



North American Natural Gas Plenary: Rediscovering Gas

**Al Monaco, President and CEO,
Enbridge Inc.**

April 22, 2015

**Opening remarks for natural-gas panel discussion
at IHS Energy CERAWEEK event
Hilton Americas Houston
Houston, Texas**

Check against delivery

[INTRODUCTION BY BOB INESON, MANAGING DIRECTOR, NORTH AMERICAN NATURAL GAS AND GLOBAL LNG RESEARCH, IHS]

Thanks Bob.

I think that Enbridge is a good proxy for your topic because our roots are in oil transportation and we're in the middle of a massive build out of our crude oil systems right now.

But a few years ago we made a strategic push into natural gas . . .

. . .and that turned out to be the right move for today and, as we look to the future.

We're all familiar with the natural gas revolution (as Bob would say, "the shale gale").

For good reason, we're mesmerized by the impressive gas production outlook.

But in my view, we're underplaying the magnitude and role that natural gas will play on the downstream side and the massive spinoffs and opportunities that will come from it.

Before I get to that, let me provide some context and Enbridge's perspective on energy.

Slide: North American Midstream Perspective

65 years ago, we built the first pipeline to connect Western Canadian crude to the US Midwest.

Today we move more than ½ the crude imported to the US from Canada.

In total, our system moves about 2.2 mmbpd.

Fair to say we've built unparalleled strength in liquids pipelines.

As you can see, we're the midstream part of the value chain.

Slide: North American Energy Outlook

What doesn't show up on the map is that what really drives our business is how well we understand two things:

- #1 – The North American and global supply and demand picture; and
- #2 - Regional price disparities – that provide signals on where new infrastructure needs to be built.

Energy supply fundamentals have never been better.

It's those fundamentals that are driving North America's global competitive advantage in energy.

An advantage that combines several factors.

- the scale and quality of our unconventional resources (manufacturing operation);
- the skills and technology to develop those resources;
- we're able to leverage a well-established transportation grid (no other like it globally);

and, critical to this advantage, availability of capital to fund development.

The location, competitiveness and speed at which these resources are being developed is driving the need for new infrastructure.

In fact, what we are seeing today is a transformation of the North American pipeline grid
 . . . whereas infrastructure was designed to move imported oil and gas inland, the grid now needs to be pointed to coastal markets.

Crude Oil Market Access Well Advanced

That's what's driven our oil strategy, where we're connecting Canadian barrels to the US Gulf Coast.

(We recently brought into service our Flanagan South and Seaway pipelines (with partner Enterprise) – creating the first full path solution from the Canadian oil sands to the Gulf Coast.)

That's adding value for producers and providing much sought after heavy feedstock to refiners.

This is a big accomplishment for North America, for us, and our customers because it's a perfect marriage between Canadian heavy barrels and USGC refining capability.

As we execute our liquids pipelines growth strategy, we're building our natural gas business.

Natural Gas Asset Base

From a limited position 2 decades ago, today we have:

- Long haul natural gas and NGL transmission lines including the offshore Gulf Coast;
- Extensive gas gathering and processing assets;
- NGL extraction and fractionation facilities; and
- Canada's largest distribution business (2 million industrial, commercial and residential customers).

We see natural gas as a key to the next generation of Enbridge's growth.

We know that natural gas will supply a growing share of global and NA energy demand.

That's simply because:

- It's abundant, and because of that it's going to be very cost effective for years to come;
- That supply is also very responsive to demand. Economists refer to this as elastic supply. (I think of it as turning on the drilling tap);

- There's already well-developed infrastructure, particularly storage and processing;
- And it's ideal for power generation in that it can follow load requirements and heat rates for CCGT have improved dramatically;
- And, of course, it's lower in emissions.

But the future of gas will, in my view, be driven mostly by one thing that has been beyond our reach for many years – price stability.

Natural Gas: Competitive and Stable

When I was running our natural gas utility – the most common theme I heard from my customers was this:

We love natural gas, but my business can't stomach the volatility.

That volatility made it difficult for commercial and industrial customers making long-term investments.

Today, growing supply and some 100+ years of reserves has changed this dynamic.

This chart illustrates this change well:

Yes, absolute prices are lower today, but . . .

You can see how volatility has narrowed dramatically since 2009;

Sure there will always be seasonal price moves.

But it's pretty clear that prices will be relatively stable and very competitive for years to come.

In fact, the outlook for North America is a 30-year supply that can be profitably produced at \$4.00 to \$5.00.

What makes that go around is the cracking of the technology and efficiency code for unconventional gas.

All of this gives customers much greater certainty on which to base large capital investment decisions.

It's that dynamic that will – and is – driving an industrial renaissance in North America.

North American Industrial Renaissance

Just look at what we're seeing already:

A re-birth and expansion of gas-intensive industries, like chemicals and steel, that directly benefit from low-cost gas.

Reshoring of fertilizer plants that went offshore following gas price volatility in the early 2000s.

Unmothballing and expansion of existing petrochemical facilities along the Gulf Coast.

And new investment in ethane crackers.

It's the competitiveness and stability of natural gas that's driving these changes.

And an estimated \$140 billion in industrial investment in the US.

Just look at how North America has clawed down the petchem production cost curve in global terms.

That's good for our economies, good for jobs – and creates a significant NA competitive advantage.

There's more to the story.

Price stability is also:

- Enhancing the ability of gas to meet growing demand for electricity (base load intermediate and peaking);
- And load balancing for renewable power generation.

There's renewed interest in gas as a transportation fuel.

This will happen mostly in long-haul fleet applications.

The build-out of CNG and LNG refueling stations is slowly, but steadily, occurring along key corridors.

Enbridge is involved in projects in Quebec and Ontario to advance use of gas for transportation.

North American Gas Flows (2013 to 2025)

So, what are the implications for the midstream part of the value chain?

First, the speed of gas development has led to a mismatch between supply growth and the ability to get it to markets.

Second, there's a massive change in flow patterns driven by the growth in the Marcellus.

Gas supplies that traditionally served the US Northeast are being squeezed out.

And, instead, will be pointed southward to growing petrochemical and power generation load, and export markets.

That means we need to re-purpose our existing infrastructure – and build new – to address these changing flow patterns.

Strong Fundamentals Drive Infrastructure Requirements

The magnitude of infrastructure investment stretches from upstream gathering and processing through to transmission and distribution.

Between 2014 and 2020, we'll see an average of over \$80 billion invested annually in midstream infrastructure.

Canada will also require over \$65 billion of natural gas, NGL and LNG infrastructure.

An area of focus for Enbridge is Canadian midstream where infrastructure is much less developed.

Challenges

Let me close with an issue that I believe threatens the North American competitive energy advantage I referred to a couple of times.

We'll only realize the massive gas supply growth if we see the right price signals to encourage development.

And the only way that will happen is if NA is connected to the rest of the global gas market.

Global LNG demand is expected to double over the next two decades.

And North America is well positioned to play a big role in that growth.

But whether we can hit that market window is an open question.

I think the U.S. is demonstrating it can hit that window, but there are still challenges.

For example, we often struggle with ensuring we can establish the right commercial underpinnings for midstream investments, mostly related to some degree of volume protection.

That means we need to be an effective aggregator of volumes.

But, our ability to build global connectivity hinges, in large part, on how we address opposition to infrastructure development.

Public concerns over energy development are contributing to a challenging regulatory and permitting environment.

As industry, we need to understand – and address – public concerns over energy development.

I think the gas industry has made good progress, particularly on reducing consumption and emissions.

For example, our gas utility DSM programs have saved 16.5 million tons of CO₂; that's equivalent to removing 3.2 million cars off the road.

And we've reduced our emissions by 21% below 1990 levels.

And the industry is improving its capability and transparency with regard to drilling practices.

On the ground, the expectations of the public, our regulators, landowners around midstream projects are exponentially higher.

Today, talking to them about economic benefits alone won't cut it in achieving public support for energy development.

I believe our industry needs to focus even harder on the public concerns over safety and the environment . . .

. . . and to focus on building more trust through better engagement and world class performance.

With that context, I look forward to your questions.