

Canadian Nuclear Association Conference
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Speaking Notes for Jeff Lyash
OPG President and CEO
(Check against delivery)

Opening

Thank you for your kind introduction Mark (Sutcliffe).

And thank you to the Canada Nuclear Association and all the good people who put together another successful conference.

I enjoyed my first CNA conference last year but this year, I feel like it's different; like it's special.

And I think it boils down to two reasons.

First, this year Canada will celebrate its 150th birthday. There's a sense of pride and celebration that's starting to build.

I notice that pride when I talk to my Canadian friends and colleagues. They want to share their stories and tell me what they love about this country.

Just last week, I was speaking with my parish priest who told me a biblical story (of sorts) that I hadn't heard.

Everyone knows the story of God creating the world in six days, and resting on the seventh....well on the 8th day, God and the angel Gabriel were looking down on the world and God said to Gabriel:

"I am happy with my creation Gabriel, so happy in fact that today I will create the best land in the world and I will call this land Canada....

It will be the most beautiful land... I will give it tall majestic mountains, and wide open prairies...I will give it three oceans...I will cover this land in rich green forests, deep blue lakes, crystal clear rivers and beautiful wildlife to enjoy.

I will let them experience all four seasons and I will populate this land with all different types of people...nothing but the kindest, gentlest most caring people in the world...and they shall be known as Canadians.

These Canadians will be known around the world for their friendliness and compassion for others, and will be well respected by all.

They will be intelligent, and they will use this intelligence for the good of the world...."

God keeps going on like this for awhile. Gabriel has become quite worried and finally he says: "God, I don't mean to question you, but don't you think that you may be giving these Canadians a little too much?"...God looks upon Gabriel and smiles...and says: "Don't worry Gabriel....wait until you see the neighbours I'm giving them."

Canada's Nuclear Story

The second reason why I believe this year's conference is special is because for the first time, the two largest infrastructure projects in the country, as ranked by ReNew Canada Magazine, are the Bruce Power refurbishment and OPG's Darlington Refurbishment.

And since the Darlington Refurbishment is already underway, I like to say we're number one.

It's fitting that Canada's nuclear industry is experiencing a renewed prestige coinciding with the country's sesquicentennial because it is an important part of that history.

Canada's nuclear story started just two hours west of here on the Ottawa River, after the Second World War when Canada became the second nation to construct a working nuclear reactor.

Eventually, the Chalk River Nuclear Laboratories would host a 20-million-watt reactor called the NRX, the most powerful research reactor in the world.

Author Jeremy Whitlock writes: "Canadian nuclear science defined the forefront of the art, and the little Canadian Pacific Rail station in Chalk River welcomed the world's greatest scientists and other VIPs to the heart of the Canadian Shield..."

...From those humble beginnings, Canada became a world leader in the production of medical radioisotopes and radiation therapy devices."

In 1962, the Nuclear Power Demonstration reactor or NPD became Canada's first electricity-producing reactor, successfully demonstrating the CANDU design.

And in 1968, Douglas Point, Canada's first full-scale nuclear generating station came on line.

The rest, as they say, is history.

An important history that has enriched this country and its people with decades of clean power, good jobs, countless economic spin offs, and technological and safety innovations.

And we're still making history today.

The Darlington Refurbishment and Pickering Continued Operations

As I indicated, Canada's largest infrastructure project *currently underway* is the Darlington Refurbishment.

Darlington is one of the world's top-performing nuclear stations. It safely and cost-effectively produces about 20 per cent of Ontario's electricity.

The \$12.8 billion refurbishment will allow Darlington to provide 30 or more additional years of safe, reliable baseload power with virtually no smog or carbon emissions.

That equals removing two million cars a year from Ontario's roads or 300 million tonnes of avoided carbon emissions. This is more than Alberta's total annual carbon emissions and almost double Ontario's total annual emissions.

It's also \$15 billion in avoided carbon costs if you factor in a \$50-per-tonne carbon tax.

The Conference Board of Canada estimates the refurbishment project, together with Darlington's additional 30 years of operation, will boost Ontario's GDP by approximately \$89 billion, and create an average of 14,200 new jobs per year over the same period.

Along with the clean, reliable power and long-term price stability, the Darlington Refurbishment's legacy will be felt by many companies and communities across Ontario for years to come.

I recently reported the first phase of the refurbishment, which involves removing fuel from the 480 channels inside the reactor vessel, completing a series of important modifications and setting plant conditions to support the efficient execution of this massive scope, was completed ahead of schedule and under budget.

In my experience large projects often end as they start so we're very pleased with this good beginning.

That said, we view the refurbishment as a marathon, we know we have a long road ahead and we're committed to the success of this project and to the success of the Bruce Power refurbishment.

While there is considerable focus and attention on Darlington, at the same time the importance of Pickering's continued operation to 2024 cannot be overstated because it's so critical to our nuclear plan.

The Pickering Nuclear GS provides 14 per cent of the province's electricity and does so reliably and with virtually no carbon emissions. It also has the highest industry safety ratings.

OPG continues to invest and improve Pickering's performance to ensure this baseload electricity is available during the Darlington and Bruce Power refurbishments.

Its role in securing Ontario's clean power future is critical.

And continuing Pickering's operation to 2024 would save Ontario electricity customers \$600 million, contributing over 4500 jobs and \$1.2 billion a year in GDP to the Ontario economy, while avoiding a minimum of 17 million tonnes of carbon emissions.

At \$50 a tonne for CO₂, that works out to \$850 million in avoided carbon cost.

When an industry or a country strives to accomplish something significant, there are always critics -- as there are of Pickering. While critics have their reasons for wanting to see Pickering closed down early, I don't believe protecting customer price, the economy and the environment are high on their list.

And I think the facts speak for themselves.

More importantly, I know the people who run that plant and their commitment to safety and performance is unmatched.

Pickering has nurtured a culture of success -- striving to do better; striving to ensure the best possible performance so that the station's last day is better than all the days that preceded it.

Darlington, Pickering and Bruce are great Canadian energy stories. They exemplify value, homemade innovation, safety excellence, and long-lasting environmental and economic benefits.

I know I'm preaching to the choir when I say this to you, but outside of this conference, it still feels a bit like Sisyphus pushing the boulder up a hill.

Public acceptance of nuclear power has inched upwards, largely because it's clean and will be instrumental to helping de-carbonize Canada's economy.

So the boulder has gotten smaller, but we still have work to do.

Beyond the lingering apprehension toward the technology, which may never fully disappear, there's a gap between the perceived and actual value of nuclear power to people's lives.

Although many may not realize it “Playing Pokemon Go doesn’t compare to operating a power plant”

Forbes Magazine contributor James Conca amplifies this gap when he compared the revenues, employee numbers and total share values of U.S. energy companies with social media and digital service firms.

Snapchat has valued their upcoming IPO at \$25 billion.

Last summer, LinkedIn went out with a \$26 billion valuation; that’s more than half of General Motors’ market cap.

Conca points out, “these companies don’t actually produce anything...the biggest media company on the planet, creates no actual content. Uber, the world’s largest taxi company, owns no cars. Alibaba, the most valuable retailer on Earth, keeps no stock. And the world’s largest hotel and guestroom provider, Airbnb, owns no property.”

He contrasts the positive brand recognition and total share value of social media companies with outstanding energy companies like Duke Energy.

In 2015, Duke had a total share value of \$52 billion. It employed 30 thousand people directly and significant numbers as contractors. In contrast, Facebook’s total share value was \$337 billion. That’s six times more than Duke and they employ only a small fraction in comparison.

And I love this line: “Those who trade in apps and ads are in the minor leagues of job creation compared to those who’ve harnessed the atom.”

In Canada, the nuclear industry – which includes generation, mining and indirect activities – is a \$6 billion annual industry employing more than sixty thousand people.

There simply is no other form of power that yields as big a positive economic impact. This doesn’t include the environmental benefits of having reliable, low-carbon power.

So how do we further narrow the gap between how people perceive our value and the real story?

At OPG we believe it is by reconnecting with our customers

Sir Adam Beck, the founder of our predecessor company Ontario Hydro, had a simple, coherent message.

People understood his value proposition – that electricity could significantly benefit their lives.

That's because Beck took the time to show them. In the early 1900s, he travelled across Ontario in his famous "Hydro Circus," introducing rural folks to a host of labour-saving devices – everything from electric stoves and washing machines to milking machines and power saws.

For the next 50 years or more, Beck's strategy was continued by the Hydroelectric Power Commission and Ontario Hydro.

Hydro made sure that electricity was seen as a positive and productive force in people's lives.

It built massive hydroelectric projects across Ontario to meet post-war demand.

It also launched a huge and highly successful campaign to convert Ontario's electricity system from 25 cycles to 60 cycles.

This involved going door-to-door across Ontario and changing or replacing the motors of millions of household appliances.

Electricity industry participants were really connected to each other and to people back then.

I believe we can do it again.

I'm not suggesting Mike Rencheck and I rent a van and drive around the province replacing appliance motors.

Although as two hands-on engineers from Pennsylvania, that *literally* is our idea of good time.

As an industry, we need to come to terms with the issues people have. Then we must come together to solve them.

In Ontario, where customers are angry about rising electricity rates, this requires a tangible demonstration of value.

For OPG, it means making sure we achieve on-time, on-budget success at Darlington and all of our projects.

And I believe this applies across the industry.

As an industry, we can't ignore how important the price issue has become to people.

So we have to show them that we know this and that we care.

Through meticulous and detailed planning, OPG intends to rigorously control our costs.

We're going to be very demanding of ourselves. And we're going to be equally demanding of our suppliers -- many of you are heretoday -- because we see you as partners in achieving this target.

We expect and encourage suppliers to provide us with goods and services that meet our standards for being competitively priced and efficiently delivered.

We are raising our expectations of ourselves and of the companies that support us. And we *all* must rise to these higher expectations. Because we're all in this together. This includes suppliers, operators, regulators, governments, and other operators.

The collaboration between Bruce Power and OPG is accelerating, producing results and we hope this collaboration will be contagious.

As goes one nuclear plant, so goes each of us.

We are judged as an industry.

So as an industry, what better time to get aligned and to coalesce around a common goal than right now -- when we are responsible for delivering Canada's two largest infrastructure projects.

It's our best opportunity to prove our incredible value to this country.

If we are successful we will drive the next generation of nuclear development in Canada

And that's largely because Ontario's refurbishments will drive the nuclear supply chain and operations for decades to come.

Nuclear suppliers will be able to market their products and services to a global nuclear industry that could reach over 500 reactors by 2030.

By working with nuclear operators, suppliers will demonstrate their ability to deliver domestically and internationally, creating innovation, more jobs and more economic opportunities.

Our domestic industry has already been successful in exporting Canadian technology around the world to countries including Argentina, South Korea, China, Romania and India.

But we know we have more to offer.

As a country, we can leverage our expertise in areas like nuclear refurbishment, reactor maintenance, project management, training, inspection, decommissioning and safe storage.

It's an incredible time to be working in this industry. But the question remains: can the nuclear industry align around a clear path forward to gain the support of Canadians and the Canadian government, and do what it takes to succeed?

Closing

So let's not lose sight of what will keep us moving forward on that path.

Safety and cost effectiveness – along with performance and value -- are absolute prerequisites for convincing people that our industry operates in their best interest.

We can't ask people to pay more for electricity if we can't deliver on time and control our own costs.

They want us to be cost-effective and responsible.

They want us to perform well.

They want openness, transparency and honesty.

Above all they want us to be an industry that sees things from their perspective.

They want an industry that can tell them specifically what we're doing to make and deliver safe, clean, reliable electricity – at a fair price – so that their lives can be better.

There's no better place to begin the task of meeting these expectations than right here at this conference.

Safe, on-time and on-budget, innovation, transparency, are keys to securing the continued growth and success of our industry.

It is up to us to ensure the continued contribution nuclear makes – on so many levels -- to Canada's success for generations to come.

Thanks for listening. Enjoy the rest of your time in Ottawa.

