

# **Planning Process Working Group Report to the Board**

**The Process for Regional Infrastructure Planning  
in Ontario**

March 13, 2013

**\*Revised May 17, 2013**

*intentionally blank*

## Table of Contents

1	Introduction .....	2
	1.1 Background and Context.....	2
	1.2 The Working Group Process.....	5
	1.3 The Current Regional Planning Process in Ontario .....	7
	1.4 Structure of the Report.....	7
2	Overview of the Regional Infrastructure Planning Process.....	9
3	Elements of the Regional Infrastructure Planning Process.....	17
	3.1 Appropriate Predetermined Regional Boundaries .....	18
	3.2 Information Required from Distributors.....	19
	3.3 Role of the Participants.....	20
	3.4 Evaluative Criteria to Compare Potential Solutions .....	22
	3.5 Form of Broader Engagement.....	22
	3.6 Participation in the Process - “Required” or “Expected”.....	24
	3.7 Filing Requirements Related to Regional Infrastructure Planning.....	25
	3.8 Increasing Transparency in the Regional Planning Process.....	26
	3.9 Proposed Changes to the Board’s Regulatory Instruments.....	27
	3.10Regional Coordination of the Smart Grid.....	27
4	Transition and Implementation.....	29
5	Other Matters.....	33
	Appendix 1: Description of Regional Infrastructure Planning Process .....	i
	Appendix 2: Description of Integrated Regional Resource - Planning (“IRRP”) Process.....	ii
	Appendix 3: Maps setting out the regions.....	iii
	Appendix 4: Table setting out Distributors in each Region.....	iv

Appendix 4a: Group Priority List - 21 Planning Regions .....v

Appendix 5: Supporting Documentation for Distributor's - Application to the Board..... vii

Appendix 6: Needs Screening Summary Report Template..... viii

Appendix 7: Scoping Process Outcome Report Template ..... viii

Appendix 8: Planning Status Letter - Request Form Template ..... ix

Appendix 9: Load Forecast Information required for Integrated Regional Resource Planning  
x

Appendix 10: Currently Active Regional Planning Studies..... xi

Appendix 11: Regional Infrastructure Planning Process – OEB Staff Memorandum..... xii

Appendix 12: List of PPWG Members ..... xiii

# 1 Introduction

---

## 1.1 Background and Context

On October 18, 2012, the Ontario Energy Board (the “Board”) issued its *Report of the Board – A Renewed Regulatory Framework for Electricity Distributors: A Performance Based Approach* (the “[RRFE Board Report](#)”). The RRFE Board Report concluded a consultation process aimed at promoting the cost-effective development of electricity infrastructure through coordinated planning on a regional basis between licensed distributors and transmitters.

In the RRFE Board Report, the Board concluded that infrastructure planning on a regional basis is required to ensure that regional issues and requirements are effectively integrated into utility planning processes. The Board also noted that the effective use of Regional Infrastructure Planning and the inclusion of regional considerations in distributors’ and transmitters’ plans will be key in ensuring that the development and implementation of the smart grid in Ontario is carried out on a coordinated basis and that smart grid investments are made at the system level (distribution or transmission) that will best serve the interests of the region.

The Board indicated that distributors and transmitters will be expected to file evidence in rate and leave to construct (“LTC”) proceedings that demonstrates regional issues have been appropriately considered and addressed in developing the utility’s capital budget or infrastructure investment proposal. The Board also noted that it would not expect that a formal Regional Infrastructure Plan will be required in all instances to satisfy the filing requirements and, while the Board will consider Regional Infrastructure Plans in its regulatory processes, it will not formally approve Regional Infrastructure Plans.

The Board also concluded that effective Regional Infrastructure Planning would be best achieved by allowing relevant stakeholders a further opportunity to build on their practical experience and on the input received through the RRFE consultation process.

The Board therefore convened a stakeholder working group to prepare a report to the Board (the “Working Group Report”) that sets out the details of appropriate Regional Infrastructure Planning processes, that defines the outputs of the planning process and that identifies any changes to the Board’s regulatory instruments that may be needed to support the process. The RRFE Board Report set out the following expectations to be reflected in this Working Group Report:

- For Regional Infrastructure Planning to be more structured, lead responsibility must be assigned and that there is merit in having this responsibility lie with the appropriate transmitter. The transmitter is to work with the Ontario Power Authority (“OPA”) to identify where conservation and demand management (“CDM”) or distributed generation (“DG”) options may represent potential solutions.
- Regions are to be identified to form the foundation for the process and so that all distributors will have an understanding of the regions that they reside in. The Board therefore indicated that predetermined regions should be established based on electrical system boundaries and suggested that the Independent Electricity System Operator’s (“IESO”) electrical zones be used by the working group as a starting point.
- Protocols should be established by the working group for sharing information amongst the relevant parties for Regional Infrastructure Planning purposes.
- Distributors will be expected to participate in Regional Infrastructure Planning processes.

In addition to the above expectations, the Board identified that the following key elements needed to be addressed in this Working Group Report in order to facilitate the move to a more structured Regional Infrastructure Planning process:

- The information a distributor should be required to provide to the transmitter for Regional Infrastructure Planning purposes and the frequency at which it should be updated;
- The appropriate evaluative criteria to compare potential solutions;
- The circumstances under which the OPA should participate;
- The form in which broader consultation should take place before a Regional Infrastructure Plan is finalized;
- The appropriate regional boundaries and the criteria to be used to establish them; and
- Any other key elements that the working group believes should be addressed in order to facilitate the move to a more structured Regional Infrastructure Planning process.

In addition, as part of this Working Group Report to the Board, the Board noted that the working group was expected to provide input to Board staff in relation to filing requirements related to Regional Infrastructure Planning to inform a Board staff proposal related to consolidated filing requirements that will be developed by a separate working group – the Distribution Network Investment Planning Working Group.

The Board indicated that, following receipt of this Working Group Report, it would determine the changes to its regulatory instruments that are required to facilitate the planning process established by the working group. The Board further indicated that those changes would be effected through one notice and comment process to amend the relevant codes (and other regulatory instruments) along with the cost responsibility changes related to the redefinition of line connection assets and those involving Transmission System Code (“TSC”) cost responsibility rule changes.

On October 30, 2012, the Board issued a [letter](#) to stakeholders announcing the selection of working group members to prepare this Working Group Report to the Board setting out the planning process for Regional Infrastructure Planning. Appendix 12 identifies the members of the Planning Process Working Group (“PPWG”).

## 1.2 The Working Group Process

The PPWG held six full day meetings from November 14, 2012 to January 23, 2013 which were facilitated by Board staff. Prior to the first working group meeting, Board staff circulated a Memorandum (the “Board staff Memorandum”) to the PPWG members which included the Board’s expectations and the process elements set out in the RRFE Board Report as well as additional planning process elements that were suggested by Board staff. The Board staff Memorandum also included suggestions associated with each element for the PPWG’s consideration to facilitate discussion in the meetings. The Board staff Memorandum is attached as Appendix 11.

The PPWG notes that the process elements identified in the Board staff Memorandum need to be addressed in order to facilitate the move to a more structured Regional Infrastructure Planning process. Given the RRFE Board Report stated that a more structured approach to Regional Infrastructure Planning is key to ensuring that the development and implementation of the smart grid in Ontario is carried out on a regionally coordinated basis, the PPWG provides some discussion on the topic of smart grid in this report. A complete list of key elements that were the focus of discussion during the working group meetings is provided in Chapter 3.

There were six scheduled meetings of the PPWG. Over the initial five scheduled meetings, the PPWG had extensive discussions in relation to developing a more structured Regional Infrastructure Planning process, with a particular focus on the key elements that provided the foundation for the process. There was also extensive discussion regarding the relationship between the Regional Infrastructure Planning process and the OPA’s Integrated Regional Resource Planning (“IRRP”) process. Drawing on the discussions during those meetings, the sixth scheduled meeting of the PPWG focused on coming to agreement on the structure of this Working Group Report. This included meetings and conference calls, which were facilitated by Board staff, following the issuance of a draft version of the report for broader stakeholder comment, for the purpose of reflecting stakeholder input received by the PPWG. The PPWG had



further meetings and conference calls to make revisions to reflect feedback from the Board in advance of this report being submitted to the Board as a final document. <sup>1</sup>

During the working group meetings, there was also discussion regarding transition and implementation issues. The PPWG believes that there is a need for a transition process and implementation plan for Regional Infrastructure Planning. This report therefore includes a proposed transition process and implementation approach for the Board's consideration. This report also identifies other matters that the PPWG believes the Board should consider.

Meeting summaries of all PPWG meetings and related materials are posted on the [OEB website](#).

The PPWG believes the Regional Infrastructure Planning process set out in this report is consistent with the Board's expectations that were identified in the RRFE Board Report.

The PPWG notes that there was consensus amongst the members that it was important to obtain feedback from stakeholders before finalizing this report. Accordingly, the draft report was posted on the OEB website for public review with an opportunity for comments to be made to the PPWG. Comments received were considered by the PPWG before this report was finalized.

---

<sup>1</sup> "The PPWG and Board staff concluded that Meeting Notes were only necessary for the initial five scheduled meetings that focused on discussion and debate, amongst the PPWG members, regarding the key elements that provided the foundation for this report; i.e., not for the ad hoc meetings that focused on drafting and revising this report".

### **1.3 The Current Regional Planning Process in Ontario**

As noted in the RRFE Board Report, regional planning is not a new concept in Ontario. The former Ontario Hydro, as the vertically integrated utility, had been conducting regional supply planning for the province up until the restructuring of the electricity industry in 2000. Following the demerger of Ontario Hydro, regional planning for transmission infrastructure was conducted by the transmitters on an 'as needed' basis.

Since its inception in 2005, the OPA has been carrying out regional planning activities to address local and regional supply adequacy and reliability needs. Joint regional planning studies have been carried out with distributors, transmitters and the IESO. The OPA began conducting regional planning activities outside the Integrated Power System Plan because a high degree of coordination with these, and other parties, was required to develop integrated plans that examine conservation, generation (including DG) and infrastructure (transmission and distribution) options.

A number of regional planning projects are currently active. Appendix 10 provides a list of these areas and identifies the distributors involved.

### **1.4 Structure of the Report**

The balance of this Working Group Report to the Board is organized as follows:

- Chapter Two provides an overview of the Regional Infrastructure Planning process;
- Chapter Three discusses the key elements of the Regional Infrastructure Planning process;
- Chapter Four discusses the need for a transition process and implementation plan, and explains the approach the PPWG is proposing to the Board for its consideration; and
- Chapter Five identifies some other matters and provides associated recommendations for Board consideration.

This report also includes the following appendices:

- Appendix 1 - Description of Regional Infrastructure Planning Process
- Appendix 2 - Description of Integrated Regional Resource Planning (“IRRP”) Process
- Appendix 3 - Maps setting out the regions
- Appendix 4 - Table setting out the distributors in each region [Hydro One upstream Transmitter]
- Appendix 4a Group Priority List - 21 Planning Regions (Chart)
- Appendix 5 - Supporting Documentation for Distributor’s Application to the Board
- Appendix 6 - Needs Screening Summary template
- Appendix 7 - Scoping Process Outcome Report template
- Appendix 8 - Planning Status Letter - Request Form
- Appendix 9 - Load forecast information required for Integrated Regional Resource Planning
- Appendix 10 - Currently active regional planning studies
- Appendix 11 - Regional Infrastructure Planning Process – OEB Staff Memorandum
- Appendix 12 - List of PPWG members

## 2 Overview of the Regional Infrastructure Planning Process

---

Before describing the Regional Infrastructure Planning process, the PPWG felt that it is important to clarify what ‘regional’ planning entails and what is meant by “infrastructure” in the context of the Regional Infrastructure Planning. By doing so, the Board and other stakeholders will be provided greater clarity on what the PPWG believes is, and equally as important, what is not addressed by the Regional Infrastructure Planning process.

Planning for the electricity system in Ontario is done at essentially three levels:

1. Bulk system planning
2. Regional system planning
3. Distribution system planning

These levels differ in the facilities that are considered and the scope of impact on the electricity system. Planning at the bulk system level typically looks at issues that impact the system on a provincial level, while planning at the regional and distribution levels looks at issues on a more regional or localized level.

Bulk system planning typically looks at the broader power system and considers largely the 230 kV and 500 kV network systems. The bulk power system transfers large quantities of power between the provincial grid and neighbouring power systems external to the province via the interconnections. The bulk power system also connects major generation sources and delivers that power to major load centres in Ontario. Bulk system planning considers not only the transmission facilities (“wires”) but also resources, including generation and CDM, needed to adequately supply the needs of the province. To ensure the reliability of the bulk power system, planning must consider both the adequacy and the security of wires and resources, as well as the supply mix requirements set out in the government’s Long Term Energy Plan. Planning and operation of the bulk power system must comply with all applicable standards and

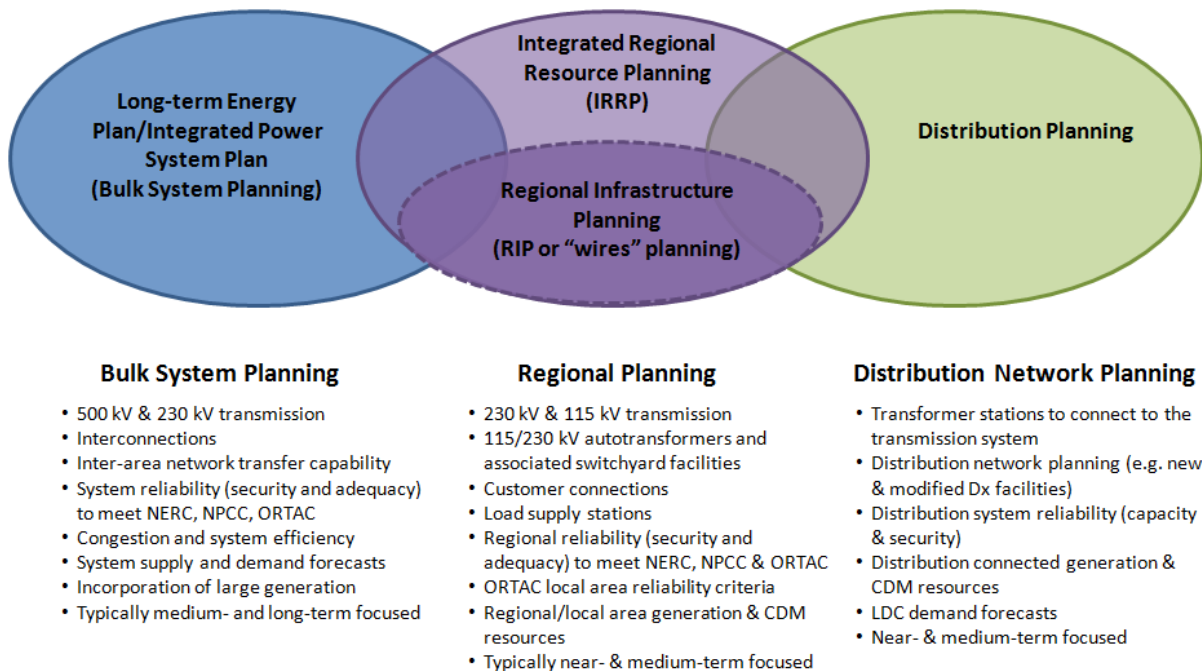
criteria established by NERC, NPCC and the IESO Market Rules. Because of the major facilities typically involved, the planning horizon is typically in the medium- (5 - 10 years) to longer-term (10 – 20 years). The OPA has the accountability for the integrated planning of the bulk power system.

As the name implies; regional planning looks at supply and reliability issues at a regional or local area level. Therefore, it largely considers the 115 kV and 230 kV portions of the power system that supply various parts of the province. As described in Section 3.1 in greater detail, there are portions of the power system which can be electrically grouped together due to their bulk supply points and their electrical interrelationships whereby common facilities may impact many connected customers. From a transmission or “wires” perspective, regional planning focuses on the facilities that provide electricity to the delivery points of the transmission connected customers including distributors and large directly-connected customers, such as industrial loads. This typically includes the transformer load stations and the transmission supply circuits to these stations. It also includes the 115/230 kV auto-transformers and their associated switchyards. From a resource perspective, regional planning considers the local generation and/or CDM that could be developed to address supply and reliability issues in a region or local area. Typically, regional facilities may not require the same magnitude of investments or the same long lead times as bulk system facilities. The planning horizons of regional facilities are typically in the near- to medium-term; however, there may be situations where particular needs and issues may require a long-term outlook at the regional level.

Regional planning can overlap with bulk system planning. For example, overlaps can occur at interface points such as at the 230/500 kV auto-transformer stations, or where there may be regional resource options to address a bulk system issue. Regional planning can also overlap with distribution planning. Such overlaps largely occur at the transformer load stations which deliver power to distributors and large directly-connected customers. In the case of building transformer load stations, this planning can sometimes take place at the distribution level. Another example where regional

planning may require coordination with distribution planning occurs when a distribution solution may address the needs of the broader local area or region, for example, by providing load transfer capability between transformer stations. In this case, the distribution investment may not be driven in part or in whole by the needs of the distributor.

The PPWG felt it was important to be clear that regional planning will seek to coordinate in a cost effective manner the planning of transmission-level investments that can provide supply to more than one distributor, but it was not meant to coordinate the breadth of distribution planning and investments among distributors. From a regional planning perspective, the scope of planning for distribution-level investments will be confined to those distribution investments which can address a regional need more effectively in cost and/or performance than other transmission or resource options. The diagram below illustrates at a generic level the three levels of planning and their potential interrelationships.

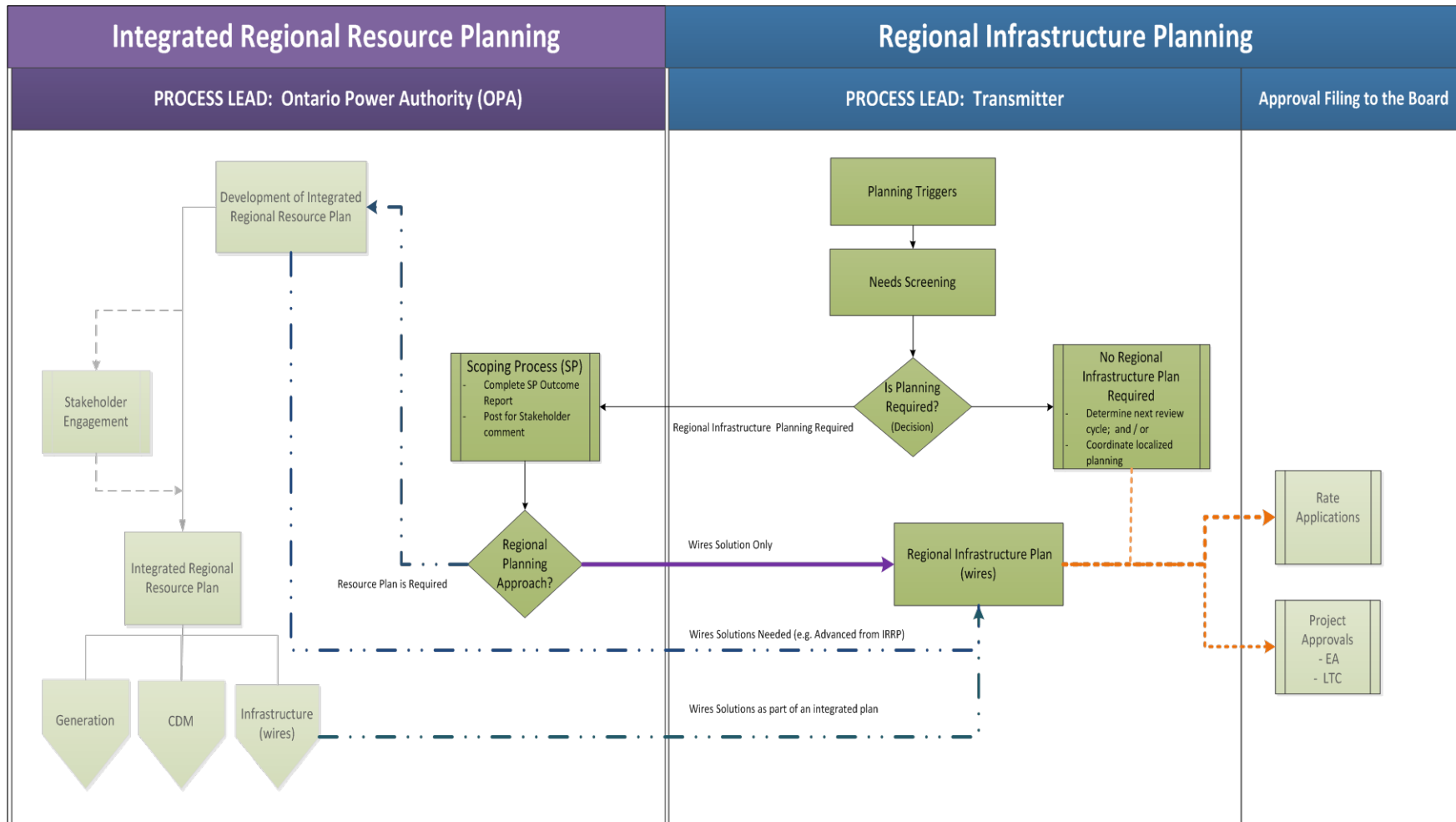


As conveyed to the PPWG by Board staff, the Board’s intent in relation to the reference to “infrastructure” is that “infrastructure” means “wires”, both transmission and

distribution, and is not intended to reflect other types of power system infrastructure such as generation resources. As a result, the Regional Infrastructure Planning process will require close coordination with the OPA's IRRP process. Where "wires" solutions are needed to address a regional need, the transmitters will lead the work with the respective distributors and the OPA to develop wires alternatives and recommend the best overall option

The flowchart on the following page provides an overview of the Regional Infrastructure Planning process that has been developed by the PPWG. The flowchart also illustrates its relationship with both the OPA's IRRP process and the Board's application process for transmitters and distributors. Following the flowchart is a high level description of the various stages in the process. A more detailed explanation of each of the stages is provided in Appendix 1.

# REGIONAL PLANNING PROCESS





The Regional Infrastructure Planning process begins with a planning trigger. Potential triggers include regularly scheduled Needs Screening by the transmitter, a scheduled review specified in an existing Regional Infrastructure Plan, a Government directive, a significant change to codes and standards or an emergent need brought forward by the transmitter, distributors, customers, the OPA or the IESO that cannot wait until the next scheduled review.

The next stage involves a Needs Screening process which is led by the transmitter to determine if there are regional needs that would lead to regional planning and, if so, the geographic scope and which distributors should be involved in the development of a plan. The determination of which distributors need to be involved is based on the load forecasts provided by distributors and the issues (e.g., equipment end-of-life, reliability, etc.) brought forward in a predetermined region.

Following the Needs Screening process, a decision is required as to whether a Regional Infrastructure Plan is necessary to address some or all of the needs. If no Regional Infrastructure Plan is required, any necessary infrastructure investments are planned directly by the distributor (or customer) or in conjunction with the transmitter. These types of investments would ultimately go directly through the Board approval process in the form of a rate or LTC application. In situations where identified needs require coordination at the regional or sub-regional levels, the OPA then initiates the Scoping Process. The Scoping Process will identify the degree to which the needs require integration with regional resource planning. Subsequent stages of the Regional Infrastructure Plan or IRRP will further refine the needs in order to develop their respective “wires” or resource options and recommendations.

During the Scoping Process, the OPA, in collaboration with the transmitter and impacted distributors, reviews the information collected as part of the Needs Screening phase (e.g. load forecasts), along with additional information on potential non-wires alternatives, and makes a decision on the most appropriate Regional Planning Approach.

The approach is either a Regional Infrastructure Plan, which is led by the transmitter, or an IRRP, which is led by the OPA. If more than one sub-region was identified in the Needs

Screening phase, it is possible that a different approach could be taken for different sub-regions.

In some cases, a straightforward wires solution may be the only option. If that is the case, the Regional Infrastructure Planning process is triggered immediately. If CDM and/or generation are potential solutions, the OPA's IRRP process is triggered prior to the Regional Infrastructure Planning process, to determine the preferred mix of infrastructure (i.e., wires), CDM and local generation. In support of this stage of the process, the OPA will produce a Scoping Process Outcome Report. This report will include the results of the Needs Screening process, a preliminary terms of reference ("ToR") and identify the various sub-regions that require study. For each of the study areas, the Scoping Process Outcome Report will indicate the proposed study approach and provide a list of the distributors to be involved. This report will be made available for public review with an opportunity for comments. Comments received will be considered by the study team prior to a final decision on the study approach for the various sub-regions. All study team participants will sign off on the final Regional Planning Approach.

As part of the development of an IRRP, there may be cases where it is determined that a transmission and/or distribution wires solution is necessary to address a near-term need. In such cases, that wires solution may be advanced outside the full IRRP process. Such infrastructure solutions ultimately become part of the Regional Infrastructure Plan. Other potential infrastructure needs (e.g., longer-term) remain in the IRRP process until the optimal mix of infrastructure, CDM and generation is determined. Once that stage is completed, any infrastructure solutions identified in the IRRP process enter the Regional Infrastructure Planning process led by the transmitter for more detailed planning before a Regional Infrastructure Plan is finalized.

It is generally expected that the IRRP process will assess alternatives to infrastructure at a higher, or more macro, level but sufficient to permit a comparison of options. Once the IRRP process identifies that infrastructure options may best meet a need, the Regional Infrastructure Planning process will conduct the more detailed planning to identify and assess the specific wires alternatives and recommend the preferred wires solution. Similarly,

resource options which the IRRP identifies as best suited to meet a need are then further planned in greater detail by the OPA.

The lead transmitter will publish the finalized Regional Infrastructure Plan. This may then be referenced and submitted to the Board as supporting evidence in a rate or LTC application.

## 3 Elements of the Regional Infrastructure Planning Process

---

The PPWG decided that ten key process elements are required in order to facilitate the move to a more structured Regional Infrastructure Planning process. This chapter describes the PPWG's approach in relation to each of those elements which are set out below.

1. Developing the appropriate predetermined regional boundaries and the criteria used to establish them;
2. Identifying the information distributors should be required to provide to the transmitter and the frequency it should be updated;
3. Determining the role of the OPA in the Regional Infrastructure Planning process;
4. Identifying the appropriate evaluative criteria to compare potential solutions to address regional needs;
5. Establishing the form in which broader engagement should take place before a Regional Infrastructure Plan is finalized;
6. Identifying how it should be determined if a distributor's involvement is needed in the Regional Infrastructure Planning process;
7. Identifying whether the Board should "require" or "expect" distributors to participate in the Regional Infrastructure Planning process where the transmitter determines their involvement is necessary;
8. Providing input on Filing Requirements related to Regional Infrastructure Planning;
9. The approach to increase transparency in the regional planning process; and
10. Proposed changes to Board's regulatory instruments needed to support the process for Board's consideration.

Matters related to regional coordination of the smart grid amongst utilities were also discussed as a potential key element.

### 3.1 Appropriate Predetermined Regional Boundaries

This section describes how the appropriate predetermined regional boundaries were established and the basis used to establish those regional boundaries. The predetermined regions will be used to bring structure to the process and to screen whether a Regional Infrastructure Plan is necessary. Where it is determined a Regional Infrastructure Plan is needed, the Needs Screening process will identify the distributors that should be involved in a Regional Infrastructure Plan at a sub-regional level within the predetermined region.

The PPWG notes that the IESO zones, which were suggested as a starting point, are not appropriate to use as predetermined regional boundaries for Regional Infrastructure Planning, as the purpose of those zones is for operating, and to some extent planning, the bulk transmission network. The PPWG agrees with the Board that predetermined regions should be defined on the basis of electrical boundaries as the primary criterion. However, the boundaries for regional planning purposes need to be smaller in nature to be reflective of common supply systems, electrical interrelationships and shared supply and performance impacts. The PPWG felt that there should also be recognition of distributor boundaries (where practical). The smaller regions will also help with manageability and timeliness of completing the studies.

Hydro One and the OPA developed 21 predetermined regions for regional planning purposes on the basis set out above for the PPWG review and subsequent concurrence.

The PPWG notes that not all regions in Ontario are the same and that the Regional Planning processes will need to be flexible to accommodate those differences. For example, the Northwest Ontario region is different from the other regions due to, among other reasons, the uncertainties related to changing resources and industrial loads, which may require consideration of a broader range of scenarios, expanded list of participants and means of grouping studies.

Appendix 3 includes maps that set out the predetermined regions to be used for Regional Infrastructure Planning purposes. Appendix 4a includes a table that identifies which distributors are included in each of those predetermined regions where Hydro One is the upstream transmitter.

### 3.2 Information Required from Distributors

This section identifies the information that distributors will need to provide to the transmitter and the frequency that information should be updated.

Distributors should provide 'gross' and 'net' peak demand forecasts for the short-term (5 years) and medium-term (10 years), as well as the 'unbundled' information used to show how they arrived at the 'net' peak demand forecast. The reason the 'unbundled' information is necessary is that all distributors do not use the same forecast methodology and it will be important for the transmitter to understand how each distributor arrived at their 'net' peak demand forecast.

However, the PPWG determined that distributors should only be required to provide 'gross' and 'net' peak demand forecast at the Needs Screening stage and the 'unbundled' forecast should only be required from the distributor if it is determined the distributor is in an area where an IRRP and/or a Regional Infrastructure Plan is necessary. The rationale for this approach is that the 'gross' and 'net' peak demand forecasts alone will be adequate to determine if a Regional Infrastructure Plan or IRRP is necessary and not initially requiring the 'unbundled' information underlying the forecasts will minimize the burden placed on distributors.

The peak demand forecasts required for the Needs Screening stage need to be provided on the following basis in order to ensure consistency:

- In megawatts ("MW") with power factor assumptions provided;
- At the Transformer Station ("TS") level;
- For 'median' weather conditions; and
- For the local area coincident peak demand hour.

Other information, such as the end-of-life expectations for transmission assets owned by distributors, will also be required.

Appendix 9 provides a more detailed explanation of the “unbundled” information that will be necessary for Regional Infrastructure Planning and/or IRRP purposes which is not limited to information required from distributors. For regional planning purposes, information and input is also required from the IESO, the OPA and the transmitter, as set out in Appendix 2.

The PPWG concluded that the transmitter should only receive the required information from distributors directly connected to the transmission system. As such, embedded distributors should provide the required information to their host distributor.

In relation to the frequency that the information discussed above should be updated, it was concluded that it should coincide with the regional study cycle or at a minimum, every five years. The minimum five year timeframe aligns with the five year planning horizon identified in the RRFE Board Report for distributors. In addition, as required by legislation, land use planning documents are updated every five years and any change to land use planning documents impacts the distributor load forecasts.

### **3.3 Role of the Participants**

#### **The Role of the OPA**

The role of the OPA in the Regional Infrastructure Planning process was described in the previous chapter. The OPA’s role primarily relates to the IRRP process, as well as leading the Scoping Process which determines the appropriate regional planning approach.

#### **The Role of the Transmitter**

The transmitter takes the lead on the Regional Infrastructure Planning process. In this role, the transmitter will identify the information / data required to carry out the required assessments; ensure that the appropriate distributors have been informed of their requirement to participate in the process; complete the Regional Infrastructure Plan and publish the Regional Infrastructure Plan for the purpose of supporting transmitter and distributor applications. Where issues may overlap other regions, the transmitter will provide for inter-regional coordination and advise which LDC’s need to participate in each planning study.

There may be cases where a Regional Infrastructure Plan involves more than one transmitter. In the event this occurs, section 3.6 discusses how the lead transmitter should be determined.

**The Role of Distributors** (includes host and embedded)

All distributors are expected to participate in the initial stages of the regional planning process. Each directly connected distributor's role is to provide the transmitter with information / data required to complete the Regional Infrastructure Planning process, including information based on its embedded distributors' data. Each distributor will assess the impact of potential regional supply plans to their respective distribution systems and where appropriate develop and review potential distribution options to address regional needs. Each distributor is also expected to support regional planning by identifying to the lead transmitter, any activity/elements on a sub-regional level that may impact a review cycle in a region to the transmitter.

By participating as a member of the team in the regional planning process, distributors will be more informed of the regional plan approach and as such, will be expected to apply this knowledge/understanding to their application submissions.

Where the initial regional planning assessment results in no further planning required, each distributor, for the purposes of any current sub-regional needs, will complete its own distribution system review to determine any immediate distribution requirements.

Each embedded distributor's role is similar except it provides the required information / data in respect of its embedded delivery points to the host distributor.

The lead and the roles of all the entities involved in the Regional Infrastructure Planning process are discussed in more detail in Appendix 1.



### 3.4 Evaluative Criteria to Compare Potential Solutions

This section identifies the evaluative criteria that will be used to compare the potential transmission and/or distribution solutions to address regional needs in the Regional Infrastructure Planning process.<sup>2</sup>

The PPWG determined that the criteria for the purpose of comparing alternative solutions should be consistent with the criteria established by the Board for LTC applications. That is, a net present value (“NPV”) calculation, as well as other quantitative and qualitative criteria such as consistency with long-term strategy/direction, flexibility and robustness (i.e. operating, planning, meeting unforeseen conditions), opportunities for incremental future development, addressing risk scenarios (technology, high impact events, risk diversification), promoting standardization, etc. The PPWG also determined that other qualitative criteria such as community acceptance should be considered.

In addition to the above criteria, the plan will be reviewed to ensure all IESO Ontario Resource and Transmission Assessment Criteria (“ORTAC”), as well as NERC and NPCC planning and operating standards and criteria will be met for system reliability purposes before it is finalized.

### 3.5 Form of Broader Engagement

This section describes the forms of broader engagement that will be undertaken before a Regional Infrastructure Plan is finalized and submitted to the Board in support of rate and LTC applications.

There are three points in the regional planning process where broader engagement occurs. The first is during the Scoping Process stage. A draft Scoping Process Outcome Report, which includes a preliminary Terms of Reference, will be posted on the OPA website (and linked through the OEB website) for stakeholder comment, and a public notification, as described in section 3.8 of this report, will be sent to interested stakeholders (similar to the

---

<sup>2</sup> In some cases, this would entail a more detailed evaluation of infrastructure solutions following an assessment of the options including CDM and generation options in the IRRP process.

OEB's "What's New"). The OPA, in collaboration with the transmitter and impacted distributors, will consider stakeholder feedback in finalizing the Scoping Process Outcome Report and Terms of Reference.

The second point where broader engagement occurs is during the IRRP process. The need and a draft mix of options identified through the IRRP process will be stakeholdered through engagements and public notifications on the OPA website (and linked through the OEB website) as appropriate.

The third point of broader engagement occurs at the project level. Infrastructure projects that are the result of a Regional Infrastructure Plan may need to go through Environmental Assessment and/or LTC processes. Both of these processes allow for broader and extensive stakeholder input on projects that result from Regional Infrastructure Plans.

#### Determination of Distributor Involvement in the Process

This section explains the approach that will be used to identify the distributors within a predetermined region that need to be involved in the full Regional Infrastructure Planning process.

The Needs Screening process will be performed based on available peak demand forecasts provided by the distributors to the transmitter, as well as other needs identified in the area. Based on this screening process, a Needs Screening Summary report will be produced by the transmitter which will identify the distributors in a predetermined region that need to be involved as well as the distributors that do not need to be involved. See Appendix 6 for the Needs Screening Summary Report template.

The involvement of particular distributors may be further refined during the Scoping Process.

### **3.6 Participation in the Process - “Required” or “Expected”**

This section discusses whether the Board should “require” or only “expect” distributors to participate in the Regional Infrastructure Planning process where the transmitter determines their involvement is necessary. It also explains the rationale for the PPWG’s conclusion on this matter.

This section also discusses the determination of which transmitters should take the lead (or only be a participant) in the Regional Infrastructure Planning process, where a regional plan involves more than one transmitter.

#### Distributors

The PPWG believes that distributors should be required by the Board to participate in the Regional Infrastructure Planning process where it is determined their involvement is necessary.

The reason the PPWG arrived at this conclusion is if one or more distributors decide not to participate, the Regional Infrastructure Planning process is unlikely to produce the optimal solution(s) that the Board desires to meet the needs of the region.

#### Transmitters

In situations where there may be more than one transmitter supplying power to customers in a region, the transmitter will coordinate to confirm which portions of the regional planning study will be conducted by which transmitter. It is anticipated that the transmitter is in the best position to assess the needs of the specific customers that it supplies. For the purposes of coordinating among transmitters and the overall regional planning report, a lead transmitter should be designated. The PPWG believes this could be determined by mutual agreement; however, the default lead transmitter could be the transmitter supplying most of the region.

In situations where a transmitter does not have regional transmission facilities supplying customers, but does have bulk facilities, then that transmitter would be a potential participant in support of the regional study to provide information and/or assess potential plans and their

impacts to its facilities. Similar to distributors, all transmitters should be required by the Board to participate in the Regional Infrastructure Planning process where it is determined their involvement is necessary.

### **3.7 Filing Requirements Related to Regional Infrastructure Planning**

This section provides PPWG input in relation to the Filing Requirements that should apply to transmitters and distributors for the purpose of LTC and rate applications. The PPWG understands that this is advice to Board staff to be used in staff's proposal to the Board on a consolidated set of Filing Requirements.

In cases where the Needs Screening process determines it necessary for a distributor to be involved in the regional planning process, the distributor should be required to submit the final Regional Infrastructure Plan as part of its rate application. In such instances, the final Regional Infrastructure Plan should be provided whether or not it identifies that a distributor investment is necessary. When the plan identifies that no investment is necessary by the distributor, the plan should be provided by the distributor to demonstrate that regional considerations were taken into account.

The PPWG expects there will be cases where a Regional Infrastructure Plan has not been finalized at the time a distributor involved in the plan submits its rate application to the Board. In such cases, the distributor would request a Planning Status Letter from either the transmitter or the OPA (during Scoping Process or IRRP process) to submit with its rate applications (Appendix 8).

Regional Infrastructure Plans that are submitted should include all of the potential solutions that were considered to demonstrate to the Board that an appropriate evaluation was carried out. In addition, in cases that involve an OPA IRRP, the IRRP should be provided in support of the Regional Infrastructure Plan to demonstrate to the Board that all options were evaluated including CDM and generation. The same filing requirements should also apply to transmitters.

In cases where the Needs Screening process determines there is no need for a regional plan, or that a distributor's participation in particular regional planning is not required, the distributor should submit the most recent Needs Screening Summary report as part of its rate application. The Needs Screening Summary report will identify the distributors within a predetermined region that do and do not need to be involved in the development of a Regional Infrastructure Plan or IRRP.

### **3.8 Increasing Transparency in the Regional Planning Process**

This section sets out the approach that will be used in relation to increasing transparency in the regional planning process.

The PPWG believes that the regional planning process can benefit from additional transparency. In order to achieve that end, the Scoping Process Outcome Report (including the preliminary ToR) will be attached to the Regional Infrastructure Plans to demonstrate how the planning approach was developed.

The lead transmitter will post its Regional Infrastructure Plans on its website and the OPA will post its Scoping Process Outcome Reports and IRRPs on its website. To the extent permissible, links to these materials, as well as process information for Regional Infrastructure Planning, will also be provided on the OEB website. The PPWG believes that it would be useful to have notifications sent to interested stakeholders to facilitate the stakeholdering process (similar to notifications issued to stakeholders that subscribe to the OEB's "What's New").

As the lead, the transmitter is accountable to monitor the progress on developing the Regional Infrastructure Plan against the ability to meet the regional needs. In this regard, the transmitter will provide an overall regional planning process status report on a regular basis.

### **3.9 Proposed Changes to the Board's Regulatory Instruments**

In order to implement the Regional Infrastructure Planning process set out in this report the PPWG proposes that the appropriate regulatory instruments of the Board be amended to:

- Require distributors to participate in the Regional Infrastructure Planning process where the transmitter determines their involvement is necessary as identified in section 3.6 of this report.
- Require transmitters to lead the Regional Infrastructure Planning process given the Board's expectation that the transmitter should lead the process.
- Require the OPA to provide the results of the Scoping Process Outcome Report and other relevant documentation to the transmitter in a reasonable amount of time.
- Require distributors to provide the information identified in section 3.2 of this report to the transmitter for Needs Screening, Scoping Process, Regional Infrastructure Plans and IRRPs, at least every five years and more frequently if planning studies need to be performed on a more frequent basis.
- Make changes to the Board's filing requirements for applications to the Board as proposed in section 3.7 of this report.
- Facilitate the proposed transition process described in the next chapter of this report.

### **3.10 Regional Coordination of the Smart Grid**

As previously noted, this element was not identified in the Board Report or the Board staff Memorandum for this working group to address. However, the PPWG concluded it was an important matter to discuss during the meetings given the relationship between Regional Infrastructure Planning and the Government directive to the Board in relation to regional coordination of the smart grid.

The PPWG believes that the areas for smart grid coordination likely need to be larger than the regions identified in this report for Regional Infrastructure Planning purposes or be based on other considerations such as the nature of the distribution system (i.e. urban vs. rural or big vs. small). The PPWG also expects that smart grid investments will primarily be distribution

focused and believes that transmitters may not be appropriately equipped to provide the coordination. The PPWG also believes that establishing a formal framework for regional coordination of the smart grid is premature at this time.

At the same time, the PPWG notes that the participation of distributors in a more structured Regional Infrastructure Planning process provides an opportunity for distributors to exchange information on smart grid programs and development in their respective distribution systems. This will provide distributors, within a region, a chance to look for opportunities to co-operate and/or collaborate on smart grid development where synergies may exist. This is expected to become particularly important in situations where targeted CDM and/or generation are part of the preferred solution to meet the regional needs in which case an effective and coordinated smart grid may be a crucial component of that solution.

## 4 Transition and Implementation

---

This Chapter sets out a proposed transition and implementation process for the Board's consideration. While the Board did not identify in its RRFE Board Report that this working group was to provide a transition and implementation process, the PPWG believes that such a process is necessary for reasons which are described below.

The proposed transition process is staged based on the known and identified regional needs and their criticality. Regional Infrastructure Plans will be developed based on planning priorities, which will result in some applications to the Board not being supported by a Regional Infrastructure Plan. This will be particularly prevalent during the transition phase.

There are a number of factors underlying this proposal including the following:

1. A typical Regional Infrastructure Plan can take a year or more to complete based on the complexity of the defined needs and whether an OPA IRRP needs to first be completed.
2. The urgency of any regional plan development is not aligned with the application schedule for utilities. Aligning the regional planning sequence with the application schedule would not focus resources and effort on high priority regions that require early development of a Regional Infrastructure Plan. A transition process also recognizes that certain areas of the province are relatively flat or declining in terms of load growth thus there is a lower urgency to have those plans completed immediately.
3. In order for a distributor to take account of a Regional Infrastructure Plan as part of its rate application, the plan (or relevant parts of the plan) will need to be sufficiently developed in advance so the distributor can determine and incorporate its impacts.
4. Resource requirements constrain the ability to complete the Regional Infrastructure Planning process for all of the distributors in Ontario within the next cycle of rate applications, particularly where it is determined that the IRRP process needs to be completed prior to the completion of a Regional Infrastructure Plan.



5. It would not be appropriate to constrain distributors from making rate applications pending completion of regional planning processes that may impact only a portion of their rate applications.

The PPWG recommends that the following transition approach be considered by the Board:

1. Using existing and known information, a cursory review is performed by the transmitter and the OPA to develop a prioritized grouping of regions. Feedback will be sought from the distributor and transmitter community on the proposed prioritization of the regional planning areas through the implementation approach outlined below. Based on current experience, this transition is expected to take about four years to complete the first cycle.
2. The transition schedule will be formally issued by the transmitter and will be used by distributors to support their applications. Specifically, in cases where the Regional Infrastructure Plan is scheduled to be completed after the application is to be submitted, the transition schedule will support the absence of a detailed Regional Infrastructure Plan.
3. Extraordinary events, such as a Government directive or the development of an unanticipated urgent need, may occur during this transition period. As a result, distributors will be expected to inform the transmitter as soon as an extraordinary event occurs and, on a regular basis, the transmitter will examine these emergent issues with the OPA to determine if the planned transition schedule needs to be revised. When that occurs, the schedule noted above will be revised and posted on the transmitter and OPA websites to inform distributors making rate applications.

Based on a high level review of the 21 regional planning regions, the following grouping of regions is recommended for the execution of the Regional Infrastructure Planning process. The first group of regions is comprised primarily of areas where regional planning activities are currently underway. These regions will be the first areas to develop Regional Infrastructure Plans, and will require a mapping of the existing activities to the formalized Regional Infrastructure Planning process. This mapping will be completed by the OPA, the

transmitter, and participating area distributors. In cases where planning is currently underway for only a portion of the region identified in the Regional Infrastructure Planning process, distributors will be contacted by the transmitter to complete the necessary Needs Screening process, and/or to engage the distributor in the currently active Regional Infrastructure Plan. Upon completion of the first group of Regional Infrastructure Plans, plan development will subsequently take place for those regions in the second and third groups. A full cycle of the 21 planning regions (Appendix 4a - Chart) is expected to be completed within four years.

Group 1:

- Burlington to Nanticoke
- Greater Ottawa
- GTA North
- GTA West
- Kitchener- Waterloo-Cambridge-Guelph (“KWCG”)
- Metro Toronto
- Northwest Ontario
- Windsor-Essex

Group 2:

- East Lake Superior
- GTA East
- London area
- Peterborough to Kingston
- South Georgian Bay/Muskoka
- Sudbury/Algoma

Group 3:

- Chatham/Lambton/Sarnia
- Greater Bruce/Huron
- Niagara
- North of Moosonee

- North/East of Sudbury
- Renfrew
- St. Lawrence

In order to effectively implement the processes outlined in this report, it is necessary that transmitters, distributors and broader industry be engaged. To this end, the PPWG recommends that the following implementation approach be considered by the Board:

1. The Working Group Report to the Board is finalized and posted on the OEB's website. An announcement will be made through the OEB's "What's New".
2. A conference call to be held to discuss the Regional Infrastructure Planning process with transmitters, and to solicit their input on the proposed prioritization of regional planning areas.
3. A letter be sent by lead transmitters to distributors advising them of the finalization of the PPWG report, the regional planning area they belong to, and the Regional Infrastructure Plan communication plan and schedule. Distributors will be asked to acknowledge the receipt of this letter and to provide any comments they may have.
4. A webinar to be held with distributors to discuss the Regional Infrastructure Planning process, to solicit their input on the proposed prioritization of regional planning areas, and to answer any questions they may have.
5. A webinar to be held for the broader industry and other interested parties to discuss the Regional Infrastructure Planning process and to answer any questions they may have.

Following these sessions, should an interest be expressed in face-to-face meetings to further discuss the Regional Infrastructure Planning process, the PPWG would be happy to arrange for such discussions.

## 5 Other Matters

---

This chapter discusses some other matters that the PPWG believes the Board should consider to facilitate a smooth transition to a more structured Regional Infrastructure Planning process.

The first matter involves the relationship between the Regional Infrastructure Planning process and the Board's rate application process. For example, distributors involved in the development of a Regional Infrastructure Plan are likely to have rate applications being submitted to the Board in different years and some of those distributors may share a capital investment that represents the optimal solution. As a result, cost recovery for that solution may not be approved for up to four years, which may delay the project. There is also the potential for one Board Panel to approve an investment in a Regional Infrastructure Plan and a different Board Panel to not approve another investment in the same Regional Infrastructure Plan when hearings on applications are not conducted simultaneously for distributors in the same region. The PPWG does not have a specific recommendation on this issue.

The PPWG also expects that, following implementation of the process set out in this report, there will be a need to monitor and refine it from time to time to make improvements, based on experience and lessons learned. The PPWG therefore recommends that the process be reviewed and updated at least every four years or earlier if needed. The PPWG also recommends that the Board facilitate this review through a working group process similar to the PPWG.

*Intentionally blank*

## **Appendix 1: Description of Regional Infrastructure Planning Process**

**Appendix 2: Description of Integrated Regional Resource - Planning (“IRRP”) Process**

## Appendix 3: Maps setting out the regions



## Appendix 4: Table setting out Distributors in each Region

**Appendix 4a: Group Priority List - 21 Planning Regions**

## **Appendix 5: Supporting Documentation for Distributor's - Application to the Board**

**Appendix 6: Needs Screening Summary Report Template**

**Appendix 7: Scoping Process Outcome Report Template**

## **Appendix 8: Planning Status Letter - Request Form Template**

## **Appendix 9: Load Forecast Information required for Integrated Regional Resource Planning**

## **Appendix 10: Currently Active Regional Planning Studies**



## **Appendix 11: Regional Infrastructure Planning Process – OEB Staff Memorandum**

**Appendix 12: List of PPWG Members**