Speaking Notes

CAMPUT 2018 Staying Ahead of the Curve: The Challenge of Accelerating Change

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- I have been invited to speak to you this morning on this conference's central theme, "accelerating change."
- I don't know about you, but to me, that sounds like the title of the soundtrack of everyday 21st-century life.
- Just about any global industry in the world today is grappling with unprecedented technology-driven disruption and upheaval.
- You all could be in agriculture, or the music business, or automotive, and I'd still be looking out a room full of uncertain, expectant faces, all looking to me for answers.
- I need to come clean with you: I don't have them!
- I've been in this game a long time, first as a lawyer, and later in politics as both a provincial premier and a big city mayor. That was the pre-Internet era, of course.
- We were utterly oblivious how technology could usher in such deep change. We could not possibly have imagined what the world would be like.
- We had FAX machines. And now, someone can tap out a short message on a glass screen and set events in motion that could topple a government, company, or institution.
- What I will try to do this morning is outline some of the challenges you face as I see them, and offer a couple of thoughts on where you might begin to find solutions.
- First, let me offer my sympathies. You are in a tough spot. The forces that have shaped Canada's energy landscape for generations are shifting and heaving underfoot.
- Though energy systems do not change overnight, they can change within a couple of decades, and we are clearly in the middle of a major transition.

- As regulators, you find yourself needing to reconcile emerging technologies and the imperative to address climate change with the need to control costs and ensure system reliability and resilience.
- You are accountable to policymakers, but your primary ultimate responsibility is to the ratepayer.
- New energy sources and technologies are rising, others are on the ropes, and Canadians are expecting greater transparency across the board on energy infrastructure decisions.
- This is not only an age of disruption, it is an age of accountability, and you as regulators are under the microscope.
- But first, what's going on out there? Let me flag just a few examples of the change and disruption out there:
    - In power generation, the increasingly favorable economics of renewables, the growth of embedded generation, the emergence of utility storage, and a vigorous climate agenda, all stand to fundamentally reconfigure markets.
    - The Ontario IESO recently logged more than 3,800 MW of embedded generation in this province—that's power being generated close to where it is needed, instead of in centralized plants.
    - The electricity system is transitioning from a one-way to a bidirectional model, where consumers sell power back to utilities and one another. Canada's next utility could look very different, it could be a big box retail chain, for example.
    - Meanwhile, in B.C. where I live, we have BC Hydro's Site C project, which I have called an economic, fiscal, environmental and aboriginal treaty-rights disaster.
    - It is one of three large hydro projects across the country and all are forecasting massive cost overruns.
    - And in the B.C. Lower Mainland, the pipeline battle rages on. Local and provincial government challenges to the Transmountain pipeline expansion project are taking the country to the brink of a constitutional crisis.
    - It's no wonder Premier Notley is so upset: The United States, which absorbs 99 percent of Canada's crude exports, is on the verge of energy self-sufficiency—again, thanks to technology innovations. The International Energy Agency expects that U.S. crude imports will fall to near negligible levels by 2040.
    - In other words, Canada's most important customer is poised to say no thanks to one of our lead products.
- That's just a taste of the turmoil you are being asked to navigate as you make decisions.

- For more than 10 years, I have been saying that we are about to enter a very messy decade and now today, we are on the cusp of it, and you, the regulators, are in the hot seat.
- You are wrestling with the dizzying pace of innovation while working to ensure energy distribution systems are secure—so that the system remains rock-solid reliable, and gigabytes worth of consumer data remains protected from prying eyes.
- There is also the imperative to meet climate objectives and ensure long-term resilience against climate impacts.
- And again, all the while, you must keep the ratepayer front and centre.
- You're being asked to do all this every day, but you operate within an extremely tight framework. Your hands are tied. You can only do what the policymakers give you permission to do.
- Canada's regulatory system is slow and conservative by design. It just isn't set up to deal with rapid change and the pressures coming to bear on the system.
- So what are the pressures coming to bear on your decision-making process? Let's take a moment to walk through the expectations of the various actors.

- **Consumers** want their energy system to just work.
- They want it to be reliable and safe, they want infrastructure out of sight and out of mind, and they want it to be cheap.
- Historically, they only care about energy when the lights go out, when the price goes up, or when a company tries to build infrastructure across the street.
- But Canadians are getting more sophisticated. They are demonstrating increasing awareness and understanding of the impacts and trade-offs of energy production, distribution, and use. They want to be more involved in decision-making, and they will increasingly expect to have access to and control over the data that utilities and energy companies keep about them.
- And a small, but significant, group are showing increasing interest in the idea of generating their own electricity.
- Developers are responding to this demand by installing local energy delivery systems. But guess what, they aren't really interested in owning and operating local energy systems. And regulated utilities aren't currently able to own and operate them.
- **Governments** are your masters, and they want to be in the drivers' seat. They want to be seen to be acting on climate, while also keeping the existing resource economy humming, and keeping energy costs down.
- Here in Ontario, sky-high electricity prices are fueling a populist backlash against carbon pricing and climate action.

- This federal government is keen to accelerate the low-carbon transition but it also recognizes that we will need to build the energy system of the future atop the resource economy of today.
- The federal government launched Generation Energy, one of the most ambitious citizen engagement projects ever, for a national dialogue on Canada's energy future. More than 380,000 Canadians participated, and the report is expected in the coming months.
- Federal and provincial governments have introduced carbon pricing and a variety of climate policies, but their long-term political viability remains to be seen.
- Meanwhile, local governments are increasingly building, owning and operating local energy delivery systems.
    - In Vancouver, the city's Southeast False Creek Neighbourhood Energy Utility recycles waste heat back into the community in a neighbourhood thermal grid.
    - Over on the prairies, Saskatoon Light & Power, a city-owned power utility, has proposed a one-megawatt solar power plant.
- QUEST, the organization I chair, is tracking all this local government activity, and recently identified more than 400 communities that have community energy and emissions plans, and they're putting those plans into action.
- Then there are the **utilities**. They just want to remain relevant.
- They recognize how the energy system is changing, and the change is leading to investment uncertainty. They need to maintain the system and upgrade it and build new delivery systems to serve new communities and neighbourhoods.
- They want to remain competitive as new technologies such as solar and electric vehicles stand to reshape marketplace dynamics.
- Some are getting out front. Look at Hydro Quebec. That crown utility is overwhelmingly hydro and wind, but and today has but a smattering of solar in the mix.
- But Hydro Quebec has been watching solar. It expects the price of rooftop solar electricity will reach parity with the price it charges for power around 2025.
- When that line is crossed, the company expects its customers will begin buying panels en masse. It wants to be ready.
- Last year, Hydro Quebec fitted out pair homes with solar panels, energy storage, demand-side control devices, and a vehicle-to-grid/vehicle-to-home device. It's figuring out how all those technologies work to see how it can play a more active role.
- Hydro Quebec is not resting on its laurels, it is showing leadership. All Canadian utilities should be following its lead.
- So where does this leave you, the regulator? You don't have competitive markets, and you can't create policies – although there is no reason why you shouldn't be advising on policy. But you are being asked to somehow square a circle at least three different ways:

    - You are expected to reconcile how emerging options, such as bargain-basement rooftop solar, could impact the business and regulatory models that keep existing infrastructure operating – notably long-lived infrastructure that in many instances risks becoming stranded.
    - You are expected to reconcile the challenge of controlling energy-cost increases, just as utilities need capital to renew, upgrade, and replace infrastructure to ensure it remains reliable and resilient.
    - And speaking of resilience, you are expected to mitigate a dog's breakfast worth of risks in an increasingly complex world.
    - Cybersecurity issues will crop up, privacy will be compromised, and infrastructure will fail in the face of severe weather events.
    - And like it or not, the buck stops with you, because no other public authority will have the capability to address all this.

- So, what do you have to work with? I don't have answers, but I can offer you some food for thought.

- First, play to your strengths. The regulatory system may have its limitations but it also has key advantages that you should keep in sight as you navigate this transition:
    - You have authority over the electric, gas, and sometimes thermal grids upon which the new supply and demand technologies will be built.
    - You work with long-term time horizons.
    - You have deep expertise in how these systems operate.
    - You have the authority to account for public interest costs through system benefits charges, or by directing utilities to invest in demand-side management.
    - You can pay strict attention to fairness.
    - You are close to consumers and know their habits and needs.
    - You operate on a foundation of expertise, evidence, and transparency, and your decisions are subject to due process.

- Second, don't be shy about asking for help. I would suggest regulators might benefit from pursuing expanded dialogue with a wide range of stakeholders.

- Some years ago, regulatory dialogues created a safe space to understand and advance critical and systemic issues. Those dialogues have fallen by the wayside, but it's probably time to bring them back.

- Give yourselves permission to bring in more voices to pursue systems thinking.

- Bring the policy makers into these discussions – they are every bit as nonplussed by the coming changes as everyone else, they have less access to data and expertise than you do and some of them are open to dialogue.

- And by the way, if you need a forum for that dialogue, then I expect my colleagues at QUEST would be happy to speak with you about that.

- And finally, in the past regulators focused on fuels and technologies. To surf this wave, if you aren't already, I would encourage you to keep one eye on the horizon, but shift your focus squarely to performance and outcomes.
- Embrace the idea that the future will look nothing like the past, and that energy systems are growing increasingly integrated and local, and that electricity will likely play a stronger role than it does today over sectors of the economy that have traditionally depended on fuels.
- You don't want to have your head in the weeds when something comes in fast out of left field and presents a whole new set of risks or opportunities.
- In closing, remember what I said a few minutes ago about the FAX machine and the impossibility of imagining the future? Well, today's smartphone is tomorrow's FAX machine. I predict the pace of change is only going to accelerate. Consider the potential of artificial intelligence, which big data companies are already putting to work, and which could truly bend the arc of history. What are the energy system implications of the Internet of Things, which could assign an identifiable address to every device in our world?
- We don't know where we will end up. But I know that you, the regulators, have a critical role to play. And while you have your work cut out for you, I am confident you will rise to these challenges. I sleep better at night knowing you have your hand on the wheel.
- It's been an honour to speak with you this morning. Thank you.