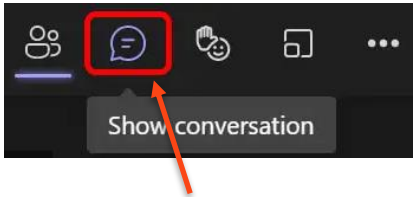
Updated complex net metering requirements

Welcome! We'll be getting started shortly.

How to participate

- Video and microphone have been turned off to save bandwidth and eliminate background noise. The chat function is available for questions.
- Let us know you're here. **Enter your first name, last name, and organization in the chat.**
- **A copy of this presentation will made available following this session**



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Updated complex net metering requirements

May 17, 2023

Agenda

Time	Agenda item	Presenter
8:00-8:20	Overview of complex application updates	Jenn Shum, Senior Program Manager Shah Rahman, Asset Management Planning Leader
8:20-8:40	Q&A	All
8:40-8:45	Wrap-up and next steps	Jenn Shum, Senior Program Manager

Objectives

Scope of today's session

- Introduce the updated complex net metering requirements that came into effect May 11, 2023.
- Familiarize you with updated materials and materials that will be updated later

Background

Why? And how?

- Growth continues… 6,800 net metering customers in-service as of end of April
    - Continued efforts to streamline the application process
    - Complex applications represent 10% of applications, but review times can be lengthy.
- Installers are deemed to follow all codes from the Canadian Electrical Code, Part I.
- BC Hydro protocol regarding load side disconnect updated
- Address uptake of battery storage, and hybrid and micro-grid inverters.

Simple net metering

No changes to simple net metering

Simple Net Metering

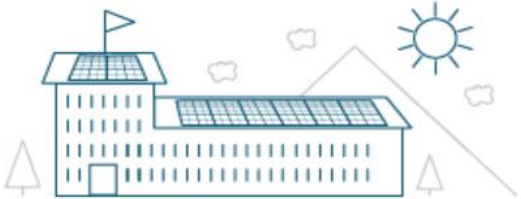
For inverter-based projects up to 27 kW in size with a self-contained revenue meter for service 200A or less

- **Reminder:** Simple net metering includes projects that meet the definition **with or without** battery storage.

Complex (A) net metering

Simple Net Metering

For inverter-based projects up to 27 kW in size with a self-contained revenue meter for service 200A or less



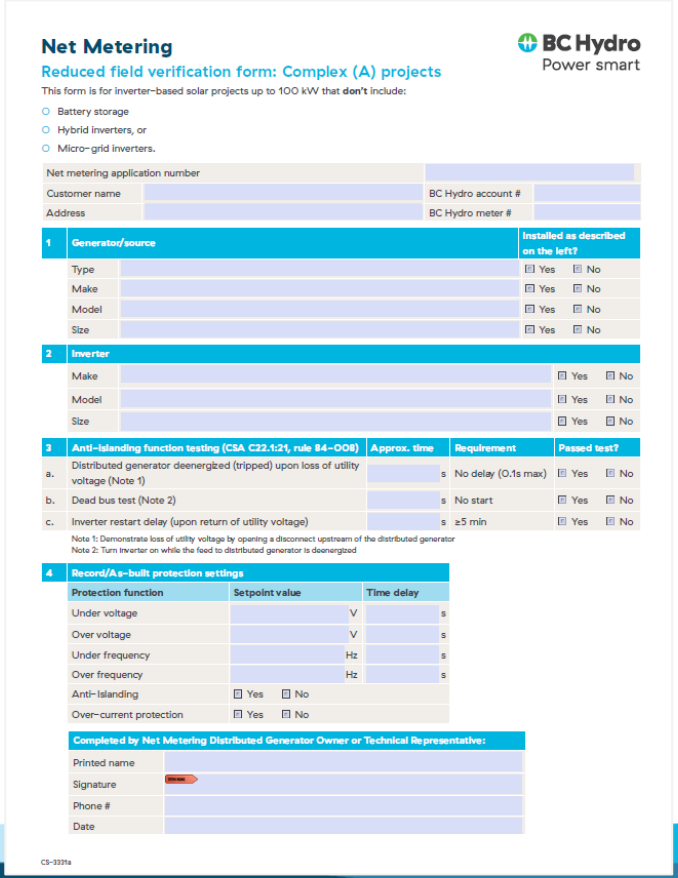
Complex (A) Net Metering *New*

- For inverter-based solar projects up to 100 kW that have instrumentation transformer revenue metering and **don't** include:
  - Battery storage
  - Hybrid inverters, or
  - Micro-grid inverters.
- No additional application documents required
  - Site plan and single line diagram are **not required**

Complex (A) net metering

Interconnection approval

- Reduced field verification form ***New***
  - Photos are not required
  - Additional data points for protection settings
  - **Reminder:** Form must be signed by the individual who completed the test
- *Authorization & Declaration of Compliance* from your electrical contractor or *Certificate of Electrical Inspection* from Technical Safety BC is still required.



Net Metering

BC Hydro Power smart

Reduced field verification form: Complex (A) projects

This form is for inverter-based solar projects up to 100 kW that **don't** include:

- Battery storage
- Hybrid inverters, or
- Micro-grid inverters.

Net metering application number	
Customer name	BC Hydro account #
Address	BC Hydro meter #

1	Generator/source		Installed as described on the left?
	Type		☐ Yes ☐ No
	Make		☐ Yes ☐ No
	Model		☐ Yes ☐ No
	Size		☐ Yes ☐ No

2	Inverter	
	Make	☐ Yes ☐ No
	Model	☐ Yes ☐ No
	Size	☐ Yes ☐ No

3	Anti-islanding function testing (CSA C22.1:21, rule 84-008)	Approx. time	Requirement	Passed test?
a.	Distributed generator deenergized (tripped) upon loss of utility voltage (Note 1)	s	No delay (0.1s max)	☐ Yes ☐ No
b.	Dead bus test (Note 2)	s	No start	☐ Yes ☐ No
c.	Inverter restart delay (upon return of utility voltage)	s	≥5 min	☐ Yes ☐ No

Note 1: Demonstrate loss of utility voltage by opening a disconnect upstream of the distributed generator
Note 2: Turn inverter on while the feed to distributed generator is deenergized

4	Record/As-built protection settings		
	Protection function	Setpoint value	Time delay
	Under voltage	V	s
	Over voltage	V	s
	Under frequency	Hz	s
	Over frequency	Hz	s
	Anti-islanding	☐ Yes ☐ No	
	Over-current protection	☐ Yes ☐ No	

Completed by Net Metering Distributed Generator Owner or Technical Representative:	
Printed name	
Signature	
Phone #	
Date	

CS-3391a

Complex (B) net metering

Simple Net Metering

For inverter-based projects up to 27 kW in size with a self-contained revenue meter for service 200A or less

Complex (A) Net Metering *New*

- For inverter-based solar projects up to 100 kW that have instrumentation transformer revenue metering and **don't** include:
  - Battery storage
  - Hybrid inverters, or
  - Micro-grid inverters.
- No additional application documents required
  - Site plan and single line diagram are **not required**

Complex (B) Net Metering *New*

- All other projects up to 100 kW that have instrument transformer revenue metering that may include the following, but are not limited to:
  - Battery storage
  - Hybrid inverters
  - Micro-grid inverters
  - Synchronous or induction generator
- These projects have additional application document requirements
- **Applies to new projects and additions to existing projects**

Complex (B) net metering

Application documentation requirements

- Single line diagram
- Site plan
- If there is battery storage and/or a hybrid/micro-grid inverter ***New***
    - Battery inverter data sheet with certification information
    - Manufacturer documentation for the power flow management control system
    - Description of the mode of operation on company letterhead
- Additional synchronous/induction documentation requirements (If applicable)

Commonly used inverter list *New*

Applicable to all net metering projects

- Inverter data sheet with CSA certification is required for any project using an inverter not on BC Hydro's commonly used inverter list.
- Inverter must meet requirements listed in DGTIR-100.

Net metering program

LAST UPDATED: 2023-04-19

Commonly used inverter list

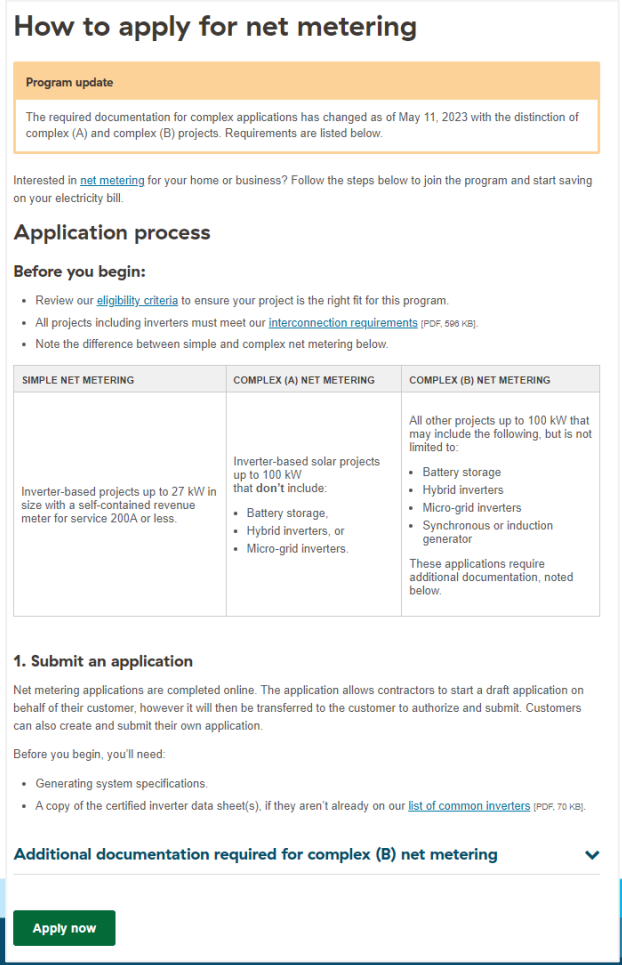
This is a list of commonly used inverters that have come through the net metering program, and is not intended to be an exhaustive list. If the inverter you'd like to use is not listed below, please submit the inverter datasheet with certification information as part of your **net metering application**.

Note that grid interactive photovoltaic inverters must be certified under CSA C22.2 No. 107.1, comply with rules in CSA 22.3 No. 9:20, and are equipped with anti-islanding protection per CEC Part I, rule 84-008.

Inverter Make	Inverter Model
ABB	PVI-5000-TL-OUTD-US
APS	YC500A
APS	YC500i
APS	YC600
APS	YC1000-3
APS	QS1200
APS	QS1
APS	QS1A
APS	DS3
APS	DS3-L
APS	DS3-S
Chilicon	CP-250E-60/72-208/240-MC4
Chilicon	CP-720-60/72/96-208/240-MC4
Enphase	M190
Enphase	M210
Enphase	M215
Enphase	M250
Enphase	IQ 6

Updated materials

- “How to apply” webpage now updated (www.bchydro.com/netmeteringapplication)
  - Complex A vs. Complex B definition
  - Application requirements for Complex B
  - Updated PDF application form for complex net metering



How to apply for net metering

Program update

The required documentation for complex applications has changed as of May 11, 2023 with the distinction of complex (A) and complex (B) projects. Requirements are listed below.

Interested in net metering for your home or business? Follow the steps below to join the program and start saving on your electricity bill.

Application process

Before you begin:

- Review our eligibility criteria to ensure your project is the right fit for this program.
- All projects including inverters must meet our interconnection requirements (PDF, 596 KB).
- Note the difference between simple and complex net metering below.

SIMPLE NET METERING	COMPLEX (A) NET METERING	COMPLEX (B) NET METERING
Inverter-based projects up to 27 kW in size with a self-contained revenue meter for service 200A or less.	Inverter-based solar projects up to 100 kW that **don't** include: • Battery storage, • Hybrid inverters, or • Micro-grid inverters.	All other projects up to 100 kW that may include the following, but is not limited to: • Battery storage • Hybrid inverters • Micro-grid inverters • Synchronous or induction generator These applications require additional documentation, noted below.

1. Submit an application

Net metering applications are completed online. The application allows contractors to start a draft application on behalf of their customer, however it will then be transferred to the customer to authorize and submit. Customers can also create and submit their own application.

Before you begin, you'll need:

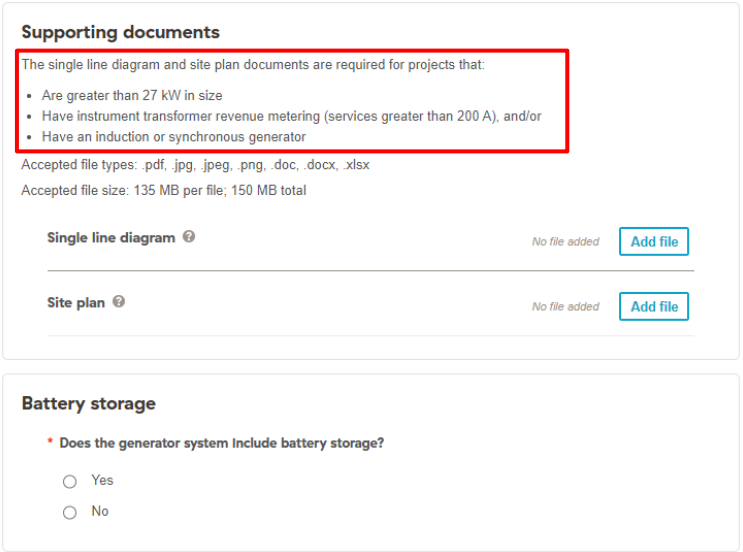
- Generating system specifications.
- A copy of the certified inverter data sheet(s), if they aren't already on our list of common inverters (PDF, 70 KB).

Additional documentation required for complex (B) net metering

Apply now

Updates in progress

- Online application form (Summer)
  - Additional upload functionality to be built for Complex B documents.
  - Instructions for when documents are required will be updated.
    - In the meantime, disregard existing upload instructions that request site plan and single line diagram for all complex applications.
- Sample single line diagram, and other sample documents (Summer)
- DGTIR-100 (Fall)



Q&A

When do these updates go into effect?

These updates went into effect on May 11, 2023.

Q&A

What about applications submitted prior to May 11 that are currently in queue for BC Hydro review?

- Site plans and single line diagrams will be reviewed and feedback will be provided.
- If your project qualifies as Complex A, you will be given two options:
    - Complex A
        - Proceed with installation
        - Complete a *Complex A acknowledgement form* to confirm that identified issues/deficiencies have been addressed
        - Reduced Field Verification form does not require photos
    - Complex B
        - Continue with revisions until the application is accepted
        - Reduced Field Verification will continue to require photos

Q&A

What about applications that have been accepted and installations are in progress?

- Complete the Reduced FV form that was originally provided
- Photos will be reviewed and feedback will be shared
- If your project qualifies as Complex A, you will be given two options:
    - Complex A
        - Complete a *Complex A acknowledgement form* to confirm that identified issues/deficiencies have been addressed
    - Complex B
        - Continue with submitting photos and revisions until interconnection is approved

Q&A

Can I still use the online application to submit complex net metering applications?

- Complex A
  - Yes! You may skip the upload fields as they are not mandatory.
  - Upload the inverter data sheet, if applicable.
- Complex B
  - Yes, but you will need to email the required battery storage and/or hybrid/micro-grid inverter documents.
    - Add a “Note” in your application that you will be emailing additional documentation
    - Reference your application number in your email

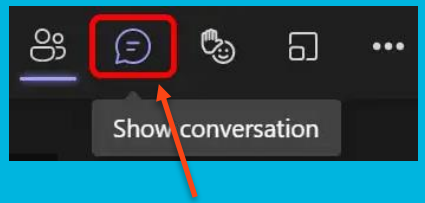
Q&A

How can I get in touch directly with a member of BC Hydro's technical team?

If you'd like to further discuss the technical details of your complex application, email net.metering@bchydro.com with a few options for your availability, and we can set-up a phone call.

Q&A

Submit your questions using the chat function in Teams



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Wrap up and next steps

- Presentation will be posted on www.bchydro.com/netmetering this afternoon.
- Visit www.bchydro.com/netmeteringapplication for updated complex application requirements.
- Email net.metering@bchydro.com if you have further questions.

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