

# **NU Guidance on ISO-NE Proposed Plan Application (PPA) Process for Generators Connecting to the NU Distribution System**

## **Introduction**

This tutorial will assist Interconnection Customers (ICs) who are looking to interconnect generators to a distribution voltage in the NU service area as they go through the ISO-NE PPA application process. For purposes of this process, “distribution interconnection” is defined as interconnecting at voltages less than 69-kV. This document provides guidance on the Transmission interconnection requirements for Distribution connected generators. The Distribution requirements are located on their websites as listed in Table 2.

The Proposed Plan Application (PPA) tutorial provides high level guidance with a broad overview covering the following topics:

1. **What is the ISO-NE PPA?**
2. **Am I FERC or State Jurisdictional?**
3. **What is the ISO-NE Queue?**
4. **How does the PPA Process work**
5. **When is a PPA required?**
6. **What are the Requirements of the PPA Process?**

## **1.) What is the ISO-NE Proposed Plan Application (PPA)?**

The PPA process ensures that each Interconnection Customer (IC) or Interconnecting Transmission Owner (ITO) submits plans to the ISO New England Inc., which are also reviewed by the NEPOOL Reliability Committee (RC) for additions or changes in their generation facilities that might have a significant effect on the stability, reliability or operating characteristics of the Transmission System.

- The PPA process is applied to all generators interconnecting to either the transmission or the distribution systems having:
- An incremental net output greater than 5 MW, or
- An increase or decrease (lead or lag) of 5 MVAR or more in net output for a single unit, or
- An increase or decrease (lead or lag) of 10 MVAR or more in total net station output, since the last time a PPA was approved

Generators connected to the NU distribution system are included because the energy from these sources may impact the flow on the transmission system. The ISO-NE procedure PP5-1 is located at

[http://www.isone.com/rules\\_proceeds/isone\\_plan/index.htm](http://www.isone.com/rules_proceeds/isone_plan/index.htm)

The PPA process includes a review of technical studies demonstrating that the IC does not negatively impact the transmission system or if it does impact the transmission system, how to mitigate the negative impact. Note that the Interconnection Customer must pay all costs to mitigate the negative impact. The technical study may include thermal and voltage, short circuit and stability and transfer analysis. The IC is required to provide technical data about their intended generation at the time of application so that any required studies can be conducted.

**2.) Am I FERC or State Jurisdictional?**

The issue of whether the IC is State or FERC (Interconnection Requests to the ISO) jurisdictional is outside the PPA process. However, whether an IC is FERC or State jurisdictional determines how the technical studies are performed and who will submit the PPA to ISO-NE.

The first step in the interconnection process is to determine which regulatory body has jurisdiction over your specific generation interconnection project. The IC should contact the appropriate NU Distribution Company representative prior to filing their application for guidance on whether the project is State or FERC jurisdictional.

Please see Table 1 for general guidelines on the jurisdiction for your generation project.

All generation requests that fall under State jurisdiction should be forwarded to the appropriate NU Distribution Interconnection Group, and any requests that are FERC jurisdictional should be submitted to ISO-NE. See Table 2 for contact information on the Distribution Companies of Northeast Utilities.

<b>Table 1 – Determination of Jurisdiction</b>		
<b>Connection Type</b>	<b>Jurisdictional</b>	<b>Contacts</b>
Load Reducer with or without exporting power to NU	State	Distribution Company
Sell entire excess output to NU through retail rates or Qualifying Facility with a power purchase agreement	State	Distribution Company
First wholesale transaction on the Distribution circuit	State	Distribution Company
Second wholesale transaction on the Distribution circuit	FERC	ISO-NE who will contact the Transmission Company

<b>Table 2: Contact Information for Distribution Connected Generators</b>			
<b>Generator Location</b>	<b>Phone Number</b>	<b>Web site</b>	<b>Address of Electric Distribution Company</b>
CL&P Service Territory	1-866-324-2437	<a href="http://www.cl-p.com/GeneratorInter/Default.asp">http://www.cl-p.com/GeneratorInter/Default.asp</a>	The Connecticut Light & Power Co. Distributed Resources Group P.O. Box 1409 Hartford, CT 06143-1409
WMECO Service Territory	1-413-585-1750.	<a href="http://www.wmeco.com/Business/Understand/Bill/RatesRules/DistribGenRequirements.aspx">http://www.wmeco.com/Business/Understand/Bill/RatesRules/DistribGenRequirements.aspx</a>	WMECO Attention: Cindy Janke 55 Russell St. Hadley, MA 01035-9455
PSNH Service Territory	1-603-634-2312 or Mark Fraser's phone at 1-603-634-2312	<a href="http://www.psnh.com/Business/Efficiency/renewrate.asp">http://www.psnh.com/Business/Efficiency/renewrate.asp</a>	PSNH Supplemental Energy Sources Dept Attention: Mark Fraser 780 N. Commercial St. P. O. Box 330 Manchester, NH 03105

**FERC Jurisdictional Customers**

IC that fall under FERC Jurisdiction will need to submit their Interconnection Request Form to ISO-NE for projects for any amount of incremental output. ISO-NE will take the lead and work with the Interconnecting Transmission Owner to make sure the interconnection process is completed according to ISO-NE tariff.

There are two types of Interconnection Request forms: Interconnection Request form for a small generating facility that is no larger than 20 MW (Schedule 23) and an Interconnection Request form for a large generating facility that is greater than 20 MW (Schedule 22). The Interconnection Request Forms are located on the ISO-NE website: [http://www.iso-ne.com/genrtion\\_resrcs/nwgen\\_inter/smgen\\_20/index.html](http://www.iso-ne.com/genrtion_resrcs/nwgen_inter/smgen_20/index.html) or [http://www.iso-ne.com/genrtion\\_resrcs/nwgen\\_inter/lg\\_gen\\_/index.html](http://www.iso-ne.com/genrtion_resrcs/nwgen_inter/lg_gen_/index.html), respectively. It is important that all of the information on the Interconnection Request Form is completed in order to obtain an ISO-NE queue position in a timely manner.

Once ISO-NE receives the completed Interconnection Request Form, they will assign a Queue position, which determines the order in which interconnection studies will be performed.

### **State Jurisdictional Customers**

IC that fall under State Jurisdiction will need to complete an Interconnection Application to the NU Distribution Company. If the project has:

- An incremental net output change of greater than 5 MW or
- An increase or decrease (lead or lag) of 5 MVAR or more in net output for a single unit, or
- An increase or decrease (lead or lag) of 10 MVAR or more in total net station output, since the last time a PPA was approved

then the IC will also need to complete the NU Generator Interconnection Request (GIR) Form and submit it to the appropriate NU Distribution Company. This NU form is provided as an attachment to this document. The Distribution Company will use this information to determine what studies will be required and forward this information to the Transmission Owner (TO) in order to obtain an ISO-NE Queue position. Obtaining an ISO-NE Queue position will determine the sequential order in which the Transmission Studies will be performed, if required.

If the project has a net output of less than 5 MW, see section 5 for further details.

### **3.) What is the ISO-NE Queue?**

When an IC submits an application to install a project that is not FERC jurisdictional and that has an incremental net output greater than 5 MW that IC needs to obtain a Queue position through the Interconnecting Transmission Owner (ITO). All projects that are under FERC's jurisdiction are assigned a Queue position by ISO-NE. The Queue is the method ISO-NE uses to determine the order in which interconnection requests are studied. The transmission system is one large electrical system. The addition of a generator to the grid may result in potential impacts to the transmission system. The impacts are cumulative as each successive generator is added. The Queue is used to determine the order of the analyses so that the ISO-NE can determine which generator causes impacts significant enough to require upgrades or additions to the transmission system. The cost for any required upgrades must be paid for by the Interconnection Customer.

In order to obtain a Queue position, IC will need to provide all of the information required in the Generator Interconnection Request (GIR) Form. The TO will submit this information to ISO-NE and ISO-NE will assign the project a Queue position.

If an IC decides to make any technical changes to their original interconnection request, it may be considered a material modification. This may cause the IC to lose their existing queue position and be assigned a later queue position. This may occur if:

1. any change to the design or operating characteristics of the existing facility that may have a significant adverse effect on the reliability or operating

characteristics of the New England Transmission System as determined by ISO-NE, or

2. any change to the design operating characteristics that is considered a material modification or
3. the commercial or in-service date is changed by greater than three years, or
4. the generator size increases
5. the generator size decreases by more than 60%,

Of course, withdrawing from the Queue will result in loss of your Queue position and potential delays and cost ramifications to the project. Small changes are allowed under ISO-NE rules for changes that arise after the customer has received PPA approval.

<b>Table 3: PPA notification criteria</b>			
<b>Generator Size (cumulative total from your last PPA)</b>	<b>NU Generator Interconnection Request Form (GIR) Required</b>	<b>ISO-NE Queue Position Required</b>	<b>PPA Required</b>
Less than 5 MW	No	No, just the ISO-NE Generator Notification Form For Units or Changes of Less Than 5 MW	No
Equal to or greater than 5 MW	Yes	Yes	Yes

#### **4) How does the PPA Process work?**

The PPA is filed by the appropriate governance participant (see definition on page 2). A governance participant is defined by ISO-NE as a NEPOOL Participant who signs the Counterpart signature page of the Second Restated NEPOOL Agreement (RNA) or and individual participant who signs the signature page of the Participants Agreement (PA). A list of NEPOOL Participant can be found on the ISO-NE website ([http://www.iso-ne.com/committees/nepool\\_part/list\\_of\\_nepool\\_participants.pdf](http://www.iso-ne.com/committees/nepool_part/list_of_nepool_participants.pdf))

If the IC is not a governance participant, then the Interconnecting Transmission Owner (ITO) will submit the PPA on the customer's behalf. The generator PPA forms are located on the ISO-NE website ([http://www.iso-ne.com/rules\\_proceeds/isone\\_plan/index.html](http://www.iso-ne.com/rules_proceeds/isone_plan/index.html)). The PPA for the generator is completed by the governance participant. The Transmission Owner submits the PPA for any transmission facilities that will be owned by the Transmission Owner, including network upgrades.

After the required Transmission studies are completed and any needed network upgrades are identified, the results are shared with the Interconnection Customer.

The IC must commit to pay for any network upgrades identified in the study process. The completed studies are then submitted to the appropriate working groups and task forces(s) for review and they in turn make a recommendation to the RC.

Once the technical studies are completed, the ITO or the IC will submit the studies at least two weeks prior to the technical groups/meetings. In general, the Stability Study Group is usually the first group that meets in the morning. They will review and comment on the studies. Following the meeting, the Stability Task Force will usually meet on the same day in the afternoon to review and comment also on the particular studies. In general, the Transmission Working Group will meet the following day in the morning and the Transmission Task Force will meet on the same day in the afternoon. Once those meetings are completed and no further information is needed, then the studies and the comments are forwarded to the RC at least two weeks prior to their meeting. The RC will usually meet once a month. The Task Forces and Working Groups may request additional information. If additional information is requested, the action would be tabled to a future meeting. The additional information would have to be provided at least two weeks prior to any subsequent meeting in order to get on those meetings agenda.

ISO-NE reviews all of this information and the RC makes a positive recommendation to ISO-NE as long as there is no significant adverse effect created by the IC project. Once the RC approves the project, a PPA letter is issued by ISO-NE to the Governance Participant, which will complete the PPA process.

The time needed to complete the various committees to reviews could affect a project's construction schedule. The study results are in the following table. In general, the groups usually meet once per month. Care must be taken to ensure information is provided to these groups in time to support the generator commercial in-service date. Depending on the schedule of committee meetings, once the study results are available, it could take up to four months to be reviewed by the three ISO committees.

<b>Table 4: ISO Groups to Review Study Results</b>		
<b>Technical Groups to Review Study Results</b>	<b>Submit Studies prior to appropriate meeting</b>	<b>Estimated minimum completion time</b>
Stability Study Group Stability Task Force	At least two weeks	One to two months
Transmission Working Group Transmission Task Force	At least two weeks	One to two months
ISO-NE Reliability Committee	At least two weeks	One month ( RC recommends reliability determination is complete)

Note: The task forces and working groups work in parallel, while the Reliability Committee work in series with the task forces and working groups.

### **5) When is a PPA required?**

IC with projects that have an incremental net output greater than 5 MW or an increase or decrease (lead or lag) of 5 MVAR or more in net output for a single unit, or an increase or decrease (lead or lag) of 10 MVAR or more in total net station output, since the last time a PPA was approved, will need to file a PPA application to ISO-NE (also called an I.3.9 application because I.3.9 is the section of the ISO-NE tariff specifying the requirement of whether they fall under State or FERC jurisdiction).

Interconnection Customers' projects with an increase of less than 5 MW since the last ISO filing was completed for the site, will need to submit the ISO-NE Generator Notification Form for Units of Changes of Less than 5 MW to ISO-NE and will not need to file a PPA. Please refer to the ISO-NE Planning Procedures PP5-1 for more information. [http://www.isone.com/rules\\_proceeds/isone\\_plan/index.htm](http://www.isone.com/rules_proceeds/isone_plan/index.htm)

Projects that are less than 5 MW do not need a PPA from ISO-NE. However, the Distribution and Transmission Company will determine if any studies will be required. The completed studies are reviewed by Transmission Planning to ensure that the ISO PPA process is not needed. The Governance participant sends the "ISO-NE Generator Notification Form for Units or Changes of less than 5 MW (from the ISO-NE Planning Procedure 5-1) to ISO-NE. If the customer is not a Governance Participant, then the Interconnecting Transmission Owner is responsible for submitting this form to ISO-NE. These submittals must be made two weeks prior to the Reliability Committee meeting. The project is then added to the RC agenda. After the RC meeting, if no action is required or taken by the RC, then the project is accepted.

**6) What are the Requirements of the PPA Process?**

The requirements, procedures and application forms that are used in the submittal process for the PPA and/or I.3.9 application are found in the ISO-NE Planning Procedures PP5-1 ([http://www.iso-ne.com/rules\\_proceeds/isone\\_plan/index.html](http://www.iso-ne.com/rules_proceeds/isone_plan/index.html)) the process assures that the generation additions do no harm to the Regional Transmission System. The requirement to follow the PPA process applies to both State and FERC jurisdictional interconnection customers.

The required forms for the PPA application are dependent on the type of project.

<b>Table 5: Forms</b>	<b>ISO-NE Procedure</b>
Generator PPA form	PP5-1 Generator Proposed Plan Application
Hydro-Electric PPA form	PP5-1 Proposed Plan Application Data Requirements for Hydro-Electric Facilities
Transmission Facilities PPA form	PP5-1 Transmission Facilities Proposed Plan Application
Generator units or changes of less than 5MW form	PP5-1 ISO-NE Generator Notification Form For Units or Changes of Less Than 5 MW

ISO-NE and the Technical Committees will examine the PPA and the technical studies in order to evaluate the potential significant adverse impact on the stability, reliability or operating characteristics of the interconnected system. After all of this information is evaluated, the Reliability Committee will determine whether or not the proposed generation does not have a significant negative impact on the Regional Transmission System.

Once the PPA has been approved by the Reliability Committee, the Interconnection Customer can build the assets per the technical specifications as outlined in the PPA or notification form, whichever is applicable according to Schedule 22, Schedule 23, or the state process. In all situations, the Interconnection Customer must notify ISO-NE or the Distribution Company once the unit has gone commercial depending on the jurisdiction.

Table 6 outlines the PPA requirements and responsibilities for State and FERC Jurisdictional Projects:

<b>Definitions taken from the ISO-NE website</b>
Governance Participant is someone who signs the Participants Agreement or the Restated NEPOOL Agreement
Stability Study Group consists of representatives of Transmission Owners that may share non-Public Transmission Information.
Transmission Working Groups consists of representatives of Transmission Owners that may share non-Public Transmission Information
Stability Task Forces-Analyzes the dynamic behavior of New England's bulk electric power system as planned and installed. Reports to Reliability Committee.
Transmission Task Forces-Assists in developing requirements to ensure that New England's bulk electric power system meets established reliability standards and economic objectives.
Reliability Committee-Advises ISO-NE about design and oversight of reliability standards for New England and the development of the Regional System Plan

**Table 6: PPA Requirements for NU State/FERC Jurisdictional Projects**

<b>Interconnect ion Jurisdiction</b>	<b>Submit Interconnectio n Request to</b>	<b>Size of Generat or</b>	<b>Working Groups/Task Forces</b>	<b>Governan ce Participa nt</b>	<b>Reliability Committee</b>
State	Distribution Co.	< 5 MW or 5 MVAR	N/A	No	Notification Form sent to RC by ITO
				Yes	Notification Form sent to RC by IC
		≥ 5 MW or 5 MVAR	Studies to the Working Groups/Task Forces by TO	No	PPA (I.3.9) Form and Studies sent to RC by ITO
				Yes	Generator PPA Form and Studies sent to RC by IC  Transmission PPA Form and Studies sent to RC by ITO
FERC	ISO-NE	< 5MW or 5 MVAR	N/A	No	Notification Form sent to RC by ISO-NE
				Yes	Notification Form sent to RC by IC
		≥ 5 MW	Studies to the Working Groups/Task Forces by ISO	No	PPA (I.3.9) Form and Studies sent to RC by ISO-NE
				Yes	Generator PPA Form and Studies sent to RC by IC  Transmission PPA Form and Studies sent to RC by ITO