Queue Point User Guide

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**Introduction**

This user guide will show you how to request access for and how to use the Queue Point module in PJM’s Planning Center tool, as well as provide other helpful tips. Queue Point is a module that allows users to enter data for Attachments N, S and EE Feasibility Study data, Impact Study data and As-Built Facility data, and enter data for Attachments Y and Attachment BB, in Planning Center, PJM’s planning tool.

The guide consists of the following sections:

1. What Is Queue Point?
2. How to Request Access to Queue Point
3. Queue Point Walk-Through
4. Definitions

**Section 1: What Is Queue Point?**

Queue Point is a module within PJM’s Planning Center tool that allows you to enter data for multiple attachment forms in a single location. It consolidates Attachment N, Feasibility Study data, System Impact Study data, Attachment BB, Attachment EE, Attachment S, Attachment Y and As-Is Study data.

The information provided through these forms is used to conduct various studies in order to identify any enhancements to the transmission system that are needed to maintain grid reliability while accommodating the new service request.

Queue Point is able to handle the deficiency process, including automated notifications, integration with PJM calendars, and role-based functionality.

**Section 2: How to Request Access to Queue Point**

In order to use Queue Point, you must first be provided access to the tool.

If your company is an active member of PJM:

- Log in to Account Manager with your user ID and password, and request Planning Center Queue Point Read Only or Read/Write Access.
- If you do not see Planning Center Queue Point Read Only or Read/Write Access as an option, request access through your company Account Manager (CAM). They will be able to authorize your access to Planning Center Queue Point Read Only or Read/Write Access. You may be required to create a new user ID under the specific organization provided by your CAM.

If your CAM administrator is not familiar with Planning Center Queue Point Read Only or Read/Write Access, please contact custsvc@pjm.com.
Please note that Production accounts differ from Training (Sandbox) test accounts. If you do not have an account in either environment, you should work with your Company Account Manager to provision the accounts or follow the New User Registration instructions within the Account Manager User Guide.

If your company is not a PJM member:

1) First you must create a new company account.
   - When you reach step 2, you must select the checkbox to enter your company account name, which will create the account without tools access (default tool access only, including Queue Point).
   - When you select “Next” you will receive a confirmation review page with default tools access.
   - Select “Submit” to complete registration. You will receive a second confirmation message once registration is complete.
   - You will receive an email containing a link to set up your password. Once this is complete, you will be able to log in to Queue Point.

Section 3: Queue Point Walk-Through

Queue Point consolidates Attachment N, Feasibility Study data, System Impact Study data, Attachment BB, Attachment EE, Attachment S, Attachment Y and As-Is Study data through a single application. The information provided through these forms is used to conduct studies to identify transmission enhancements needed to maintain the system reliability from a new service request being added to the transmission system.

Queue Point makes it easier for you to submit these forms. Improvements include:

- A wizard to help you find the right form
- Better design, data entry and file upload capabilities
- The ability to enter multiple sets of data for one queue project
Home Screen

Queue Point’s home screen shows a number of options for you to start a new form submission for Attachments N, S, and EE Feasibility Study data, System Impact Study data and As-Built Facility data and enter data for Attachments Y and Attachment BB. You can also select “Find the Right Form” at the top of the screen to help you find the right form for your application.

You can also work on existing requests by clicking the “Existing Requests” tab at the top left. On the Existing Requests screen, you can edit, copy and delete any application you have started.
Attachment N/Feasibility Data Form

General Information
After clicking “Begin Submission” on the Generation Interconnection Feasibility Study, you can start to fill out the application. The first vertical tab is for general information. Here you will enter basic information as well as answer some specific questions about your applications.
**Point of Interconnection (POI)**

On the next vertical tab, labeled “Point of Interconnection,” you will be asked to enter point of interconnection information. Here, you specify if your request is a direct connection (existing substation), a tap of an existing line (single line tap/new substation), or other connection type such as a double tap, a tap of one line and direct connection, etc.
**Project Capability**

In the next vertical tab, “Project Capability,” you should enter the megawatt values for your facility or behind-the-meter MW values, as well as upload supporting documents and any other comments you would like to enter for your request.

Note: For customers proposing storage facilities (i.e., batteries), please note in the “Describe the Facility” data entry dialog box whether the project will require charging the storage facility from the transmission system or charge the storage facility solely from on-site generation associated with the customer project.
**Generator Information**

Select the generator type for your request in the “Generation Information” tab.

A conventional synchronous generator requires data such as the saturated and unsaturated reactances and resistances, terminal voltage, MVA base, kilovolt base and Machine ID. You are encouraged to keep the Machine ID name(s) unique. You will eventually link the generator(s) with the transformer(s).

The parameters required for synchronous generators are different from wind turbine and inverter-based generators. The selection changes when you select wind or solar/storage and click "Add Generator."
Transformer Information

Enter transformer information in this section as well as link the transformer(s) to the generator(s). You will need to enter MVA base, impedances, cooling designations ratings, nominal voltages and winding connection types.

You can enter information for two transformers: main and step-up transformers.

The main transformer(s) are typically the bigger of the two transformers, which steps up the voltage to the sub-transmission or transmission level. The step-up transformer(s) typically are smaller and they step up the voltage from the generator’s terminal voltage to the distribution level voltage. There could be multiple step-up transformers.
Attachment Line Data

Enter the attachment line data for the project in the Attachment Line Data tab. The attachment line goes from the customer’s generating site to the POI substation. The information required is voltage level, MVA base, line length, conductor type and impedances.

Review & Confirmation

Review the data before submitting. If you want to edit a field, click “Edit.” Once you have checked all the fields, you can then submit the data.

You can save the page and complete the information at a later time by clicking the “Save as Draft” button.

The “Save & Validate” button validates all the fields in that particular tab and saves it. You can only submit the information in the review section once every tab has been saved and validated.
Please note that the form is then available for printing. The form must be printed and signed by the customer, along with sending any additional data, information and funds as required. The executed copy must be sent to: IPAdmin@pjm.com or a mailed hard copy must be sent to:

   Jeannette Mittan
   PJM Interconnection
   2750 Monroe Blvd.
   Audubon, PA 19403

In addition, please wire the required deposit to PJM or send a check to:

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2750 Monroe Blvd.
Audubon, PA 19403
Attention: Interconnection Projects Department
Impact Study Form

General Information
To start the Impact Study form, click on the queue project in the existing request tabs. Most information that was submitted during the Attachment N/Feasibility Study is prepopulated. However, you are encouraged to double-check the information before moving on to the next tab. The general information tab is very similar to the corresponding tab in the Attachment N/Feasibility Study form.

Point of Interconnection (POI)
The Point of Interconnection is prepopulated from the Attachment N/Feasibility Study form, and you will need to select one POI.

This is a required field, so you should enter the information for the POI in the Impact Study form if you didn’t do so in the Attachment N/Feasibility Study form.
**Project Capability**

Enter net megawatt, Maximum Facility Output (MFO), MW Capacity (MWC), auxiliary load, station load and reactive power capability in the Project Capability tab. The Behind the Meter section is applicable if the application is for a new or existing Behind the Meter facility.
### Queue Point User Guide

#### Station Load

| Load necessary to support facility of the plant (e.g., heating, lighting, air-conditioning, office equipment etc.) |
|---|---|
| Summer | Winter |
| [ ] | [ ] |

#### Total Reactive Power Capability at Max Gross Energy Output

| Lagging - Overexcited |
| --- | --- |
| Summer | Winter |
| [ ] | [ ] |

| Leading - Underexcited |
| --- | --- |
| Summer | Winter |
| [ ] | [ ] |

#### Additional comments related to the configuration above:

```
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#### Fuel Supply Verification

**Primary fuel type**

- [ ] Natural Gas
- [ ] Other

#### Behind The Meter

**Purpose of application:**

- [ ] New Behind The Meter generating unit(s)
- [ ] Existing Behind The Meter generating unit(s)
- [ ] Not applicable
**Generator Information**

The generator information provided in the Attachment N/Feasibility Study form will auto-populate this form.

The Capacity Interconnection Rights (CIRs), gross energy, reactive power and the auxiliary load are broken down by summer and winter. There are more generator parameters that are required. The saturated reactances, unsaturated reactances, resistances and time constants are also required. You should also upload the generator, excitation system and governor model for the generator for stability study.
Transformer Information

The transformer information carries over any information you have entered from the Attachment N/Feasibility Study form. No extra information is required in the Impact Study form compared to the Attachment N/Feasibility Study form.

However, if there are going to be extra or new transformers, you should enter that information here.
Attachment Line Data
Attachment line data is also carried over from the Attachment N/Feasibility Study form. If you have not entered the line information in the Attachment N/Feasibility Study form, you should enter it in the Impact Study form. You will need to enter voltage level, MVA base, length of the line and the transformer impedance.

Review & Confirmation
Review the data before submitting. If you want to edit a field, click “Edit.” Once you have checked all the fields, you can then submit the data.

Please note that the form is then available for printing. The form must be printed and signed by the customer, along with sending any additional data, information and funds as required. The executed copy must be sent to: IPAdmin@pjm.com or a mailed hard copy must be sent to:

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As-Built Data

As-Built data requirements are similar to the Attachment N/Feasibility Study form.

Attachment S/Feasibility Data Form

General Information

After clicking “Begin Submission” on the Attachment S Feasibility Study, you can start to fill out the application. The first vertical tab is for general information. Here you will enter basic information such as the project name, company official name and email, title, phone and secondary contact information.
Facility Information
In the next vertical tab, labeled “Facility Information,” you should enter the location of the facility, the substation where interconnection customer proposes to interconnect or add its facilities, and the planned in-service date. Select between “Merchant A.C.”, “Merchant D.C. Transmission Facility” or “Controllable A.C. Merchant Transmission Facility.” The fields will change depending on the selection in this tab. If the latter two are selected, the information in the next four tabs will be required.
**Point of Interconnection (POI)**

On the next vertical tab, labeled “Point of Interconnection,” you will be asked to enter point of interconnection information. Here, you specify if your request is a direct connection (existing substation), a tap of an existing line (single line tap/new substation), or other connection type such as a double tap, a tap of one line and direct connection, etc.
Project Capability

In the next vertical tab, labeled “Project Capability,” you should enter the megawatt values for the total auxiliary and station load, as well as upload supporting documents and any other comments you would like to enter for your request.
Transformer Information
Enter transformer information in this section. You will need to enter MVA base, impedances, cooling designations ratings, nominal voltages and winding connection types.
**Attachment Line Data**

Enter the attachment line data for the project in the Attachment Line Data tab. The attachment line goes from the transformer to the POI substation. The information required is voltage level, MVA base, line length, conductor type and impedances.

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**Review & Confirmation**

Review the data before submitting. If you want to edit a field, click “Edit.” Once you have checked all the fields, you can then submit the data.

You can save the page and complete the information at a later time by clicking the “Save as Draft” button.

The “Save & Validate” button validates all the fields in that particular tab and saves it. You can only submit the information in the review section once every tab has been saved and validated.

Please note that the form is then available for printing. The form must be printed and signed by the customer, along with sending any additional data, information and funds as required. The executed copy must be sent to: IPAdmin@pjm.com or a mailed hard copy must be sent to:

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**Attachment S/System Impact Study Data and As-Built Data**

The System Impact Study data and As-Built data requirements are the same as the Feasibility Study form.

**Attachment EE/Feasibility Data Form**

**General Information**

After clicking “Begin Submission” on the Attachment EE Feasibility Study, you can start to fill out the application. The first vertical tab is for general information. Here you will enter basic information such as the project name, company official name and email, title, phone and secondary contact information.
Request Information
In this section, you will be asked if you would like to “upgrade request for incremental Auction Revenue Rights.” If you answer no, you will be asked if you would like to advance construction of a Regional Transmission Expansion Plan (RTEP) project. If you answer no, you will be asked the circuit name and the quantity of increase.

Review & Confirmation
Review the data before submitting. If you want to edit a field, click “Edit.” Once you have checked all the fields, you can then submit the data.

You can save the page and complete the information at a later time by clicking the “Save as Draft” button.

The “Save & Validate” button validates all the fields in that particular tab and saves it. You can only submit the information in the review section once every tab has been saved and validated.

Please note that the form is then available for printing. The form must be printed and signed by the customer, along with sending any additional data, information and funds as required. The executed copy must be sent to: IPAdmin@pjm.com or a mailed hard copy must be sent to:

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Attachment EE/System Impact Study Data and As-Built Data

The System Impact Study data and As-Built data requirements are the same as the Feasibility Study form.

Attachment Y/Form of Screens Process Interconnection Request (For Generation Facilities of 2 MW or Less = Synchronous 5 MW or Less Inverter-Based)

General Information

After clicking “Begin Submission” or arriving at the page through the wizard function, you can start to complete the application. The first vertical tab is for general information. Here you will enter basic information as well as answer some specific questions about your applications.
Facility Information

The information provided in this section provides the location of the facility itself, the location to which the facility is intending to connect on the existing electrical system, as well as basic information relating to the type of facility that will be installed. If multiple fuel types and/or generation types are being installed, please select all that apply.
Generator Information

This page allows you to add one or more generators to the submission. Please ensure that you provide as much information as you have available. Any additional information beyond the minimum required will assist in reviewing the submission.

Select the type of generator by clicking on the “Add Generator” button. This will cause additional data fields to be displayed as shown below. Complete the data for that generator and click on the “Save as Draft” or “Save & Validate” buttons. Please note that the “Add Another” button on this page is specific to this individual type of generator and allows you to provide additional components associated with the individual generator type.
If you would like to submit multiple generators, again select the type of generator. The second and any subsequent generator data packages are entered in the spaces that will then be provided.

**Transformer Information**

On this page you can add information relating to the transformer which will step up the voltage of the generators to the voltage at the Point of Interconnection.
Supporting Documents
Upload any information in electronic file format to send to PJM on this page. Specific information is identified as required, while other information is suggested. In the event that information is of a type not listed in the specific available upload points on the page, please add all additional files, not previously submitted, in a compressed file storage format such as a Zip file. This will allow you to submit multiple files inside of a single file (the Zip file).

Review
On this page you can review all data submitted through the individual pages of the process in a single location. Please review this information and ensure that all data entered is correct prior to submission. You can also print the information. If any information must be changed, return to those sections and change the data.

After you have verified that all the information is correct, select the “Submit” button to send the submission electronically to PJM. Please note that the form that is then available for printing must be printed and signed by the
customer, along with sending any additional data, information and funds as required.
Attachment BB/Form of Interconnection Service Agreement for Certified Inverter-Based Generating Facility (≤10kW)

General Information
After clicking “Begin Submission” or arriving at the page through the wizard function, you can start to complete the application. The first vertical tab is for general information. Here you will enter basic information as well as answer some specific questions about your applications.

Facility Information
The information provided in this section provides:

- The location of the facility
- Information about the service company to which the facility will connect
- The type of facility being installed

If multiple fuel and/or generation types are being installed, please select all that apply. This page also lets you upload to PJM any information in electronic file format. Specific information is identified as required, while other information is suggested. In the event that information is of a type not listed in the specific available upload points on the page, please add all additional files, not previously submitted, in a compressed file storage format such as a Zip file. This will let you submit multiple files inside of a single file (the Zip file).
Inverter Information

First select the “Add Inverter” button.

This will make the additional data fields seen below available for entering data. Next complete the data for that inverter and click on the “Save as Draft” or “Save & Validate” button. Please note that the “Add Another” button on this page is specific to the individual inverter and allows you to add additional components associated with the individual generator type.
If you would like to submit multiple inverters, select the “Add Inverter” button again. The second and any subsequent inverter data packages are entered in the spaces that will then be provided.

Review

On this page you can review all data submitted through the individual pages of the process in a single location. Please review this information and ensure that all data entered is correct prior to submission. If any information must be changed, return to those sections and change the data.

You can also print the information using the “Print” button at the top right corner of the page.

After you have verified that all the information is correct, select the “Submit” button to send the submission electronically to PJM.

Please note that the form is then available for printing. The form must be printed and signed by the customer, along with sending any additional data, information and funds as required. The executed copy must be sent to: IPAdmin@pjm.com or a mailed hard copy must be sent to:

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Attention: Interconnection Projects Department
Section 4: Definitions

Attachment N (Form of Generation Interconnection Feasibility Study Agreement)
Users will need to execute Attachment N if “an Interconnection Customer that seeks to interconnect new generation in, or to increase the capacity of generation already interconnected in, the PJM Region shall submit to the Transmission Provider a Generation Interconnection Request.” For Attachment N submitted electronically through Queue Point, the customer is required to send PJM a signed copy of the Tariff Attachment and required deposit. Attachment N should not be used if an Interconnection Customer qualifies to use Attachment Y or Attachment BB described below (https://pjm.com/directory/merged-tariffs/oatt.pdf; PJM Tariff 36.1.01).

Attachment Y (Forms of Screens Process Interconnection Request)
(For Generation Facilities of 2 MW or Less)
The Interconnection Customer desiring the interconnection of a new permanent or temporary Energy Resource of 2 MW or less (synchronous) or 5 MW or less (inverter-based) must submit a completed Attachment Y. For Attachment Y submitted electronically through Queue Point, the customer is required to send PJM a signed copy of the Tariff Attachment and required deposit (https://pjm.com/directory/merged-tariffs/oatt.pdf; PJM Tariff 112A.1).

Attachment S (Form of Transmission Interconnection Feasibility Study Agreement)
Users will need to execute Attachment S if “an Interconnection Customer that seeks to interconnect or add Merchant Transmission Facilities to the Transmission System, or to increase the capacity of existing Merchant Transmission Facilities interconnected with the Transmission System shall submit to the Transmission Provider a Transmission Interconnection Request.” For Attachment S submitted electronically through Queue Point, the customer is required to send PJM a signed copy of the Tariff Attachment and required deposit (www.pjm.com/media/documents/merged-tariffs/oatt.pdf; PJM Tariff ATTACHMENT S).
Attachment BB (Form of Certified Inverter-Based Generating Facility No Larger than 10 Kilowatt Interconnection Service Agreement)
An Interconnection Customer desiring the interconnection of a Small Inverter Facility must submit to Transmission Provider an executed Attachment BB - Form of Interconnection Service Agreement for Certified Inverter-Based Generating Facility. For Attachment BB submitted electronically through Queue Point, the customer is required to send PJM a signed copy of the Tariff Attachment and required deposit (https://pjm.com/directory/merged-tariffs/oatt.pdf; PJM Tariff 112B.1, PJM Tariff ATTACHMENT BB).

Attachment EE (Form of Upgrade Request)
Developers that seek Incremental Auction Revenue Rights or to request increased capability of existing transmission owner facilities or seek to accelerate a PJM Board-approved RTEP upgrade must complete Attachment EE. For Attachment EE submitted electronically through Queue Point, the customer is required to send PJM a signed copy of the Tariff Attachment and required deposit (http://pjm.com/~/media/documents/manuals/m14a.ashx; PJM Manual 14A 2.2.3.2, https://pjm.com/~/media/documents/manuals/m14e.ashx; PJM Manual 14E 1.2.2, https://pjm.com/directory/merged-tariffs/oatt.pdf; PJM Tariff ATTACHMENT EE).

Feasibility Study Data
The data collected in the Feasibility Study data form is used for the Feasibility Study. The Feasibility Study assesses the practicality and cost of incorporating the generating unit or increased generating or transmission capacity into the PJM system. The analysis is limited to short-circuit studies and load-flow analysis. This study does not include stability analysis. The study also focuses on determining preliminary estimates of the type, scope, cost and lead time for construction of facilities required to interconnect the project (http://pjm.com/~/media/documents/manuals/m14a.ashx; PJM Manual 14A 4.2, https://pjm.com/~media/documents/manuals/m14q.ashx; PJM Manual 14G Attachment A, Attachment A-1).

System Impact Study
The data collected in the Impact Study data form is used for Impact Study. System Impact Studies are conducted to identify transmission expansion needed to maintain the system reliability given the addition of your generation onto the network. The data that is submitted is required to perform the power flow, short circuit, verify reactive capability, and dynamic simulation analyses which are necessary for the Impact Study phase (https://pjm.com/~http://pjm.com/~media/documents/manuals/m14a.ashx; PJM manual 14A 4.3, http://pjm.com/~/media/documents/manuals/m14g.ashx; PJM Manual 14G Attachment B, Attachment B-1, Attachment B-2).

As-Is Study
An As-Built review is conducted after the plant is built. The user is requested to enter tested data (of the installed equipment) for the facility for PJM to update their models.