PSC 119 – Export Capacity Discussion

119.02 DEFINITIONS

- (4) Category 1 is defined as: A DG Facility with an export capacity of 20kW or less. A DG Facility comprised of a resource no larger than 20 kW with a **non-exporting energy storage** system no larger than 20 kW shall be considered a Category 1 system.
- (17m) Export capacity kW in alternating current means the amount of power than can be transferred from the DG facility to the distribution system. Export capacity is the lesser of the following:
  - (a) The nameplate rating
  - (b) If limited using **any approved means**, that limited amount
- (8) Certified equipment means a generating, control or protective system that has been certified by a nationally recognized testing laboratory as meeting acceptable safety and reliability standards.

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"NON-EXPORTING ENERGY STORAGE"

- PSC 119 does not define what non-exporting means.
- Note that "non-exporting energy storage" is listed separately from "export capacity" in the definitions of the category sizes.
- Since PSC 119 does not define this, and 119.025 incorporates IEEE 1547-2018 standards into its chapter by reference, it is reasonable to use definitions contained in that standard.
- IEEE 1547-2018 defines non-exporting "The DER system is designed to provide power solely for onsite loads, with no active power exported to the area electric power system".
- IEEE1547-2018 has grid control methods that state "non-exporting systems may be achieved by controlling the DER to limit its output".
- UL3141 additional provides definitions for "non-exporting" as not capable of exporting electricity to the grid.
- California Energy Commission maintains a list of approved equipment certified for non exporting. These list have been widely used by other states for rebates and incentives, and is what CEC uses for systems that intend to be non-exporting (solar and/or battery).

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"EXPORT CAPACITY LIMITED BY ANY APPROVED MEANS"

- Applies to Cat 1, Cat 2 with less than 20kw of non-exporting energy storage and Cat 3 with less than 200kw of non-exporting energy storage.
- Who is "approving" the means?
- Should be consistent across the state.
- 119.025 adopts IEEE 1547-2018 standards as a reference.
  - If a device can limit the amount of power transferred onto the distribution system and is compliant with IEEE1547-2018, is that considered an "approved means"?
- NEC 2020 705.13 allows for the limiting of power using Power Control Systems.
  - PCS is further expanded in both 2023 and 2026 NEC
  - Wisconsin currently operates under the 2017 NEC but expects to adopt 2023 NEC later this year.
  - Only 3 other states are still operating under the 2017 NEC, most others have adopted either 2020 or 2023 NEC.
- Is using equipment that is certified to control power by a nationally recognized testing laboratory an approved means?
- UL3141 is a listing that covers power control systems.

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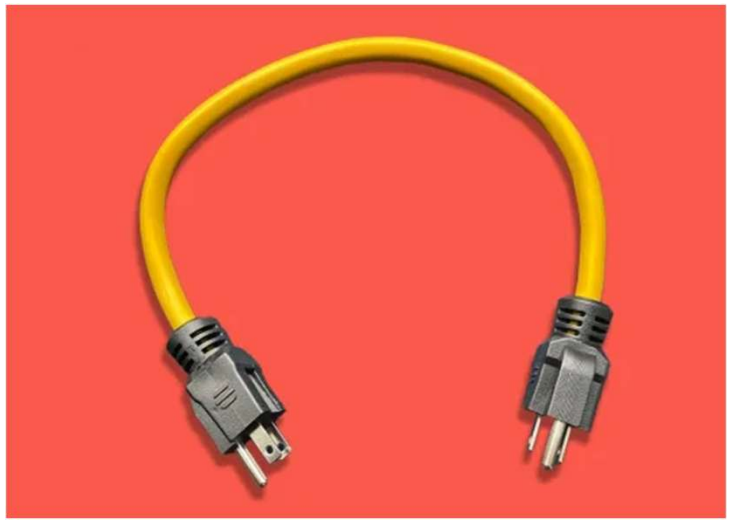
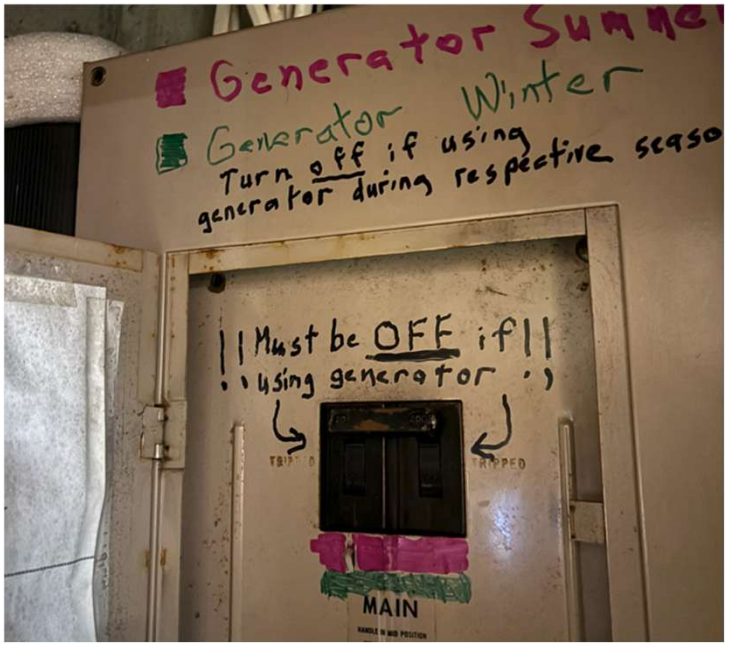
Who is in charge of determining what is “approved”?





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DC Coupled

- 17m defines export capacity in Alternating Current.
- The solar and battery power are coupled together on the DC input to an inverter.
- The batteries AC rated power is the same as the PV rated AC power since they share a common inverter.
- Export capacity is simply the nameplate rating of the inverter

AC Coupled

- Inverter and battery each have dedicated inverters tied together on the AC output.
- System owner can adjust modes (full backup, self supply), but not change the battery from non-exporting to exporting.
- Can be listed to UL as non-exporting
- Can export to the grid under certain conditions (NEM 3.0)