible relief from the railways is envisaged by transporting upwards of 200,000 bbls/day to market which will shift the over subscription point to 2018.

New pipelines are needed.

The three pipeline projects that are on the books to be constructed, the Keystone XL, the Trans Mountain Expansion and the Northern Gateway have or are about to run into significant pushback from various entities all with no clear outcome. There are huge environmental concerns in British Columbia around Northern Gateway because the proposed pipeline will run through pristine rainforest and coast line and there is a perception that the environmental risk is greater than the economic benefits.

Several other options exist and are currently being investigated:

- Enbridge's line 9 has received approval to reverse its flow direction to move conventional crude from Sarnia, Ontario to Montreal. Total volume will be 240,000 bbls/day. The crude supply for this pipeline segment will come from Alberta, Saskatchewan and North Dakota.
- TransCanada Pipeline has proposed converting one of their Canadian mainline gas pipelines over to oil/bitumen service. This could connect western Canada with all the eastern Canada refineries, including the Irving refinery in New Brunswick. Bitumen volumes could reach Canadian refineries that can handle heavy crude along with access to the Atlantic basin by means of tanker or barge out of the Saint Lawrence Seaway.
- The port of Churchill, Manitoba is currently ice free for 9 months of the year and is being investigated as a potential pipeline connection and tanker port.

NATURAL GAS

Lack of pipelines is not the issue with respect to natural gas developments in western Canada, especially as it relates to connections to Ontario. We have too much spare capacity.

Low prices are pushing producers, and particularly Canadian exploration and development companies, towards mergers and potentially, bankruptcy. With persistent low prices and reduced market access as US production displaces Canadian gas in eastern markets, producers are experiencing negative returns. The current operating philosophy is, if revenue exceeds the variable operating cost, producers will produce with potential disastrous consequences down the road.

Rising demand in Alberta to support oil sands growth represents one alternative market opportunity. LNG exports offer another, longer-term opportunity although almost exclusively for British Columbia. The short-term challenge for many companies is to survive. How the short-term restructuring will affect the long term future of Canadian natural gas is uncertain.

Western Canada natural gas production peaked in 2008 at 17 billion cubic feet per day and since then has declined to the current level of 14 billion cubic feet per day as a direct result of declining market prices and a surge of domestic production within the continental US. CERI's Canadian gas forecast model is suggesting that gas production will continue to decline to 11 billion cubic feet per day excluding the Horn River and Montney gas production that is linked to LNG exports from Kitimat, British Columbia. Exports of Canadian gas to the US will decline from

a peak of 10 billion cubic feet per day in 2007 to 2 billion cubic feet per day by 2015 and remain at that level. Imports of US gas into eastern markets will grow to 4.5 billion cubic feet per day from the current volume of 1 billion cubic feet per day.

ECONOMIC IMPACTS

The capital investment required to support the on-stream and under construction oil sands projects amounts to $8.3 billion (2012-2014) with an additional $2 billion per year of operation. The economic impacts of JUST these projects over the period 2011-2035 are:

- Canadian GDP growth = $1,500 billion.
- United States GDP growth = $141 billion.
- Canadian direct employment in 2011 = 90,000 jobs (growing to 125,000 jobs)
- Canadian indirect and induced employment in 2011 = 183,000 jobs (growing to 254,000 jobs)
- United States indirect and induced employment = 1,568 thousand person years or 62,000 jobs

KEY MESSAGES

1. Western Canada conventional oil production is forecasted to increase by 200,000 to 300,000 barrels per day by 2016.
2. Western Canada oil sands production will grow from the current level of 1.6 million barrels per day to 2.2 million b/d by 2018 with an additional 2.5 million b/d waiting for pipeline/rail access to a market.
3. North, South, East or West, liquid hydrocarbon developments in Western Canada will need 5 new pipelines (500,000 bpd) over the next 15 years to reach its production potential.
4. Western Canada gas production is forecasted to decrease from the current 13 billion cubic feet per day to 11 billion cubic feet per day with net exports to the US declining from 10 billion cubic feet per day to 2 billion cubic feet per day by 2016.
5. The existing oils sands operations (operating and currently under construction) will generate $141 billion of GDP growth over the next 25 years and support, on an indirect and induced basis, 62,000 jobs per year.
6. New oil sands projects will significantly add to the economic impacts not only in Canada but also in the United States.