APPrO Submission on Long-Term Energy Plan and Ontario Planning Outlook
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1. Introduction

The Association of Power Producers of Ontario (APPrO) is pleased to provide its comments on the Independent Electricity System Operator’s (IESO’s) Ontario Planning Outlook (OPO) and into Ontario Government’s Long-Term Energy Plan (LTEP) consultation process. This process provides an important means of testing the viability of electricity planning options and raising the level of understanding of key choices facing the residents of Ontario, both as energy consumers and as citizens.

APPrO is the trade association for Ontario’s independent power producers and related businesses. It was founded in 1986, and focuses exclusively on the business issues of independent power producers (IPPs) in Ontario. Its 22 generator member companies build, own and operate independent power projects in Ontario, across Canada and elsewhere in the world, and produce a little less than half of Ontario’s electricity from clean and renewable resources including co-generation, hydro-electric, natural gas, nuclear, wind, wood waste, and solar energy. APPrO’s membership includes generators, marketers, contractors, equipment suppliers, consultants, local distribution companies, fuel suppliers, service providers and financiers. Its goal is the achievement of an economically and environmentally sustainable electricity sector in Ontario that supports the business interests of electricity generators, ratepayers and the provincial economy. APPrO plays a leadership role in the formation of electricity policy and rules to facilitate investment in sustainable electricity infrastructure and the clear and transparent pricing of electricity in Ontario.

APPrO’s comments are designed to open discussion and strengthen parts of Ontario’s electricity planning outlook that have been left unaddressed or unresolved within the OPO and LTEP, to fill in certain details and contribute to improving clarity in the underlying assumptions.
APPrO’s comments reflect its view that a “secure, reliable supply and the ability to operate effectively in the markets should be the objectives of any supply portfolio for Ontario...in serving these objectives, the principles of robustness, flexibility and balance should be advocated.”¹

One fact about planning that is universally accepted is that it is the planning that is important, not necessarily the plan itself. Unforeseen events arise, things change. A fundamental requirement therefore is that the plan should be a robust assessment of the expected supply-demand case over the forecast period with the consideration of potential variations in to the supply and demand using proven and accepted methodologies. APPrO submits that the plan should focus on obtaining the best price for power over the long run for ratepayers while maintaining sufficient optionality (i.e., having more rather than fewer options) to deal with unforeseen events and issues. As the IESO noted during the IPSP process (itself the victim of unforeseen changes) “Ontario will now have its peak demands in the same season as the major adjacent markets... We cannot assume that they will be available to make up Ontario's shortfalls when we experience extreme temperatures.”²

Summary of APPrO Recommendations on LTEP

1. Minimize long-term electricity costs by:
   a) Maximizing the economic use of existing resources
   b) Committing to long-term, transparent, stable, independent governance of the electricity system designed to maximize the effectiveness of market functions and competition amongst resource options;
   c) Conducting a full independent cost-benefit analysis of all major planning commitments and disclosing the analysis as part of the LTEP; and
   d) Preparing fully developed contingency plans specifying where and how additional capacity would be procured in the event that either supply or demand does not materialize according to the projections outlined in the IESO’s scenarios.

2. Establish firm and comprehensive standards of transparency
   When major supply agreements are under consideration, the proposed procurement mechanisms should be fully disclosed well in advance, and the methods for comparison of costs and market impacts, and reliability impacts, fully shared with all market participants and stakeholders. The methods and standards for ensuring this kind of transparency should form a key part of the LTEP.

3. Independent oversight and improved governance of the IESO
   APPrO supports stronger governance for the IESO that brings it in line with other similar organizations across North America.

¹ Comments of the IESO on the Ontario Power Authority approach to supply mix, 2005
² Ibid.
Key Questions to Address in the LTEP

As APPrO and other stakeholders have reviewed the OPO and LTEP discussion materials, key questions have emerged. Many generators are concerned that crucial questions remain unresolved. For example:

- Has the OPO identified and quantified all relevant risks?
- Has the OPO formulated and critically compared all the realistic options available to manage risks?
- Considering the pace of change apparent in the energy sector, does the plan identify sufficient flexibility mechanisms and specific contingency options to respond to the various types of change?
- Does the approach meet the standards of best practice evident in the tools used by other jurisdictions, organizations and institutions (e.g., complete and widely available data, open and transparent examination and assessment)?
- Has the LTEP been designed to be resilient to changes of Government, built to endure and maximize the degree of predictability for consumers and investors?

The case can be made that the LTEP needs to be structured such that reasonably clear and positive responses to each of these questions are available to consumers, stakeholders, and concerned observers.

The Primacy of Cost Minimization

It is abundantly clear that electricity prices have emerged as a central public policy issue in Ontario. Premier Kathleen Wynne, speaking at the Canadian Club on December 13 stated that, "I have committed to finding more ways to lower rates and reduce the burden on households in the weeks and months ahead."

Electricity rates are determined by a combination of short- and long-term factors. The most effective approaches for minimizing the growth electricity rates are those that address the full range of causes, recognizing that the greatest impact is likely to be available from finding efficiencies in long-run capital costs, and continuing to drive for efficiencies and excellence in operating cost. We believe opportunities exist to further encourage operational efficiencies in the system through a combination of incentive regulation, consolidation in the LDC sector, competitive forces, and increased focus by market participants on both costs and customer service.

APPrO and others have in many instances recommended that the Ontario Government seek to minimize long-term capital costs by:

a) Ensuring that new procurement is conducted on an open, competitive market basis, to the greatest extent possible; and
b) Ensuring that the electricity system as a whole is governed by a transparent, rules-based framework, minimizing factors that could lessen competition or lead to an unlevel playing field for any entity, and avoiding decisions that could increase uncertainty or lead to sudden changes in direction.
Although the current OPO and LTEP indicate that Ontario is not facing an immediate shortage of energy or capacity, there are periods in the near future where capacity shortages are entirely possible.

It is therefore not just prudent but highly important that the Province, as part of its LTEP, take clear and definitive steps to ensure the availability of required capacity at the most attractive long-term prices. If the Province postpones securing these options until the need is more certain, it will almost certainly be more difficult and more expensive to meet the power system’s needs at that time.

APPrO has therefore recommended that the IESO in its implementation of the LTEP include fully developed contingency plans specifying where and how additional capacity could be procured in the event that either supply or demand does not materialize according to the projections outlined within the IESO’s scenarios as described within the OPO. In the absence of prior arrangements resulting from contingency planning, the most attractive, technically robust and economic options may simply not exist.

What options are available to planners and policy makers to reduce the long-term costs of energy for consumers?

- Facilitating private sector investment, especially long-term commitments. This is important because longer term investments can achieve better costs of capital and other efficiencies, which are a primary component of electricity rates.
- Maximizing system diversity and balance, both geographic and in generation types in an economic fashion. Diversity reduces both costs and risks as different types of supply have distinct capabilities for responding efficiently to specific circumstances. In this vein, recognize that nuclear power, hydroelectric and gas-fired generation will continue to play a critical role in power system reliability for the foreseeable future.
- Establishing firm and comprehensive standards of transparency. Suggested approaches are detailed below.
- Reducing the scope for and likelihood of out-of-market actions, sudden or unexpected policy reversals, one of the most significant causes of avoidable cost increases.
- Establishing rigorous and regularly updated tests of the costs and benefits of all sources of generation. Any major new planning or contractual commitments should be consistently based on objective economic and reliability criteria, and if contract renewal is not offered in the future, effective mechanisms to ensure revenue certainty must be sufficiently developed and workable.
- Reconsidering decisions relating to the allocation of free allowances to generators under Ontario’s cap-and-trade program, which are likely to have a direct bearing on market prices for electricity.
- Ensuring full public consultation on the LTEP, and making adjustments to the plan based on such consultation, to reduce the likelihood of subsequent changes which can be costly.
A Principled Approach to Planning Is Required

In order to address the key questions noted above, APPrO believes that a pragmatic approach to planning is necessary. The 2013 LTEP was designed to balance five principles: cost effectiveness; reliability; clean energy; community engagement; and, an emphasis on conservation and demand management (CDM) before building new generation. Development of the next LTEP should also be guided by a similar set of principles that should appropriately be revised from the 2013 principles in order to reflect changes in the direction of the energy sector. For example, the LTEP should seek to strike a balance regarding maintaining security and reliability of supply, minimizing cost to customer, transparency, flexibility, increased electrification, GHG reduction, social equity and cost, and meeting other public policy objectives, etc.

APPrO Recommendations

**Recommendation 1a: Maximize Use of Existing Resources with Contingency Planning and/or Bridging Program**

In accordance with the Ontario Government’s climate change plans and maintenance of system reliability, the LTEP needs to support an optimized solution which maximizes the use of existing energy infrastructure while reducing greenhouse gas (GHG) emissions. Prior to making commitments to new generation that could be costly and may not provide as much flexibility, considerations with respect to leveraging existing generation facilities should be made.

APPrO believes there needs to be a bridge contract program if electricity ratepayers are to benefit further from existing facilities. Inaction will undoubtedly cost ratepayers more for “new steel in the ground” otherwise.

In general, Ontario’s planning approach does not respond in any concrete way to the increasing level of supply uncertainty and risk. Normally, a plan that foresees increasing levels of risk and uncertainty would provide mechanisms for increased flexibility and quick response capability, as well as alternative scenarios to consider in the event of unexpected developments.

Without revenue certainty, existing generation after contract term expiry/close to or at end-of-life will be hard pressed to remain in-service. Generation facilities that do remain in-service will likely need to find additional value outside of the current electricity sector framework in Ontario (e.g., through bilateral agreements, export opportunities, etc.) and/or will demand sufficient market revenues (which will likely need to take the form of revenues from multiple electricity products (e.g., energy, capacity, ancillary services, where applicable environmental attributes, and potentially new products not yet defined) to continue operations. Many Non-Utility Generators (NUG) facilities with expired contracts have already closed.

**Recommendation 1b: Maximizing the effectiveness of market functions and integration of LTEP and IESO’s Market Renewal Initiative**

In March 2016, the IESO launched the Market Renewal Initiative, indicating an intention to explore future changes to Ontario’s wholesale electricity market. A primary objective of this initiative is to improve market efficiency and transparency. The LTEP planning process should
reflect the same high standards of transparency and in fact be integrated with the Market Renewal Initiative process.

The Ministry of Energy has indicated conceptual support for the initial direction of the IESO’s Market Renewal Initiative, as evident by Minister Thibeault’s remarks at the APPrO annual banquet on November 15 and then at the November 28 Empire Club of Canada luncheon.

APPrO continues to support initiatives aimed at increasing efficiency and transparency in the operation and investment in Ontario’s electricity market. APPrO therefore supports the IESO’s Market Renewal Initiative in principle with the recognition of these concerns:

- Ensuring contract and commercial continuity;
- Improved transparency and openness;
- Full cost-benefit analysis; and
- Stronger governance for the IESO that brings it in-line with other similar organizations across North America.

If the intention is for markets to have greater relevance and if generators and others are to have sufficient confidence in the markets both for commercial continuity related to current assets and to guide future investment, then the IESO’s Market Renewal Initiative needs to demonstrate that it will objectively make fact-based decisions. Like every other successful market, this will involve checks and balances and independent decision making criteria. APPrO therefore notes the following recommendations with respect to procurement of resources, which should be reflected in the LTEP and within the Market Renewal Initiative:

1. There should be many mechanisms in the IESO’s ‘tool kit’ regarding how resources are procured or secured, with a recognition that not one mechanism could satisfy all resource and generation fuel types.
2. Despite the mechanism or mechanisms selected for resource procurement, what is important is revenue certainty over the relevant contract period. There is currently a great deal of uncertainty as to future revenue sources anticipated under the LTEP. Both new and existing generation resources will require revenue certainty in order to ensure availability of resources to help meet Ontario’s future reliability and power system needs.

Furthermore, there is a fundamental disconnect in the current logic in the LTEP behind the security of future supply from generators with expiring contracts. Through the market renewal initiative, the IESO has indicated its expectation that a competitive capacity market of some kind will secure capacity from these generators at a cost significantly less than CONE and realize savings for the ratepayer. This is reflected in the economics of the long term cost of electricity in the OPO. At the same time the Government wishes to reserve the right to acquire energy and capacity it deems economic outside of this market and to make policy changes that would affect this capacity market at will. These out-of-market actions make accurate forecasting of generator revenues extremely difficult if not impossible. Investors will not extend the operation of existing assets beyond their contract term without revenue certainty. Thus, the expectation of savings in securing capacity is unlikely to be realized as forecast revenues from other sources will need to be significantly discounted.
Recommendation 1c: Full Cost-Benefit Analysis of all Planning Commitments

In a situation of heightened attention to electricity prices and rising costs to electricity customers, it is crucial that the Province and stakeholders within the electricity sector be able to make informed judgments on the cost implications of planning commitments.

It is therefore APPrO’s central recommendation that a full and independent cost-benefit analysis is performed on each major planning commitment entailed in the LTEP, and that the assumptions, methodology and calculations are released for public review along with the proposed details of the LTEP. It is appropriate that a plan like the LTEP should establish standards for performing such cost-benefit analyses, timelines and how such analyses will be used at various points during the timeframe of the plan.

Any decision to rely on imports as an alternative to generation based in Ontario should also be contingent on rigorous cost benefit analysis

Recommendation 1d: Preparing Fully Developed Contingency Plans

Strengthening the Data and Analysis in the OPO

A primary concern noted by APPrO members is the nature of the data collected for use in the planning process. For example, Power Advisory LLC has noted that, “The OPO lacks sufficient assessment of future risks and accompanied contingencies to mitigate and address these risks. Unfortunately, the OPO is not a rigorous Integrated Resource Plan (IRP) and does not utilize sophisticated methodologies and techniques used to determine power system needs along with the capabilities and cost effectiveness of resource options to potentially meet these needs, as is done within other IRPs or within all U.S. wholesale capacity markets. ... The IESO’s OPO only provides a forward view of potential demand outlooks with a single supply outlook that may or may not meet Ontario’s future power system needs.” (Power Advisory Market Update, October 2016.)

As noted by Dianne Saxe,3 the Environmental Commissioner of Ontario, the current public consultation is taking place on a discussion guide and general scenarios, rather than on the specific options to be proposed as part of the LTEP.

One of the Environmental Commissioner’s recommendations is that details need to be provided “to hedge against ... energy supply risks.” Although the Commissioner’s report focuses on the risks associated with one type of generation, her comments apply across the board to all types of generation. She observes that, “There needs to be a serious contingency plan and there should be public consultation on that contingency plan.”

Considering that the central objective is to achieve a more effective, reliable and cost efficient system, more analysis than has been presented to date including cost, reliability, environmental and risk impacts, is appropriate as part of any planning process. A high level of rigour is appropriate when major decisions are being made.

Importance of Separating Strategic Choices from Demand Projections

The OPO presents four primary scenarios that appear to conflate demand projections with strategic choices. The alternative courses of action or strategic choices available to Ontario have not been clearly defined or separated from demand projections. The scenarios presented in the OPO are primarily demand projections which provide only a portion of the information necessary for comparing alternative courses of action. Ideally, planning is intended to enable choices to be made amongst alternative courses of action, having ensured that participants are well informed with respect to projected conditions.

Although there are many ways to characterize the range of choices available to the Province, in order to compare options, it’s necessary to formulate representative alternative courses of action. As an example of alternative courses of action, the key strategic options could be summarized as:

1. Priorization of long-term cost reduction.
2. Priorization of carbon reduction, with electrification used to reduce carbon from transportation and building sectors.
3. Priorization of wholesale market development as to be defined within the IESO’s Market Renewal Initiative, facilitation of price-based competition for wider range of resources, elimination of impediments to consumer choice amongst alternative supply options.

While stark choices between the above listed alternatives 1 to 4 are not required, it is useful in a planning process to establish a sense as to the relative priority to be placed on cost reduction, carbon reduction, wholesale market development, technology innovation, and possibly other priorities. Planning options can be constructed with various relative rankings of these priorities. Other potential planning priorities include short-term cost reduction, flexibility/responsiveness, mitigation of environmental impact however defined, equity between regions, customer classes and with Aboriginal communities.

Although net supply and demand projections are affected by strategic choices like these, the underlying levels of supply and demand (i.e., gross demand prior to load reduction) can be projected independent of these prioritizations.

The major alternative directional choices to be made in Ontario include the following:

- Supply Mix influence: How much influence to accord to pre-determined supply mix parameters?
- Supply Mix definition: Should supply mix be defined in terms of specific supply alternatives or in terms of performance characteristics, or some combination of the two?
- Carbon reduction targets: To what extent should annual carbon reduction targets be treated as obligatory?
Electrification of transportation and buildings: One of the most promising strategies for simultaneously prompting new investment, encouraging innovation and reducing carbon emissions is to provide for increasing levels of electrification, particularly in buildings and transportation. Although there may be cost challenges to overcome in some types of electrification, electrified services are likely to be much more precisely controllable, thereby attracting retail consumer interest, while simultaneously helping the Ontario grid to mitigate the challenge of Surplus Baseload Generation and enabling the most comprehensive options for decarbonisation of the economy as a whole.

- Further reliance on markets and development of competitive systems or further reliance on central administration.
- Accommodating the growth of micro-grids, self-supply, storage and other forms of active distribution load reduction including the Distributed Energy Resource Tariff.
- Stance with respect to imports and exports: does the Province wish to encourage electricity trade with other provinces and states only as far as economic as competitive forces would dictate, or is it willing to make investments in order to expand electricity trade further for other reasons?
- Maximizing the value derived from existing assets: perhaps most important, to what extent and under what conditions is the Province prepared to consider incremental investments in existing capacity in order to ensure it derives the maximum value of existing investments before making new investments? How is analysis of these considerations to be factored into assessments of alternative planning options?

Supply Risk

The diversity of existing Ontario generation, including nuclear, hydro-electric and gas-fired, and other forms of generation, with wide geographic distribution represent a sturdy ‘backbone’ to the Ontario grid. Together these resources generate dependable and relatively affordable power, while meeting all-of-Ontario and regional supply needs, with significantly lower GHGs than ten years ago. In fact, Ontario’s electricity sector emissions are now a relatively minor contributor to the Province’s carbon footprint. The IESO notes that “GHG emissions from the electricity sector now make up roughly only 4% of the province’s total emissions.”

The OPO performs limited assessment of supply-side risk over the planning period and does not attempt to describe the type of future supply requirements that Ontario may need (e.g., energy, capacity, ancillary services, etc.). Instead of assessing supply-side risks and describing alternative supply outlooks, the OPO abruptly concludes that in the near term no new supply resources are required based on existing generation and the ability to repower all resources after end-of-contract or end-of-life.

However, there is no assurance that the generation associated with expiring contracts will be available as shown in the OPO. For each major type of generation on which the plan relies, there

4 IESO -- Ontario Planning Outlook, MODULE 6: Emissions Outlook, 2016
should be an impartial assessment as to the risks of unavailability of that capacity, or performance below planned levels. To the extent this risk is significant, contingency plans to substitute for that capacity should also be part of the plan. In the case of Non-Utility Generation contracts for example, many are due to expire in the near future. In fact, more than 300 MW is liable to be shut down by 2019 unless there is a bridging program, with another 200 MW potentially going out of service by 2022.\(^5\)

The OPO contains no details about the nature of any future procurement of resources.
Although the industry has no shortage of expertise, creativity and access to capital with respect to making new investments, given the current lack of clarity on procurement processes, even the investment necessary to maintain existing assets becomes risky and less dependable.

Over the 2020s and into the 2030s, the majority of contracts for generators will expire and presently there is no clear path for contract renewal or certainty that an alternate market mechanism will be successfully implemented in order to provide needed revenue certainty. Lack of revenue certainty for generation under expired contracts will increase the cost of maintaining or re-powering existing generation facilities or lead some generation facilities to be laid up, mothballed, or even fully retire. Establishing clarity and stability in terms of commitment to existing contracts increases predictability and thereby reduces costs.

**Recommendation 2: Establishing Firm and Comprehensive Standards of Transparency**

Transparency is a basic requirement for any power system planning or for the IESO’s Market Renewal Initiative. Confidence in the plans and the energy market depends on availability of data at all stages of development and operation of power sector assets. With respect to the LTEP, it is important to ensure there is sector-wide confidence in the adequacy of the assumptions and the comparisons between planning options.

One crucial standard of transparency could be stated as follows. When major supply agreements are under consideration, the proposed requirements and procurement mechanisms should be fully disclosed well in advance, and the methods for comparison of costs, market impacts, and reliability impacts, must be fully available to all market participants and stakeholders. The methods and standards for ensuring this kind of transparency should form a key part of the LTEP. Transparency should also apply to the contracting process and any other potential new processes to secure supply resources. Going forward, such concepts as open-book contracts might be considered.

**Recommendation 3: Establish independent oversight and improved governance of the IESO**

In order to manage risk and maximize confidence in the LTEP, it is important that it be constructed in a way to ensure that the basic tenets of the plan are relatively unlikely to be fundamentally disturbed by any future change in Government.

APPrO also supports stronger governance for the IESO that brings it in-line with other similar organizations across North America, especially given the potentially significant work being

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proposed under the IESO’s Market Renewal Initiative. APPrO has on many occasions requested the IESO to consider governance reforms. This is informed by its members’ participation in energy markets throughout North America. Ontario is an outlier in North America in its lack of oversight over IESO practices. However, Ontario is not New York or like other U.S. wholesale markets, and our constitutional, legal and regulatory systems are quite different from those in the U.S. Hence, simply importing what appears to work in U.S. markets without considering and understanding the relationship between U.S. markets and their systems of governance will likely not lead to improvement. However, it is instructive to note that where markets do work in the U.S., it is in large part because there are stronger independent oversight mechanisms at work, such as the U.S. Federal Energy Regulatory Commission, independent market monitors, and so forth.

Findings of a 2011 report further support APPrO’s recommendation for independent oversight of the IESO. The central finding of the report was “the best way to run the energy sector is for government to take a hands-off approach.” The report also recommended that the principle of independence of agency decision-making should be formally stated in legislation.

In a recent submission to the IESO, one of APPrO’s members reiterated “…the importance of a reliable, impartial, independent, and transparent governance process to oversee future market evolution, decision-making, and dispute resolution. The IESO’s [Market Renewal Initiative] would not only require multiple years to define and implement, its resulting market rules’ fine-tuning and further development would also remain ever-evolving and increasingly complex. In this setting, disputes and conflicts would inevitably arise, not only between participant and participant, participant-and-the-IESO, but also between market-and-market. Credible governance that holds the confidence of all stakeholders is key to prevent undue external interference on market rules and thus efficient outcomes... [we urge] the IESO to consider the question of governance seriously in its initiative.”

This could include changes to legislation to improve IESO independence, and to limit the ability of government to provide more than general policy direction and goals.

In general the investment community believes that costs will be minimized to the extent that government becomes less involved in specific decision-making and increasingly delegates decisions lower on the hierarchy to those most directly affected. This is not in any way a suggestion that government refrain from making policy but that its policy decisions be carefully designed to be durable and implemented at the most appropriate level.

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7 Brookfield Renewable Energy Group feedback on the IESO’s Market Renewal Initiative
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   f) Commit to long-term, transparent, stable, independent governance of the electricity system designed to maximize the effectiveness of market functions and competition amongst resource options;
   g) Conduct full independent cost-benefit analysis of all major planning commitments and disclosing the analysis as part of the LTEP; and
   h) Prepare well developed contingency plans specifying where and how additional capacity would be procured in the event that either supply or demand does not materialize according to the projections outlined in the IESO’s scenarios.

2. Establish firm and comprehensive standards of transparency.
   When major supply agreements are under consideration, the proposed technical requirements and procurement mechanisms should be fully disclosed well in advance, and the methods for comparison of costs and market impacts, and reliability impacts, fully shared with all market participants and stakeholders. The methods and standards for ensuring this kind of transparency should form a key part of the LTEP.

3. Independent oversight and improved governance of the IESO.
   APPrO recommends stronger governance for the IESO that brings it more in line with other similar organizations across North America.

   APPrO appreciates being invited to provide input on the LTEP and trusts that the comments and proposals provided are received with the understanding of the objective of improving the plan to secure the most reliable, robust, and cost effective plan with the flexibility to address changes in supply or demand that might arise over the forecast period.

   [Signature]

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