

EVIDENCE

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**Item One – from Toronto Globe and Mail**

The natural gas highway: A wide open road of opportunity

GWYN MORGAN FROM MONDAY'S GLOBE AND MAIL Last updated **Friday, Feb. 10, 2012 5:36PM EST**

Have you heard about the “new” alternative transportation fuel? No, it's not hydrogen, corn ethanol, or biodiesel.

It's natural gas, and here's what U.S. President Barack Obama has to say about it. In a recent speech in Las Vegas, he said his administration's Alternative Fuels Plan will help support development of natural gas refuelling infrastructure, along with tax incentives for conversion of truck and bus fleets.

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“Because of new technologies ... we can now access natural gas that we couldn't access before. We've got a supply ... that can last America nearly 100 years. Developing it could power our cars and our homes and our factories in a cleaner and cheaper way,” Mr. Obama told workers at a UPS truck-fuelling site.

So what is this “new” technology that has made natural gas so plentiful that it can power America's trucks and buses? And is it really new?

As I watched Mr. Obama's televised speech, I reflected back to 1976 when, as young engineer, I supervised the drilling of the first well of our new company, which grew to become North America's biggest natural gas producer, Encana Corp. That well was drilled into so-called tight rock that would produce no gas at all when the drilling rig pulled off the site. Then came a fleet of massive trucks carrying hydraulic pumps, tanks full of specially formulated fluids and loads of what we called “frac sand.”

When all of this was connected to the wellhead, powerful engines made a deafening roar, driving high pressure pumps that drove a fluid-and-sand slurry down the wellbore, fracturing that tight rock and forcing the porous sand into the gas bearing formation more than 400 metres below. When the trucks had pulled off the site, I opened the valve and out came natural gas.

So what is now called “fracking” isn't fundamentally new at all. But over the decades, technologies enabling the drill bit to be turned horizontally into the gas-bearing rock, along with extremely sophisticated fracturing fluid chemistry, have unlocked more and more “tight” gas. Now the brass ring –getting gas to flow commercially from enormously plentiful shale deposits – has been seized.

Using natural gas as a transportation fuel isn't a new concept, either. Statistics compiled by the International Association for Natural Gas Vehicles indicate there are 13 million natural gas-fuelled vehicles worldwide. And the "green highways project" has brought together South Korea, China, Thailand and 17 other Asia-Pacific countries in a massive strategy for natural gas-fuelled vehicles.

Given that the United States has the world's largest fleet of high fuel-consumption trucks and buses, the Alternative Fuels Plan's support for natural gas has staggering potential.

It's also a major opportunity for suppliers of natural gas motor-fuel technology, including Canadian companies. (IMW Industries, of Chilliwack, B.C., is a leading supplier of natural gas refuelling equipment, exporting it to 25 countries including China. And Vancouver-based Westport Innovations Inc. is a leader in technology to convert diesel engines to natural gas.)

The creation of transportation corridors for natural gas-fuelled trucks, and the conversion of smelly urban buses to clean-burning natural gas, helps the environment. It also offers big opportunities for companies in the supply chain of refuelling stations, high-pressure fuel tanks and truck engines. But if Canada doesn't move forward soon, it will be difficult for Canadian natural gas fuel-technology companies to keep up with their U.S. counterparts.

So what's the plan for converting Canada's truck and bus fleets to natural gas?

Two years ago, natural gas producers, transporters, distributors and equipment manufacturers joined together in the Canadian Natural Gas Vehicle Alliance to develop the "Natural Gas Use in the Canadian Transportation Sector Roadmap," which focuses on converting truck and bus fleets, both urban and highway, to natural gas.

After meetings in Ottawa in December, Natural Resources Minister Joe Oliver agreed to provide support for implementation of this initiative, including two regional truck-fleet support hubs and development of updated codes and standards for natural gas vehicles. This work needs to be a top priority, so Canadian companies aren't left stranded on the new natural gas-fuelled highway.

Published on Sunday, Feb. 12, 2012 8:00PM EST

## Column: Hydro horror stories show smart meters just aren't that smart

By Michael Smyth, The Province April 1, 2012

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**Michael Smyth**

## Photograph by: Ginger Sedlarova , The Province

Ivor Gustafson reeled in some big ones during a long career as a commercial fisherman, but when he opened his December B.C. Hydro bill, he realized he'd landed the whopper of a lifetime.

But not in a good way. The electrical bill for his four-bedroom house was a shocking \$2,046.34 — more than 1,000 per cent higher than his previous bi-monthly bill.

Gustafson built the house himself seven years ago. He uses natural gas to cook and heat his water. And the home itself is heated with an energy-efficient heat pump. He said his hydro bill is usually around \$200, and had never exceeded \$400, even during the coldest winters.

But that was before he got his new smart meter. And the 78-year-old Powell River resident is having a hard time believing it's all just a coincidence.

“They put in that damn smart meter back in October, and this was the first bill I received after it went in,” Gustafson tells me in a gravelly voice. He is recovering from throat cancer.

“When I saw the amount, I just about hit the floor.”

Gustafson paid the bill, which is automatically deducted from his bank account. But now he's in a fight with B.C. Hydro to get the money back, because he insists he didn't use all the power the smart meter claims he did.

“They keep telling me I must have used all that power and I say it's not possible,” he said.

To deepen the mystery, Gustafson says he was in hospital while his hydro bill was going through the roof. His care-provider, Tammy Henderson, estimates he was either in hospital in Powell River, or receiving radiation treatments in Victoria, for about half of the two-month period in question.

“The house was often empty,” Henderson said. “The heat was turned right down and everything was switched off.”

A local electrician hired by The Province to do a service call at the house did not notice anything obvious to account for such an enormous meter reading. The electrician advised Henderson to get the heat pump checked, though Henderson said the pump is only a year old.

Henderson said the battle with B.C. Hydro has been stressful for Gustafson, who is now afraid to use any power in his home because of the cost.

“I worked all my life and now I don't even want to turn on the light in the bathroom,” he said.

Henderson is paying an expert from Measurement Canada to test the smart meter, but that won't happen for weeks. In the meantime, she told Hydro, Gustafson can't afford any more monstrous bills.

"He's on a limited income," she said.

B.C. Hydro will send an inspection team to the home this week, and they froze Gustafson's account so he won't pay any more until the dispute is settled.

"We're very sorry to hear about his personal situation and we want to get to the bottom of this," said Jim Nicholson, B.C. Hydro's director of customer care.

"It does strike us as an extraordinarily high bill."

But while Nicholson adopts a sympathetic tone, he's adamant about one thing: **B.C. Hydro's smart meters are accurate and working properly.**

"Every time we do an investigation like this, we've been able to eliminate the smart meter as a cause," he said.

But you can't blame Gustafson for being skeptical. His final bill before the smart meter was installed on Oct. 23 was just \$178.

Henderson said she was initially rebuffed by B.C. Hydro when she complained — "I talked to a supervisor who got mad at me and hung up" — so she went to Nicholas Simons, the local NDP MLA.

"I took the bill to Energy Minister Rich Coleman's office two weeks ago and plunked it down on his desk — and nothing happened," Simons said.

"Mr. Gustafson is not alone. There's a pattern here. I know a single mom with two kids whose bill went up \$200. A church contacted me, freaking out about their bill."

Since last Sunday's front-page report on this issue, The Province has been flooded with emails from readers, all complaining their Hydro bills spiked after they received a smart meter.

Coleman is not sympathetic.

"This is nonsense," Coleman said. "They give you a story, we check it out, and find out there's nothing wrong with the smart meter. We find out there's **something like a space heater** operating through the winter.

"It's a bit of an urban myth."

But an expensive "myth" for Gustafson and hundreds of others, who have been whacked with huge Hydro bills, and can only wonder if their shiny new smart meters are to blame.

## **PROBLEMS WITH OLD METERS?**

If Hydro's new smart meters are working properly, is it possible the old analog meters were not, and that's why customers are getting huge bills?

"It's possible," said Coleman. "If the old electro-magnetic meter wasn't working perfectly, there's a possibility there could be a spike [in smart-meter bills]."

Coleman said many of the old meters were hacked and tampered with.

"We find copper strips plugged in because people wanted to play with them, people try to reverse them. The smart meters are actually giving us a more accurate reading."

In other words, if your smart-meter bill went up, maybe it's because your old meter wasn't charging you enough. So be happy.

## **PAYMENT PLAN AN OPTION**

Jim Nicholson, Hydro's director of customer care, says people just don't realize they're using more electricity, and that's why their bills go up.

"If people have a new baby, or visitors over the holidays, or they have a hot tub, or a new TV, or an addition on the home — all of these impact consumption," he said. "**People are not thinking about the colder winter**, or their activities over the holidays."

He said many customers also receive an under-estimated bill between meter readings, and when the meter is finally checked, charges rise to account for earlier under-billing.

He said Hydro will work out a payment plan for customers hit with unexpectedly high bills. Good to know, since your Hydro rate rises today by a compounded seven per cent. And, no, that's not an April Fool's joke.

## **DELUGE OF COMPLAINTS**

The super-sized electric bill Ivor Gustafson received after his smart meter was installed is just one of dozens of Hydro horror stories I received in the past week.

Emails from Province readers started filling my inbox shortly after last Sunday's front-page column appeared.

Almost all the stories have a common theme: a customer's bills were stable and predictable before the smart meter arrived. Then all billing hell broke loose.

"A smart meter was installed on my house in December 2011," begins a typical email from reader Bill Holdershaw.

“When I received my bill in February 2012, it had increased 400 per cent compared to the same time period last year. My consumption patterns have not changed and we did not add or change any major appliances. In fact, 21 days of this two-month billing period we were on vacation and no one was in the house. The only thing that has changed is the meter.

“Of course I complained to B.C. Hydro, and their response was something was wrong in our house and we should have it checked. I work in the construction industry and have been advised **there is nothing that can go wrong with your electrical that would increase your consumption by 400 per cent.**”

Now multiply that story by a factor of 200 or so, and you get an idea of Province readers’ reaction to this issue.

Hydro’s response? They say don’t blame their smart meters, because they’re all working perfectly — including the 1,000 recently removed from B.C. homes for random testing.

“It’s quality assurance and they’re all testing fine,” said Energy Minister Rich Coleman.

Try telling that to Gwen and Evan Perkins of Richmond.

“We got the absolute shock of our lives this month when we received our bill,” they wrote to me, attaching a historical usage chart for their home.

“As you can see, since 2005, we have NEVER had a usage period this high,” the Perkins report, while wondering if their dog Ripley is secretly to blame.

“Unless Ripley was baking and had a hot tub somewhere, there is no reason for our Hydro bill to have more than doubled.”

When Dean Travers’s bill tripled to \$547, the Langley father of four called Hydro to complain, and a customer-service rep told him to perform a series of complicated “circuit load” tests on his system.

“Do they think a single dad with four kids [one special-needs], a dog, a job and a life can do all this for them? I’m the customer, right?”

Travers is still angry, and so is his neighbour. “His bill was even higher!”

Tony Hari’s bill also nearly tripled, so Hydro gave him a new smart meter while his old one is sent away for testing.

“If the replaced smart meter tests within acceptable guidelines, I will be billed \$94 for their trouble,” said the Langley resident, while reporting that Hydro blamed his high bills on a cold winter.

**“My house is heated by gas,** so I’m not sure why a cold winter would change my electric bill.”

Carlo Magno said his bill shot up, too — and so did the bills for 18 of his neighbours, according to a sign-up sheet he posted in his White Rock condo complex.

“I’m not sure what else to do anymore — unless the majority of customers revolt,” he wrote.

But I’m not sure even that would work. Hydro has spent \$1 billion on its smart-meter program and will defend it to the hilt.

So what’s really going on? I think some people use more electricity than they think. I also think a lot of the old analog meters were inaccurate and possibly under-billing customers.

But, based on the sheer volume and credible nature of the stories, it’s not hard to believe that at least some smart meters just aren’t that smart. Good luck getting Hydro to admit it.

Meanwhile, Hydro rates increase today — yes, today — by another seven per cent. And I’m still convinced Hydro plans to introduce “time-of-use billing,” where they charge you more for power consumed at peak periods. After all, that’s why smart meters were invented.

I feel your pain, Province readers. But you ain’t seen nothing yet.

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[twitter.com/MikeSmythNews](https://twitter.com/MikeSmythNews)

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Read more:

<http://www.theprovince.com/worried+about+smart+meters/6093509/story.html#ixzz1qza85hsZ>

### **Item Three – from Toronto Globe and Mail**

Canada pays steep price for fragmented electricity market

BARRIE MCKENNA OTTAWA From Monday's Globe and Mail Last updated Monday, Apr. 02, 2012 6:49AM EDT

The oil sands’ big carbon footprint is a source of much national angst.

It stirs East-West rivalries, riles environmentalists and sours relations with some trading partners.

A lot less attention is paid to Canada’s hopelessly inefficient and highly politicized electricity business. That’s unfortunate, and costly.

Boralex buys Quebec wind power project N.S. wins right to manage own emissions Ontario's Bruce Power gets nod to restart reactor

The fragmented market wastes billions of dollars every year and produces millions of tonnes of extra greenhouse-gas emissions, according to Pierre-Olivier Pineau, associate professor at the University of Montreal's HEC business school and author of a new study, *Integrating Electricity Sectors in Canada: Good for the Environment and for the Economy*.

"We could save money and reduce our carbon emissions," Prof. Pineau said in an interview. "But politically, it's difficult."

No kidding. Provincial monopolies, powerful entrenched bureaucracies and regional jealousies have created a balkanized energy system that serves the few at the expense of the national interest.

Consider Quebec and Ontario. Three-quarters of Quebecers heat their homes with electricity, generated from a vast network of hydroelectric dams.

Meanwhile, Ontario is ramping up production of electricity made from natural gas and subsidizing purchases of wind and solar power as it scrambles to shut down dirty coal-fired capacity.

Here's the catch: Hydroelectricity is a wonderful and clean source of energy, but not a very efficient heat source. Natural gas, on the other hand, is a great source of heat, but an inefficient way to make electricity.

In essence, Quebec is force-feeding wasteful hydro consumption with low electricity rates, and Ontario is paying too much and polluting more because it can't buy enough cheap and clean hydro, Prof. Pineau argues.

In a more rational economic world, Quebec would use inexpensive and abundant natural gas to heat homes. And Ontario would buy more hydro power from neighbouring Quebec or Manitoba to power its factories.

"[Hydroelectricity] ... should be shared, as with other energy sources and other consumer goods, according to economic criteria," Prof. Pineau says in his study, published by Federal Idea, a Montreal-based think tank. "In other words, discrimination based on their province of residence must stop, to allow production companies to sell to the highest bidder."

Hydro-Québec isn't alone. The other hydro-rich provinces –British Columbia and Manitoba – operate in a similar fashion, selling cheaply to local consumers, rather than offering that power to other provinces.

The misallocation of gas and hydro resources isn't the only costly anomaly in Canada's electricity landscape. Quebec and Ontario overspend to produce wind power, creating an underused backup to other sources of supply. If Canadian utilities were serious about wind

power, they would instead join forces to build vast wind farms where it makes the most economic and climatic sense – the Saskatchewan prairies.

Then there's Newfoundland. Still stinging from the perceived bad deal it made decades ago to sell all the power from Labrador's Churchill Falls project to Hydro-Québec, the province now wants to tap the Lower Churchill River's hydro potential. The best way to get the power out, of course, is through Quebec.

But Hydro-Québec is apparently demanding too steep a transmission price. So Newfoundland is planning to reroute the power via a costly and circuitous subsea cable back to the island, across to Nova Scotia, and eventually to markets in New England. Only a federal subsidy makes the \$6.2-billion megaproject feasible.

Newfoundlanders could wind up paying dearly for power they don't really need.

Last year, heavily indebted New Brunswick came close to selling Crown-owned New Brunswick Power Corp. to Hydro-Québec. But the deal fell apart, at least partly because of bruised provincial pride. While deeply unpopular with ordinary New Brunswickers, the takeover was economically and environmentally sound. Quebec would get a new market for its cheap hydro, allowing New Brunswick to curb its use of oil and coal for generating electricity.

Instead of cheaper rates, New Brunswickers will pay more and pollute more.

And so it goes. Provincial electrical utilities operate in a strange netherworld. They compete in a free market of deregulated oil-and-gas markets, and cross-border electricity markets. But at home, they're slaves to provincial mandates and political pressures.

There's plenty of opportunity for the provinces to co-operate. Too often they don't, and Canadians are paying a steep financial and environmental price as a result.

It's no way to make sensible national energy policy. Maybe environmentalists should get a little more exercised about inefficiencies in electricity markets, and lay off the oil sands.

In essence, Quebec is force-feeding **wasteful hydro consumption with low electricity rates**, and **Ontario is paying too much and polluting more because it can't buy enough cheap and clean hydro**, a new report argues. (Jacques Boissinot/The Canadian Press)

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