




Application filing handbook for Enphase expansion systems

System expansion application process overview by utility

	Permission to Operate (PTO) application process status	Application method	Application fee	Online tool	Application support documentation required	Application steps	Configuring system to zero export
	Accepting and approving PTO applications	Online	\$800	PG&E Your Projects Portal	<ul style="list-style-type: none"> • Anti-islanding method letter • Building permit and inspection certificate • Single-line drawing • Site plan 	See slides 3–9	<p>New system must be configured to zero export</p> <p>See slides 42-44</p>
	Accepting and approving PTO applications	Online	\$800	Grid Interconnect on Processing Tool (GIPT)	<ul style="list-style-type: none"> • Single-line drawing showing the location of all Current Transformers (CTs) in the new and existing systems (sample on slide 22) • UL3141 PCS Certificate of Compliance • PCS Sequence of Operations • Homeowner proof of insurance 	See slides 10–24	<p>New system must be configured to zero export</p> <p>See slides 42-44</p>
	Accepting and approving PTO applications	Online	\$800	Distribution Interconnect on Information System (DIIS)	<ul style="list-style-type: none"> • Single-line drawing showing the location of all Current Transformers (CTs) in the new and existing systems • UL3141 PCS Certificate of Compliance • Homeowner proof of insurance 	See slides 25–41	<p>New system must be configured to zero export</p> <p>See slides 42-44</p>

Application process steps for Pacific Gas & Electric Company (PG&E)

PG&E application process (1 of 6)

- 1 Log in to the PG&E Your Projects portal and click **Start New Application**.
- 2 Select **Connect Solar Panels, Wind Turbines, or Other Generating Equipment**.
- 3 Choose **Complex Self Generation**.
- 4 Select **NBT/NEM Multiple Tariff**.
- 5 Choose **NBT/NEM + Non-Export**.

The screenshot displays the PG&E Your Projects portal interface. At the top, there is a navigation bar with 'Home', 'My Projects', 'My Orders', 'Help', and a user profile 'lrangel1973'. Below the navigation bar, there are three main sections: 'Outstanding Actions' (with a message 'There are no outstanding actions at this time.'), 'What's New' (listing various updates and guides), and a 'Start New Application' button highlighted with a red circle '1'. Below these sections, there is a 'Start Application' section with a grid of application options. The 'Connect Solar Panels, Wind Turbines, or Other Generating Equipment' option is highlighted with a red circle '2'. Under this option, 'Complex Self Generation' is highlighted with a red circle '3'. Within 'Complex Self Generation', 'NBT/NEM Multiple Tariff' is highlighted with a red circle '4'. Finally, 'NBT/NEM + Non-Export' is highlighted with a red circle '5'. A 'Submit' button is located at the bottom right of the application grid.

PG&E application process (2 of 6)

- 6 Enter the **Electric Service Agreement Number** and **Electric Badge Meter Number**.

Project Info

Customer and Facility Info

Program

- Simple Solar, Wind and/or Energy Storage
- Complex Self Generation
- Standby Emergency Generator
- Sell Power

Sub Program

- Expanded NBT/NEM and Larger Paired Storage
- NEM Fuel Cell
- NEM Virtual
- NEM CDCR
- NBT/NEM Multiple Tariff
- Non-Export
- RES-BCT

NEM Multiple Tariff

- NBT/NEM + Non-Export
- NBT/NEM Aggregation + Non-Export
- NEM Fuel Cell + Non-Export
- NBT/NEM + NEM Fuel Cell
- NBT/NEM + NEM Fuel Cell + Non-Export

Service Type

- New Generating Facility (Existing Electric Service)
- Upgrade Existing Generating Facility
- New Generating Facility and New Load Service

Is this application for new construction?

- Yes
- No

Was this system required by Title 24 or other building code?

- Yes
- No

6

Electric Service Agreement Number

Electric Badge Meter Number

PG&E application process (3 of 6)

In the **Contact Info** section, complete the required fields for:

7.1 Customer Contact

7.2 Contractor

7.3 Authorized Contact

Contact Info

Note: When making selections from a dropdown, other fields on the page will be auto-populated.

Customer Contact 7.1

Customer Contact
Please select a value

First Name Last Name

Company Name *optional*

Title *optional*

Mailing Address

Zip City State

Phone Extn *optional* E-mail

Save this contact to Address Book *optional*

Contractor 7.2

Self-Installed?
 Yes No

Authorized Contact 7.3

First Name Last Name

Company Name *optional*

Mailing Address

Zip City State

Phone Extn *optional*

Email Confirm Email

Save this contact to Address Book *optional*

[Save and Continue](#)

PG&E application process (4 of 6)

8 The existing system information will populate into the form.

The screenshot displays a web-based application form for PG&E. The form is titled "System #1" and is divided into two main sections. The left section, titled "Existing Equipment", contains the following fields and options:

- Program:** A dropdown menu with the text "Please select a value".
- Tech Type:** A dropdown menu with "Solar PV" selected.
- Generator Type:** A dropdown menu with "Inverter-External" selected.
- Fuel Type:** A dropdown menu with "Solar" selected.
- Will this Generator be used as a Backup?** Radio buttons for "Yes" and "No", with "No" selected.
- Please Select an Anti-Island Detection Method** (optional): A list of seven radio button options, including "Group 1: Frequency Shift with continuous positive frequency feedback" and "Group 7: I do not know".
- Do you plan to limit export?** Radio buttons for "Yes" and "No", with "No" selected.
- Enter Manufacturer Not In List** (optional): A checked checkbox. Below it, there are instructions: "1. First, try selecting your equipment Make & Model from the drop-down list of California Energy Commission (CEC) approved equipment. This option avoids delays during application review." and "2. If you cannot find your Make & Model on the list, PG&E will need to ensure your equipment complies with Sections L.2-L.4 and Section L.7 of Electric Rule No. 21 (Rule 21).".
- Additional text: "The simplest way to ensure compliance is to contact the CEC (Solar Equipment Lists Program) to have the equipment added. Alternatively, you can go through PG&E's manual process for equipment review to ensure safety and compliance with Sections L.2-L.4 and Section L.7 of Electric Rule No. 21 (Rule 21), which requires submission of the same certification documents that are required by the CEC." and "If model numbers are entered manually, please upload equipment specification sheets in the Documents section for review. If you need further assistance with this, please contact the Solar Equipment Contact Center at solarequipment@energy.ca.gov, or call (916) 654-4120."

The right section of the form, which is highlighted with an orange dashed border and a circled "8" in the top right corner, contains the following fields:

- Manufacturer:** A text input field with "Enphase Energy Inc." entered.
- Model:** A text input field with "IQ7-60-2-US [240V] [S11-JUN20]" entered.
- Quantity:** A text input field with "15" entered.
- Nameplate Rating (kW):** A text input field with "0.240" entered.
- Inverter Efficiency:** A text input field with "0.97" entered.
- Output Voltage Rating:** A text input field with "240.000" entered.
- Phase:** A dropdown menu with "Single Phase" selected.
- Power Factor:** A text input field with "1.00" entered.
- Power Factor Adjustment Max:** A text input field with "0.00" entered.
- Power Factor Adjustment Min:** A text input field with "0.00" entered.
- Short Circuit Contribution exceeds 1.2 per unit** (optional): An unchecked checkbox.
- Total Gen (kW):** A text input field with "3.6" entered.

PG&E application process (5 of 6)

- 9 Click **Add New System**, and **System #2** will appear.
- 10 When using zero export with Enphase Power Control, choose **Non-Export** in the **Program** field and **Group 1** as the **Anti-Island Detection Method**.
- 11 In the **Operating Mode** field, choose **Parallel Only (No Export)** and then **PCS Non-Export (Option 8)** in the **Protection** field.

The screenshot displays the configuration interface for 'System #2'. The 'Program' dropdown is set to 'Non-Export'. The 'Tech Type' is 'Solar PV', 'Generator Type' is 'Inverter-External', and 'Fuel Type' is 'Solar'. The 'Will this Generator be used as a Backup?' option is 'No'. Under 'Please Select an Anti-Island Detection Method', 'Group 1' is selected. The 'Manufacturer' is 'Enphase Energy Inc.' and the 'Model' is 'IQSPLUS-72-M-US [240V] [S11-SB] + IQ Gateway/CTS [CRD-PCS Non-Export]'. The 'Operating Mode' is 'Parallel Only (No Export)' and the 'Protection' is 'PCS Non-Export (Option 8)'. The 'Qualifying Facility (QF)?' option is 'No'. The 'Quantity' field is empty. The 'Manually Enter Fixed Power Factor Value' checkbox is unchecked. The 'Volt-VAR Smart Inverter Setting' is 'Custom Values' with the following values: V1: 92.00, V2: 96.70, V3: 103.30, V4: 107.00; Q1: 30.00, Q2: 0.00, Q3: 0.00, Q4: -30.00. The 'Volt-Watt Smart Inverter Setting' is 'Custom Values' with the following values: V1: 100.00, V2: 106.00, V3: 108.00, V4: 110.00; P1: 100.00, P2: 100.00, P3: 50.00, P4: 0.00.

PG&E application process (6 of 6)

- 12 Add the requested documents, along with other required information, as shown at right:

**Anti-islanding Method
Building Permit & Inspection Certificate
Single-Line Drawing
Site Plans and Diagrams**

- 13 Review and submit the application.

- 14 Email rule21gen@pge.com with the application number, explaining that this is a NEM expansion system (see sample email below). Copy your regional Enphase FAE.

Subject: NEM expansion application #XXXXXX

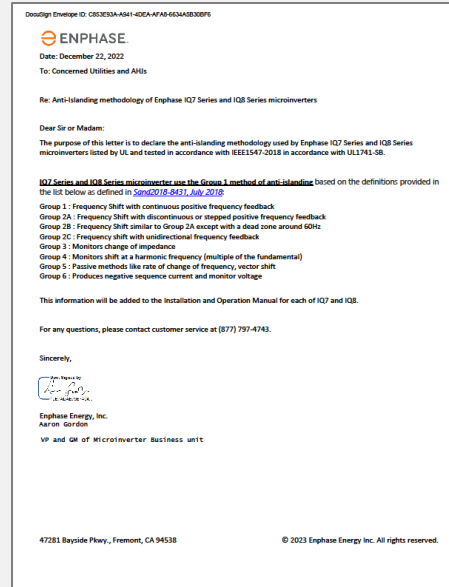
Dear PG&E interconnection team,

Application #XXXXXX for a NEM expansion system has been submitted for your review and approval.

Please acknowledge receipt of this application and let us know if you have any questions.

Thank you,
[Your name, business name, and phone number]

[Click here to download](#)
the manufacturer's declaration
of anti-islanding



Documents

Please attach all necessary documents. Any missing documents will cause a delay in processing.

Allowed file types are .pdf, .jpeg, .jpg, .gif, .xls, .xlsx, .zip, .bmp, .png, and .tiff. Please note that the allowed types may vary depending on the document type.

Maximum allowed file size is 40 MB

If you need to upload more than one document for a given document type, please zip the files and upload the zip

Manufacturer's Documentation for Anti-islanding Method **REQUIRED**

Choose a file for upload or drag and drop one into this area Not Uploaded

Building Permit # *optional*

Assessor's Parcel Number (APN) *optional*

Final Building Permit & Inspection Certificate

Choose a file for upload or drag and drop one into this area Not Uploaded

Building Permit Date Applied *optional*

Building Permit Final Sign-off Date *optional*

Single-Line Drawing **REQUIRED**

Choose a file for upload or drag and drop one into this area Not Uploaded

Site Plans and Diagrams **REQUIRED**

Choose a file for upload or drag and drop one into this area Not Uploaded

AC Disconnect Variance Requested Yes No

12

Application process steps for Southern California Edison (SCE)

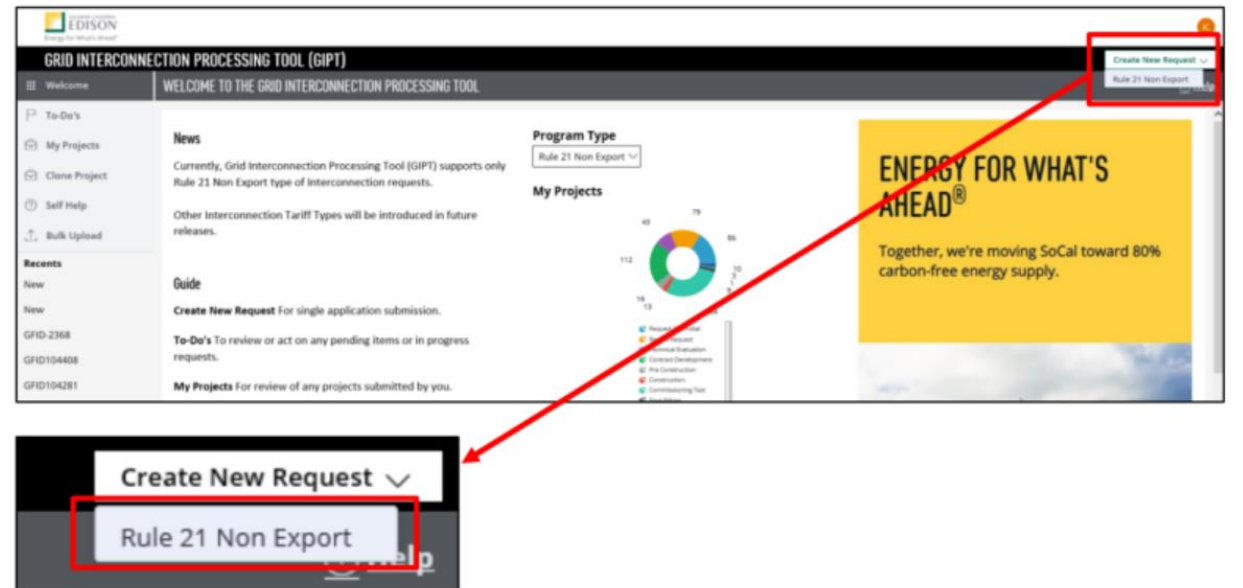
The original document can be found [here](#).

SCE application process (1 of 14)

Creating a new request

To create a new interconnection request:

1. Log on to GIPT. Registration is mandatory for first-time users. For a complete guide, please see [Grid Interconnection Processing Tool \(GIPT\) information](#).
2. From the **Create New Request** drop-down list on the upper right, select **Rule 21 Non Export**.



SCE application process (2 of 14)

Overview of interconnection request sections

To create a new interconnection request, you must complete all required areas on the right. SCE's guidance, shown in the following screenshots, covers only the most common deficiency sections and fields.

The screenshot displays the 'GRID INTERCONNECTION PROCESSING TOOL (GIPT)' interface. The main content area is titled 'Project and Contact Information' and includes sections for 'Project Information' (with a 'Project Name' field and an 'ExpirationDate' dropdown) and 'Operating Mode' (with radio buttons for 'Parallel Operation', 'Momentary Parallel (MP) Operation', and 'Isolated Operation'). Below this is a table with columns 'Operating Mode' and 'Description'. The right-hand side of the interface features a navigation menu with the following items: Project Information, Facility Information, Generating Unit Details, Additional Information, Attachments, Preliminary Screening, Checklist, and Forms and Payment. A red box highlights this menu, and a red arrow points from it to a larger, detailed view of the menu below.

Operating Mode	Description
Parallel Operation	The Generating Facility will interconnect and operate "parallel" with SCE's Distribution System for more than one (1) second
Momentary Parallel (MP) Operation	The Generating Facility will interconnect and operate on a "momentary parallel" basis with SCE's Distribution System for a duration of one (1)

- Project Information
- Facility Information
- Generating Unit Details
- Additional Information
- Attachments
- Preliminary Screening
- Checklist
- Forms and Payment

SCE application process (3 of 14)

Project and Contact information

1. The **Parallel Operation** mode must be selected.
2. In the **Agreement Options** section, “Will you be requesting a 3rd party agreement with SCE?” must be answered **No** for the correct options to appear.
3. A **Generating Facility Interconnection Agreement (Multiple Tariff) (Form 14-773)** must be the selected **Agreement Type**.


Project and Contact Information

Project Information [Help](#)

Project Name * Expiration Date (Month-Date-Year)

Operating Mode [Help](#)

Select the Operating Mode of the Generating Facility *


Parallel Operation 

Momentary Parallel (MP) Operation

Isolated Operation

Operating Mode	Description
Parallel Operation	The Generating Facility will interconnect and operate "in parallel" with SCE's Distribution System for more than one (1) second
Momentary Parallel (MP) Operation	The Generating Facility will interconnect and operate on a "momentary parallel" basis with SCE's Distribution System for a duration of one (1) second or less through transfer switches or operating schemes specifically designed and engineered for such operation
Isolated Operation	The Generating Facility will be "isolated" and prevented from becoming interconnected with SCE's Distribution System through a transfer switch or operating scheme specifically designed and engineered for such operation

Agreement Options

Will you be requesting a 3rd party agreement with SCE? * 

Will the Generating Facility be owned by a (third) party other than the name appearing on the SCE service account in "Name shown on SCE Service Account" *

Please select Agreement Type

A Generating Facility Interconnection Agreement (Non-Export) (Form 14-731)

A Generating Facility Interconnection Agreement (Inadvertent Export) (Form 14-745)

A Generating Facility Interconnection Agreement (Multiple Tariff) (Form 14-773)

A Generating Facility Interconnection Agreement (Multiple Tariff) (Form 14-972)

Other

SCE application process (4 of 14)

4. The **Contractual Notice Recipients - Contact Information** should be the **Customer Contact Information** as any future notices regarding the interconnection agreement will be sent to that address.

Contractual Notice Recipients - Contact Information

Customer Contact Information

Please select the options from the dropdown to copy information

Select

Contact Person * Email *

e.g. William Wilson e.g. name@domain.com

Mailing Street Address *

e.g. 2244 Walnut Grove Avenue

City * State * Zip Code *

e.g. Rosemead e.g. CA e.g. 91770

Phone * Fax

e.g. 9092741106 e.g. 9092741106

Company Name

Facility Information

1. The **Operating Date** must be at least 60 calendar days in the future.
2. **Multiple Tariff** must be selected under **Operating Option**.

Facility Information

Operation Information Help

Operating Date (Month-Date-Year) *

1 -- -- --

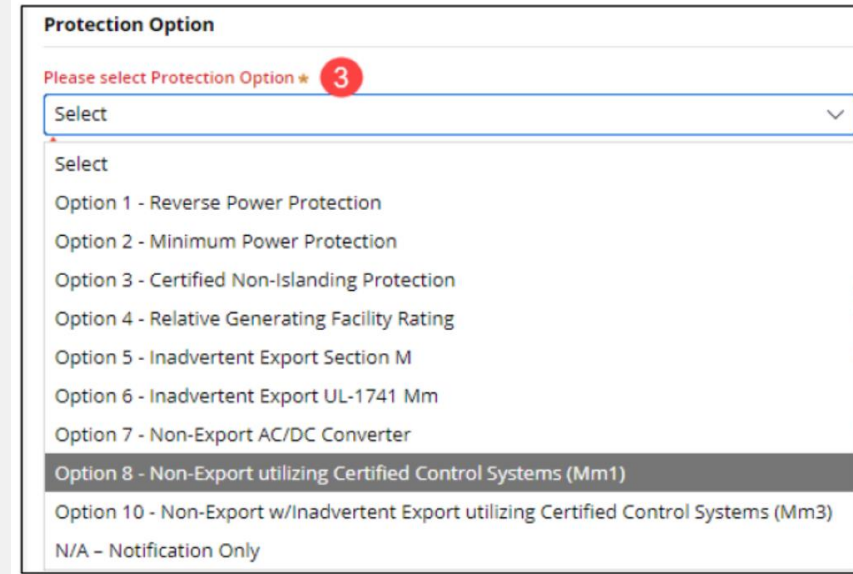
2

Please indicate how this generating facility will be operated (select all that apply) *

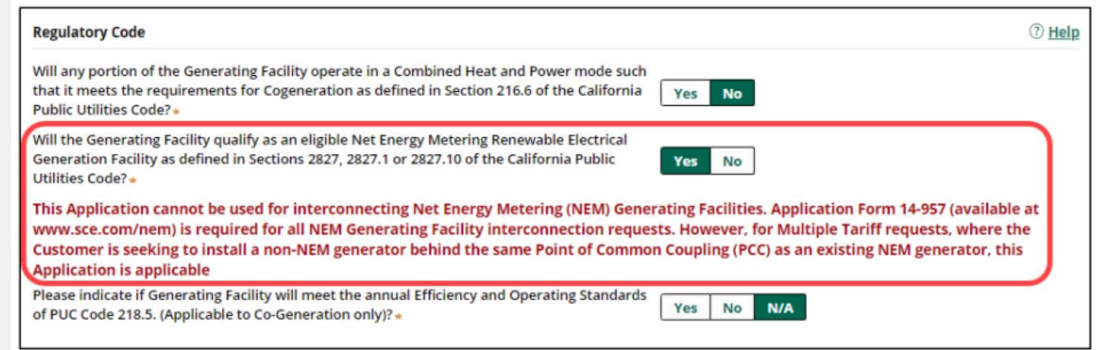
Operating Option	Description
Combined Heat and Power	The operation of the Generating Facility will produce thermal energy for a process other than generating electricity
Multiple Tariff	The Generating Facility has a combination of non-NBT or non-NEM generator(s) and NBT or NEM Generator(s) (i.e., an existing facility with NBT or NEM generator(s) and planning to add non-NBT or non-NEM generator(s))
Peak Shaving/Demand Management	The Generating Facility will be operated primarily to reduce electrical demands of the host Customer facility during SCE's "peak pricing periods"
Primary Power Source	The Generating Facility will be used as the primary source of electric power and power supplied by SCE to the host Customer's loads will be required for supplemental, standby, or backup power purposes only
Standby / Emergency / Backup	The Generating Facility will normally be operated only when SCE's electric service is not available

SCE application process (5 of 14)

3. **Option 8 - Non-Export utilizing Certified Control Systems (Mm1)** must be selected in the **Protection Option** drop-down.
4. The **Regulatory Code** question "Will the Generating Facility qualify as an eligible Net Metering Renewable Electrical Generation Facility as defined in sections 2827, 2827.1 or 2827.10 of the California Public Utilities code?" must be answered **Yes** where the customer is seeking to install a non-NEM generator behind the same point of common coupling (PCC) as an existing NEM generator.



The screenshot shows a web form titled "Protection Option". Below the title is a red asterisk and a red circle with the number "3", indicating a required field. The text "Please select Protection Option" is followed by a dropdown menu. The dropdown is currently open, showing a list of options. The option "Option 8 - Non-Export utilizing Certified Control Systems (Mm1)" is highlighted in grey, indicating it is the selected option. Other options include "Option 1 - Reverse Power Protection", "Option 2 - Minimum Power Protection", "Option 3 - Certified Non-Islanding Protection", "Option 4 - Relative Generating Facility Rating", "Option 5 - Inadvertent Export Section M", "Option 6 - Inadvertent Export UL-1741 Mm", "Option 7 - Non-Export AC/DC Converter", "Option 10 - Non-Export w/Inadvertent Export utilizing Certified Control Systems (Mm3)", and "N/A - Notification Only".



The screenshot shows the "Regulatory Code" section of the application form. It contains three questions, each with "Yes" and "No" radio buttons. The second question is highlighted with a red border. Below the questions is a red-bordered box containing a warning message. At the bottom, there is a question with "Yes", "No", and "N/A" radio buttons.

Regulatory Code [Help](#)

Will any portion of the Generating Facility operate in a Combined Heat and Power mode such that it meets the requirements for Cogeneration as defined in Section 216.6 of the California Public Utilities Code? Yes No

Will the Generating Facility qualify as an eligible Net Energy Metering Renewable Electrical Generation Facility as defined in Sections 2827, 2827.1 or 2827.10 of the California Public Utilities Code? Yes No

This Application cannot be used for interconnecting Net Energy Metering (NEM) Generating Facilities. Application Form 14-957 (available at www.sce.com/nem) is required for all NEM Generating Facility interconnection requests. However, for Multiple Tariff requests, where the Customer is seeking to install a non-NEM generator behind the same Point of Common Coupling (PCC) as an existing NEM generator, this Application is applicable

Please indicate if Generating Facility will meet the annual Efficiency and Operating Standards of PUC Code 218.5. (Applicable to Co-Generation only)? Yes No N/A

SCE application process (6 of 14)

Generating Unit Details

1. Click **Add Item** to add **New** and **Existing Generator(s)**.

For the new and existing generators, add the number of inverters, manufacturer, and model number, and nameplate rating. This information must match the SLD.

a. Please note the following:

- i. The application **does not** require Solar PV module information listed as a “Generator” Instead list the inverter information.
- ii. If unable to obtain existing equipment SLD/information, site verification will be necessary to input **Existing Generator Info**. Please see “Checklist” section (see step 10 of 12) on how to add applicant comment.

The screenshot shows the 'Generating Unit Details' form. It includes a table for 'Existing and New Generator Info' and a summary table below it. Two red callout boxes provide additional context: one points to the 'Quantity' column, stating it refers to 'Generator Type' not 'prime mover', and another points to the 'Additional Details' column for an existing generator, stating it contains the 'Existing NEM label'.

Generator Status	Quantity	Generator Type	Prime Mover Type	Generator Details
New	1	Inverter	Select	Additional Details
Existing	1	Inverter	Select	Additional Details

Total	New Generators	Existing Generators	All Generators
Gross Name Plate Rating (kVA)	0	0	0
Gross Name Plate Rating (kW)	0	0	0
Net Name Plate Rating (kW)	0	0	0
Generator Units	1	1	2

SCE application process (7 of 14)

2. Under **Additional Details**, please note the following:
 - a. Check your inverter specification sheet or the California Energy Commission (CEC) [list of eligible inverter equipment](#) for individual unit Nameplate Ratings.
 - i. **Gross Nameplate Rating (kVA) (individual unit)** – The total gross generating capacity of a Generator or Generating Facility as designed by the manufacturer(s) or Generator(s)
 - ii. **Gross Nameplate Rating (kw) (individual unit)** – the total gross generating capacity of a Generator or Generating Facility as designed by the manufacturer(s) or the Generator(s)

The screenshot shows the 'Generating Unit Details' form. It includes a table for 'Existing and New Generator Info' and a summary table at the bottom. Two red callout boxes provide additional context: one points to the 'Quantity' field, stating it refers to 'Generator Type' not 'prime mover', and another points to the 'Additional Details' field for an existing generator, stating that the 'Existing NEM label' is located there.

Generator Status	Quantity	Generator Type	Prime Mover Type	Generator Details
New	1	Inverter	Select	Additional Details
Existing	1	Inverter	Select	Additional Details

Total	New Generators	Existing Generators	All Generators
Gross Name Plate Rating (kVA)	0	0	0
Gross Name Plate Rating (kW)	0	0	0
Net Name Plate Rating (kW)	0	0	0
Generator Units	1	1	2

SCE Application Process (8 of 14)

- iii. **Net Nameplate Rating (kW) (individual unit)** – The Gross Rating minus the consumption of electrical power of the auxiliary load.
- b. Please select the existing NEM program from the drop-down.

The screenshot shows a web form for SCE application. A red arrow points from the text 'Please check your inverter specification sheet' to the dropdown menu for 'Is this existing generation currently served under the NEM program?'. The dropdown menu is currently set to 'Yes - NEM 1.0'. Other fields include Manufacturer, Model, Software Version, Gross Nameplate Rating (kVA and kW), Net Nameplate Rating (kW), Operating Voltage, PF Rating, and Short Circuit Current produced by Generator (Amps). A 'Submit' button is at the bottom right.

SCE application process (9 of 14)

Energy Storage Charging Function

The **Rated Charge Demand** [Rated Discharge] (**Load in kW**) is for the energy storage/battery only. Please refer to the manufacturer specification sheet.

Additional Information

1. Expedited **Processing Options** are not eligible for Multiple Tariff.
2. Please note the following for **Microgrid System Operations**:
 - If **Yes** is selected for microgrid, additional technical requirements will be needed such as sequence of operations to ensure microgrid system complies with all Rule 21 section Hh.h requirements
3. Complete the **Program Participation** section by selecting all programs that your project participates in or intends to participate in. This is not an application for any particular program.

Net Energy Metering (for an existing facility) should be selected.

Energy Storage Charging Function

Rated Charge Demand (Load in kW) *

Estimated annual Net Energy Usage of the energy Storage Device(s) and/or Electric Vehicle(s) (kWh) *

Maximum Charging Demand, if different than Rated Charging Demand (kW)

Will the Distribution System be used to charge the Storage Device(s) and/or Electric Vehicle(s) *

Source of energy for charging

Mechanism to prevent charging from the Distribution System

Will charging the Storage Device(s) and/or Electric Vehicle(s) increase the host facility's existing peak load demand? *

Energy Storage System Operations

Describe the intended use of the storage device *

Additional Information

Processing Options

Please indicate below if the Generating Facility exclusively employs Non-Export AC/DC Converter(s) and Customer requests expedited review pursuant to Rule 21 Section F.1.b subject to the eligibility requirements of Rule 21 Section O

Yes No

Microgrid System Operations

Please indicate if the Generating Facility will be operated as a Microgrid System? *

Yes No

Program Participation

Please select all programs which this project may be participating in, as applicable. (Note: A selection of a program does not guarantee eligibility and is for informational purposes only. Most programs require a separate application or request.)

Net Energy Metering (for an existing facility)

Self Generation Incentive Program

Accelerated PTO Pilot program (subject to further evaluation)

Local Capacity Resource

IDER

Other (please specify)

Notification Only Process (for Pre-Approved Developers ONLY)

Emergency Load Reduction Program (ELRP)

SCE application process (10 of 14)

4. In the **Additional Technical Information** section, the answer to “Is a Control Scheme being used?” must be **Yes**. Additionally, UL 3141 certified equipment must be selected from the **SCE Approved Control System** list.

- If not listed, please select “other” and input the equipment make and model. Supporting documentation will be required to verify UL 3141 certification and compliance.

Attachments

1. Upload all required technical documentation in the **Attachments** section.

- **Single Line Diagrams (SLD)** – on the single line diagram, indicate the location of all power control system CTs. The placement of these CTs is crucial for achieving UL 3141 certification and maintaining NEM integrity. Please refer to [NEM interconnection handbook](#) Section 5 for detailed Single Line Diagram requirements.

The image shows two screenshots of the SCE application process. The top screenshot is titled "Additional Technical Information" and contains the following questions and options:

- Is this a Line-side or Load-side tap? -> Line Side | Load Side
- Is a Control Scheme being used? -> Yes | No (with a red arrow pointing to "Yes")
- Please select the SCE Approved Control System -> Select (with a dropdown arrow and a red arrow pointing to it)
- Does this facility include Vehicle-to-grid (V2G) devices? -> Yes | No

The bottom screenshot is titled "Attachments" and contains the following information:

- In order to submit this request, please provide a Single Line Diagram attachment.
- For small storage projects (<11 kW) that intend to participate in the Wildfire Resiliency incentive program:**
- Due to condensed review timelines associated with the program, please provide the following documentation at this time:
 - Final Inspection form from the Authority Having Jurisdiction (AHJ)
 - Certificate of Liability insurance documentation
 - A Single Line Diagram (SLD). We encourage you to use pre-approved SLDs that match your request. If the pre-approved templates are not in alignment with your request, then please provide your own.
- Failure to provide documentation up-front will increase review and correspondence timelines for this request. A pilot plan is not required for these submissions.
- *Please see our pre-approved Single Line Diagrams and other reference materials here: <https://www.sce.com/business/generating-your-own-power/Grid-Interconnections/Interconnecting-Generation-under-Rule-21>
- Please note, residential generators over 10kW will require the producer, , to provide Commercial General Liability insurance in accordance with Section 8.1(c) of the Generating Facility Interconnection Agreement (GRIA). Please confirm the producer, , will adhere to this requirement through the entirety of the Generating Facility Interconnection Agreement (GRIA) upon execution.
- I acknowledge the above statement
- Drag and drop files here
- or
- Select file(s)

SCE application process (11 of 14)

- **Plot Plan** – Plot plan is required for Line Side Taps and construction projects requiring “new service” connection. Sample can be found here (on page 10)
- **Certification of Compliance** – Only needed if not an SCE approved Control system
- **Sequence of operations** (ensure NEM integrity). [Attach Enphase Sequence of operations document.](#)

Attachments

In order to submit this request, please provide a Single Line Diagram attachment.

For small storage projects (<11 kW) that intend to participate in the Wildfire Resiliency Incentive program:

Due to condensed review timeframes associated with the program, please provide the following documentation at this time:


- Final Inspection form from the Authority Having Jurisdiction (AHJ)
- Certificate of Liability insurance documentation
- A Single Line Diagram (SLD). We encourage you to use pre-approved SLDs* that match your request. If the pre-approved templates are not in alignment with your request, then please provide your own.

Failure to provide documentation up-front will increase review and correspondence timelines for this request. A plot plan is not required for these submittals.

*Please see our pre-approved Single Line Diagrams and other reference materials here:
<https://www.sce.com/business/generating-your-own-power/Grid-Interconnections/Interconnecting-Generation-under-Rule-21>

Please note, residential generators over 10kW will require the producer, , to provide Commercial General Liability insurance in accordance with Section 8.1(c) of the Generating Facility Interconnection Agreement (GRIA). Please confirm the producer, , will adhere to this requirement through the entirety of the Generating Facility Interconnection Agreement (GRIA) upon execution.

I acknowledge the above statement



Drag and drop files here

or

Select file(s)

SCE application process (12 of 14)

- When done, click **continue** or use the topics on the right to proceed to the next area until you get to the **Forms and Payment** section.

Checklist

- Under **Self Review** in the **Checklist** section, select **Yes** for “Is any existing generation listed in your interconnection request?” and **Add Comment** if existing equipment was site verified and include the date of verification in the event SCE records differ from what is at the site.

Forms and Payment

- The application review requires a non-refundable fee of \$800. Payment is mandatory for Parallel options. Instructions on how to make this payment are included in the [GIPT user guide](#).

The screenshot displays two sections of the SCE application process interface. The top section, titled "Checklist", is under the "Self Review" heading. It contains three checklist items, each with a "Yes/No" selection and an "Add Comment" link. The third item, "Is any existing generation listed in your interconnection request?", has its "Yes" button and "Add Comment" link highlighted with red boxes. A red arrow points to the "Add Comment" link. The bottom section, titled "Forms and Payment", is under the "Forms and Agreements" heading. It shows a "Rule21 Application Form" with a "Download" link. Below this, under "Payments Due", it lists an "Application Fee" of "\$800.00". A light blue note box contains the following text: "Note - Application fee payment is required before the interconnection request can be submitted. Only the Automated Clearing House (ACH) payment method is acceptable online at this time. Other methods of online payment are being explored and will be introduced at the appropriate time. When payment is completed, you will be directed back to this screen to Click on Finish to continue. If this does not occur, click on your 'To Do's' to open this case to take you to this Forms and Payment screen and Click on Finish to continue." At the bottom of this section is a "Make a Payment" button.

SCE Application Process (13 of 14)

2. Click **Download** to review the Rule 21 application form. It includes all the information you provided. If you have any questions, contact SCE. Otherwise, proceed with completing the payment.
3. Click **Make a Payment** to proceed to payment.
4. Refer to the section: Making a Payment for information on how to make a payment.
5. Click **Save**.
6. Click **Finish**.



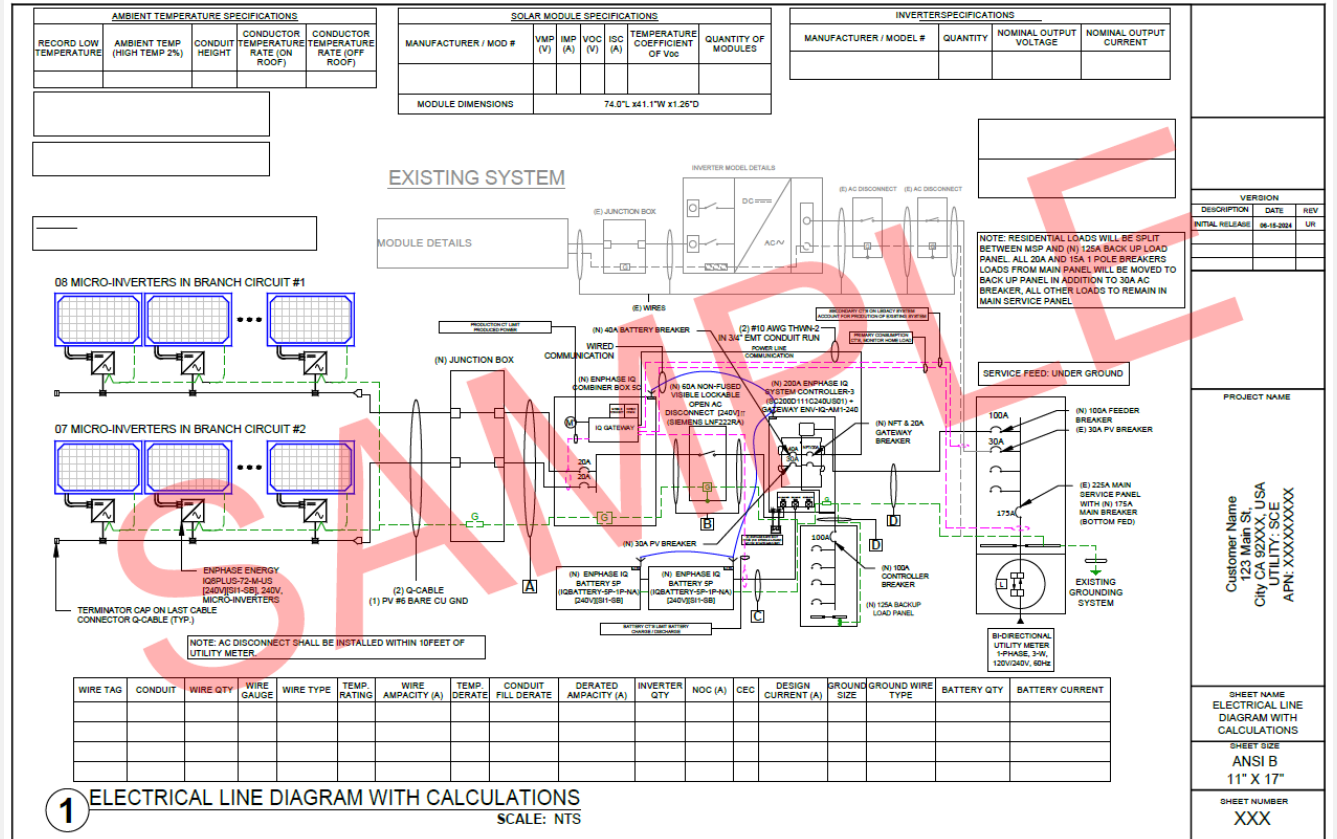
Your payment transaction is incomplete until you click **Finish**; you must click **Finish** for the case to move forward.

SCE application process (14 of 14)

Informational sample line diagram

This diagram can be used as a template for what SCE requires to be submitted as an attachment to the application.

(See step 10 for further information on exact attachments to include in your application.)



Application process steps for San Diego Gas & Electric (SDG&E)

The original document can be found [here](#).

SDG&E application process (1 of 16)

Starting an SDG&E application

- The first paragraphs are informational, describing SDG&E's multiple tariff use case.
- To begin an application, visit [SDG&E's Distribution Interconnection Information System \(DIIS\)](#).
- Note: An \$800 interconnection application fee applies to multiple tariff applications.
- Once logged into the DIIS portal, choose **DG Rule 21 Application**.

SDG&E™

Interconnection Application Guide for SDG&E Multiple Tariff Facilities

Per [SDG&E Electric Schedule NEM-ST](#) (Special Condition 9.b; Sheet 27):
"Customers making modifications and/or additions to their REGF that exceed the 10 percent or 1 kW limit referenced above have the option of either: 1) metering the additions and/or modifications separately under another eligible tariff or other authorized process, or 2) having the entire REGF served under another eligible tariff, subject to the terms and conditions contained therein."

Essentially, what this means is that the required application request will be for a NEM Multiple Tariff Facility interconnection which provides for parallel operation of a non-NEM Generating Facility (or the Non-Export portion) in combination with the existing NEM facility.

- For more information regarding Multiple Tariff Facility provisions please reference Special Condition 5 on Sheet 14 of Schedule NEM-ST (link provided above).

If a contractor or customer decides to move forward with the first option noted above, they can do so by logging into SDG&E's Distribution Interconnection Information System (DIIS) [Net Energy Metering | San Diego Gas & Electric](#). When clicking on the "Start a New Application" option you'll want to select the "DG Rule 21 Application" option as illustrated in the screenshot below.

- Please note that an **\$800 Interconnection Application Fee** is required for this application. An invoice will be sent with payment instructions. Application review will commence upon receipt of payment.

Start a New Application

- NEM/NBT Less than 30KW Application
- NEM/NBT Greater than 30KW Application
- DG Rule 21 Application**
- Backup Generators Application

Page 1 of 3

SDG&E application process (2 of 16)

Continuing an SDG&E application

- In section B of the DIIS application, choose **Existing facility with NEM generator(s) and planning to add non-NEM generator(s)**.
- Applicants must fill out a separate PDF ([Form 142-05203](#)) and upload the completed form to the application. For full instructions on Form 142-05203, see step 4 in subsequent slides.
- Departing load changes will apply to NEM-MT applications in SDG&E territory.
- System owners must have a homeowner's insurance policy and show proof of this during the application phase. Complete [Form 117-2160](#).
- If the expansion system has batteries attached, two [142-05203](#) forms are required—one for the PV system, and one for the battery system.
- This section contains informational notes:
 - Link to [full SDG&E tariff](#)
 - Customer support phone numbers

SDG&E

When you get to Section B of the application, please select the "Existing facility with NEM generator(s) and planning to add non-NEM generator(s)" option as illustrated in the screenshot below.

B. Describe each of the Generators

* Required Field

New facility installing non-NEM generator(s) and NEM generators at the same time.

Existing facility with non-NEM generator(s) and planning to add NEM generator(s).

Existing facility with NEM generator(s) and planning to add non-NEM generator(s).

Existing facility with NEM generator(s) and planning to add NEM generator(s) under a different NEM tariff.

A completed **paper application is required** to be uploaded to the electronic submittal. You may find the hard copy application Form 142-05203 [here](#).

It's also important to note that the Non-NEM (or Non-Export) portion may be subject to departing load demand charges. See [SDG&E Electric Schedule CGDI-CRS](#) and [SDG&E Electric Schedule E-DEPART](#) for more information.

Additionally, **insurance requirements apply** to this type of application and must be met to receive Permission to Operate (PTO). Please refer to Generating Facility Interconnection Agreement [Form 117-2160](#), Section 9. We will also require contractors/customers to fill out this form and sign.

And last, if a battery storage is being installed behind the non-export system, please note that this will **require a separate DG Rule 21 application**.

Additional Resources

- [SDG&E's Electric Tariff Books](#) to access your OAS tariff which will be necessary when conducting an analysis for departing load charges.
- For questions regarding departing load demand charges:
 - Residential and Unassigned Commercial Customers - Contact SDG&E's Customer Contact Center.
 - Residential: 1-800-411-7343
 - Unassigned Commercial: 1-800-336-7343
 - Assigned Commercial Customer – Contact your Account Executive

Page 2 of 3

SDG&E application process (3 of 16)

Continuing an SDG&E application

- For additional interconnection questions, SDG&E customer support can be contacted through these channels



- For questions regarding the interconnection application process:
 - Email Netmetering@sdge.com or,
 - Call 1-858-636-5585

SDG&E application process (4 of 16)

Instructions for filling out [Form 142-05203](#)

- This application must be filled out and attached to the applicant's submittal in the DIIS system.
- If batteries are attached to the expansion system, one PV and one ESS application must be submitted.
- Scroll to the bottom of page 2 and select **Fast Track Process**.

Note: For solar and wind Net Energy Metering ("NEM") projects, please refer to the following SDG&E web site:
<http://www.sdge.com/nem>

Selecting the Study Process

Please check one:

Fast Track Process

Detailed Study

- Will be either an Independent Study Process, Distribution Group Study Process or Transmission Cluster Study Process, dependent upon the Electrical Independence Test.

2

Form 142-05203
(05/021)

SDG&E application process (5 of 16)

Continuing an SDG&E application

Page 3:

- Input the **Customer Election Account Information** in Section A.
- Input the **Project Contact Information** for the generating facility in Section B.

Part 2 – Identifying the Generating Facility's Location and Responsible Parties

Project Name:	Date Received:	Generating Facility ID:	Application Expiration Date (Refer to Part 2, Section E)

(For SDG&E Use Only)

A. Customer Electric Account Information (Behind which meter and to which electric Service Account will the Generating Facility be interconnected for parallel operation with SDG&E?)

--	--	--

Name shown on SDG&E Service Account Electric Account Number Meter Number

NOTE: Customer Electric account must match the customer's utility bill account information.

--	--	--	--

Meter Location Street Address City State Zip

Customer Electric Account Contact Information (Who is the customer contact for progress updates and/or additional information?)

--	--

Contact Person Company Name

--	--	--

Phone Fax E-mail

--	--	--	--

Mailing Address City State Zip

B. Project Contact Information (Who is the project contact for this Generating Facility?)

--	--

Project Contact Person (Optional) Company Name

--	--	--

Phone Fax E-mail

--	--	--	--

Mailing Address City State Zip

B.1. Will the Generating Facility be owned by a (third) party other than the name appearing on the SDG&E service account in A. above (please check)? Yes No

3 Form 142-05203 (05/021)

SDG&E application process (6 of 16)

Continuing an SDG&E application

Page 4

- Input expected energy output, and contact person who will execute the utility agreement
 - Choose C.1 if Customer owned
 - Choose C.2 if third party owned
- Input contact information from customer or 3rd party

Part 2 Cont'd – Identifying the Generating Facility's Location and Responsible Parties

B.2. Will any portion of the Generating Facility operate in a Combined Heat and Power mode such that it meets the requirements for Cogeneration as defined in Section 216.6 of the California Public Utilities Code? Yes No

B.3. Will the Generating Facility qualify as an eligible Net Energy Metering Renewable Electrical Generation Facility as defined in Sections 2827, 2827.1 or 2827.10 of the California Public Utilities Code? Yes No Enter expected energy output of the system.

B.4. What is the estimated annual energy production of the Generating Facility? kWh Battery should be entered as zero

C.1. Customer - Generation Facility Interconnection Agreement ("GFIA") (applicable where customer is the signatory on the GFIA) or Customer Generation Agreement ("CGA") Information (applicable where a 3rd party is the signatory on the GFIA; see also Section C.2 below)

Please identify the party who will sign and execute the GFIA or CGA, as applicable.

<input type="text"/>	<input type="text"/>
Person Executing the GFIA/CGA	Title of Person Executing GFIA/CGA

<input type="text"/>	<input type="text"/>
Name of Legal Entity to be entered in the Signatures Section of the GFIA/CGA	Type of Entity (e.g., a Delaware Corporation; a California Municipality)

C.2. 3rd Party Owner/Producer – GFIA Information (If applicable)

Please identify the 3rd party who will sign and execute the GFIA.

<input type="text"/>	<input type="text"/>
Person Executing the GFIA	Title of Person Executing GFIA

<input type="text"/>	<input type="text"/>
Name of Legal Entity to be entered in the Signatures Section of the GFIA	Type of Entity (e.g., a Delaware Corporation; a California Municipality)

C.3 Contractual Notice Recipients – Contact Information

Customer			
<input type="text"/>		<input type="text"/>	
Contact Person		Company Name (if applicable)	
<input type="text"/>	<input type="text"/>	<input type="text"/>	
Phone	Fax (if applicable)	Email (required)	
<input type="text"/>		<input type="text"/>	<input type="text"/>
Mailing Address		City	State Zip Code

Contact info for C.1 or C.2 above

4

Form 142-05203
(05/021)

SDG&E application process (7 of 16)

Continuing an SDG&E application

Page 5

- Input contact information if owned by 3rd party
- Operating Date: Input expected PTO date
- Expiration date: Input 12 months after the application date
- Input **No** for Cost Envelope Option Election for upgrades

SDG&E
Southern California Edison Energy Services

GENERATING FACILITY INTERCONNECTION APPLICATION

Part 2 Cont'd - Identifying the Generating Facility's Location and Responsible Parties

3rd Party Owner/Producer (if applicable)

Contact Person: _____ Company Name (if applicable): _____

Phone: _____ Fax (if applicable): _____ Email (required): _____

Mailing Address: _____ City: _____ State: _____ Zip Code: _____

D. **Operating Date** (What date is this Generating Facility expected to begin operation?)

E. **Expiration Date*** (The date the status of this Application is changed to "withdrawn" by SDG&E?)

* The information submitted in this Application will remain active and valid for a period of 12 months from the date the Application was accepted by SDG&E as a "completed" Application. If the project has not received written authorization to operate in parallel, or that reasonable proof the project is going forward has not been submitted to SDG&E by that time, the Application will be considered "withdrawn". Any Interconnection Request, Supplemental Review or Detailed Study fees paid to SDG&E for corresponding reviews/studies completed by SDG&E will be forfeited.

F. **Estimated Versus Actual Cost Responsibility**

If actual costs for (1) detailed interconnection studies, and/or (2) interconnection Facilities and distribution system modifications exceed the original estimated amounts, Applicant will be responsible for costs above the estimated amounts, and SDG&E will refund the difference.

G. **Cost Envelope Option Election for Upgrades**

Please indicate below if Customer elects to participate in the Cost Envelope Option pursuant to Rule 21 Section F.7 for the costs associated with any applicable Interconnection Facilities and/or Distribution Upgrades (check below):

Yes
 No

If "Yes" is selected, Customer must provide all of the following additional information as part of this Application:

1. Final location of the Point of Common Coupling: [provide a description of the physical location of the Point of Common Coupling and indicate on the site drawing provided under 5 below]
2. Final location of the Point of Interconnection: [provide a description of the physical location of the Point of Interconnection and indicate on the site drawing provided under 5 below]
3. Confirmation of service voltage:

5 Form 142-05203 (05/021)

SDG&E application process (8 of 16)

Continuing an SDG&E application

Page 6

- H does not apply to AC NEM expansion systems. Select **No**
- Select option 1: Parallel Operation

Part 2 Cont'd – Identifying the Generating Facility's Location and Responsible Parties

4. Confirmation that technical data provided in the Application is accurate, including equipment type and manufacturer:

5. A site drawing on a scale of 1:30 or less, which shows the final location of the Point of Common Coupling, Point of Interconnection, and final location and routing of conductors and equipment between the Point of Common Coupling and Point of Interconnection:

6. Identification of any constraints or limitations related to the siting or routing of conductors and equipment between the Point of Common Coupling and the Point of Interconnection: [provide a description of the constraints/limitations and indicate their location on the site drawing provided under 5 above]

H. Expedited Review for Non-Export AC/DC Converters

Please indicate below if the Generating Facility exclusively employs Non-Export AC/DC Converter(s) and Customer requests expedited review pursuant to Rule 21 Section F.1.b subject to the eligibility requirements of Rule 21 Section O (check below):

Yes
 No

Part 3 - Describing the Generating Facility and Host Customer's Electrical Facilities

A. (MP&I)	Indicate the operating mode of the Generating Facility	operating mode options: 1 2 3 (Choose one)
--------------	--	--

Instructions and Notes

Choose from the following operating mode options:

- Parallel Operation:** The Generating Facility will interconnect and operate "in parallel" with SDG&E's Distribution System for more than one (1) second.
- Momentary Parallel Operation (MP):** The Generating Facility will interconnect and operate on a "momentary parallel" basis with SDG&E's Distribution System for a duration of one (1) second or less through transfer switches or operating schemes specifically designed and engineered for such operation.
- Isolated Operation (I):** The Generating Facility will be "isolated" and prevented from becoming interconnected with SDG&E's Distribution System through a transfer switch or operating scheme specifically designed and engineered for such operation.

If the answer is operating mode option 1, "parallel operation," please supply all of the information requested for the Generating Facility. Be sure to supply adequate information including diagrams and written descriptions regarding the protective relays that will be used to detect faults or abnormal operating conditions on SDG&E's Distribution System.

If the answer is operating mode option 2, "momentary parallel operation," only questions A, E and F of this Part 3 and questions A, B, E, F, J, M, N, O and T of Part 4 need be answered. Be sure, however, to supply adequate information including diagrams and written descriptions regarding the switching device or scheme that will be used to limit the parallel operation period to one second or less. Please also describe the back up or protective device and controls that will trip the Generating Facility should the transfer switch or scheme not complete the transfer in one second or less.

If the answer is operating mode option 3, "Isolated Operation," only questions A, E, and F of this Part 3 and questions A, B, F, and T of Part 4 need be answered. Be sure, however, to supply adequate information including diagrams and written descriptions regarding the isolating switching device or scheme that will be used to prevent the Generating Facility from operating in parallel with SDG&E's Distribution System.

6 Form 142-05203 (05/021)

SDG&E application process (9 of 16)

Continuing an SDG&E application

Page 7

- Select option 9 for “Net Energy Metering Agreement: Multiple Tariff”

SDG&E
Semptra Energy Group

GENERATING FACILITY INTERCONNECTION APPLICATION

Part 3 Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

B. Parallel Operation Applications Only

If the Answer to Section A above was operating mode option 1, please indicate the type of agreement that is being requested with this Application. If operating mode option 2 or 3 was selected, please skip to questions E and F.

If agreement options 2, 3, 5, 7, 8, 9, or 10 to this Section B are chosen, please provide an estimate of the maximum kW the Generating Facility is expected to export to SDG&E's Distribution System. If SDG&E determines that the amount of power to be exported is significant in relation to the capacity available on its Distribution System, it may request additional information, including time of delivery or seasonal kW/kWh estimates.

agreement options:
_1 _2 _3 _4 _5
_6 _7 8 9 _10
(Choose all that apply)

Maximum kW

Select option 9 for NEM multiple tariff

Instructions and Notes
Sample agreements are available from SDG&E for review. Choose from the following thirteen (13) agreement options:

Customer Owned Generating Facility (not NEM eligible)

1. A **Generating Facility Interconnection Agreement (Form 142-05202)** that provides for parallel operation of the Generating Facility, but does not provide for exporting power to SDG&E's Distribution System.
2. A **Generating Facility Interconnection Agreement (Inadvertent Export) (Form 142-0544)** that provides for parallel operation of the Generating Facility, and the occasional, inadvertent, non-compensated, export of power to SDG&E's Distribution System.
3. A **Generating Facility Interconnection Agreement (Continuous Export) (Form 142-0545)** that provides for parallel operation of the Generating Facility, and, continuous export of power to SDG&E's Distribution System.
4. A **Generating Facility Interconnection Agreement (Form 142-0543)** that provides for parallel operation of the third party owned Generating Facility, but does not provide for exporting power to SDG&E's Distribution System.
5. A **Generating Facility Interconnection Inadvertent Export Agreement (Form 142-0542)** that provides for parallel operation of the third party owned Generating Facility and the occasional, inadvertent, non-compensated, export of power to SDG&E's Distribution System for one second or less.
6. A **Customer Generation Agreement (Form 142-0541)** that defines the relationship between the Customer whose name appears on SDG&E's electric service account (this agreement must be executed in addition to 5 and 6).

Net Energy Metering Generating Facility

If Applicant intends to operate the Generating Facility under one of SDG&E's Net Energy Metering tariffs, following a bi-directional metering installation, the meter and disconnect switch must be installed in a location acceptable to SDG&E. Access to the meter and disconnect switch located on Applicant's premises must be in accordance with SDG&E Electric Rule 16, Section A 11.

7. A **Net Energy Metering Agreement (Form 142-02760)** that provides for parallel operation of a qualifying solar and/or wind Generating Facility, and exporting power to SDG&E's Distribution System under the terms of SDG&E's Net Energy Metering tariffs. This option is available only to Renewable Electrical Generating Facilities, as defined in SDG&E's Net Energy Metering tariffs.
8. A **Net Energy Metering Agreement: Fuel Cell (Form 142-02762)** that provides for parallel operation of a qualifying fuel cell Generating Facility with a capacity of not more than 1,000 kW, and exporting power to SDG&E's Distribution System for credit under the terms of SDG&E's Net Energy Metering tariffs. This option is available only to eligible Generating Facilities as defined in SDG&E's Net Energy Metering tariffs.

7 Form 142-05203 (05/021)

SDG&E application process (10 of 16)

Continuing an SDG&E application

Page 8

- Leave table C blank since option 9 was selected

SDG&E
San Diego Gas & Electric Company

GENERATING FACILITY INTERCONNECTION APPLICATION

Part 3 Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

9. A Net Energy Metering Agreement: Multiple Tariff (Form 117-2160) that provides for parallel operation of a Generating Facility that consists of generators 1) eligible for service under applicable net energy metering tariffs exporting power to SDG&E's Distribution System under the terms of SDG&E's Net Energy Metering tariffs and 2) generators not eligible to receive the same tariff treatment under a Net Metering tariff. All Generating Facility Generators are electrically connected behind the same Point of Common Coupling. This option is available only to Renewable Electrical Generating Facilities, as defined in SDG&E's Net Energy Metering and other applicable tariffs.

10. Other, please describe: _____

C. Parallel Operation Applications Only	If the answer to Section B above was agreement option 1 or 5, or 3 or 6, please indicate the protection option that will be used to prevent energy from being exported to SDG&E's Distribution System. Leave blank since option 9 was selected.	Protection Option: _1_ _2_ _3_ _4_ _5_ _6_ (Choose one)
	If the answer to Section B above was agreement option 1 or 5 and the answer to the question above is protection option 3 or 4, please indicate if expedited processing pursuant to Section N of Rule 21 is requested (currently applicable to non-export inverter-based energy storage generating facilities only).	Yes ___ No ___ N/A ___
	If protection option 3 to this Section C is selected, please provide the continuous current rating of the host Customer facility's service entrance equipment (service panel rating):	<u>leave blank</u> Amps
	If protection option 4 to this Section C is selected, please provide the minimum load of the host Customer facility:	<u>leave blank</u> kW

Instructions and Notes

Refer to SDG&E's Rule 21, Section G.1.1 for additional information as to how to answer this question. If the Generating Facility will never export power to SDG&E's Distribution System, a simpler, lower cost, protection scheme may be used to control the interface between the Generating Facility and SDG&E's Distribution System. Choose from the following six protection options:

1. A reverse-power protection device will be installed to measure any export of power and trip the Generating Facility or open an intertie breaker to isolate the Generating Facility if limits are exceeded.
2. An under-power protection device will be installed to measure the inflow of power and trip or reduce the output of the Generating Facility if limits are not maintained.
3. The Generating Facility Interconnection Facility equipment has been certified as Non-Islanding and the incidental export of power will be limited by the design of the interconnection. If this option is to be used, the continuous ampere rating of the service entrance equipment (service panel rating) that is used by the host Customer facility must be stated in the space provided above.
4. The Gross Nameplate Rating of the Generating Facility will not exceed 50% of the host Customer facility's minimum electrical load. If this option is to be used, the minimum load of the host Customer facility must be stated in the space provided above.
5. The Generating Facility utilizes only UL-1741 or UL-1741 SA-listed grid support (non-islanding) inverters and meets other minimum requirements as described in Section Mm of Rule 21 to ensure conditional (inadvertent) export of electric power from the Generation Facility to Distribution Provider's Distribution or Transmission System that is limited in size, duration and cumulative impact.
6. The Generating Facility utilizes only Non-Export AC/DC Converter(s). This protection option is applicable only for agreement options 1 or 5 above (Non-Export).

Note: With the approval of SDG&E, a Producer that wishes to retain the option to export power from a Generating Facility to SDG&E's Distribution System may use a different protection scheme that provides for the detection of faults and other abnormal operating conditions.

8 Form 142-05203 (05/021)

SDG&E application process (11 of 16)

Continuing an SDG&E application

Page 9

- Select option 6: Multiple Tariff
- Residential systems will not be a FERC qualifying facility. Select NO

AC short circuit fault current rating can be found on "output data" section of Enphase inverter datasheet. Multiply this number times quantity of inverters. Example: IQ8A has short circuit fault rating of 2A. (20) IQ8As = 40A fault current

ION

Input AIC rating of main panel. This can be found on the main panel decal, or main breaker enclosure

Part 3 Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

D. Parallel Operation/Applications Only	What is the maximum 3-phase fault current that will be contributed by the Generating Facility to a 3-phase fault at the Point of Common Coupling (PCC)? (If the Generating Facility is single phase in design, please provide the contribution for a line-to-line fault.) Please indicate the short circuit interrupting rating of the host Customer facility's service panel:	Amps Amps
---	---	--------------

Instructions and Notes
Refer to SDG&E's Rule 21 Sections H.4.a. and G.1.f for significance and additional information. To determine this value, any transformers and/or significant lengths of interconnecting conductor used between each of the Generators (if there are more than one) that make up the Generating Facility and the PCC must be taken into account. The details, impedance, and arrangement of such transformers and interconnecting conductors should be shown on the single-line diagram that is provided. Consult an electrical engineer or the equipment supplier if assistance is needed in answering this question.
It is expected that most Applicants will want to reserve the flexibility to operate any or all of their Generators in parallel. If the design of the proposed Generating Facility limits the amount of generation that may be interconnected at any time to SDG&E's Distribution System, please describe the assumptions used in calculating the maximum fault current contribution value.

E. (MPS)	Please indicate how this Generating Facility will be operated.	1 2 3 4 5 6 7 (Please choose all options that may apply.)
----------	--	--

Instructions and Notes
Choose from the following operation options:

1. **Combined Heat and Power or Cogeneration** – Where the operation of the Generating Facility will produce thermal energy for a process other than generating electricity.
2. **Peak Shaving/Demand Management** – Where the Generating Facility will be operated primarily to reduce electrical demands of the host Customer facility during SDG&E's "peak pricing periods".
3. **Primary Power Source** – Where the Generating Facility will be used as the primary source of electric power and power supplied by SDG&E to the host Customer's loads will be required for supplemental, standby, or backup power purposes only.
4. **Standby / Emergency / Backup** – Where the Generating Facility will normally be operated only when SDG&E's electric service is not available.
5. **Net Energy Metering** – Where the Generating Facility qualifies and receives service under one of SDG&E's Net Energy Metering tariffs.
6. **Multiple Tariff** – Generating Facilities that have a combination of generator(s) eligible for service under one or more of SDG&E's NEM tariffs and/or generator(s) eligible to receive service under other, non-NEM eligible SDG&E tariffs. Check one of the options listed in Part 4.
7. Other, please describe: Additional information on page 15 & 16 of application

F. (MPS)	Please indicate if Qualifying Facility Status will be obtained from the FERC for this Generating Facility.	Yes No
----------	--	-----------

9 Form 142-05203 (05/021)

SDG&E application process (12 of 16)

Continuing an SDG&E application

Page 10

- Select Not Applicable since cogeneration does not apply
- Input existing facility with NEM generator(s) and planning to add non-NEM generator(s)

Part 3 Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

Instructions and Notes
Parties operating Generating Facilities complying with all of the requirements for qualification as either a small power production facility or cogeneration facility pursuant to the regulations of the FERC (18 Code of Federal Regulations Part 292, Section 292.203 et seq.) implementing the Public Utility Regulatory Policies Act of 1978 (16 U.S.C.A. Section 796, et seq.) or any successor requirements for "Qualifying Facilities," may seek certification from FERC to have the Generating Facility designated as a Qualifying Facility or "QF." In summary, QF's are Generating Facilities using renewable or alternative fuels as a primary energy source or facilities that utilize the generation process for some other useful purpose. QF's enjoy certain rights and p... application is not for co-generation

QF status is not required to interconnect and operate in parallel with SDG&E's Distribution System.

G.	Please indicate if Generating Facility will meet the annual Efficiency and Operating Standards of PUC Code 216.6 (Applicable to Cogeneration Only)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
----	--	--

Part 4 - Describe each of the Generators (See Instructions.) Use additional sheets, if necessary.

- New facility installing non-NEM generator(s) and NEM generators at the same time.
- Existing facility with non-NEM generator(s) and planning to add NEM generator(s). Please provide data for the table below.
- Existing facility with NEM generator(s) and planning to add non-NEM generator(s). Please provide data for the table below.
- Existing facility with NEM generator(s) and planning to add NEM generator(s) under a different NEM tariff. Please provide data for the table below.
- Existing facility with non-NEM generator(s) and planning to add non-NEM generator(s). Please provide data for the table below.

Non-export expansion is considered a non-NEM generator

10 Form 142-05203 (05/021)

SDG&E application process (13 of 16)

Continuing an SDG&E application

Page 11

- Input fields for legacy and expansion systems as shown to the right

SDGE
Sempia Energy

GENERATING FACILITY INTERCONNECTION APPLICATION

Legacy system information Expansion system information

Part 4 Cont'd – Describe each of the Generators (See Instructions.) Use additional sheets, if necessary.

Instructions	Generator Information	Existing Generator Type	Existing Generator Type	New Generator Type	New Generator Type	Totals For All Generators
#	Please indicate the number of each "type" of Generator being installed. (See instructions)	enter qty of legacy inverters		enter quantity of Enphase inverters		
A (MPS)	Gen/Inverter/Converter Manufacturer	Enter mfr of legacy inverters		enter mfr of new inverters (Enphase)		
B (MPS)	Gen/Inverter/Converter Model	PV inverter or battery type		PV inverter or battery type		
C	Gen/Inverter/Converter Software Version	minimum sw version if applicable (or leave blank)		gateway sw \$2.127 and higher		
D	Is the Generator Certified "yes" if rule 21 certified	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
E (MPS)	Generator Design (Choose One)	<input type="checkbox"/> Synchronous <input type="checkbox"/> Induction <input type="checkbox"/> Inverter	<input type="checkbox"/> Synchronous <input type="checkbox"/> Induction <input type="checkbox"/> Inverter	<input type="checkbox"/> Synchronous <input type="checkbox"/> Induction <input type="checkbox"/> Inverter	<input type="checkbox"/> Synchronous <input type="checkbox"/> Induction <input type="checkbox"/> Inverter	
E.1	If the Generator Type is an Inverter, is the Inverter Certified as a Smart Inverter in accordance with Rule 21 Section Hh by a Nationally Recognized Testing Laboratory (NRTL)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
E.2	If the Generator Type is a Converter, does the Converter meet the NonExport AC/DC Converter requirements of Rule 21 Section H.3.e?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No leave this blank		Legacy + Expansion system info
F (MPS)	Gross Nameplate Rating (kVA)	system kVA size (inverter nameplate)		system kVA size (inverter nameplate)		sum of legacy and expansion capacity
G	Gross Nameplate Rating (kW)	only input if manufacturer provides separate kw rating		leave blank		
H	Net Nameplate Rating (kW)	only input if manufacturer provides separate kw rating		leave blank		
I	Energy Storage Electrical Source Function (in addition, please complete section H for further description regarding operations)	Max kWh Capacity: _____ Rated kW Charge: _____ Rated kW Discharge: _____ List (if any) Device Used to Limit Discharge (inverter/ Power Control/etc.): _____ _____	Max kWh Capacity: _____ Rated kW Charge: _____ Rated kW Discharge: _____ List (if any) Device Used to Limit Discharge (inverter/ Power Control/etc.): _____ _____	Max kWh Capacity: _____ Rated kW Charge: _____ Rated kW Discharge: _____ List (if any) Device Used to Limit Discharge (inverter/ Power Control/etc.): _____ _____ Specify Power Control systems, NEM integrity mode	Max kWh Capacity: _____ Rated kW Charge: _____ Rated kW Discharge: _____ List (if any) Device Used to Limit Discharge (inverter/ Power Control/etc.): _____ _____	input information for battery application. Leave blank for PV application

11 Form 142-05203 (05/021)

SDG&E application process (14 of 16)

Continuing an SDG&E application

Page 12

- Continue filling out the table as shown to the right.

Part 4 Cont'd – Describe each of the Generators (See Instructions.) Use additional sheets, if necessary.

Instr.	Generator Information	Existing Generator Type	Existing Generator Type	New Generator Type	New Generator Type
J (MP)	Operating Voltage (Volts or KV)	240V		240V	
K	Power Factor Rating (%)	Min. _____ Max. _____		Min. 0.85 Max. 0.85	Min. _____ Max. _____
L	PF Adjustment Range (%)				
M (MP)	Wiring Configuration (Choose One)	__ Single-Phase __ Three-Phase		__ Single-Phase __ Three-Phase	__ Single-Phase __ Three-Phase
N (MP)	3-Phase Winding Configuration (Choose One)	__ 3 Wire Delta __ 3 Wire Wye __ 4 Wire Wye	__ 3 Wire Delta __ 3 Wire Wye __ 4 Wire Wye	__ 3 Wire Delta __ 3 Wire Wye __ 4 Wire Wye <i>Leave Blank</i>	__ 3 Wire Delta __ 3 Wire Wye __ 4 Wire Wye
O (MP)	Neutral Grounding System Used (Choose One)	__ Ungrounded __ Solidly Grounded __ Ground Resistor _____ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor _____ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor _____ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor _____ Ohms
P	<i>For Synchronous Generators Only:</i> Synchronous Reactance: Transient Reactance: Subtransient Reactance:	_____ (Xd %) _____ (Xd %) _____ (Xd %)	_____ (Xd %) _____ (Xd %) _____ (Xd %)	<i>Leave Blank</i> _____ (Xd %) _____ (Xd %) _____ (Xd %)	_____ (Xd %) _____ (Xd %) _____ (Xd %)
Q	<i>For Induction Generators Only:</i> Locked Rotor Current: OR Stator Resistance: Stator Leakage Reactance: Rotor Resistance: Rotor Leakage Reactance:	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	<i>Leave Blank</i> _____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)
R	Short Circuit Current Produced by Generator:	_____ (Amps)	_____ (Amps)	_____ (Amps)	<i>input same value from part 3, box D</i> _____ (Amps)
S	<i>For Generators that are Started as a "Motor" Only</i> 1. In-Rush Current: 2. Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating:	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)	<i>Leave Blank</i> _____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)

12

Form 142-05203
(05/021)

SDG&E application process (15 of 16)

Continuing an SDG&E application

Page 13

- Continue filling out table as shown to the right.

9 = PV panels

Part 4 Cont'd – Describe each of the Generators (See Instructions.) Use additional sheets, if necessary.

Instructions	Generator Information	Existing Generator Type						Existing Generator Type						New Generator Type						New Generator Type																																			
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6																								
T (MP&I)	(Circle One)	7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		7	8	9	10	11		12	13	14	15	16		12	13	14	15	16		12	13	14	15	16		12	13	14	15	16	
U	AC Disconnect	Manufacturer _____						Manufacturer _____						Manufacturer _____						Manufacturer _____																																			
		Model# _____						Model# _____						Model# _____						Model# _____																																			
		Rating (amps) _____						Rating (amps) _____						Rating (amps) _____						Rating (amps) _____																																			
V	Photovoltaic (PV) Panel	Manufacturer _____						Manufacturer _____						Manufacturer _____						Manufacturer _____																																			
		Add Legacy system PV module details _____						Model# _____						Add Expansion system PV module details _____						Model# _____																																			
		Nameplate Rating (kW/unit) _____						Nameplate Rating (kW/unit) _____						Nameplate Rating (kW/unit) _____						Nameplate Rating (kW/unit) _____																																			
		CEC Rating (kW/unit) _____						CEC Rating (kW/unit) _____						CEC Rating (kW/unit) _____						CEC Rating (kW/unit) _____																																			
		Quantity of Panels _____						Quantity of Panels _____						Quantity of Panels _____						Quantity of Panels _____																																			
		Total Capacity (kW) _____						Total Capacity (kW) _____						Total Capacity (kW) _____						Total Capacity (kW) _____																																			
W	Energy Storage (ES) System	Manufacturer _____						Manufacturer _____						Manufacturer _____						Manufacturer _____																																			
		Model# _____						Model# _____						Model# _____						Model# _____																																			
		Quantity of Units _____						Quantity of Units _____						Quantity of Units _____						Quantity of Units _____																																			
X	Lineside Tap	__Yes __No						__Yes __No						__Yes __No																																									

13 Form 142-05203 (05/021)

SDG&E application process (16 of 16)

Continuing an SDG&E application

In Form 142-05203, skip ahead to page 17 (pages 14-16 are instructional notes only).

Page 17

- Input battery information as shown to the right.
- NOTE: If no batteries, all fields are left blank.

GENERATING FACILITY INTERCONNECTION APPLICATION

NOTE: This form only used for battery application, not for PV application

Part 5. Information Required for Energy Storage (if applicable)

Energy Storage System Operations

Describe the intended use of the storage device (Example of this can be peak shaving, export to grid, load shifting, etc. The intended use may be taken into account in the study process.):

Energy Storage Charging Function:

Rated Charge Demand (Load): Battery AC nameplate kW

Estimated annual Net Energy Usage* of the ESD: (1) IQ5P annually = 55 kWh annually kWh
*Net Energy Usage = (kWh input, including charging, storage device auxiliary loads, and losses) – (kWh output, including discharging)

Will the distribution grid be used to charge the storage device (yes/no): No

If no: Provide technical description of control systems including:
Source of energy for charging: New Solar PV system described in this application
Mechanism to prevent charging from the Distribution System: PCS Power Control Systems

If yes: Will charging the storage system from the grid increase the host facility's current peak load demand (yes/no): No

- **Yes:** Provide the amount of added peak demand in (kW): _____ kW
- **No:** Provide technical description of charger control systems including charging periods, source of energy (if applicable), and/ or mechanism to prevent increasing the host facility's peak load demand:
Battery is only charged from solar.

Generating Facility:

Including all generation sources such as PV, storage, and other technologies, provide the following information:

Will the generating facility export power to the grid (yes/no): No

If yes, specify Generating Facility's maximum coincident export to the grid: _____ kW

If all generation sources are not simultaneously exporting to the grid, provide technical description of the controls systems for this function that prevent simultaneous export:
Power Control Systems, UL 3141

17 Form 142-05203 (05/021)

How to configure an expansion system for zero export

For all system expansions, the new system must be configured to zero export.

There are two ways to do this:

- Using the Enphase Installer App
- Using Enphase Enlighten Manager

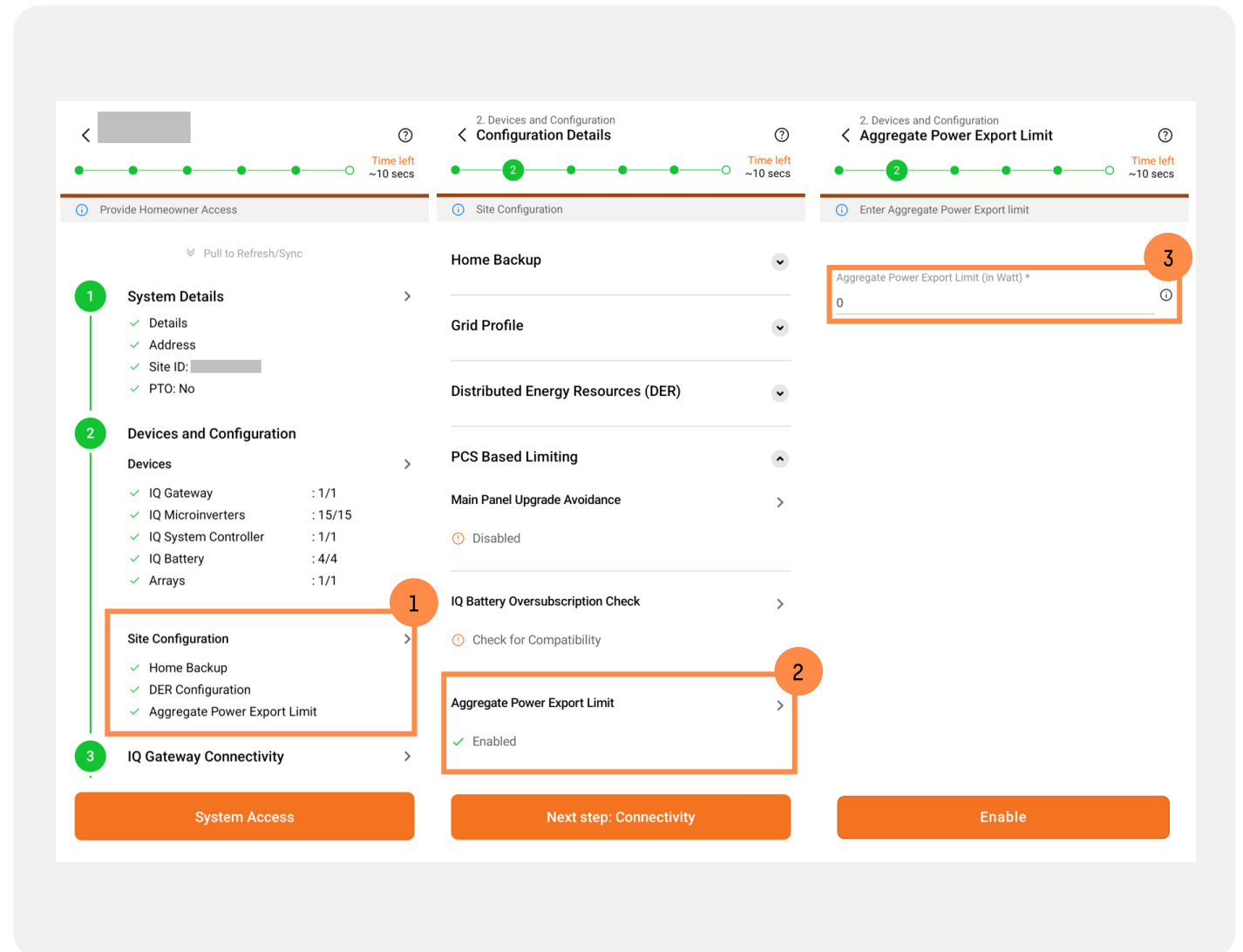
Follow the steps on the next slides to ensure that the system expansion is properly configured.

Option 1: Setting zero export using the Enphase Installer App

APEL (aggregate power export limiting) is required for all systems participating in NEM zero export system expansions.

To configure APEL using the Enphase Installer App, follow these steps while commissioning the system:

- 1 Tap **Site Configuration** in step 2 of the Installer App.
- 2 Tap the **Aggregate Power Export Limit** submenu.
- 3 Set **Aggregate Power Export Limit (in Watt)** to 0 and tap **Enable**.



Option 2: Setting zero export using Enlighten Manager

APEL (aggregate power export limiting) is required for all systems participating in NEM zero export system expansions.

To configure APEL using Enlighten Manager, follow these steps:

- 1 Click the **Activation** tab.
- 2 Click **PCS Based Limiting**.
- 3 Click **Aggregate Power Export Limit**.
- 4 Set **Aggregate Power Export Limit (in Watt)** to 0.
- 5 Click **Enable**.
- 6 Confirm the configuration is **0 W** and click **Enable**.

The screenshot displays the Enlighten Manager web interface. The top navigation bar includes 'Enlighten Manager', 'Dashboard', 'Systems', 'Account', 'Services', 'Data & Privacy', 'Support', and 'Admin'. A secondary navigation bar shows 'SFDC Case', 'System Dashboard', 'Admin View', 'Activation' (highlighted with a red box and a '1' callout), 'MyEnphase View', 'Enlighten Mobile', and 'Service Manager'. The main content area shows the 'Activation' page for system 4418007. The left sidebar has 'Details' and 'Devices and Config...' sections. The 'Devices and Config...' section is expanded to show 'PCS Based Limiting' (callout '2'). The 'PCS Based Limiting' page has a 'Main Panel Upgrade Avoids' section with a sub-section 'Aggregate Power Export Limit' (callout '3'). The 'Aggregate Power Export Limit' is currently 'Disabled' and has a text input field set to '0' (callout '4'). Below this is an 'Enable' button (callout '5'). A modal dialog titled 'Aggregate Power Export Limit' (callout '6') is open, containing the text: 'Important! Read carefully. This will enable Power Export Limiting and the system will never export more than 0W of power to the utility grid.' Below the text is a checked checkbox and the text 'I confirm the limiting of power exported to the utility grid.' At the bottom of the modal are 'Cancel' and 'Enable' buttons.

Revision history

Revision	Date	Description
MKT-00914-4.0	January 2025	Added instruction obtained from SCE and SDG&E application guidance documents.
MKT-00914-3.0	November 2024	Corrected SCE screenshot that showed incorrect parameter selected
MKT-00914-2.0	November 2024	Added instructions for configuring an expansion system for zero export
MKT-00914-1.0	October 2024	Initial release



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Data subject to change