

Notes for Remarks

Terry Young at CanSIA Solar Canada

Thanks very much for having me here today.

IESO realignment and future of innovation

The IESO has recently gone through some organizational realignment, and I have taken on a few new responsibilities as Vice President of Policy, Engagement and Innovation.

What this new role means to me is working with stakeholders and government to help develop and implement effective energy policies.

But it also means positioning the IESO to enable innovation in our sector.

The theme of innovation is one the IESO and the solar industry have been coming together on for many years in the interest of advancing Ontario's electricity sector – and it's an area in which I'm excited to continue to work with you.

I want to take some time this morning to reflect back on some of the accomplishments of the solar industry, check in on where we're at now and look at what's coming ahead.

Look back at the successes of solar in Ontario

It wasn't that long ago, that we used to say that if Alexander Graham Bell were to come back today, he wouldn't recognize the telecommunications industry that we have today but that if Thomas Edison were to come back, he could pick up right where he left off, demonstrating how little electricity had changed when compared to telecommunications

However now, whenever we talk about the electricity sector, we seem to always be talking about constant change and transformation.

Over the past decade, both the supply and the demand aspects of electricity have changed significantly, and they predict that the next decade will be even more impactful in terms of the change we expect to see.

I think the solar industry has in many ways been the poster child for change in Ontario's electricity sector.

Solar has often challenged the sector's status quo.

Solar has emerged as a significant contributor to meeting electricity needs. When I think back to even as recently as 15 years ago, we truly have gone through some major transformations when it comes to solar and other renewable energy sources.

In 2002, we mostly relied on large generating stations that were at the end of very long transmission lines that supplied power into the load centres. Wind, solar, and other non-renewable hydro sources of power were not very much in the conversation when it came to talking about meeting demand.

Recent worldwide data from 2016 shows that non-hydro renewables and distributed energy resources (DERs) remain the fastest-growing segments of the electricity sector. In 2016, solar capacity grew by 33 percent.

Solar's growth continues to be fueled by rising efficiency ratings of solar modules and plummeting costs.

Today, Ontario is a global leader in renewables integration.

We have ample energy supply that is robust, clean and diverse.

Renewable energy represents nearly 40 percent of Ontario's installed capacity and generates approximately one-third of the electricity produced in the province.

About 90 percent is produced by emissions-free resources.

Today, we have a smarter grid that can support new and innovative technologies.

And the province's electricity customers have more choice than ever, in how they manage their electricity use.

Many of these advancements are due to the efforts of people in this room.

Through the years, your advocacy and participation in a number of stakeholder engagement initiatives have helped shape policy and decision-making in Ontario's electricity sector – and I know it will continue to do so.

Since the launch of the FIT program in 2009, over 3,500 solar contracts have been awarded, representing 1,700 MW of capacity.

We recently concluded the FIT 5 procurement and awarded 390 new FIT contracts, representing 150 MW. Solar PV projects accounted for about 97 per cent of those contracts.

And over 80 percent of those contracts have Indigenous, community, or municipal and public sector entity participation.

We've also recently ended the procurement phase for MicroFIT. Since that program began, more than 26,000 contracts have been awarded to solar projects on the distribution system, a total of 230 MW. That's a lot of new participants in Ontario's clean energy economy.

So even while Ontario's solar capacity growth slowed somewhat in 2016 as Ontario started transitioning from FIT programs to net metering, solar capacity still grew at 7 percent last year.

Where we are now

So today we have almost 400 MW of solar on the transmission side and about 2,000 MW of solar embedded within the province's distribution networks. Again, when you think about where we were 15 years ago, you realize what a major achievement this is for solar.

We didn't get here without challenges.

As you may recall, the IESO was here last year, talking about the increased penetration of solar, especially on distribution networks, and the impact that was having on reliable operations of the provincial power grid.

The contributions from solar have helped us reduce the demand peaks on summer days, reducing the need to call on "peaker plants" and shift the peaks to later in the day. But it's also increased our need for flexible generation and regulation services to balance the grid on a second-to-second basis, when solar output changes suddenly.

Even with the best forecast tools in the business, the contributions of the large amounts of solar installed on distribution networks continues to be a challenge for operators to manage in real-time.

As you can see on this graph, the embedded generation, of which we have little visibility, has significant impact on the Ontario demand we observe in the control room.

Here are three very similar days in terms of Ontario demand, until sun exposure changes.

Of course, the effects of embedded generation were even more pronounced on August 21 this year, when Ontario experienced its first solar eclipse since significant amounts of solar were added to the system.

On that day, we experienced a combined embedded and grid-connected solar output reduction of over 1,200 MW, with most of that reduction coming from generation installed at the distribution level.

The eclipse really highlighted the complexity of forecasting for these events. In this case, our forecasts and planning allowed us to maintain reliability throughout the day.

Approximately 80% of solar capacity in Ontario is distribution-connected and not participating directly in the wholesale market.

Like all other system operators across North America, the IESO is examining various means of expanding participation in wholesale markets and obtaining greater visibility and situational awareness data from solar.

Integrating more flexibility into operations to manage this variability is something we continue to work on today.

Just last week we announced the successful proponents of an RFP for an additional 50 MW of incremental regulation capacity.

Two energy storage providers, Hecate Power and Saturn Power will provide this important grid-balancing function – traditionally provided by generators.

We're exploring the expansion of Operating Reserve, or stand-by power or demand reduction that can be called upon with short notice to deal with unexpected mismatch between generation and load.

And as we forge ahead on the Market Renewal Project, we're examining the need to schedule resources capable of responding within a shorter timeframe in order to manage forecast uncertainty in the real-time energy market.

Where we're headed

A few weeks ago, the government released the 2017 Long-Term Energy Plan. The IESO has been directed to implement nine initiatives from the plan.

Given our strong supply situation, there's an increased focus on moving towards competitive capacity procurement models, price bid-down tools and other efficiencies, in order to manage electricity system costs.

Bringing more competition and efficiencies into Ontario electricity market is the main focus of the Market Renewal Project.

Through market renewal, we are working with stakeholders to both address the inefficiencies that have crept into our market over the past 15 years and to lay a foundation that will address the needs of tomorrow.

It's a comprehensive program that shows potential for up to \$5.2 billion in cost savings over a ten year period.

This new market design will help us more cost effectively schedule and dispatch resources to meet demand as it changes from minute to minute and hour to hour.

Annual incremental capacity auctions will improve the way Ontario acquires supply resources providing more flexibility to better address changing system needs.

As the province moves away from technology-specific procurements and long-term contracts, we're looking at how we can best integrate non-emitting resources like wind and solar into the market.

How can we value the attributes of solar, in a competitive market?

What mechanisms can be built into the market design to compensate non-emitting resources?

These are some of the questions we're exploring through the Market Renewal Program's Non-Emitting Resources sub-committee.

Providing customers with greater choice is another key theme of the 2017 LTEP.

New pricing plan options, net metering, energy storage and electrification of transportation are expected to give customers more control and choice over how they generate, use and pay for energy.

This is another initiative the IESO will undertake as we develop a program to support a number of innovative renewable distributed generation demonstration projects, strategically located and paired with other distributed energy resources and smart-grid technologies as well as virtual net-metering demonstration projects.

Finally, the LTEP reinforces the government's commitment to combat climate change.

This is something the IESO supports in many ways:

Through the Market Renewal Program, as we look for ways to break down barriers for and value the contributions of non-emitting resources.

Through our various conservation programs and offerings – Seeing some terrific results. Less than halfway through the framework, most LDCs are poised to hit their mid-term target.

And most recently, through the work that we're doing to support the Green Ontario Fund – or GreenON.

Continuing the dialogue

This continues to be an exciting time of change and transformation for the electricity sector. We may never actually outgrow those themes!

The solar industry and the IESO have a strong record of coming together to tackle issues to advance Ontario's electricity sector and I know we will continue to work as partners in that regard.

For those of you in the room who are looking to get involved, there's certainly no lack of opportunity right now.

We want to hear from you on the Market Renewal Program. I encourage you to provide your feedback to the Non-Emitting Resource subcommittee.

There will be opportunities to provide your perspective on the IESO's LTEP Implementation Plan, especially concerning the renewable distributed generation demonstration projects, early in 2018.

We're even hosting a pre-consultation session tomorrow, at this conference for GreenON, as they look at future offerings for the solar community

Thank you for being active participants in many of our stakeholder engagements through the years, I know this group in particular has been lively participants in the discussions that have shaped the industry we work in today.

I want to acknowledge too, that this level of engagement requires significant time and commitment from many of you in the room, and I thank you for your ongoing dedication and open communication with us.

Thanks for having me here today, and I look forward to our continued collaboration.