

IESO Stakeholder Advisory Committee
Meeting Notes
October 1, 2015
St. Andrew's Club & Conference Centre, Toronto

Advisory Committee Members:

Mr. Brian Bentz – Chair (representing Distributors and Transmitters)
Ms. Ersilia Serafini – Vice Chair (representing Ontario Communities)
Mr. Steve Baker (representing Related Businesses/Services)
Mr. John Beaucage (representing Ontario Communities)
Ms. Darlene Bradley (representing Distributors and Transmitters)
Mr. Jack Burkom (representing Related Businesses/Services)
Mr. David Butters (representing Generators)
Mr. Jared Donald (representing Generators)
Ms. Valerie Helbronner (representing Generators)
Mr. Geoff Lupton (representing Ontario Communities)
Mr. Rob Mace (representing Distributors and Transmitters) (by teleconference)
Mr. Mark Schembri (representing Consumers)
Mr. Adam White (representing Consumers)
Mr. Todd Wilcox (representing Distributors and Transmitters) (by teleconference)
Mr. Terry Young (representing IESO)

Absent:

Ms. Julie Girvan (representing Consumers)
Mr. James Scongack (representing Generators)
Mr. Paul Shervill (representing Related Businesses/Services)

Presenters:

Ms. Kimberly Marshall
Ms. Alexandra Campbell
Ms. Julia McNally
Mr. David Robitaille
Mr. John Godfrey

IESO Board Members:

Mr. Timothy O'Neill - Chair
Mr. Bruce Campbell
Ms. Susanna Han
Mr. Ronald Jamieson
Ms. Deborah Whale
Ms. Carole Workman

Agenda Item No 1: Welcome – Brian Bentz

Mr. Bentz welcomed all to the Stakeholder Advisory Committee (SAC) meeting and the last public meeting of the year. He noted that 65 participants were in attendance in person in addition to 20 on the phone. He welcomed the IESO Board members in attendance and introduced the five IESO presenters and the guest speaker, John Godfrey, a special advisor on climate change and chair of the Climate Action Group, Ontario Ministry of Environment and Climate Change.

Agenda Item No 2: IESO Business Update – Terry Young

Mr. Young provided highlights on active stakeholder engagement activities.

2016–18 Business Plan

Ms. Marshall presented the business plan at the August 13, 2015, SAC meeting, and it has since been filed with the Ministry of Energy. Once approved by the Minister, the business plan will be submitted to the Ontario Energy Board (OEB) in early November.

IESO Planning

A lot of good feedback was received on the planning presentation by Andrew Pietrewicz at the August 13, 2015 SAC meeting. The IESO is in talks with the Ministry of Energy, and the IESO intends to bring updates back to the SAC and invite input.

Conservation Update

The IESO has conditionally approved 39 conservation and demand management plans put forward by local distribution companies (LDCs). Four plans are awaiting approval by the IESO.

Regional Planning Update

The first York local advisory committee meeting took place September 30. It was a good first meeting that saw active participation from PowerStream and Newmarket, which are heavily involved in the process.

Ontario/Quebec Capacity Sharing Agreement

The IESO is working on market manuals for a capacity-sharing agreement. They should be available in early November for stakeholder review and comment. Meanwhile, questions can be submitted to stakeholder.engagement@ieso.ca.

Stakeholder Engagement Update

With respect to the Real-Time Generation Cost Guarantee Program review, the IESO is about to launch a formal stakeholder engagement initiative. Details will be in the bulletin posted October 1.

Market Development

JoAnne Butler and her team are developing a plan to take a variety of market development initiatives forward in a cohesive manner. She will be working with stakeholders this fall toward a formal engagement process.

Comments

Mr. Butters asked where the Technical Panel review currently stands. Mr. Young said there are some recommendations with respect to aligning it with the stakeholder engagement process. New terms of reference will be developed over the next six to eight weeks which will be provided to the SAC and the Technical Panel for comments.

Ms. Helbronner said it would be helpful to understand the distinction between an information item and an input item. Especially regarding the business plan, it would be good to know how the SAC input was considered and how it informed the feedback process. This is not a tick-the-box process. It is a back-and-forth discussion, but it seems there is a sense that some information items are pro forma. Mr. Young replied that the IESO intends to come back and outline how the input received is being addressed. The business plan is an ongoing process and will be shared and discussed later on.

Mr. Schembri asked how consistent the 39 approved conservation plans are across the LDCs. He asked whether each LDC is coming up with a unique plan. Mr. Young said there is a general level of consistency that still allows for individuality. Some LDCs are relying more on provincially approved programs while others are looking more at regional and local programs.

Mr. Schembri asked what the strategy would be if an LDC does not submit a plan. Mr. Young replied that all LDCs did submit their plans by the May 1 deadline and that all but four plans are now approved.

Regarding the involvement of other parties, Mr. Wilcox asked whether Mr. Young was referring to conservation programs in general or only the pay-for-performance program. Mr. Young said he was speaking specifically to the pay-for-performance program.

Mr. Butters noted that Mr. Young did not touch on the NUG Framework Assessment Report during his update, though a document was included in a handout. Mr. Butters said generators were deeply disappointed in the report, particularly in the number of

unquantified assertions made which goes back to the issue of transparency. A response will be made to the report in another forum.

Mr. Bentz invited members to raise any other matters they may wish to discuss.

Mr. Donald wished to add another agenda item regarding more time being needed for process and results relating to the most recent pricing review for the Feed-in Tariff (FIT) Program and how it informs other activities. Mr. Bentz added that it is important to ensure that stakeholders understand the logic behind the decisions and how they are made and the speed with which they are made. This relates to the recurring theme of transparency, in this case transparency around the buildup of the FIT price. There appears to have been a gap between expectations and what was actually released. Mr. Donald added that last-minute changes are considered irresponsible by the private sector. As an example, with respect to decisions that were made within the NUG Framework, millions of investment dollars could have been saved with earlier and better communication. Mr. Young noted these concerns and said he would respond back to the SAC.

Mr. Burkom echoed the transparency concerns and asked that if all of the assumptions included in the NUG Framework Assessment Report are accurate about what the IESO thinks about the evaluation of those resources, then why doesn't the same logic apply to other, larger capital decisions. Second, he praised the IESO for its work on the Ontario-Quebec capacity swap because it will give the market a chance to understand the changing rules in the market.

Agenda Item No 3: Corporate Performance Measures – Kimberly Marshall

Ms. Marshall (VP, Corporate Services & Chief Financial Officer) introduced colleagues JoAnne Butler (VP, Market & Resource Development), Michael Lyle (VP, Planning, Law and Aboriginal Relations), Doug Thomas (VP, Information Technology Services & Chief Information Officer), and Kim Warren (VP & Chief Operating Officer).

Included in the discussion of the business plan at the August SAC meeting, there was much discussion of the nature of metrics and how they will be used and measured.

Ms. Marshall outlined eight performance targets:

- NERC compliance: Compliance with the North American Electric Reliability Corporation is an area of primary importance. There is a detailed process, not just for the IESO but for all U.S. entities and Alberta, to define exactly what must be complied with.
- Conservation: The executive team wants to ensure that the point is not only achieving conservation but also considering how conservation is achieved.

- Renewable supply: Again, there was much discussion around not just achieving megawatts but also how megawatts are achieved. It is important to have a good procurement process.
- Demand response auction: This is a key item for the end of this year and for next year and is a significant component of IT and settlement. The significant issue is not only demand response activity but also what determines success, such as participation or price. The IESO wants to add details to support the process.
- Regional plans: The IESO has seriously considered the comment made about being activity-based or being based on end results. Both are desirable.
- Stakeholder engagement: Much of the August discussion focused on how success is measured. There will be more discussion on this, including how it relates to Aboriginal and regional planning.
- Priority projects: IT is a big component of what the IESO does. Success in both capital planning and projects is important.
- Business plan: There has been a focus on meeting synergy targets, and this will require continued monitoring and reporting to the ministry.

Comments

Mr. White asked whether the targets pertain only to 2016 or go beyond. Ms. Marshall replied that 2016 is the focus. Mr. White suggested the targets be more forward looking. For the demand-response metric, for example, the proposal does not speak to the significant potential for growth and investment. Ms. Marshall replied that demand response is seen as an important building block in moving toward more capacity-based markets. While the language is somewhat focused, it is trying to say, "We need to do this in order to move forward." Mr. Campbell added that although the wording may not be strong, the intent is to be forward looking.

Referring to regional and provincial planning targets, Ms. Helbronner said more detail is needed about the IESO tracking progress on six priority bulk transmission projects, especially considering the recent attention given to remote communities. These should be tracked in a measured way. Mr. Lyle replied that spreadsheets have been developed to detail each regional plan, and tracking is being done on a granular level. He acknowledged that bringing remote communities to the forefront is a good suggestion. Ms. Helbronner said that in the interest of transparency it would be helpful to share such details in a public forum.

Mr. Donald said that in the last two meetings comments have been made that a megawatt contracted is not a megawatt built. He asked how a 242 megawatt procurement target for renewable projects can be measured when zero is a potential achieved target. Ms. Butler said there is an absolute expectation of going beyond zero megawatts procured under FIT 4.0. Trends in the buildup of capacity in the renewable sector are being seen, and targets will likely be met. Mr. Donald countered that the sector has not come close to achieving 50 megawatts under the microFIT program in recent years. Ms. Butler replied that for MicroFIT, the IESO is looking at other options for residential programs and potential movement toward net metering. She acknowledged that past targets have not been met. Mr. Donald said the industry is concerned about how the procurement of renewable projects will be built out. If the view is that procurement will occur up to a point, with no concern about whether or not the target is met, that represents a different strategy from the past. Business parameters must be defined, and transparency is key. Setting minimum targets for achievement would be helpful.

Ms. Serafini said in comparing these performance targets with those in the private sector, these performance measures seem opaque and lacking in ambition by private sector standards, and asked where the IESO wants to exceed expectations. Mr. Young said the goal is to do better every year. The challenge is to establish baselines that can be addressed in the 2017 corporate performance measures.

Mr. Mace said he senses slippage in the objectives of the regional planning process. In addition to follow-up on these, he would like to see the process being completed as required. Mr. Lyle replied that the IESO is tracking to timelines in accordance with the OEB licence and code requirements and is currently on track and offered to add this level of detail to the measures.

Ms. Helbronner noted that at least 80% of the 10 priority capital projects are either complete or on time and on budget. She asked why the 80% target was chosen and on what grounds these projects are considered priority. Mr. Thomas replied that the 10 projects were chosen according to their impacts on the market or were considered significant by the IESO. He said the 80% figure is considered to be a reasonably ambitious target. Ms. Helbronner said it would be helpful to understand why some projects are not included. Ms. Marshall said there have been discussions on how to report back to the SAC about this, and she acknowledged that a greater level of detail is desired by the Committee.

Agenda Item No 4: IESO Stakeholder Engagement Framework – Alexandra Campbell

Ms. Campbell said a framework for stakeholder engagement has been proposed with the goal of having an ongoing feedback loop. She reviewed the feedback gained in 2015, starting with extensive surveys completed by the former IESO and OPA SACs in

January. Second, she provided an overview of the principles the IESO is proposing and the process.

The IESO has heard that stakeholders need more time to review and consult with their peers in order to provide feedback, and this must be an area of ongoing improvement.

Stakeholders have also asked that the IESO be very clear about its process prior to stakeholder engagement and allow stakeholders to comment on the process.

Revising the stakeholder engagement process includes an acknowledgement that this is a new organization with a bigger mandate. Looking at both current engagement processes and future ones, including everything from regional planning to market rule changes, has been helpful.

Seven principles for stakeholder engagement have been proposed, and Ms. Campbell spoke to some of these:

- **Inclusive and Adequate Representation of all Stakeholders:** Ms. Campbell said some stakeholders are at the IESO doorstep every day, and an effort will be made to seek out those who are not. This will be done by inviting stakeholder engagement through newspaper advertising to ensure wide representation at local advisory committee meetings, for example.
- **Building Trust:** Building trust is also about respect and about behaviours throughout the process. Ms. Campbell commented that there is evidently a great amount of respect among those at the table, considering their diverse points of view. Ms. Campbell commented that there is often a great amount of respect among those at the table, particularly considering their diverse points of view.

Two areas where the IESO has been told there is room for improvement are the feedback loop for providing the rationale for decisions, and providing enough time for stakeholder review.

There are circumstances where limited engagement is called for, and these will be made transparent. For example, in markets and contract groups, only qualified applicants for procurement are invited to comment on the request for proposals. Also, membership in working groups like the Demand Response Working Group was limited by necessity. The same principles will apply to both open and limited engagements.

There is process continuum, with stakeholder processes for policy initiatives and non-policy initiatives.

Processes for policy initiatives are brought in at the launch. Stakeholder engagement then may lead to a role for the Technical Panel, a decision by the Board, and then a return to the SAC with a final report. An example of this is the Foundation Project; the IESO reached out to the SAC initially, and its feedback helped to reframe stakeholder engagement. Today it is being presented.

Non-policy initiatives may at times end up as information items to the SAC, as they may not be things the SAC wants to be involved in.

The first survey will establish a baseline for future comparison and annual surveys of stakeholders who have participated in an initiative, allowing for continuous improvement.

Comments

Ms. Serafini said the principles are solid and provide a strong foundation, and she recognized the commitment by senior management to uphold them. She asked how the principles are to be communicated and implemented throughout the organization, because that is where things tend to fall down. Ms. Campbell replied that efforts are made to communicate the principles often. For example, Mr. Campbell addresses them in his employee meetings. Also, when changes are coming, the Stakeholder and Public Affairs group gets involved in sharing views on the impacts on customers and the market and attempts to work with all business units to ensure they are following the process. Within an organization of nearly 700 people, understanding and communication are key.

Mr. Burkom asked what activities and files the process is being applied to, and whether it applies to smaller market rule changes at the margins. He said he encourages senior management to apply the process not just with smaller files but with larger ones as well. With respect to measurement criteria, he asked how the process is integrated. For example, the renewable industry is unhappy with the procurement process. He said applying the principles and processes in planning is also important. Traditionally the province has made black box decisions behind closed doors and foisted the plan on the market, unchanged. Industry needs to be involved earlier and have influence.

Ms. Campbell acknowledged that getting the right issues to the right places is a challenge; the IESO relies on the input from stakeholders to get it right. Efforts are made to avoid taking issues to the SAC that do not apply to it. Surveys are intended to let the IESO know whether it is doing a good job and whether or not principles and processes are being followed.

Mr. Butters commended the IESO for listening to stakeholders and developing a good engagement process. He suggested that the pre-engagement phase is where a lot of engagements can be made or broken. For example, there was some discussion during the in camera session regarding floor price review or gas-electric coordination

enhancements and how these engagements can sometimes spring fully formed, without discussion around objective or rationale. He encouraged more pre-engagement. For example, the IESO could present an issue it thinks should be dealt with, ask whether stakeholders agree, and then discuss how the process should unfold.

Ms. Helbronner emphasized the importance of a feedback loop in achieving objectives. Without a feedback loop, stakeholders run the risk of not having enough opportunity for dialogue around ideas. She commented on the IESO principle of neutral facilitation, saying that it is idealistic and possibly disingenuous. The IESO is not a neutral party and should provide its views. She also suggested adding measurement to the list of principles so that it does not get lost.

Mr. Donald said the process is on the right path, as there is more stakeholder engagement now than in the past. He commented on the IESO principle of building trust. While there may not always be agreement on outcomes, the process must be fair and transparent. People do not want to be blindsided. To build trust with the private sector, consistent and early communication along with forward visibility are required including a decision metrics.

Mr. White said he does not understand the IESO principle called “assess issues for change.” The IESO is already playing a role in bringing new ideas, facilitating new technologies, and accommodating new businesses and business structure. He agreed with Ms. Serafini’s point about the importance of being ambitious. He mentioned that the word “early” does not appear in the principles. For example, during the last three or four SAC meetings he has asked when there will be a discussion about the long-term energy plan, because it takes a while to produce one. Without early involvement, it is possible to miss out on investments. Finally, the planning process will drive the cost of power in Ontario, which is what consumers care about most. He said now that this process is within the organization, the IESO cannot be ambivalent about the cost of power. The IESO is accountable for cost, and it is time to start talking about it.

Mr. Baker said it is important to be clear about decision criteria when starting an engagement. In response to Mr. White’s point, he said keep the industry up to date on what is changing. To use the NUG process as an example, if the operational plan has been adjusted and the nuclear refurbishment has been pushed out, then the decision has already been made and people need to know this up front.

Mr. Bentz said there appears to be one process at the front end and one at the back end. Policy and non-policy decisions have variable impacts. He suggested the IESO focus on high-impact decisions when engaging stakeholders, and the earlier the better. The principles are good, but the devil is in the details, so expectations and priorities must be set early on.

Mr. Schembri said it is impressive that many diverse stakeholders have had good feedback about the process to date, but with the expanded role of the IESO, the process is about to become much more difficult.

Comments from the Floor

A stakeholder asked whether the IESO has benchmarked its stakeholder processes against other independent electricity system operators. One opportunity for improvement is to allow for remote participation via WebEx™ in combination with dial-in services. Participants are provided with a security code to get in. He suggested forming working groups or task forces for specific issues to get broader participation.

A stakeholder said that at the end of the day the rubber hits the road with the market manual. He noted there has been feedback with the Technical Panel review on voting on market rules. He asked whether the market manual could be used as a way of measuring how effective the market rules are based on whether stakeholders are in agreement. He asked whether the IESO receives comment from stakeholders on the posting of the market manual, as well as how effective the market rules are.

Ms. Campbell replied that there is little feedback on the market manuals however, there is room to improve the market manual process. .

Agenda Item No 5: Foundation Working Group – Julia McNally

Mr. Bentz said the Foundation Working Group undertook an initiative to develop a framework to enhance the use and value of information currently stored in the provincial Meter Data Management and Repository (MDM/R). The group has had broad market participation and representation, and recommendations were developed for input from the SAC.

Ms. McNally said the working group was established in spring 2015 with a focus on, first, what initial data elements need to be added to the MDM/R to enhance its analysis value, and, second, what would be a framework for public access to the data. The group had diverse representation from utilities, government, and the private sector. Five meetings were held within six months; two were open to the public.

Three recommendations have been made, with a target to deliver them to the IESO by the end of October. However, before moving to implementation it will be important to look at the requirements set out in Ontario's *Freedom of Information and Protection of Privacy Act*. Throughout the process, engagement with the Information and Privacy Commissioner took place that identified issues to be addressed. As well, costing of different scenarios for access will need to be examined to determine the best approach. Finally, the scope of services will have to be determined. For example, access to electricity data has value, but the data becomes more valuable when matched to other

data sets. If there is to be data matching, the question will arise as to who should do it, and how.

Ms. McNally provided an overview of the three recommendations:

- 1) Additional data elements: The long list of data elements to potentially add includes impact, Teranet, and demographics. To balance the need for analysis with cost, one must determine the key elements that would allow MDM/R data to be matched without posing a heavy burden on the utilities. It was agreed that address information is a vital link, along with move-in and move-out occurrences. Where there is no address information, GPS is a valuable tool.
- 2) Access: There was consensus that different types of data are valuable for different purposes, and having access to de-identified data is sufficient in many cases. When matched with personal information, electricity consumption data is considered personal under the law, so it must be de-identified. Downloadable reports, servicing of customer requests, or access via a portal were discussed with the goal of determining cost versus need. Municipalities have expressed interest in accessing personal data for the purpose of community energy planning. They have done mapping at an aggregated level but have been unable to get accurate information due to inaccurate data sets. Service providers have also expressed interest in accessing personal information to support conservation efforts. In view of the complexities, the working group agreed to focus on giving government—municipal, provincial, and federal—access to personal information. However, this was not a consensus recommendation from the working group as there remains concern about releasing personal information. In particular, utilities expressed the concern that ultimately the utilities will be the ones responsible for potential breaches of confidentiality.
- 3) Meeting a Robust De-identification Framework: Experts were brought in to talk about how to do de-identification. This is a robust field, especially in the health care sector. The working group recognizes that if de-identified data is to be shared, security breaches must be minimized while maintaining analysis value.

Comments

Mr. Bentz asked if accountability will ultimately rest with the LDCs, is there a process for breach of data or contractual breach. Ms. McNally said the group did not reach that level of detail, though it is a vital question to answer.

If the goal is to enhance the value of consumption data by adding personal information, then what is the value of the data once it has been de-identified, Mr. Baker asked.

Ms. McNally replied that the goal of de-identification is to sort data by city, county, or building type, for example, which is not possible at this time. For instance, bringing in address information would make it possible to cluster all single-family homes in an area of Toronto. It is only when an individual person can be identified that there is a concern.

Mr. Lupton asked whether any particular market segment is concerned about sharing data. For example, is there a concern about competitive corporate data? Ms. McNally replied that these concerns will likely be raised among commercial customers; however, the focus of the working group was on residential customers, which primarily make up the MDM/R. Mr. Lupton said a process to get early customer sign-off would be useful.

Mr. Schembri asked whether the initiative was to benchmark residential intensity. Ms. McNally said the goal was to enhance the MDM/R. Mr. Schembri asked whether this would be better done at the LDC level. Ms. McNally replied that Ontarians have invested in the MDM/R, and the question is whether there is a way to enhance its value. For example, a municipality with more than one utility would have one place to get the data, and service providers working with LDCs see benefit in being able to access a one-stop shop.

Following up on Mr. Lupton's point, Mr. White said Statistics Canada has standards to aggregate data to protect commercially-sensitive data in that if there is only one company within a category it is not published. This should be looked at as currently there are some companies in some locales where it would be easy to identify specific information. This already occurs in some of the data the IESO publishes now (ie aggregate AQEW data). While the Foundation Project is great for residential customers, there is however a need for this information for the general-service over 50 kW customers – this is the low hanging fruit for demand response and peak energy management. He said he would like to understand the plan to include the domestic supply chain customers in the data repository. Mr. Thomas replied that the Market Data Access Platform is looking to bring in larger service customers and potentially gas and water information. These are two different initiatives to get extra value out of the data that are currently available.

Mr. Beaucage said rural Ontarians are largely suspicious of time-of-use metering on their houses. He questioned whether there is a direct connection between the data collected for time-of-use and conservation measures, and whether there is a way to turn that back in a feedback loop to the consumers to show how much energy can be saved. Ms. McNally agreed that conservation would be one of the beneficiaries of the Foundation Project.

Ms. Bradley asked whether the cost to do the analysis has been discussed. Ms. McNally replied that a cost analysis has not been done but will need to be done before moving to implementation.

Mr. Bentz said he looks forward to an update soon, as the project moves from principles to practice.

Agenda Item No 6: Operations Update – David Robitaille

Mr. Robitaille provided a synopsis of the recently published 18-month outlook with respect to how planning is done and for reacting to certain conditions under the prevailing operating conditions.

The reserve above requirement ([Figure 4.2 of 18-Month Outlook](#)) takes into consideration outages, the Quebec-Ontario capacity swap, and demand under normal conditions. This is how the system is planned. As well, an extreme peak is forecasted. During the second week of September, extreme peak demands were reached during abnormally high temperatures.

The 18-month outlook, with its built-in assumptions, is crystallized into smaller time frames of a day ahead or a week ahead. The day-ahead scheduling includes unit and intertie commitments. The pre-dispatch shows hourly units and intertie commitments. Real-time schedules resources on a five-minute basis and absorbs changes in those periods. Operating reserve is carried to react to unforeseen events.

In the last week of July 2015 there was a mid-week peak of 22,500 megawatts. Peak saver was initiated. In preparing for such events, actions can be taken outside of normal mechanisms. The Seasonal Readiness Program provides reasonable assurance that existing assets will operate when called upon. All of this is outlined in the market manual.

A windstorm that rolled through Ontario on August 2, 2015, caused wind cutouts that had to be responded to in real time to rebalance the system. In follow-up with market participants it was learned that some wind farms went to zero output because the wind had died down to zero within their footprint, while other wind farms were reduced due to strong wind.

The IESO continuously coordinates with NERC in preparation for large outages and unforeseen circumstances. For the third time we are embarking on a North American exercise called GridEx, which simulates a catastrophe and a collective response. This exercise is conducted every two years with NERC. As well, the group continues to work with market participants and LDCs to understand their needs.

Comments:

Mr. Baker asked what is done when the reserve above requirement capacity goes negative. Mr. Robitaille said the reserve capacity does not take into consideration import transactions, so corrections can be made in real time. Mr. Baker asked what assumptions are made about wind and solar during planning. Mr. Robitaille replied that outside of 14 days in advance of real time, a seasonal capacity factor is utilized. It is shorter in the summer, for example. Mr. Warren said for wind it is 13% in summer and 33% in winter.

For solar it is 40% in summer and zero in winter. Every resource has a discounted value, not just wind and solar. Mr. Robitaille noted that as things progress into real time, a service provider provides wind forecasts.

Mr. Godfrey asked whether the historic data by which extreme weather events are predicted have changed over time, such as identifying a new normal for wind, for example. Mr. Robitaille said the big component is how demand will change in the future. About 30 to 35 years of historic demand information is available to help pick out extremes.

Mr. Schembri asked how the wind fleet performed during the July heat wave, and whether it was 13% or below. Mr. Robitaille said the wind fleet was 200 to 400 megawatts that week at a penetration level of just over 3,000. The big issues are not performance but how well the wind fleet can be forecast and to be prepared.

Comments from the Floor

A stakeholder asked whether it is possible to do an average forecast of the wind band throughout the year and sensitivity to temperature. For example, at an average temperature of 30 degrees Celcius, July 25 is statistically the hottest day of the year. The expected average cost of power would be 8 cents. He asked whether the IESO can share the effect on price if the temperature rises to 40 degrees. Mr. Robitaille replied that putting these data together would not be possible.

Speaker: What the Emerging Climate Change Agenda Means for Ontario in General and Specifically in the Electricity Sector, John Godfrey, PhD

Mr. Godfrey began by saying that seven years ago, the McKinsey Global Institute undertook a study of climate change. In it the keys to solving climate change were broken down into three components: efficiency, electricity, and trees. Today, he was going to focus on electricity.

History is a study of change through time. With climate change, the world is experiencing a dynamic situation. Our reaction to it is also changing in time. Climate change dwarfs all other issues because an appropriate climate is a precondition for life itself. The only thing like it is the development of nuclear weapons, which also has the capacity to destroy human life.

The response to climate change is not crisis-driven. People often talk about how climate change will affect their grandchildren, when actually they should be talking about how it will affect their children. It begs the question: When faced with a crisis, how long does it take before we get it? Mr. Godfrey likens the situation to the Churchill moment that marked England's recognition that it was time to enter the Second World War.

An element of fear is required to get people going, but being paralyzed by fear is not good either. Collectively, we must find the zone of action and act upon it quickly. There has been no action since Canada signed the Kyoto Accord 10 years ago. However, we may now have reached our Churchill moment: the Pope talked about climate change in late September in Washington, the presidents of China and the United States have been talking about it, and the major world leaders are planning to attend the upcoming summit in Paris.

From 2007 to 2009 Ontario was involved in conversations with Quebec and California to discuss a cap-and-trade system. Legislation has since been created in Ontario in anticipation of this system, which will be modeled on the Quebec and California systems. One of the challenges will be what to do with energy-intensive trade-exposed sectors such as cement, steel, and pulp and paper. Rules about giving allowances to those sectors to allow them to transition without leaking capacity will be examined. The auction processes for emissions will be quarterly, initially, for Ontario itself and then joining in with the others. The start date will be January 1, 2017.

In addition, a carbon registry was established in 2009 to cover all emitters in Ontario that produce more than 25,000 tonnes per year, which in those days included coal-fired generating plants and gas plants. If the liquid fuel sector is included, the registry covers about 85% of emissions in Ontario. The first reduction goal for Ontario was set to -6% relative to 1990 by 2015, and that goal has been met. Eventually, electricity production will only be about 3% of the province's total carbon emissions, which is an extraordinary achievement. Transportation and heating fuel emissions have both been growing since 1990, which is a challenge to Ontario in meeting its ambitious reduction targets. Over the whole economy, however, the good news is that despite considerable population and economic growth since 1990, Ontario has become more productive and less energy intensive.

Experience in Quebec and California teaches that price signal is crucial, but further regulation is needed to mitigate emissions. Californians attribute only 15% of their reductions to cap and trade; the rest is standards and regulation. Ontario needs to do this too. The average Ontario household uses four times more energy than the average German household, for example.

A feature of the cap-and-trade system is that the sale of allowances, particularly to sectors that are not exposed to foreign competition, such as delivery of transportation and household fuels and electricity, will generate \$1 billion to \$2 billion a year. The money is being collected under a regulatory fee. Ontario legislation stipulates that it cannot be put into general revenues and must be used to reduce greenhouse gasses. Adaptation would not be covered under this purpose. A legitimate use of the money would be to front the cost of a systemic retrofit program for households. Some money

will go to provide incentives for large consumers, some will go to research and development, and attention will be paid to electric vehicles.

The challenge is that so many government ministries are involved, including infrastructure, transportation, health, natural resources, and public safety. On the adaptation side, no country is well organized in terms of integrated planning and measurement of results.

The economic opportunities are extraordinary. Decarbonization presents Ontario with a major industrial revolution. Ontario has always been a power leader, and the electricity sector will be the saviour of all.

Comments

A stakeholder asked what must happen before January 1, 2017, for Ontario to be part of the Western Climate Initiative (WCI). Mr. Godfrey replied that Quebec must decide whether Ontario can join, and California must invite Ontario to join the WCI through legislation. He does not see a problem getting the legislation passed in Ontario since the bill has already passed. The stakeholder also asked whether the IESO has been engaged and will include a carbon price in its market manuals. Mr. Godfrey replied that he has interacted with the IESO, which has ideas specifically for proceeds from the gas-fired plants.

Mr. Donald asked whether there is a concern about decision making in terms of making trade-offs. Mr. Godfrey said he is not anti-nuclear at all, but the question is what is the rate of evolution of alternatives and how fast they can be counted on to come on stream in a way that would influence thinking around nuclear refurbishment. At the system level, the IESO needs to get it right and avoid locking into a technology that becomes a stranded asset. Being clear about price signals and options and pushing them through policy as required will be the interesting challenge for Ontario to stay on the cutting edge. He said one must be cautious but also open to disruptive technologies.

Mr. Bentz thanked Mr. Godfrey for his inspiring optimism and said the SAC shares the vision.

Agenda Item No 7: Other Business

The dates of the SAC meetings for next year will be posted soon. In the meantime, questions can be directed to Mr. Bentz or Ms. Susan Harrison.

Agenda Item No 8: Adjourn

Mr. Bentz adjourned the meeting.