

Ontario Energy Board

Staff Discussion Paper

**on the Review of the Ontario Power Authority's
Integrated Power System Plan and Procurement
Processes**

September 8, 2006

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Under the *Electricity Act, 1998* (the “Act”), the Ontario Power Authority (the “OPA”) is responsible for developing both an integrated power system plan (the “IPSP”) and adequate procurement processes for managing electricity supply, capacity and demand in accordance with the IPSP. The OPA’s IPSP and procurement processes must both be submitted to the Ontario Energy Board (the “Board”) for review and approval. It is expected that the OPA will file the IPSP and its procurement processes concurrently.

The development and approval of an IPSP, as well as of the OPA’s procurement processes, are new activities for each of the OPA and the Board. It is therefore timely to provide guidance in relation to the approach to be used in reviewing the IPSP and the OPA’s procurement processes, as well as in relation to expectations regarding the OPA’s filings.

PART ONE: THE IPSP

I. Introduction

A. Overview of the IPSP

As described in section 25.30(1) of the Act, the IPSP is a plan “to assist, through the effective management of electricity supply, transmission, capacity and demand,” the achievement by the Government of Ontario of certain goals and to encompass other matters prescribed in regulations. The goals relate specifically to the adequacy and reliability of electricity supply, including electricity supply from alternative energy sources and renewable energy sources, and to demand management.

In developing the IPSP, the OPA must follow directives issued to the OPA by the Minister of Energy in relation to the IPSP (the “IPSP Directives”) and is required to comply with the *Integrated Power System Plan Regulation*, O. Reg. 424/04 (the “IPSP Regulation”). IPSP Directives set out the goals to be achieved during the period covered by the IPSP. The IPSP Regulation sets out matters that the OPA is required to (i) identify, (ii) identify and develop, or (iii) consider in preparing the IPSP, as well as matters that must be included in the IPSP.

The IPSP Regulation also requires that the IPSP cover a period of twenty years, and that it be updated and submitted to the Board for approval every three years. The Minister or the Board may require more frequent updates.

Appendix A contains excerpts from the Act that relate to the IPSP, as well as the provisions of the IPSP Regulation.

B. *IPSP Directives*

IPSP Directives are an articulation of the Government's policy goals for the IPSP and are binding on the OPA.

On June 13, 2006, the Minister of Energy provided direction to the OPA in relation to the preparation of the IPSP (the "Supply Mix Directive"). At the time of preparation of this Discussion Paper, the Supply Mix Directive was the sole IPSP Directive issued by the Minister.

The Supply Mix Directive is discussed further in section II.B below. The full text of the Supply Mix Directive is set out in Appendix B.

C. *The IPSP Regulation*

The Supply Mix Directive states that the IPSP must comply with the IPSP Regulation. As such, the IPSP Regulation has been brought within the scope of the Board's IPSP review mandate.

Like IPSP Directives, the IPSP Regulation articulates Government policy and is binding on the OPA.

II. Principles Guiding Review and Implementation of the IPSP

A. Board Mandate

There are three fundamental themes that underlie the statutory framework that governs the IPSP. First, it is the Government, and not the Board or the OPA, which is responsible for articulating the goals that the IPSP is to assist in achieving. Second, those goals go beyond simply ensuring that supply is adequate to meet demand, and the IPSP in that sense is a plan whose scope and purpose is different from that of other, more traditional power system plans. As noted below, the Supply Mix Directive prescribes a mandatory portfolio of supply and conservation resources and addresses other matters that are not, strictly speaking, designed solely to achieve a supply/demand balance purpose. Third, it is the OPA, and not the Board, that has the statutory role of developing the IPSP. These themes direct the tenor of and establish parameters for the scope of the Board's review.

The Board's mandate in relation to its review of the IPSP is to ensure that the IPSP complies with IPSP Directives and that it is economically prudent and cost effective. The next five sections in this Part address principles relating to the following:

- The Supply Mix Directive (section B)
- The IPSP Regulation (section C)
- Economic prudence and cost effectiveness of the IPSP (section D)
- The treatment of certain projects that were initiated prior to the date of filing of the IPSP (section E)
- Facilitating implementation of the IPSP (section F)

Section G addresses the general approach to implementation of the IPSP.

B. The Supply Mix Directive

The mandate of the Board does not extend to determining whether the goals expressed in IPSP Directives are appropriate, economically prudent or cost effective. Accordingly, it is not the intention to solicit input on the goals set out by the Government in the Supply Mix Directive.

It will, however, be necessary to consider whether and how the IPSP achieves the goals set out in the Supply Mix Directive in an economically prudent and cost effective manner. Specifically:

*Achievement of conservation targets:*¹

The Supply Mix Directive states that the goal for total peak demand reduction from conservation by 2025 is 6,300 MW, with the aim of reducing projected peak demand by 1,350 MW by 2010 and by an additional 3,600 MW by 2025. These reductions are in addition to the 1,350 MW reduction set by the Government as a target for achievement by 2007. The Supply Mix Directive states that the IPSP should assume that “conservation includes continued use by the government of vehicles such as energy efficiency standards under the *Energy Efficiency Act* and the Building Code, and should include load reduction from initiatives such as: geothermal heating and cooling; solar heating; fuel switching; small scale (10 MW or less) customer-based electricity generation, including small scale natural gas fired co-generation and tri-generation, and including generation encouraged by the recently finalized net metering regulation”.

The IPSP will need to address how the costs of the different types of conservation measures (e.g., customer-based generation programs or energy efficiency programs) are to be compared in determining which portfolio of measures achieve the conservation target in an economically prudent and cost effective manner.

*Achievement of renewable energy targets:*²

The Supply Mix Directive states that the IPSP should assist the government in meeting its target for 2010 of increasing the installed capacity of new renewable energy sources by 2,700 MW from the 2003 base, and increase the total capacity of renewable energy sources used in Ontario to 15,700 MW by 2025.

The achievement of renewable energy targets allows the economic prudence and cost-effectiveness of different renewable resources to be compared with one another to achieve the renewable energy target in an economically prudent and cost effective manner.

¹ In determining whether the IPSP complies with the Supply Mix Directive, “conservation” must be interpreted as including, in addition to more traditional energy efficiency or demand response programs, the generation measures identified in the Supply Mix Directive. Where a reference to conservation in this Discussion Paper applies only to certain measures (i.e., the reference is not applicable to conservation obtained through generation initiatives), this has been noted.

² The term “renewable energy” is not defined in the Supply Mix Directive. For purposes of the review of the IPSP, this term will be interpreted in a manner consistent with the definition of “renewable energy source” in the Act; namely, “an energy source that is renewed by natural processes, and includes wind, water, a biomass resource or product, solar energy, geothermal energy, tidal forces and any other energy sources as may be prescribed by regulation, provided that the energy source satisfies any applicable criteria as may be prescribed by regulation”.

Use of nuclear energy for baseload:

The Supply Mix Directive states that the OPA should plan for nuclear capacity to meet base-load electricity requirements but limit the installed in-service capacity of nuclear power over the life of the plan to 14,000 MW.

The OPA will need to demonstrate how the IPSP implements the nuclear energy portion of the Supply Mix Directive and whether the means by which any nuclear supply investments will be effected (i.e., by the refurbishment of existing facilities or by the construction of new facilities) are economically prudent and cost effective.

Use of natural gas in high efficiency, high value applications:

The Supply Mix Directive states that the IPSP should maintain the ability to use natural gas capacity at peak times and to pursue applications that allow high efficiency and high value use of the fuel.

The OPA will need to address how the IPSP allows for the use of natural gas capacity at peak times and enables the pursuit of applications that allow high efficiency and high value use of natural gas in an economically prudent and cost effective manner.³

Replacement of coal-fired generation:

The Supply Mix Directive states that the OPA should plan for coal-fired generation to be replaced by cleaner sources in the earliest practical time frame that ensures adequate generating capacity and electricity system reliability in Ontario. The OPA is to work closely with the Independent Electricity System Operator (the "IESO") to propose a schedule for the replacement of coal-fired generation, taking into account feasible in-service dates for replacement generation and necessary transmission infrastructure.

The OPA will need to demonstrate how the schedule set out in the IPSP allows for such replacement in the earliest practical time frame while ensuring adequate generating capacity and electricity system reliability.

³ This element of the Supply Mix Directive is closely linked to a comparable provision in the IPSP Regulation. See section III.C.3(d) below.

Strengthening of the transmission system:

The Supply Mix Directive states that the IPSP must strengthen the transmission system to: enable the achievement of the supply mix goals set out above; facilitate the development and use of renewable energy resources such as wind power, hydroelectric power and biomass in parts of the province where the most significant development opportunities exist; and promote system efficiency and congestion reduction and facilitate the integration of new supply in a manner consistent with the need to cost effectively maintain system reliability.

The OPA will need to demonstrate how the IPSP provides for the strengthening of the transmission system to achieve these diverse goals. To the extent that strengthening of the transmission system is proposed for purposes of system efficiency and congestion reduction, the OPA will need to identify how and to what degree system efficiency will be improved or congestion will be reduced, as well as the justification for selecting the chosen levels of efficiency and congestion reduction.

Satisfying the requirements of the IPSP Regulation:

The Supply Mix Directive states that the IPSP should comply with the IPSP Regulation.

The requirements of the IPSP Regulation are addressed in sections II.C and III.F below.

C. The IPSP Regulation

While the mandate of the Board does not extend to assessing the adequacy or appropriateness of the provisions of the IPSP Regulation, the Board will need to determine whether the requirements of the IPSP Regulation have been met. A description of, and filing guidelines applicable to, the IPSP Regulation are set out in section III.F.

D. Economic Prudence and Cost Effectiveness

Economic prudence balances the economic and financial risks and benefits of alternative means of achieving the goals set out in IPSP Directives. Cost effectiveness refers to comparison of alternative investments or initiatives in terms of costs and tangible benefits. In other words, the cost effectiveness of alternative investments will be compared based on a \$/kW or \$/kWh basis.

It is recognized that the OPA will be required to make trade-offs in preparing the IPSP and to consider or address non-quantitative, non-financial or non-economic factors (such as some of the factors outlined in the IPSP Regulation). As such,

the IPSP may not necessarily be the “least cost” solution, since a higher cost solution may have incremental benefits. To the extent that the OPA proposes something other than the “least cost” solution, however, the onus will be on the OPA to satisfy the Board that the incremental benefits outweigh the extra costs.

The tests of economic prudence and cost effectiveness will be used in two related ways in the IPSP review. First, as indicated above, it will be necessary to determine whether the goals set out in IPSP Directives have been satisfied in an economically prudent and cost effective manner. In addition, the Board must be satisfied that the IPSP as a whole is economically prudent and cost effective.

In making these assessments, the Board will require an understanding of the total cost implications of the IPSP, including the short- and long-term financial impact of IPSP initiatives on electricity system costs and provincial electricity prices and rates. The Board will also require an understanding of the financial and other risks associated with IPSP initiatives. Section III.F addresses filing guidelines related to the evaluation of the IPSP as a whole when considered against the “least-cost” solution.

E. Pre-IPSP Projects

As a general rule, the economic prudence or cost effectiveness of specific generation or conservation projects that were the subject of governmental procurement or OPA procurement prescribed by Ministerial directive issued prior to the date of filing of the IPSP (for example, the OPA’s York region demand response process or the existing Standard Offer Program) will not be assessed as part of the IPSP review process, even if these projects are included in the IPSP.

F. Facilitating Implementation of the IPSP: Regulatory Consistency and Streamlining

Section 1(2) of the *Ontario Energy Board Act, 1998* (the “OEB Act”) states that the Board must facilitate the implementation of an approved IPSP when it exercises and performs its statutory duties. This obligation is a driving force in favour of regulatory streamlining in relation to those of the Board’s statutory duties that may overlap with matters considered by the Board in its review of the IPSP. Regulatory streamlining opportunities will therefore be sought in relation to projects that are examined as part of the Board’s review of the IPSP, and the IPSP review proceeding will be used to address as many issues as is feasible in relation to proposed projects that would otherwise be reviewed on a case-by-case basis as part of another of the Board’s statutory functions. In other words, issues that are adequately addressed in the context of the IPSP will not be subject to substantive re-examination by the Board at a later date. Parties with an interest in those issues must therefore ensure that their positions are brought forward during the IPSP proceeding. As noted below, it is expected that the OPA

will use its consultation process to foster a greater and more widespread understanding of this approach.

The potential for streamlining is greatest in relation to the Board's regulatory approvals associated with transmission system investments. Traditionally, these include a review of transmission investment costs (as part of a transmitter's capital budget in a rates proceeding) and the Board's approval of applications for leave to construct transmission facilities. If an adequate level of detail is provided in the IPSP, the IPSP proceeding will be used to confirm the need for the project and to examine the costs associated with the project, and those issues will not thereafter be revisited except in relation to any material deviations.

As there are no exclusive franchises for electricity transmission in Ontario, any major new "greenfield" transmission initiatives identified in the approved IPSP may bring forward more than one potential transmission developer, subject to existing land use rights and rights arising from the ownership of existing transmission infrastructure. It may therefore be necessary for the Board to ultimately determine who should provide transmission infrastructure and service in such cases.

With respect to streamlining in relation to gas pipelines that may be required by gas-fired generators, it is not expected that the IPSP review proceeding will be used to address gas pipeline infrastructure issues that the Board typically considers in the context of pipeline leave to construct applications. These would continue to be dealt with in the context of leave to construct proceedings.

G. Implementation of IPSP Initiatives

For the IPSP to be meaningful, it is necessary that there be accountability for its implementation. The OPA and other parties that are regulated by the Board will therefore be expected to work diligently towards implementation of initiatives that have been included in the approved IPSP. Consideration may be given to using the regulatory tools that are at the Board's disposal (such as the imposition of licence conditions) as required or appropriate to facilitate the implementation of projects identified in the IPSP.

In the event that there is a potential material deviation from the IPSP, the OPA (or the party responsible for implementation of an initiative) will be expected to notify the Board accordingly so that the need for an update to the IPSP or other action may be considered. Similarly, it is expected that the Board will be kept apprised of impediments or obstacles to implementation of IPSP initiatives, as well as of the means by which those impediments or obstacles might be overcome.

It follows from the above that the OPA will be expected to monitor the implementation and evaluate the effectiveness of IPSP initiatives on an on-going

basis. The OPA will also be expected to provide the Board with periodic updates regarding IPSP implementation between triennial reviews of the IPSP.

III. IPSP Filing Guidelines

A. Introduction

In the Board's IPSP review proceeding, the onus will be on the OPA to demonstrate to the satisfaction of the Board that the IPSP complies with the IPSP Directives and the IPSP Regulation, and that it is economically prudent and cost effective.

This Part sets out expectations regarding the OPA's IPSP filing as follows:

- Section A describes expectations of a general nature that apply to the IPSP as a whole
- Section B contains filing guidelines regarding the acquisition of conservation, generation and transmission resources for the period covered by the Near-term Plan
- Section C contains filing guidelines regarding the acquisition of those resources for the period beyond the years covered by the Near-term Plan
- Section D sets out the information that will be required in order for the Board to consider the economic prudence and cost effectiveness of the OPA's preferred IPSP against the "least cost" solution
- Section E sets out the information that will be required in order for the Board to determine whether the requirements of the IPSP Regulation have been satisfied

B. General

1. Level of Detail

It is expected that considerable detail will be provided in relation to solutions or initiatives that are proposed for implementation in the earlier years of the IPSP. It is not considered realistic to expect that same level of detail in relation to the later years of the IPSP. Since the IPSP is required to be updated every three years, solutions or initiatives for which approvals processes must commence prior to the date of the next IPSP update (the "Near-term Plan") must be identified with a high level of detail. Based on current expectations regarding the timing of approval of the first IPSP, the Near-term Plan would extend to the end of 2010. While a more conceptual level is expected for the later years, it must be sufficient to enable the Board to understand the integrated nature of the IPSP over the longer term.

2. Third Party Input

The OPA must present a realistic assessment of the initiatives identified in the IPSP. Those initiatives must realistically be able to be implemented within the specified timeframe, particularly in the case of initiatives identified as part of the Near-term Plan. This can only be achieved if the IPSP reflects all necessary input from the IESO, transmitters and other relevant parties.

3. Demand and Supply Forecasts and Adequacy Assessments

In assessing the economic prudence and cost effectiveness of the IPSP, the extent to which new resources (transmission, generation and conservation) are necessary in order to meet overall power and system needs during the period covered by the IPSP will need to be considered. Forecasts of demand and supply will therefore be required, as well as assessments of the adequacy of resources to satisfy demand at any given time. The OPA will be expected to identify the supply gap for the province under different scenarios, and to describe how and why its forecasts might differ from other published forecasts, such as those prepared by the IESO.

For each year covered by the Near-term Plan, and biennially for the period beyond that covered by the Near-term Plan, the OPA should identify:

- i. the net load growth, including the peak load component, after separately accounting for:
 - a. end-use and economic load growth;
 - b. load reduction resulting from “natural conservation” (i.e., the effect of ongoing energy efficiency and conservation improvements in building codes, household appliances and the like); and
 - c. increases or decreases in system reliability margins;
- ii. generation capacity assumed to exist at the relevant time, and the basis for the assumptions made in that regard;
- iii. transmission capacity assumed to exist at the relevant time, and the basis for the assumptions made in that regard;
- iv. the resultant adequacy assessment that identifies shortfalls in generation or transmission capacity that will need to be met through “project-specific” conservation activities (i.e., specific targeted conservation initiatives undertaken by the OPA), transmission system expansions or improvements and/or investments in or purchases of generation.

It is expected that the load forecasts utilized by the OPA and filed for purposes of the IPSP review will:

- i. identify the load growth (or decline) assumptions by region, for the province as a whole and by customer class;
- ii. include annual regional forecasts for each year covered by the Near-term Plan for both energy and capacity requirements;
- iii. include biennial provincial forecasts for the period beyond that covered by the Near-term Plan for both energy and capacity requirements;
- iv. identify the load growth or decline assumptions associated with electricity commodity prices over the relevant planning period;
- v. include a range of forecasts to reflect possible future load changes resulting from various economic and end-use scenarios; and
- vi. separately identify the impact of conservation on the forecasts.⁴

The OPA will also be expected to provide the following in relation to its preferred plan (see section E for further detail regarding the preferred plan):

- i. a description of the load growth scenario(s) being assumed (e.g. end-use increases/decreases and low, median or high economic growth) and the forecast methodology employed;
- ii. a description of the load reduction activities being assumed as a result of conservation initiatives, and the forecast methodology employed for identifying separately “natural conservation” improvements and the impact of “project-specific” conservation activities;
- iii. the specific level of transmission system reliability/adequacy and generation reserve margins selected by the OPA;
- iv. a description of the methodology and metrics used for determining the generation reserve margin and the transmission system reliability/adequacy requirements, and the justification for the selected methodology and metrics; and
- v. the assumptions being made about the remaining operating lives of existing facilities, and the basis for the assumptions made in that regard.

⁴ This does not apply in relation to conservation resource initiatives in the form of generation.

C. Resource Planning and Acquisition: The Near-term Plan

It is anticipated that the IPSP will call for investment in three types of resources; namely, generation resources that provide additional power supply to the transmission system, conservation resources that reduce electricity system supply requirements, and transmission resources that support the other resources or substitute for them.

Resource planning and acquisition/investment is one area where it is expected that there will be considerably more detail in relation to the period covered by the Near-term Plan than will be the case for the remaining period covered by the IPSP. Furthermore, the Near-term Plan will be strongly affected both by existing resource initiatives and by the near-term targets set out in the Supply Mix Directive.

1. General

This section sets out information requirements that apply to all resource investments identified in the Near-term Plan. The following sections contain additional information requirements for each type of resource: conservation (section 2), generation (section 3) and transmission (section 4).

This general section and those that follow contemplate that the OPA will have identified resources based on a consideration of alternatives. In this regard, it is expected that the OPA will consider and present, where applicable, the smallest number of alternatives consistent with conveying to the Board the major concepts available to meet the same objectives as those that are met by the preferred option.

In presenting the resource acquisition/investment portion of the Near-term Plan, it is expected that the OPA will:

- i. identify the total need for resources and associated timelines;
- ii. indicate the allocation between generation and conservation resources, as well as the rationale for that apportionment;
- iii. where one resource solution has been preferred over an alternative resource solution (whether of the same or a different type), identify the rationale for selecting the preferred solution in terms of factors such as costs, financial risks to be assumed by electricity consumers, benefits, reliability and quality of service;
- iv. describe the critical preliminary work, consultations or approvals that must be undertaken or obtained, as well as the costs and timetable associated with those activities; and

- v. express the costs in a consistent manner for all generation and conservation resources (i.e., cost per MW or MWh supplied or not consumed).

The OPA must also identify the mechanism by which a generation or conservation resource will be procured or acquired and the basis upon which the OPA believes that the process will result in the economically prudent and cost effective procurement of the resource. Where a procurement process is proposed to be used, the OPA must identify the nature of the procurement process. In the case of transmission resources, the entity that will be making the transmission resource investment must be identified if known.

In estimating the total costs of a resource, the OPA must identify and include the costs associated with the method of obtaining the resource.

Further discussion is warranted in relation to proposals for obtaining a resource using a process other than a contract-based procurement mechanism, such as a proposal to obtain demand response by means of an auction or a series of auctions. Specifically, the costs associated with using a process other than a contract-based mechanism can be more diverse than those associated with a contract-based procurement process, and these should be identified and quantified. For example, there may be costs associated with:

- i. the development of and compliance with new or additional legal or regulatory requirements (such as market rules, licences, codes, etc.);
- ii. the need for new infrastructure if the mechanism cannot be supported by existing infrastructure or new infrastructure that is known to be required for other purposes (such as wholesale market settlement systems and distribution customer information and billing systems);
- iii. the stranded costs associated with the mechanism if it cannot be accommodated by existing infrastructure or new infrastructure that is known to be required for other purposes; and
- iv. the need for existing and potential market participants to acquire new skills or resources.

Where transition costs result from a shift from contract-based supply to non contract-based supply, this must be identified and the costs quantified where possible.

The use of mechanisms that are not contract-based can carry benefits, and these should also be identified and quantified. For example, they may:

- i. enhance consumer choice for electricity products and services;
- ii. enhance electricity commodity price stability;
- iii. reduce or limit increases in regulatory charges; and
- iv. shift the commodity risk away from consumers.

Where use of a non contract-based mechanism for obtaining resources is proposed, the following additional information will also be required:

- i. an evaluation of the ability of existing and potential market participants to assume the financial and operational risks associated with the initiative, including a consideration of creditworthiness criteria; and
- ii. an assessment of the degree to which the mechanism will either reduce or create new or additional barriers to entry or participation for existing and potential market participants.

2. Conservation Resources

The IPSP must propose a portfolio of conservation measures that will achieve the short-term and long-term targets set out in the Supply Mix Directive.

For specific conservation resource initiatives, the OPA must identify:

- i. the initiative by sector and by type of program used to deliver the initiative;
- ii. the criteria used by the OPA in evaluating, selecting and prioritizing the conservation initiatives that are being put forward; and
- iii. the manner in which the OPA will evaluate, monitor and verify the contribution to reductions in peak energy demand (and, where applicable, energy consumption) from the conservation initiatives.

In valuing a conservation resource initiative, the OPA must take into account any conservation investments that would have been made in the absence of the initiative.

For each proposed conservation resource initiative that is not in the form of generation, the OPA must identify the following:

- i. the full capital and operating cost (per unit of demand and/or consumption) expected to be associated with implementation of the resource initiative, regardless of the person that bears the costs;

- ii. the savings (in demand and/or consumption) expected to be associated with implementation of the resource initiative, including the timing and persistence of those savings;
- iii. a description of the major assumptions that underlie the OPA's determination of the expected costs and savings referred to above;
- iv. whether the resource initiative is intended principally to address local area reliability or supply issues; and
- v. how the conservation resource initiative will be procured and from which sector, and at which end use it is targeted.

For each proposed conservation resource initiative that is in the form of generation, the OPA must provide the information set out in the applicable portions of section 3 below.

3. Generation Resources

a) General

Specific generation resource acquisition initiatives must be identified in addition to the total supply mix being acquired. This section sets out information requirements that apply to all types of generation resources. The following sections contain additional information requirements for each type of generation resource: renewable energy (section (b)), nuclear (section (c)), gas-fired (section (d)) and resources outside of Ontario (section (e)).

The criteria used by the OPA in evaluating, selecting and prioritizing the generation resource initiatives that are being put forward must be identified.

For each proposed generation resource initiative, the OPA must identify the following:

- i. size (capacity), fuel source, capacity factor and general location of the resource (including an indication of distance from existing transmission or distribution system facilities and loads) and the rationale for that location;
- ii. an estimate of the full cost of the project (i.e., construction, operation, waste disposal and decommissioning), including the directly attributable cost of transmission investments that would be necessary to incorporate and deliver energy from the project to the network. The most significant cost elements should be expressed as range estimates (e.g., plus/minus one standard deviation) in order to form a basis for a risk analysis of the project;

- iii. an estimate of the impact of the resource on transmission constraints and congestion costs;
- iv. an estimate of any impact (other than a transmission rate or congestion cost impact) of the project on existing affected transmission customers;
- v. a description of the major assumptions that underlie the OPA's determination of the estimated costs referred to above;
- vi. an estimate of the in-service date of the project and an assessment of the risk of project delays;
- vii. an assessment of the economic and financial risks associated with the project, including in relation to such factors as additional investments in existing facilities, project delays and uncertainty regarding fuel costs;
- viii. whether the resource initiative is intended principally to address local area reliability or supply issues;
- ix. how the generation resources will be procured; and
- x. all approvals and permits that would be required to construct and operate the resources.

b) *Renewable energy generation resources*

The IPSP must propose a portfolio of renewable energy resource development measures that will meet the short-term and long-term targets set out in the Supply Mix Directive.

For each generation resource initiative that targets generation from renewable energy sources, the OPA must identify:

- i. the eligible fuel sources;
- ii. the OPA's expectations or assumptions regarding acquisition of generation from each type of fuel source; and
- iii. the intermittent nature of the generation resource, if applicable.

c) *Nuclear generation resources*

The IPSP must include a plan for using nuclear energy to meet base-load electricity requirements, up to a maximum of 14,000 MW of installed, in-service capacity. To address this, the OPA must provide:

- i. an assessment of the level of base-load generation required over the forecast period, and the gap between that forecast and existing resources available to serve base-load;
- ii. an economic assessment of the feasible refurbishment or additions of new nuclear power capacity up to the 14,000 MW ceiling; and
- iii. an assessment of the economic and financial risks associated with life extension options for existing nuclear facilities and for new nuclear facilities.

The Government has directed Ontario Power Generation Inc. (“OPG”) to begin a feasibility study on the refurbishment of its existing facilities to review the economic, technological and environmental aspects of refurbishment.⁵ OPG has also been directed to begin the environmental assessment process for the construction of new units at an existing nuclear facility.

To the extent that the results of these activities are known at the relevant time, it is expected that they will be considered by the OPA in the development of the IPSP.

d) Gas-fired generation resources

For each generation resource initiative that targets generation from gas-fired resources, the OPA must provide:

- i. a forecast of natural gas prices and an assessment of the impact of the project on electricity prices in the wholesale spot market in light of forecast changes in natural gas prices; and
- ii. an assessment of economic natural gas generation (including CHP/cogeneration and gas-fired distributed generation) above what may be included in contracts listed in the *Prescribed Contracts re Sections 78.3 and 78.4 of the Act Regulation*, O. Reg. 578/05.

Paragraph 3 of section 2(1) of the IPSP Regulation requires the OPA to identify opportunities to use natural gas in high efficiency and high value applications in electricity generation. These applications appear to be the same as, or at least a subset of, the applications that allow high efficiency and high value use of natural gas that the OPA is required to pursue under the terms of the Supply Mix Directive. Accordingly, the opportunities must be realistic from a physical and commercial perspective. In order to evaluate whether the requirements of this

⁵ On August 3, 2006, OPG announced that it will proceed with an environmental assessment as part of its business case study for a potential refurbishment and life extension of its Pickering B nuclear plant, and that an environmental assessment report on the matter could be ready by 2007.

element of the IPSP Regulation and the Supply Mix Directive have been met, the OPA will be required to:

- i. identify the criteria that it has used to determine whether an application is high efficiency and high value; and
- ii. identify any barriers to the pursuit of those applications, as well as the means by which those barriers can be eliminated.

e) *Generation resources outside of Ontario*

For each generation resource initiative that targets generation resources located outside the province, the OPA must identify:

- i. all significant agreements that would need to be entered into in order to allow for the construction and operation of the project, and the status of those agreements, if known; and
- ii. how and, if known, by whom associated transmission investments will be secured.

4. Transmission Resources

Transmission resource initiatives associated with generation resource initiatives are addressed in section 3 above. As noted in that section, the following estimated costs should be identified separately for each of the following:

- i. the directly attributable cost of the transmission investments that would be necessary to incorporate and deliver energy from the generation resource to the network;
- ii. the impact of the generation resource on transmission constraints and congestion costs; and
- iii. the impact (other than a transmission rate or congestion cost impact) of the project on existing customers.

The remainder of this section addresses transmission system initiatives that are proposed to address the requirements outlined in the Supply Mix Directive to strengthen the transmission system.

For each such transmission resource initiative, the OPA must:

- i. identify the need for the resource initiative (for example, to comply with a reliability standard; to meet anticipated load growth; to reduce transmission congestion costs, etc.) and the relationship between the

- initiative and other projects it immediately supports and/or that it is supported by;
- ii. provide a description of the transmission resource initiative, including the length and capacity of the transmission line if known, routing or general siting information and an estimate of the total project cost broken down to network and radial transmission lines serving more than one transmission customer;
 - iii. provide a description of each phase of the project, together with a year-by-year time schedule until the planned in-service date;
 - iv. provide a schedule of estimated costs, broken down as set out in item ii above, associated with the project that meets the following requirements:
 - a. costs must be expressed in dollars of the year;
 - b. acquisition/capital costs and interest costs must be identified separately and expressed as a single best estimate (point estimate) and as a range estimate (e.g. plus/minus one standard deviation) cumulatively until the planned in-service date;
 - c. annual costs must be specified, including operating and maintenance costs; and
 - d. decommissioning costs must be specified, including any salvage value and ongoing storage costs;
 - v. where the resource initiative is required in order to meet a system reliability standard, identify the standard, as well as any material underlying assumptions or issues in relation to the interpretation or application of that standard; and
 - vi. where the resource initiative is required or desired for another purpose, identify the benefits associated with the investment (benefits may be expressed in quantitative or qualitative terms, depending on the nature of the benefit). Such other purposes could include reducing transmission system losses, reducing congestion, increasing generation reserve margins or enhancing the flexibility of transmission system operations and maintenance.

In relation to each transmission resource that is proposed for the purpose of meeting a system reliability standard, the OPA must demonstrate that the proposed solution offers the greatest net benefit of all alternatives considered. In relation to each transmission resource that is not designed for the purpose of meeting a system reliability standard, or is designed to exceed a system

reliability standard, the OPA must demonstrate that the benefits of the resource exceed its costs, and that the proposed solution offers the greatest net benefit of all alternatives considered.

D. Resource Planning and Acquisition: Beyond the Near-term Plan

As noted earlier, solutions or initiatives for years beyond the period covered by the Near-term Plan are expected to be presented at a more conceptual level. In this regard, the following is expected in relation to resource planning and acquisition:

- i. identification of the need for resources;
- ii. the anticipated composition of the resource portfolio (generation, conservation and transmission) and, for the generation resource element, the anticipated composition of the generation resource portfolio in terms of capacity, fuel source, technology and similar distinguishing features; and
- iii. the rationale used to arrive at the portfolio compositions, including a general description or assessment of the following, in as much detail as practicable:
 - a. expected direct costs (such as capital and commodity costs);
 - b. expected method of procurement or acquisition;
 - c. expected in-service or availability dates;
 - d. expected or potential location of resources or, in the case of non-generation conservation resources, the persons or class of persons targeted to deliver the resources;
 - e. integration implications (such as associated transmission or distribution system upgrades); and
 - f. material risks and uncertainties related to the feasibility of the portfolio compositions (such as uptake under the standard offer program, technological advances, performance under existing contracts, changes in demand growth, resource intermittency and the need for regulatory approvals).

E. Evaluation of Preferred Plan

It is expected that the OPA will identify a single preferred IPSP, including an implementation schedule that articulates when and how key initiatives will be undertaken.

It is also expected that the OPA will, in identifying its single preferred IPSP, have modeled alternative plans. To the extent that the preferred plan is not the plan with the lowest identified cost of all plans modeled, the OPA will be required to justify the selection of the preferred plan over the plan with the lowest identified cost. In this regard, the plan with the lowest identified cost is the plan with the lowest net present value ("NPV") that meets the requirements of IPSP Directives and the IPSP Regulation.

If the preferred IPSP is not the plan with the lowest identified cost, the OPA must file both plans, together with the following:

- i. a description of each plan, including conservation, generation and transmission resource initiatives, together with the following:
 - a. the year-by-year cumulative resource acquisition/capital cost and, separately, the interest cost for each plan, each expressed as a single best estimate (point estimate) and as a range estimate (e.g. plus/minus one standard deviation), with all costs expressed in dollars of the year; and
 - b. a cost comparison for each plan that meets the following requirements:
 - the NPV for each plan must be shown, expressed as a single best estimate (point estimate) and as a range estimate (e.g. plus/minus one standard deviation);
 - all NPV calculations must be stated in dollars of a single base year. The NPV must include all applicable costs and the discount rate used must be justified; and
 - the estimated impact on wholesale electricity prices and on transmission revenue requirements must be shown for each plan (in percentage terms), expressed as a single best estimate (point estimate) in each year and as a range estimate (e.g. plus/minus one standard deviation) in each year;

- ii. a comparison of the two plans. Using the plan with the lowest identified cost as the base case and identifying the additional costs and benefits of the preferred plan, provide:
 - a. a comparison of the plans, including their economic, environmental, reliability, safety, security, locational, congestion, system loss, land use and land acquisition, and other technical and non-technical attributes;
 - b. to the extent practical, the monetary equivalence of the attributes of each plan;
 - c. generating capacity vs. transmission capacity trade-offs, generation location vs. additional transmission trade-offs, schedule acceleration vs. deceleration trade-offs, and other resource trade-offs; and
 - d. an analysis of each plan's flexibility/robustness to changes in implementation schedule; and
- iii. for the preferred IPSP:
 - a. a supporting sensitivity analysis, including all financial risks, high and low forecast risks and other significant risks;
 - b. an indication of how those risks will be managed; and
 - c. a demonstration of how the preferred plan can address a range of contingencies such as unexpectedly rapid or slow growth in electricity demand and material deviations in fuel prices.

F. Satisfying the Requirements of the IPSP Regulation

Section 2(1) of the IPSP Regulation sets out responsibilities that the OPA must fulfill in developing the IPSP. These responsibilities largely fall into the categories of:

- plan preparation;
- alternatives to OPA procurement; and
- environmental issues.

Each of these are described in turn below. The element of the IPSP Regulation that relates to the use natural gas in high efficiency and high value applications in

electricity generation is discussed in section III.C.3(d) above in the context of the acquisition of gas-fired generation resources.

1. Plan Preparation

Two paragraphs of section 2(1) of the IPSP Regulation (1 and 7) require the OPA to consider certain things in developing the IPSP. This section outlines what is expected of the OPA with respect to those considerations.

Paragraph 1 of section 2(1) of the IPSP Regulation requires that the OPA consult certain persons and consider their priorities and views in developing the IPSP. The OPA will therefore be required to describe the consultation process that it followed in developing the IPSP, including a list of the persons consulted, as well as an indication of how those persons' priorities and views were determined and considered in developing the IPSP. The OPA should ensure that, through its consultation process, interested parties understand that the need for certain projects (i.e., projects identified in the Near-term Plan) will be addressed as part of the IPSP review and may not be reconsidered by the Board after that time.

Paragraph 7 of section 2(1) of the IPSP Regulation requires the OPA to ensure that safety, environmental protection and environmental sustainability are considered in developing the IPSP. Thus, the OPA will be required to indicate how it has considered these matters in developing the IPSP.

For purposes of paragraphs 1 and 7 of section 2(1) of the IPSP Regulation, the term "considered" should be taken as meaning weighed and evaluated.

The OPA should, in developing the IPSP, use the following definitions for each of the terms set out in paragraph 7 of section 2(1) of the IPSP Regulation:

Safety:

Refers to the safety of workers and members of the public through compliance with all applicable Ontario and federal laws and regulations pertaining to the construction and operation of facilities identified in the IPSP, including regulations and requirements of the Electrical Safety Authority and of the Canadian Nuclear Safety Commission.

Environmental protection:

Refers to the identification of adverse effects on the environment that an electricity project and identified alternatives to it may have and the measures that will be applied to mitigate those adverse effect in compliance with all applicable Ontario and federal laws and regulations related to environmental protection.

Environmental sustainability:

Refers to development that meets the needs of the present in a manner that seeks to minimize impacts on the ability of future generations to meet their own needs.

2. Alternatives to OPA Procurement

Paragraphs 5 and 6 of section 2(1) of the IPSP Regulation speak to the use of procurement processes and associated procurement contracts by the OPA – the former in relation to measures that can reduce reliance on those processes and the latter in relation to circumstances in which those processes should be engaged. This recognizes that OPA procurement processes and procurement contracts are not the sole means by which the supply and conservation goals set out in an IPSP Directive may be achieved, and that realistic alternative means may be more cost effective. Those alternative means are embodied in the concept of the “innovative strategies” referred to in paragraphs 2 and 4 of the IPSP Regulation. This means that cost-effective alternatives to OPA procurement can be addressed in the IPSP.

For purposes of these four elements of the IPSP Regulation, the OPA will be required to:

- i. identify realistic alternatives to reliance on OPA procurement processes for the purposes of meeting the conservation and supply goals set out in IPSP Directives, including:
 - a. the costs and benefits associated with each alternative relative to the costs and benefits associated with use of the OPA’s procurement processes; and
 - b. any barriers to the implementation of those alternatives, as well as the means by which those barriers can be eliminated;
- ii. indicate how each such conservation or supply alternative will reduce reliance on OPA procurement processes and how each such alternative is economically prudent and cost effective;
- iii. for each alternative that is intended to accelerate the implementation of conservation, energy efficiency and demand management measures, identify how implementation would be accelerated relative to implementation by way of OPA procurement process;
- iv. for each alternative that is intended to encourage and facilitate competitive market-based responses and options, identify how the alternative would encourage and facilitate those responses and options and how they would

assist in meeting overall system needs. The OPA is expected to describe the merits and disadvantages of different options, and might identify a process for further development of those options.⁶ However, the intention is not for the Board to engage in an assessment of whether market-based responses or options are appropriate or inherently “better” than is centralized procurement within the Ontario electricity context; and

- v. for the factors to be considered in determining that it is advisable to enter into procurement contracts for conservation or supply, identify how and why each factor was determined to be relevant to this determination.

3. Environmental Issues

Paragraph 8 of section 2(1) of the IPSP Regulation requires the OPA to ensure that, for certain “electricity projects” (transmission line, generation facility, distribution station or transformer station) that are proposed in the IPSP, the IPSP contains a sound rationale including: (i) an analysis of the impact of the project on the environment; and (ii) an analysis of the impact on the environment of a reasonable range of alternatives to the project. For purposes of this paragraph of the IPSP Regulation, “environment” is defined as “air, land, water, plant life and animal life, including human life”, and “environmental” has a corresponding meaning.

The sound rationale must be included for electricity projects that require an environmental assessment under Part II of the *Environmental Assessment Act* and for which an application for approval under that *Act* will have to be made within five years after approval of the IPSP by the Board in order to meet the completion date for the project set out in the IPSP. Nuclear generation projects as well as some others are outside the scope of this paragraph of the IPSP Regulation.

Guidance is required as to the nature of the analysis that is required to be produced in response to this paragraph of the IPSP Regulation. This paragraph can have the effect of facilitating the streamlining of regulatory approvals associated with electricity projects that are subject to provincial environmental assessments. More specifically, by requiring that a sound rationale for electricity projects and alternatives to those projects be provided, this paragraph of the IPSP Regulation will result in the creation of an analysis that can be relied upon by a future electricity project proponent in addressing the scope of subsequent environmental assessments.

For purposes of this paragraph of the IPSP Regulation, the OPA will be required to:

⁶ Section III.C.1 contains a discussion of some of the costs and benefits that could be associated with non contract-based procurement mechanisms.

- i. identify each electricity project that meets the criteria set out in section 2(2) of the IPSP Regulation and explain the basis for that determination;
- ii. describe the following for each electricity project identified in item i above:
 - a. the environment that will or might reasonably be expected to be directly or indirectly affected by the electricity project;
 - b. the effects that the electricity project will or might reasonably be expected to have on the environment; and
 - c. the actions that are or might reasonably be expected to be required in order to prevent, change, mitigate or remedy the effects referred to in item b above;
- iii. identify a reasonable range of alternatives to each electricity project identified in item i above;
- iv. describe the elements set out in item ii above for each alternative identified in item iii above; and
- v. for each electricity project, provide a comparative evaluation of its environmental impact relative to the alternatives identified for that project.

It is expected that environmental externalities will be addressed as part of the analysis required by paragraph 8 of section 2(1) of the IPSP Regulation. Externalities should be addressed consistently for each electricity project identified by the OPA as meeting the requirements of section 2(2) of the IPSP Regulation and for each alternative to that project identified by the OPA.

The analysis described in this section F.3 should, at a minimum, be conducted as part of the resource planning and acquisition selection process described in sections III.C and III.D above, and in particular in the evaluation of generation and transmission resources.

PART TWO: PROCUREMENT PROCESSES

I. Introduction

Under section 25.31 of the Act, the OPA is required to develop “appropriate procurement processes for managing electricity supply, capacity and demand” in accordance with its approved IPSP. The procurement processes must provide for simpler procurement processes for supply or capacity to be generated using alternative energy sources or renewable energy resources, or both, where the supply or capacity of the facility or unit satisfies the prescribed conditions.

Further guidance regarding the OPA’s procurement processes is found in the *Ontario Power Authority Procurement Process Regulation*, O. Reg. 426/04 (the “Procurement Process Regulation”).

Once the OPA’s procurement processes have been approved by the Board, the OPA may enter into “procurement contracts” in accordance with those procurement processes, subject to the constraints imposed by the Act and the Procurement Process Regulation. Procurement contracts are described in section 25.32(1) of the Act as contracts for: “(a) electricity supply or capacity, including supply or capacity to be generated using alternative energy sources, renewable energy sources or both; or (b) measures that will manage electricity demand or result in the improved management of electricity demand on an on-going or emergency basis”.

Because recovery by the OPA of its costs and payments related to procurement contracts is deemed by section 25.20(4) of the Act to be approved by the Board, those costs and payments are automatically passed through to electricity consumers without regulatory approval.

Appendix C contains excerpts from the Act that relate to the OPA’s procurement processes, as well as the provisions of the Procurement Process Regulation.

II. Principles Guiding Review of Procurement Processes

A. Board Mandate

The Act does not provide any specific criteria against which the Board is to review the OPA's procurement processes. The Act does require that the OPA's procurement processes be appropriate for the purpose of managing electricity supply, capacity and demand in accordance with the approved IPSP. In this context, a procurement process would be considered appropriate if it will or is likely to result in the OPA obtaining the supply, capacity and demand resources identified in the IPSP on an economically prudent and cost effective basis.

In reviewing the OPA's procurement processes, it must be recognized that the Procurement Process Regulation establishes parameters for the development of those processes and allows the OPA a degree of flexibility in relation to certain elements. For example, the Procurement Process Regulation favours but does not mandate competitive procurement processes. Similarly, the Board will favour but cannot mandate the sole use of competitive procurement processes.

The Standard Offer Program⁷ is a form of procurement process. On March 21, 2006, the Minister of Energy issued a directive to the OPA under section 25.32 of the Act directing the OPA to assume responsibility for certain aspects of the Standard Offer Program. The stated expectation is that the OPA will enter into such contracts as are necessary to implement the Standard Offer Program. The Board does not intend to review the Standard Offer Program within the scope of its review of the OPA's procurement processes.

B. Procurement Process Elements

1. General

All procurement processes must be fair and transparent and must allow the OPA the flexibility to cancel the process in appropriate cases without proceeding to procurement. The procurement processes must be designed to maximize the likelihood of obtaining the required supply, capacity or resource on an economically prudent, cost effective and timely basis. They must also be designed to minimize at the outset, and/or reduce over time, the financial risks and obligations of electricity consumers. Among other things, electricity consumers should not bear the financial risk of non-performance by the counterparty.

Procurement processes should:

- i. be designed to limit barriers to participation;

⁷ See the March 17, 2006 joint report of the Board and the OPA to the Minister of Energy entitled *Recommendations on a Standard Offer Program for Small Generators Connected to a Distribution System*.

- ii. be as simple as the circumstances allow; and
- iii. restrict the use of confidentiality provisions to the maximum extent possible.

There are three forms of procurement process that can be anticipated to be used by the OPA – competitive processes (i.e., open tenders), non-competitive processes (i.e., single source procurement) and standard offer processes. Competitive processes may be addressed to the public generally, to all persons within a particular class (i.e., to all licensed distributors or to all licensed generators) or to a list of pre-identified prospective proponents having known qualifications. Non-competitive processes are those in which formal competitive processes are not used to select between bids. Standard offer processes are those for which standard contract terms and conditions are made available to all interested and qualified proponents with technically feasible projects, subject to any ceiling or cap that may be in place.

It is expected that competitive procurement processes will be used in the normal course, and that non-competitive procurement processes will be used on an exceptional basis (for example, in cases of urgency). To the extent that the OPA anticipates that it may need to use a non-competitive process in circumstances where a competitive one was initially intended, the criteria for doing so must be clearly identified.

Because standard offer processes can carry the risk of higher consumer prices and less than optimal deployment of resources, mechanisms must be in place to minimize that risk.

2. Competitive Procurement

Competitive procurement processes are expected to be used in the normal course, and should:

- i. clearly identify the resource being procured and, where applicable, the region in which the resource is required to be located. For generation resources, this should include eligible fuel sources and minimum capacity and output parameters, as well as the total number of MW to be procured under the process. For conservation resources, this should include a description of the eligible conservation activities (such as demand response, load shifting or behind the meter generation) and the total number of MW to be procured in relation to each;
- ii. clearly identify the criteria that will be used to evaluate each proposal, how those criteria will be applied or evaluated and the weight given to each

criterion. The criteria must be applied in a consistent and fair manner to all proponents, and should include the following:

- a. date of availability of the resource;
- b. type and status of project financing;
- c. creditworthiness or financial strength of the proponent;
- d. need for and status of project and site approvals or permits;
- e. need for and status of acquisition of land use rights;
- f. for generation resources, all indirect costs (such as the extent of any costs associated with any necessary network investments, waste disposal or remediation costs, etc.) and all indirect benefits (such as congestion reduction);
- g. for generation resources, the impact on affected transmission or distribution systems and/or natural gas infrastructure in Ontario;
- h. technical or equipment requirements for the resource and technical or operational experience of the proponent;
- i. maturity of the project technology;
- j. major project risks such as delays in implementation and regulatory risks, and measures for mitigating those risks; and
- k. pricing.

Inclusion of a prequalification phase may be beneficial in many procurements. Where a prequalification phase is used, a number of the above evaluation criteria could be used for purposes of that phase;

- iii. require the proponent to agree that, if selected, the proponent will execute a contract on specified terms;
- iv. include either a copy of the contract that selected proponents will be required to execute or an adequate summary of the key terms and conditions of that contract – key terms should include term, pricing, critical timelines for being in-service or available, penalties for non-performance by the selected proponent that are appropriate to the nature of the resource being procured, and adequate measures enabling the OPA to assess and verify performance by the selected proponent. Contract terms

- may be flexible or open to negotiation provided that this does not affect the fairness of the process;
- v. except where unreasonable, include a requirement that all proponents provide bid security in an amount commensurate with the project size and development status, and the terms on which that security may be forfeit in whole or in part (such as failure of a selected proponent to enter into a contract with the OPA); and
 - vi. include mechanisms that ensure that conflicts of interest and collusion between bidders are avoided and that no proponent will have an unfair advantage in relation to the procurement process by reason of preferential access to information or otherwise.

It is expected that the OPA will articulate the following as part of any competitive procurement process:

- i. how prospective proponents will be informed that a procurement process has been initiated by the OPA;
- ii. mechanisms that will allow prospective proponents to obtain information about procurement opportunities generally as well as about specific procurement initiatives, and how the procurement process operates; and
- iii. any registration or other similar conditions that must be met in order for a prospective proponent to participate in the process.

3. Non-competitive Procurement

Non-competitive procurement processes are expected to be used on an exceptional basis. It is expected that the OPA will articulate, as part of such a process:

- i. the circumstances under which that process can or will be used;
- ii. the process by which the OPA will approve and document its decision to use that process; and
- iii. an obligation on the OPA in each case to make public its decision to use that process and the reasons justifying that decision.

To the extent that the OPA anticipates that there may be occasions where a competitive process is initially intended but circumstances require a non-competitive process to be used, those circumstances should also be identified.

4. Standard Offer Procurement

A standard offer process may be appropriate for the procurement of specific types of resources. It is expected the OPA to articulate, as part of any such process:

- i. the resources to be procured, including as to nature of the resources and the quantity to be procured;
- ii. the methodology to be used to determine the standard offer price(s) for each resource;
- iii. whether the standard offer will be subject to a ceiling or cap in terms of total participation;
- iv. measures that will be used to avoid the “hoarding” of standard offer contracts; and
- v. other key elements of the standard offer, including:
 - a. eligibility criteria (including in relation to type of fuel or activity, ownership, location, in-service or availability date, creditworthiness, etc.);
 - b. security requirements;
 - c. queuing procedures, if applicable; and
 - d. key standard offer contract or tariff terms and conditions (including term and default provisions).

Appendix A

Statutory Provisions Regarding the IPSP

Electricity Act, 1998

Integrated power system plan

25.30 (1) Once during each period prescribed by the regulations, or more frequently if required by the Minister or the Board, the OPA shall develop and submit to the Board an integrated power system plan,

- (a) that is designed to assist, through effective management of electricity supply, transmission, capacity and demand, the achievement by the Government of Ontario of,
 - (i) Its goals relating to the adequacy and reliability of electricity supply, including electricity supply from alternative energy sources and renewable energy sources, and
 - (ii) Its goals relating to demand management; and
- (b) That encompasses such other related matters as may be prescribed by the regulations.

Minister's directives

(2) The Minister may issue, and the OPA shall follow in preparing its integrated power system plans, directives that have been approved by the Lieutenant Governor in Council that set out the goals to be achieved during the period to be covered by an integrated power system plan, including goals relating to,

- (a) The production of electricity from particular combinations of energy sources and generation technologies;
- (b) Increases in generation capacity from alternative energy sources, renewable energy sources or other energy sources;
- (c) The phasing-out of coal-fired generation facilities; and
- (d) The development and implementation of conservation measures, programs and targets on a system-wide basis or in particular service areas.

Publication

(3) A directive issued under subsection (2) shall be published in *The Ontario Gazette*.

Review of integrated power system plan

(4) The Board shall review each integrated power system plan submitted by the OPA to ensure it complies with any directions issued by the Minister and is economically prudent and cost effective.

Board's powers

(5) After review, the Board may approve a plan or refer it back with comments to the OPA for further consideration and resubmission to the Board.

Deadline for review

(6) The Board shall carry out the review of an integrated power system plan under subsection (4) within such time as the Minister directs.

Regulations, Part II.2

114 (1.3) The Lieutenant Governor in Council may make regulations,

...

- (b) governing integrated power system plans and procurement processes;

IPSP Regulation

Period and updating of integrated power system plan

1. For the purpose of section 25.30 of the Act, the OPA,
 - (a) shall develop and submit an integrated power system plan that covers a period of 20 years from the date of its submission; and
 - (b) shall develop and submit an update of the plan every three years, which updated plan shall cover a period of 20 years from the date of its submission.

Development of integrated power system plan

- 2.(1) In developing an integrated power system plan under subsection 25.30 (1) of the Act, the OPA shall follow directives that have been issued by the Minister under subsection 25.30 (2) of the Act and shall do the following:
 1. Consult with consumers, distributors, generators, transmitters and other persons who have an interest in the electricity industry in order to ensure that their priorities and views are considered in the development of the plan.
 2. Identify and develop innovative strategies to accelerate the implementation of conservation, energy efficiency and demand management measures.

3. Identify opportunities to use natural gas in high efficiency and high value applications in electricity generation.
 4. Identify and develop innovative strategies to encourage and facilitate competitive market-based responses and options for meeting overall system needs.
 5. Identify measures that will reduce reliance on procurement under section 25.32 of the Act.
 6. Identify factors that it must consider in determining that it is advisable to enter into procurement contracts under subsection 25.32 (1) of the Act.
 7. Ensure that safety, environmental protection and environmental sustainability are considered in developing the plan.
 8. Ensure that for each electricity project recommended in the plan that meets the criteria set out in subsection (2), the plan contains a sound rationale including:
 - i. an analysis of the impact on the environment of the electricity project; and
 - ii. an analysis of the impact on the environment of a reasonable range of alternatives to the electricity project.
- (2) For the purposes of paragraph 8 of subsection (1), the following are the criteria:
1. An environmental assessment of the electricity project under Part II of the *Environmental Assessment Act* must be required.
 2. The electricity project, based on the recommended date for completion of the project in the plan, will in the opinion of the OPA require that an application for approval for an undertaking be made under the *Environmental Assessment Act* within five years after the approval of the plan by the Board.
- (3) In this section,
- “electricity project” means a project that includes one or more of a transmission line, generation facility, transformer station or distribution station;
- “environment” means air, land, water, plant life and animal life, including human life and “environmental” has a corresponding meaning.

Publication of plan

3. The OPA shall publish all integrated power system plans that have been approved by the Board under subsection 25.30 (5) of the Act on a publicly accessible website approved by the Board.

Appendix B

The Supply Mix Directive

June 13, 2006

Dr. Jan Carr
Chief Executive Officer
Ontario Power Authority
1600-120 Adelaide Street West
Toronto, Ontario
M5H 1T1

Dear Dr. Carr:

Re: Integrated Power System Plan

As authorized by the Lieutenant Governor in Council under Section 25.30 of the *Electricity Act, 1998*, I am providing direction for the preparation of the Integrated Power System Plan.

The Government directs the OPA to create an Integrated Power System Plan to meet the following goals:

1. The goal for total peak demand reduction from conservation by 2025 is 6,300 MW. The plan should define programs and actions which aim to reduce projected peak demand by 1,350 MW by 2010, and by an additional 3,600 MW by 2025. The reductions of 1,350 MW and 3,600 MW are to be in addition to the 1,350 MW reduction set by the government as a target for achievement by 2007. The plan should assume conservation includes continued use by the government of vehicles such as energy efficiency standards under the *Energy Efficiency Act* and the Building Code, and should include load reduction from initiatives such as: geothermal heating and cooling; solar heating; fuel switching; small scale (10 MW or less) customer-based electricity generation, including small scale natural gas fired co-generation and tri-generation, and including generation encouraged by the recently finalized net metering regulation.
2. Increase Ontario's use of renewable energy such as hydroelectric, wind, solar, and biomass for electricity generation. The plan should assist the government in meeting its target for 2010 of increasing the installed capacity of new renewable

.../cont'd

energy sources by 2,700 MW from the 2003 base, and increase the total capacity of renewable energy sources used in Ontario to 15,700 MW by 2025.

3. Plan for nuclear capacity to meet base-load electricity requirements but limit the installed in-service capacity of nuclear power over the life of the plan to 14,000 MW.
4. Maintain the ability to use natural gas capacity at peak times and pursue applications that allow high efficiency and high value use of the fuel.
5. Plan for coal-fired generation in Ontario to be replaced by cleaner sources in the earliest practical time frame that ensures adequate generating capacity and electricity system reliability in Ontario.

The OPA should work closely with the IESO to propose a schedule for the replacement of coal-fired generation, taking into account feasible in-service dates for replacement generation and necessary transmission infrastructure.

6. Strengthen the transmission system to:
 - Enable the achievement of the supply mix goals set out in this directive;
 - Facilitate the development and use of renewable energy resources such as wind power, hydroelectric power and biomass in parts of the province where the most significant development opportunities exist;
 - Promote system efficiency and congestion reduction and facilitate the integration of new supply, all in a manner consistent with the need to cost effectively maintain system reliability.
7. The plan should comply with Ontario Regulation 424/04 as revised from time to time.

Yours sincerely,



Dwight Duncan
Minister of Energy

Appendix C

Statutory Provisions Regarding the OPA's Procurement Processes

Electricity Act, 1998

Procurement process for electricity supply, etc.

25.31 (1) The OPA shall develop appropriate procurement processes for managing electricity supply, capacity and demand in accordance with its approved integrated power system plans.

Same

(2) The OPA's procurement processes must provide for simpler procurement processes for electricity supply or capacity to be generated using alternative energy sources or renewable energy sources, or both, where the supply or capacity or the generation facility or unit satisfies the prescribed conditions.

Application for approval

(3) The OPA shall apply to the Board for approval of its proposed procurement processes, and any amendments it proposes.

Board approval

(4) The Board shall review the OPA's proposed procurement processes and any proposed amendments and may approve the procurement processes or refer all or part of them back with comments to the OPA for further consideration and resubmission to the Board.

Deadline for review

(5) The Board shall carry out the review of the proposed procurement processes and any proposed amendments within such time as the Minister directs.

Procurement contracts

25.32 (1) When the OPA considers it advisable, it shall enter into contracts in accordance with procurement processes approved under section 25.31 for the procurement of,

- (a) electricity supply or capacity, including supply or capacity to be generated using alternative energy sources, renewable energy sources or both; or
- (b) measures that will manage electricity demand or result in the improved management of electricity demand on an on-going or emergency basis.

Contract to comply with regulations

(2) The OPA shall not enter into a procurement contract that does not comply with the regulations.

Resolution of procurement contract disputes

(3) The parties to a procurement contract shall ensure that the contract provides a mechanism to resolve any disputes between them with respect to the contract.

Transition

(4) Despite subsection (2), the Minister may direct the OPA to assume, as of such date as the Minister considers appropriate, responsibility for exercising all powers and performing all duties of the Crown, including powers and duties to be exercised and performed through an agency of the Crown,

- (a) under any request for proposals, draft request for proposals, another form of procurement solicitation issued by the Crown or through an agency of the Crown or any other initiative pursued by the Crown or through an agency of the Crown,
 - (i) that was issued or pursued after January 1, 2004 and before the Board's first approval of the OPA's procurement process under subsection 25.31 (4), and
 - (ii) that relates to the procurement of electricity supply or capacity or reductions in electricity demand or to measures for the management of electricity demand; and
- (b) under any contract entered into by the Crown or an agency of the Crown pursuant to a procurement solicitation or other initiative referred to in clause (a).

Release of the Crown, etc.

(5) As of the day specified in the Minister's direction under subsection (4), the OPA shall assume responsibility in accordance with that subsection and the Crown and any Crown agency referred to in that subsection are released from any and all liabilities and obligations with respect to the matters for which the OPA has assumed responsibility.

Deemed compliance

(6) The following contracts shall be deemed to be procurement contracts entered into in accordance with any integrated power system plan and procurement process approved by the Board:

1. A contract entered into by the OPA following a procurement solicitation or other initiative referred to in clause (4) (a).
2. A contract referred to in clause (4) (b).

Same

(7) The OPA shall enter into any contract following a procurement solicitation or other initiative referred to in clause (4) (a) if directed to do so by the

Minister of Energy, and that contract shall be deemed to be a procurement contract that was entered into in accordance with any integrated power system plan and procurement process approved by the Board.

Regulations, Part II.2

114 (1.3) The Lieutenant Governor in Council may make regulations,

...

- (c) prescribing principles to be applied in developing procurement processes and in evaluating proposals for reducing or managing electricity demand or for increasing electricity supply or capacity;
- (d) prescribing conditions for the purposes of subsection 25.31 (2);
- (e) governing procurement contracts;

Procurement Process Regulation

Assessment of capability of IESO-administered markets

1. The OPA shall not commence the procurement process under section 25.32 of the Act unless it has, in consultation with interested parties, made an assessment of the capability of the IESO-administered markets to, or the likelihood that investment by other persons will,
 - (a) meet the need for electricity supply or capacity as identified in an assessment made under section 25.29 of the Act; or
 - (b) deliver measures that will manage electricity demand or result in the improved management of electricity demand as described in clause 25.32 (1) (b) of the Act.

Factors for consideration

2. The OPA shall not commence the procurement process under section 25.32 of the Act unless,
 - (a) it has considered the factors identified in the integrated power system plan in respect of the advisability of entering into contracts; or
 - (b) in the opinion of the OPA, after consultation with the IESO, extraordinary circumstances exist that justify proceeding with a procurement process without consideration of the factors mentioned in clause (a).

Principles in the procurement process

3. In developing procurement processes under section 25.31 of the Act, the OPA shall comply with the following principles:
 1. Procurement processes and selection criteria must be fair and clearly stated and, wherever possible, open and accessible to a broad range of interested bidders.
 2. To the greatest extent possible, the procurement process must be a competitive process.
 3. There must be no conflicts of interest or unfair advantage allowed in the selection process.
 4. To the greatest extent possible, the procurement process must not have an adverse impact outside of the OPA procurement process on investment in electricity supply or capacity or in measures that will manage electricity demand as described in subsection 29.32 (1) of the Act.

No adverse impact of contract

4. The OPA shall ensure that, to the greatest extent possible, any contract it enters into under subsection 25.32 (1) of the Act does not contain any terms or conditions that have an adverse impact on investment by persons who are not parties to such a contract with the OPA in electricity supply or capacity or in measures that will manage electricity demand as described in subsection 29.32 (1) of the Act.