IESO Stakeholder Advisory Committee
Meeting Notes
May 10, 2017
St Andrew's Club & Conference Centre, Toronto

Advisory Committee Members:
Mr. Brian Bentz, Chair (representing Distributors and Transmitters)
Mr. Steve Baker (representing Related Businesses/Services)
Ms. Darlene Bradley (representing Distributors and Transmitters)
Mr. Jack Burkom (representing Related Businesses/Services)
Mr. David Butters (representing Generators)
Ms. Brandy Giannetta (representing Generators) – via teleconference
Mr. Jim Hogan (representing Distributors and Transmitters)
Ms. Rachel Ingram (representing Energy Related Businesses and Services)
Mr. Ted Leonard (representing Energy Related Businesses and Services)
Mr. Paul Norris (representing Generators)
Mr. Mark Passi (representing Consumers)
Mr. Mark Schembri (representing Consumers)
Mr. James Scongack (representing Generators)
Mr. John Sherin (representing Ontario Communities)
Mr. Todd Wilcox (representing Distributors and Transmitters)
Mr. Terry Young (representing IESO)

Absent:
Mr. John Beaucage (representing Ontario Communities)
Ms. Julie Girvan (representing Consumers)

IESO Board Members:
Mr. Timothy O'Neill (Chair)
Mr. Bruce Campbell
Ms. Susanna Han
Mr. Glenn Rainbird
Ms. Ersilia Serafini
Ms. Deborah Whale
Ms. Carole Workman

Presenters:
Mr. Brian Bentz
Ms. Barbara Ellard
Mr. Nicholas Ingman
Ms. Sorana Ionescu
Mr. Todd Wilcox

Agenda Item No. 1: Welcome
Mr. Brian Bentz

Mr. Bentz welcomed participants and introduced the IESO directors, including three new directors: Ersilia Serafini, Glenn Rainbird, and Christopher Henderson. He also noted that Mr. Bruce Campbell will be retiring after 17 years of dedicated service to the IESO, including four years as president and CEO. Mr. Peter Gregg will assume the role of president and CEO this summer.

The Stakeholder Advisory Committee (SAC) has six new members, each appointed for two years. Mr. Bentz thanked the six members who have left the SAC: Paul Shervill, Jared Donald, Valerie Helbronner, Geoff Lupton, Rob Mace, and Ersilia Serafini.

Participants in today's meeting were invited to provide additional input by email at iesosac18@gmail.com.

Agenda Item No. 2: IESO Business Update
Mr. Terry Young

Conservation

The IESO is working to finalize a Whole Home pilot with Enbridge and Union Gas to integrate electricity efficiency measures. The IESO expects to make the Whole Home program available to customers soon. The local distribution companies (LDCs) were given until May 1, 2017, to indicate what province-wide programs they will deliver. At one-third of the way through the conservation framework, many LDCs are on track to meet their targets. As well, the IESO has been working with the Ministry of the Environment and Climate Change to support the launch of a website, customer support, and the design of programs for the new agency that was created (Ontario Climate Change Solutions Deployment Corporation or OCCSDC).

2017–2019 Business Plan

The 2017 revenue requirements were filed with the Ontario Energy Board (OEB) last month. There are revenues of $191.4 million, of which $190.8 million will be recovered through usage fees to support the Market Renewal Program. The IESO is proposing new usage fees of $1.287 per megawatt-hour (MWh) for domestic customers and $0.982 per MWh for export customers. These are increases of 4.7% and 2.8%, respectively. The OEB is expected to issue its notice shortly, and then the process will begin.

Business priorities were identified at the February 2017 SAC meeting, and these are grouped into seven areas. When the IESO comes forward with the draft business plan in August, SAC members will see how these priorities have played a part. As part of the

IESO's business planning process, the IESO will develop its 2018 corporate performance measures for input from SAC at a future meeting.

The IESO is working to improve the website (ieso.ca) launched earlier this year, and a user experience test will be conducted this fall.

In response to a request from the Deputy Minister of Energy, the IESO published the "Ontario-Quebec Interconnection Capability" report this week. The report builds on the IESO's 2014 review of Ontario interties. Using updated modelling and analysis, the technical review presents several cases where expanding the eastern Ontario transmission system could enable Ontario to maximize import capability. The report identifies relatively modest Ottawa-area improvements that would facilitate competitive, market-based Quebec trade.

Mr. George Pessione, IESO's Director of Planning, added the Hydro Quebec and Ontario agreement was mandated by the Ontario government last year. The objective in Ontario is to reduce greenhouse gas and to create savings for ratepayers. There is an energy component, a capacity component, and a cycling component to take care of surplus energy in Ontario. All transactions related to these components are meant to operate within the current markets in Ontario and Quebec. Quebec will buy and sell energy in the Ontario Wholesale market at formula rates. When these bids and offers are accepted by the market, power will flow accordingly. For the energy sales component the formula will be designed to follow the price of gas to reduce greenhouse gas emissions. For the cycling component the formula will seek to take advantage of very low prices consistent with a surplus of energy in Ontario. The energy will be stored in Quebec and will come back through the same mechanism as the main energy transactions.

Comments Regarding the Ontario-Quebec Agreement

Mr. Butters said generators are concerned about an out-of-market deal that lacks detail and transparency and that discriminates against existing generators. He said he hopes the Market Surveillance Panel (MSP) will produce a report in the future on what the Ontario-Quebec agreement has achieved. He questioned the impact on transmission rates and congestion, and asked about the claims made for greenhouse gas reduction. The agreement undermines confidence in the markets and questioned how market renewal participants are expected to enter into investments.

Mr. Burkom said it is shocking to see an independent market operator engaged in bringing about the Ontario-Quebec agreement. A referee should be enlisted to ensure no one is being favoured. He asked whether traders on the interties risk having their trades bumped off by the independent operator, who is supposed to be facilitating these trades.

Mr. Norris echoed the concerns of Mr. Butters and Mr. Burkom. The Ontario-Quebec agreement does not pass the test with respect to transparency, fair competition, and market certainty. It is very challenging for generators to explain it to their constituencies.

Ms. Ingram asked the IESO to consider how Quebec energy could be dispatched in the face of market renewal. Mr. Baker further questioned how market renewal could work when the rules keep changing. The impact of the Ontario-Quebec agreement is not only on generators but also on suppliers. He said he wonders whether the government realizes how damaging the agreement is.

A comment from the floor noted that there is concern about the lack of transparency. There are no details about costs, and it is consumers who will pay. The observer invited the MSP or some other body to take a look at the Ontario-Quebec agreement, as it appears discriminatory at best. In addition, research should be conducted on the unknown effects the agreement may have on Market Renewal and the potential decrease the identified benefits is expected to bring.

General Comments

Mr. Wilcox asked how confident the IESO is about achieving the conservation and demand management (CDM) objectives for 2020. Mr. Young said most LDCs are on track to meet mid-term incentives, and he will be in a better position to answer the question in 12 to 18 months.

Mr. Butters said he had heard of users finding it difficult to retrieve archived material within the IESO website, and he asked whether this will be rectified. Mr. Young replied that it will be.

A comment from the floor noted encouraged the IESO to ensure that the objectives and scope of stakeholder and community engagement are clear, particularly in terms of how participants' inputs will be acted upon. Mr. Young noted the comment.

Agenda Item No 3: Conservation Framework: Mid-Term Review
Mr. Terry Young

Mr. Young said a draft of the mid-term review study report will be completed by the end of this year. It will include a look at the Conservation First Framework and the Industrial Accelerator Program for large, transmission-connected customers. An advisory group was assembled, which meets monthly. It consists of representatives from Loblaw Properties Limited (Mr. Schembri), five LDCs, and two service providers. Navigant Consulting will help create a discussion guide to conduct market research to inform the Mid-Term review report.

Discussions are focused on eight topic areas: customer and market engagement and satisfaction; definition of CDM; collaboration; governance and operations; planning integration; non-energy benefits; climate change; and budgets, targets, and cost-effectiveness.

Comments

Mr. Hogan said utilities are challenged to know how successful they are in their conservation programs. Having the IESO help coordinate programs among the utilities would facilitate their continuing to deliver successful, thriving programs. Mr. Young said the IESO does play a role in identifying target gaps. There are 68 LDCs in Ontario and approximately 40 CDM plans. Collaboration is encouraged.

Mr. Sherin said the definition of conservation is critical. He asked whether the IESO has looked at what community energy plans and the government could contribute to greenhouse gas reductions. Mr. Young replied that this is being done now. Erinn Meloche, IESO, said conservation planning is included within the topic of planning integration.

Mr. Wilcox said changing the definition of conservation at this point would be problematic and would erode confidence; instead, a change in definition could be used as valuable input for the next framework. Mr. Young noted the comment.

Mr. Bentz agreed that now is not the time to expand the scope of the mid-term review. He said he would like to know how the IESO sees the evolution of co-branding Save On Energy with the utilities. There is also the question of the role of utilities in the standardization of programs such as business refrigeration and data centres. Mr. Young said the IESO has enabled LDCs to market the programs. The goal of province-wide programs is to ensure that effective local programs are developed and made available across the province. The business refrigeration program developed by PowerStream is an example. LDCs are not forced to offer programs; there is no one-size-fits-all approach.

Mr. Leonard asked whether there is an opportunity to change the definition of CDM before the review is completed so that action can be taken in 2018. There are opportunities where new technologies can be employed. Mr. Young said the advisory group recognizes this idea. Ms. Jodi Ami, Navigant Consulting, said the advisory group could not look at changing the definition of CDM without looking at climate change more broadly.

Ms. Ingram said the advisory group has suggested that if there is to be a change in the definition of CDM, solar storage and demand response must be considered in the discussion. The demand response sector is not in support of this. Demand response is procured through the auction in a competitive process.

Mr. Passi said that he strongly supports Conservation First. Glencore works in all regions of Canada and subscribes to many incentive programs. He asked whether the role of the LDCs is to fund the initiatives or to provide a level of funding that will allow and drive conservation initiatives. For example, if a return is required on an item, is the objective to get the more energy-efficient item to a more acceptable price point, or is it to give money to third parties to install equipment. Glencore supports the refrigeration program that offers things to be done at no cost to the end user. Glencore is pushing hard to get a sense of the performance of LDCs, including the cost in delivered kilowatt hours (kWh) and the overhead cost per kWh. The Achievable Potential Study is important, as it is best to focus on where opportunities lie.

Mr. Wilcox said most customers are not knowledgeable about implementing CDM efficiencies. Therefore, it is best to keep the energy-efficiency projects at a high level rather than taking them to a customer level.

Agenda Item No 4: Market Renewal
Ms. Barbara Ellard, IESO Director of Markets

Ms. Ellard provided a status update on market renewal. The IESO has posted a benefits case that shows an average of $3.4 billion in potential benefits for the province. The high-level design phase has been entered. Much time has been spent with stakeholders on processes and levels of engagement. The design has not yet been determined and will require collaboration with stakeholders.

Market renewal is an umbrella term for a multitude of projects. Membership in the Market Renewal Working Group (MRWG) has expanded and will deal with the seams between work streams, strategic issues, and contentious issues. Beyond the MRWG, the design discussions will be open to everyone. The CEO's Roundtable will tackle policy issues. The Technical Panel will handle the new and revised market rules, and the door is open to subcommittees. The SAC is a great forum to gain stakeholder feedback.

Stakeholders have asked for a co-chair as a formal sign of a collaborative process. As a result, there are now three co-chairs: Barbara Ellard (IESO), Paul Dottori (Tembec), and Rob Coulbeck (Goreway Power Station). There will be alignment and transparency between the SAC, the Technical Panel, the CEO's Roundtable, and other forums. For example, Julien Wu and Sarah Griffiths are members of both the MRWG and the Technical Panel. The co-chairs have been invited to be observers at the CEO Roundtable discussions. APPrO, Brookfield Renewable Power Inc., and AMPCO all have dual representation in the MRWG and in SAC.

Comments

Mr. Butters said there might be an issue when members of the MRWG do not agree and that appropriate ways to resolve disagreements will be needed. Ms. Ellard said the IESO would always have the authority to make final design decisions. Any dissent will be accurately recorded. Mr. Butters said that in the event of dissention, two co-chairs could update the SAC at a meeting. Ms. Ellard noted that this would be a possibility.

Mr. Baker asked whether the government is a stakeholder in this process, and Ms. Ellard replied that it is an important stakeholder. Market renewal must work within the policy context. Stakeholder concerns have been raised during frequent meetings with the government. Meetings will continue to ensure that the government understands its role in helping deliver the benefits of market renewal.

Mr. Norris suggested the SAC should play a role in areas where the MRWG is challenged or where there is dissent.

Mr. Scongack said people struggle with where the interaction is with government policy. The intent should be to encourage the government to step back over time.

Mr. Burkom said transparency, governance, and stakeholder engagement are important. The IESO is good at the process of stakeholder engagement, but it is not always good with the resulting outcomes and proposals. Key principles are missing. He questioned how the process can ensure that stakeholders do not end up with something that only the IESO wants. A framework around importing a U.S. gas design into a non-emitting market is troubling. He asked where the principles that should precede the work are. Ms. Ellard said the MRWG has discussed the principles and will spend the majority of its next meeting discussing objectives and principles. Mr. Burkom said critical components are missing and have not been discussed with stakeholders.

Ms. Ellard described the preliminary strategic issues:

- Governance
- Alignment of planning on all levels
- Demand response coordination with market renewal and how to enable and prepare for changes
- Interactions with environmental policy objectives
- How contracts may change in light of market renewal
- Procurement of gas supply

Comments

Mr. Wilcox asked how customer expectations are factored into the strategic issues. Ms. Ellard said as per the benefits case, the majority of the $3.4 billion would flow back to customers. More efficient ways to procure resources will be sought, and the IESO recognizes the importance of engaging with customers.

Mr. Burkom said thinking about what customers want is a good place to begin. Customers and policy-makers are asking for clean technology, distributed demand, and non-emitting resources. These assets will require more energy price formation, ancillary price formation that compensates for the distributed demand, and a non-emitting payment. However, all of this runs counter to a market that relies heavily on capacity. Ms. Ellard said customers want to be more active and to take more control. Whether on the storage side or the load management side, a lot of software is being developed to help customers make informed choices.

Mr. Butters said it is important to understand that the cost of the electricity system is not likely to be lower in the future than it is today but instead lower than it would have been. We need to be careful with this messaging.

Mr. Norris said the MRWG should put governance and environmental policy, which are not market renewal issues, front and centre and should bring them to the SAC.

Mr. Baker said customers also want affordability. He asked what will keep gas generators in the province at the end of their contracts, and what the economic case will be. Ms. Ellard said the capacity auction would be a key driver, which ties to reliability. Mr. Baker said reliability is the heart of the issue. He asked whether Ontario is importing a model that will have trouble working.

Mr. Passi agreed that the issue is reliability. Ontario has an expensive cost structure, and flexibility of gas generation is needed.

Mr. Burkom said excess capital cost built into the system is a problem, based on a 100-year-old utility model that assumes a vertical demand curve and that everybody has the same reserve requirement. Getting capacity out of the system will reduce costs. The grid that will exist in 50 years should not be building a 20% reserve margin.

Mr. Leonard said procuring each individual service for a short period of time would collectively produce the lowest cost. There is much talk about value stacking or revenue stacking. Multiple services can be procured together. Ms. Ellard said this is a good point. The IESO is looking to create a market that drives technologies and providers to provide multiple services.

Ms. Bradley said cost is very important for customers. Ms. Ellard said costs will be driven lower than they would have been without market renewal, but the overall cost will not be reduced.

Mr. Passi asked to whom the $3.4 billion in benefits will accrue and when, and if there will be transparency. Ms. Ellard said the benefits case would address these questions.

Mr. Butters said value stacking should be factored in to avoid stranded assets. All assets have future value.

Ms. Ellard said the IESO wants to discuss priorities with the SAC and to balance strategic issues while controlling scope creep. A market development road map is a public process for discussing the priorities. Alongside market renewal, other market changes will occur where there is room for improvement, and the MSP will help with those. The road map will also provide visibility on other projects that are under way.

Ms. Giannetta asked when it is appropriate for renewable generators to raise other considerations. Limiting the scope is of concern. It would help to be mindful of the U.S. Federal Energy Regulatory Corporation conference outcomes.

A comment from the floor noted that California and New York have done a good job of contrasting their evolutions and of quantifying the benefits of market renewal.

Mr. Burkom echoed that a limited scope is of concern. The big issue is that Ontario is importing a broken U.S. market. If other components are not included in the initial scope, problems could develop early.

Mr. Bentz said the IESO is at the transition between objectives, the stakeholder process, and the activities. He supports the process.

Mr. Passi said it is important to get away from prescriptive solutions and to get back to guiding principles and characteristics.

Agenda Item No 5: Grid-LDC Interoperability
Mr. Brian Bentz, Mr. Todd Wilcox and Mr. Nicholas Ingman

Mr. Wilcox provided an overview of The Power To Connect research conducted by the Electricity Distributors Association. He said that in the next few years an ecosystem of integrated power flows will be created. This work has already begun within Ontario communities. However, the customer mindset is not all positive. When asked in a survey if they are confident about the electricity industry's ability to meet expectations of quality, reliability, and price, 42% of customers said they are confident, while 44% said they are not.

In the next five to 15 years, there will be an emphasis on creating a plug-and-play platform and a new kind of control room. A framework and benchmarks will be required. The LDCs will want to play a role in ownership. Reaching the full potential of new technologies will be a challenge for stakeholders and customers. The LDCs will be challenged by having to change their operations and skill sets. Regulators will face having to overhaul the traditional poles-and-wires model.

Mr. Bentz followed with details of Alectra's Emerging Technologies. He said the future is now, and there are many pilot projects on the go. Ten years ago, Hydro One built a 230-kilovolt circuit transmission-only loop around York Region. At that time, there were fears that electromagnetic fields from the circuits could cause leukemia. Today in the city of Markham, there is a lot of load growth, and a 200-megavolt ampere transformer station is being considered. The fears about the risk of leukemia persist. The community wants creative solutions. The PowerHouse project can delay a 100- to 200-megawatt peaker plant by putting solar battery technology and intelligence into the grid. This empowers consumers and integrates with the grid, which is the way of the future. Solutions will come not from discrete devices but rather from the integration of multiple devices behind and in front of the meter, and adding intelligence to that. New regulatory frameworks and customer engagement strategies are required. The question of poles and wires versus distributed energy resources presents a real challenge for both investors and regulators.

South Korea has invested in advanced microgrid technologies that serve as a model for Ontario. It involves taking a radial feed into an embedded community, putting a battery in it, and integrating it with the municipal substation. It has distributed automation that can be managed in real time, as well as upload shifting, resiliency, and ride-through capability. It is more of a technology play than an infrastructure play.

Commercial and utility-scale microgrids are being looked at in Ontario. Putting a microgrid behind the meter allows for distributed resources, such as micro combined heat and power, renewables, and load management, that will provide resiliency during an outage or frequency disturbance. These customers will put a premium on resiliency and ride-through capability.

PowerHouse has 50 pilot projects in Vaughan where batteries and solar technology are being aggregated into community grids. This is not virtual net metering where energy from a solar farm is sold 20 miles away; it stays in the community where it is required. Over time there are benefits, as new ancillary market services become available, including regulation services.

Mr. Passi said it could help to slow down and let the technologies become cost-competitive. Mr. Bentz said the power usage per customer is going down, the cost of the

grid is going up, and the cost of technology is coming down. When these converge, the market needs to be ready.

Mr. Nicholas Ingman, Director of Market Operations, IESO, said better integration and transfer of information between the distribution sector and the transmission grid are needed, and this is not unique to Ontario. Grid operators require good visibility, reliable forecasting, and an understanding of how the future power grid is likely to operate with increased levels of distributed energy resources. In 2016, the IESO engaged with Alectra (formerly PowerStream) to examine the feasibility of increased penetrations of their PowerHouse initiative and to look at grid interoperability and LDC coordination. This work has transitioned into a grid-LDC standing committee. Nine LDCs are involved, and it is hoped that participation will grow.

Comments

Mr. Passi said cost-effective solutions should be the focus. Mr. Bentz agreed. However, some consumers place a premium on choice and reliability and factor that into their value proposition, as well.

Mr. Baker said the integrated solutions under way are primarily on the electricity side. If greenhouse gas emissions are going to be reduced in buildings, gas will be needed during peak time. He wondered if the power usage per customer will continue to go down, or whether it will go up instead. Mr. Bentz said PowerHouse is partnering with Enbridge on a gas-electric solution.

Mr. Burkom said it would be good to discuss how to do things in a least-cost manner. It appears that the planning in Ontario is based on a 100-year-old system, while at the same time the LDCs are demonstrating that they can take care of themselves. Ontario does not need to buy a lot of reserve. The LDCs will run away from these costs. He asked what can be taken out of the load stack in the next five to 20 years. There are studies on batteries that show costs will come down by 80%.

Mr. Hogan said customers are asking for choice. The distributors and transmitters do not want to put up the same pole and wire.

Mr. Passi said if people are willing to pay a premium for something, that's fine, but waiting for costs to come down is still a good idea.

Mr. Leonard asked whether Alectra is working with the builders and planners.
Mr. Bentz said Markham has a net-zero strategy, and the city involves developers and building standards in pilot projects.

Agenda Item No. 6: Smart Metering Entity - Third Party Access Implementation Plan; Ms. Sorana Ionescu, Director of Smart Metering Entity

Ms. Ionescu said people are skeptical about privacy protection with sharing smart meter data. Questions are expected to be raised about who will do the work, who will pay for what, how much they will pay, and how the work will be done. There will also be questions about unintended consequences. These subjects will be discussed within the Data Strategy Advisory Council (DSAC) over the next year and a half, as well as within a broad stakeholder engagement this year. Transparent and collaborative discussions will take place outside and within the IESO, and many representatives will contribute to the DSAC to guide the development and design of various elements. The DSAC will discuss business processes and project requirements, training and communication plans, third-party-access pilot plans, and program evaluation strategies.

All of the 2016 Smart Metering Entity objectives were accomplished. Additional data collection is now under way, and compliance in terms of data fields is nearly 100%. Attention is now turning to third-party access.

Comments

Mr. Passi asked where the data will be collected from. Ms. Ionescu said it is limited to residential and small-business customers under 50 kilowatts. Mr. Passi said collecting data from business may have unintended consequences. He asked whether the business sector would be notified well in advance if this were to happen. Ms. Ionescu replied that it would.

Mr. Norris noted that the Office of the Information and Privacy Commissioner of Ontario is not an observer of the DSAC, and he asked whether it is restricted. Ms. Ionescu said the Information and Privacy Commissioner, in light of their role and mandate, asked that they remain involved on the project in a close consultative capacity but not as part of a working group.

Mr. Sherin said collecting data from the social housing sector would be beneficial in York Region.

Ms. Ingram asked where the Green Button initiative fits in. Ms. Ionescu said it is unrelated.

Mr. Passi said privacy of information is of utmost concern.

Mr. Bentz asked what technology solutions would be required to support third-party-access objectives. Ms. Ionescu said this will be a topic of discussion in the future, once more information is known, and that costs will remain an important consideration.

Ms. Ionescu said the call for nominations for members and observers is now open and expires on May 15. The first DSAC meeting is expected to take place on June 15, and the next step is to develop a more detailed project roadmap.

A comment from the floor said his utility is having trouble choosing one candidate with general knowledge. He asked whether the goal is to get a diversity of skills and expertise on the DSAC. Ms. Ionescu replied that it is. The LDCs should choose someone who can take the information back and connect with the right people.

Agenda Item No 7: Adjournment

Mr. Bentz thanked everyone for participating. The next meeting will take place on August 23. Prior to that, the Stakeholder Summit will be held at Exhibition Place in Toronto on June 12, and attendance is encouraged.