Canadian Electricity Association | Association canadienne de l'électricité

The Electricity Imperative

Keynote Speech

by

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INTRODUCTION

Thank you [*introducer*] and good afternoon everyone!

A special thanks to the Ontario Energy Network for having me here today. I'm happy to be in Toronto, a city that I called home for many years and that I in fact proudly represented in Parliament.

Toronto and the surrounding area is also home to a number of our members – Hydro One, Oakville Enterprises Corporation, Ontario Power Generation, PowerStream, and Toronto Hydro – and I'm always happy to come pay them a visit.

As I begin my remarks, I am reminded of former US Senator Bob Dole's advice for giving speeches. He called it the "3B's": Be on time; be brief; and be seated! So I will endeavour to follow this edict.

CONTEXT

Electricity. It's been called "the great enabler" of modern society.

From the alarm that woke you up this morning to the coffee maker that provided your coffee. From the traffic lights that guided your commute to work, to the elevator that took you to your office, electricity is central to our lives, to our businesses, and to the functioning of our country.

When most of us think of our electricity system, we probably think of it in terms of our local utility. But we really also need to see it as part of a *national* industry that helps drive our country's economy and our way of life.

My central message to you today is that Canada's electricity system is at an inflection point. And the decisions we make - or fail to make – will have repercussions for generations to come.

And that's because many of Canada's electricity assets are reaching the end of their lifecycle, which can range from 30 years for a utility pole to as much as a century for a power plant. Quite simply, much of the system built a generation ago, now needs to be replaced or refurbished.

As a result, we'll need to make significant investments just to maintain the reliability of what we have today.

Here's the challenge: when it comes to refurbishing or building new infrastructure, the lead times are long – often measured in decades. So while the future may seem a long way off, it's really only an electric heartbeat away. We simply don't have the luxury of waiting if we're going to build the electricity system Canadians want and need.

VISION 2050

At the Canadian Electricity Association, we've developed a blueprint to guide our actions, a plan we've called *Vision 2050.*

In developing this plan, we looked at four pillars that we think will determine what the electricity system of 2050 will have to look like in order to meet the needs of Canada and Canadians.

The first is the increasing demand for electricity.

And here, there are a number of drivers, including the rise of electric vehicles and the energy demands of a digital society.

In regards to electric vehicles, according to NRCan and industry leaders, there could be as many as 500,000 on our highways by 2018 – as well as more hybrids.

But whether you buy one to save money or to save the planet, the bottom line is the same – we'll need more electricity to power them.

In our digital world, just consider that those vast computer-servers that make cloud computing possible? Just one server room at one data centre can use enough electricity to power 18,000 homes.

All told, the global information and communications technology sector now uses about 10% of the world's electricity. That's the same amount that was used to light the entire planet back in 1985.

But the demand for electricity won't stop there.

We'll also need more to light, heat and cool every new building, every new housing development, every new school or hospital. We'll need more electricity to power every new manufacturing plant, oil or gas project and every new mine.

In short, we need to anticipate a soaring demand for electricity. And at the same time, include in our calculations the continued advances in energy efficiency.

Second, we have to recognize that technology is allowing people to manage how they use energy in ways that were unimaginable even a few years ago.

From when to charge your electric vehicles, to whether to install a solar panel, technologies are fundamentally changing the customer from a passive recipient to an engaged partner in the electricity system.

This is bringing a new set of expectations from Canadians. They want new services and new tools to help them conserve. And they want more choices about how their electricity is generated.

So this is about more than just replacing and renewing assets - it's also about a different relationship with consumers and we need to understand – and plan – for this new reality.

Third, we need to look at the question of carbon in our economy and how best to reduce it. Our Association believes that you have to price carbon on a North American basis, given that our grid is so integrated with that of the United States.

In this regard, Canada's electricity system is among the cleanest in the world. More than 80% of our electricity generation is non-greenhouse gas emitting. By comparison, Germany generates just 41 per cent of its electricity free of these emissions. The United States? 31 per cent. And Japan, 15 per cent.

Of course, even as we make this transition to a lower carbon world, we'll need to face the continuing impacts of climate change, including more severe weather events.

One quick example. According to the Insurance Bureau of Canada, the December 2013 Toronto ice storm resulted in $200 million in insured losses and pushed that year's severe weather-related insured losses to over $3 billion – the highest in Canadian history.

And in the United States, severe weather is now the leading cause of power disruption, costing their economy between $18 and $33 billion every single year.

Here in Canada, dealing with severe weather brings its own challenges to our electricity system, which has to be more robust and resilient. It has to handle both the physical toll of these events as well as the increased demand for air conditioning or heating that our different seasons call for.

The fourth pillar shaping the electricity system of the future will be developments with the U.S. There are already some 35 physical interconnections between us – and the number continues to grow.

This offers exciting new opportunities to export our clean energy. For example, this past summer, the US Environmental Protection Agency finalized new rules limiting greenhouse gas emissions from power plants in the US. CEA was pleased to see electricity exports from Canada included among the many greenhouse gas reduction options made available to US states under the final version of the Clean Power Plan.

And how the American market evolves – including how renewables are integrated into its energy system – will have a big influence on what the Canadian system will look like.

COSTS OF INACTION

So that's our Vision 2050, a plan to strategically map out our rebuild for the future.

Of course, I also understand that Canadians have certain priorities for – and expectations of – their utility companies. They want them to be efficiently run. They want them to listen to their customers. And they want them to provide value for money.

Since taking this job, I've been meeting with the heads of utilities across the country and I can tell you that they are committed to delivering on these aspirations, and further sharpening their focus on their customers.

We also understand that for our story to be understood by Canadians, we need to listen to – and address – their stories.

Let's face it, nothing lasts forever. Our TVs might last 10 years. Our washing machine, 15. Our furnace, 20. It's the same with our energy infrastructure. It's wearing out and we need to reinvest in it.

And our Vision 2050 comes with a price tag.

The Conference Board of Canada estimated that from 2010 until 2030, we'll need to invest some $350 billion in our electricity system to meet the demands of a growing population and new technologies.

Just to put that into context, between the 1970s and early 2000s, we averaged between $9 and $11 billion in investments per year. However, to keep the system running will now require, on average, about $15 billion per year.

Since 2008, we've achieved that. But the Conference Board made it clear that that investment has to be

sustained up until 2030, just to maintain the reliability of what we have today.

That's a lot of money.

And by the way, Canada's not alone in having to invest so much in its electricity infrastructure. The infrastructure life cycle has also caught up in Europe, where it's estimated that they'll need to invest more than $2 trillion, between now and 2035. And in the United States, it's $2 trillion by 2030.

Now, no one likes paying more for their electricity. Homeowners don't like it and neither do businesses. And when you have unhappy consumers, you have a perfect storm for political inaction.

I'm a former elected official, I get that. But I'm also a realist. And a citizen. And a father. And I want to make sure that my children – and grandchildren – will enjoy the same quality of life that I've enjoyed.

So let's look at it from a different perspective. What if we *don't* make these investments? What if we just kick the can further down the road?

Well, I think the consequences are pretty clear - and quite significant. There will be less than-reliable electricity. A loss in quality of life. Lost economic opportunities. And a less competitive economy.

All because of the potential for more disruptions caused by increased brownouts or blackouts.

Moreover, according to the Conference Board of Canada, every $100 million invested in our electricity system boosts our GDP by $85.6 million and creates 1,200 jobs. But the reverse is also true – failing to invest means foregoing those jobs and economic growth.

Think about the ice storm in Toronto and what it was like for tens of thousands of people trying to cook their Christmas turkeys on the barbeque – or seniors trapped in homes without heat.

Ask them about the importance of electricity. About taking it for granted – until it wasn't there. And then project those images ahead five or ten years, if we don't upgrade our system.

Quite simply, failing to invest now will bring other – and greater – costs down the road.

THE VALUE PROPOSITION

Therefore, rather than only looking at the *costs* involved in building the electricity system of the future – which is an entirely legitimate point – let's also consider its *value* to Canadians. We need to take the two in tandem, and when we do, I would argue it's a very compelling value proposition. Why?

Well…

Because electricity is indispensable – to our homes, schools, hospitals and businesses. In fact, I'd be hard pressed to think of any other public asset that provides more good to more people, every single day. Simply put, could we really live our lives and run our country without electricity?

And because, it comes to us at a relatively low cost. For most Canadians, according to Statistics Canada, it amounts to about $3.59 per day – which is under 2% of household spending. That includes everything from phones to cable, clothing to groceries. Two per cent on electricity. A very modest cost for something that is absolutely critical to our lives and livelihoods.

How does this cost stack up internationally? Well, according to the International Energy Agency, Canadian residential electricity prices are lower, for example, than prices in Japan, the U.K., and the U.S.

And because, while it may operate in the background, out of sight and out of mind for most of us, the electricity system is incredibly complex and it takes money – and highly skilled workers - to run. From engineers and operators to technicians and emergency crews.

It starts with generation - turbines driven by rushing water, pressurized steam, burning coal or nuclear fission. Then, the electricity is carried over thousands of kilometers of transmission lines – lines supported by towers, relay stations, transformers and utility poles.

Finally, it's distributed to individual homes and businesses, in every province, and territory, all of which are metered to gauge their usage.

And all of this activity is controlled in real time, carefully calibrating the generation and distribution of power, so that just the right amount is produced at just the right time.

There for us when we need it. In a word: *reliable.*

CONCLUSION

In closing, electricity is the physical heartbeat of our modern society.

We have something that is indispensable to our way of life, that contributes to a low-carbon future, and that's delivered through a vast, sophisticated national system. For a relatively low cost.

I think that's real value. And I believe that's something worth investing in. It's also a value proposition that deserves Canadians' thoughtful consideration.

But there's one final reason we should make these investments – and that's our obligation to the future. We need to leave our kids a system at least as good and at least as reliable as the one our parents built after the Second World War.

As you well know, throughout our country's history, Canada has undertaken major infrastructure projects. Think of the great railroads of the 19th century, or the highway, seaway and national broadcast systems of the 20th. In all these undertakings, we have understood the importance of tackling big projects, of investing today for a better tomorrow.

And each time we did, it was transformative – uniting our country, facilitating the movement of people and goods and laying the foundation for economic prosperity for generations to come.

It's called nation building. And nation building never stops.

Today, we are again at one of those transformative moments. A time to build something important. Something enduring. Something essential.

The benefits are obvious. The responsibility is clear. And the time is now.

Let's invest today for sustainable, reliable electrical power tomorrow.