ENPHASE.

Expand NEM 1.0 and 2.0 systems with Enphase

MKT-00951-1.0

Expand any NEM 1.0 or 2.0 system

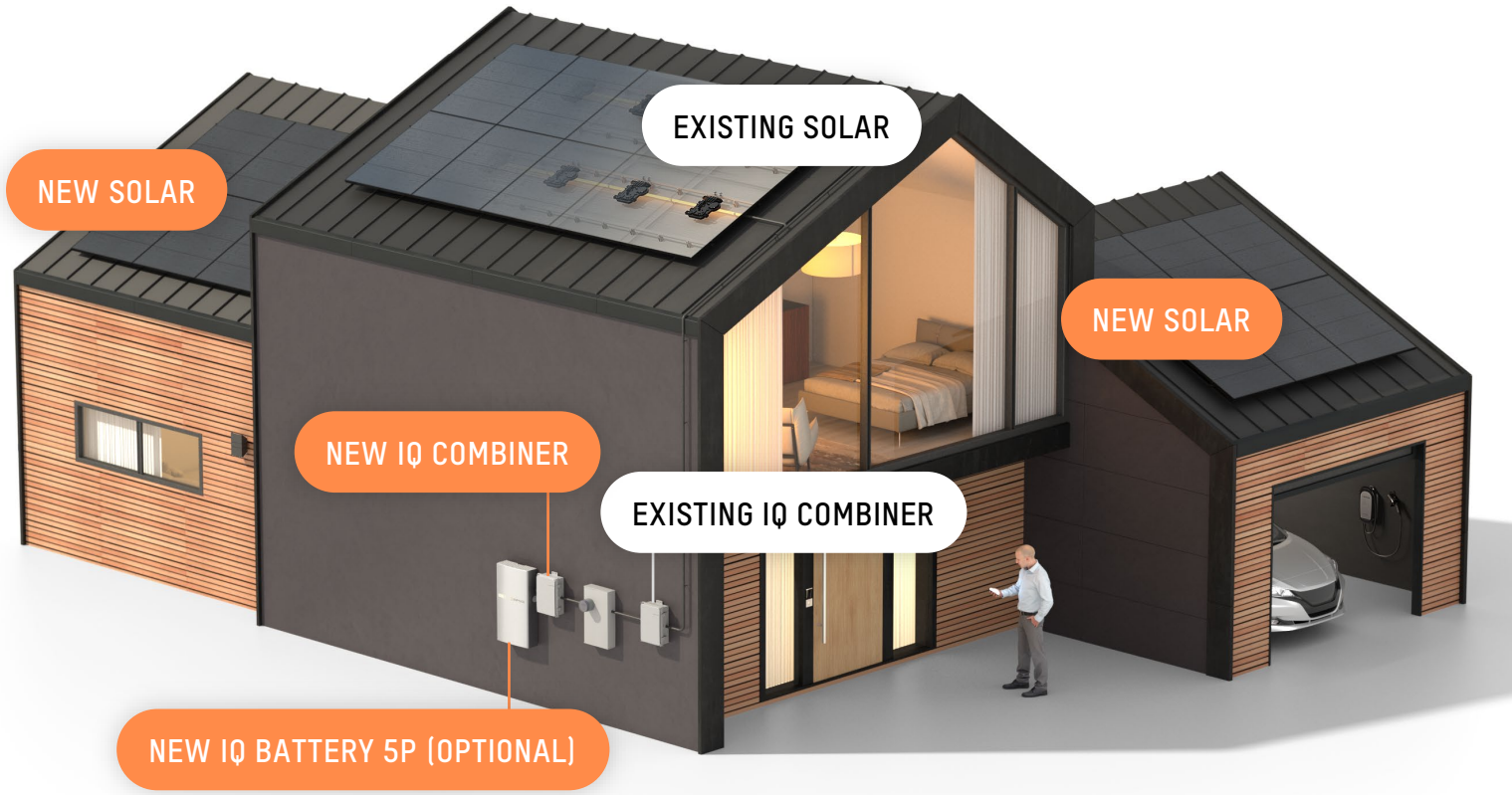
Offer additional solar energy to any California homeowner with an existing system, without transitioning to NEM 3.0

Create new sales opportunities with the ability to expand any Enphase or third-party solar system

Choose the best solution with two configuration options: zero-export or load relocation

Add an IQ Battery 5P to maximize bill offset for homeowners with heavy nighttime energy needs

Get the ultimate in peace of mind with a 25-year limited warranty for the new expansion solar system



ENPHASE.

Enphase offers the most flexible solution to expand any NEM 1.0/2.0 solar system

- There are many thousands of NEM 1.0/2.0 systems which don't meet the home's energy needs
- Homeowners can now expand their existing system without losing their NEM 1.0/2.0 status
- The existing system can include Enphase microinverters or another brand of solar inverter
- Enphase offers two utility-approved configurations to expand existing NEM 1.0/2.0 systems
- 100% of the energy produced by the existing system can be exported at the NEM 1.0/2.0 rate
- Only the existing system can export to the grid for NEM 1.0/2.0 credits
- Added batteries can only be charged by the expansion system
- The existing and expansion systems operate independently of each other
- The existing system cannot be modified to include new solar or battery capacity

Support your customer's expanding energy needs and quickly create new business from your existing fleet.

Utility-approved configurations

1

RECOMMENDED

Zero export

The simplest and least expensive option to add an expansion system, with or without batteries.

2

Circuit relocation

The best option for homeowners wanting to add an expansion system with battery backup capability.

3

DISCONTINUED

NGOM

Effective November 2024, utility companies have stopped accepting NGOM configurations.

CONFIGURATION 1

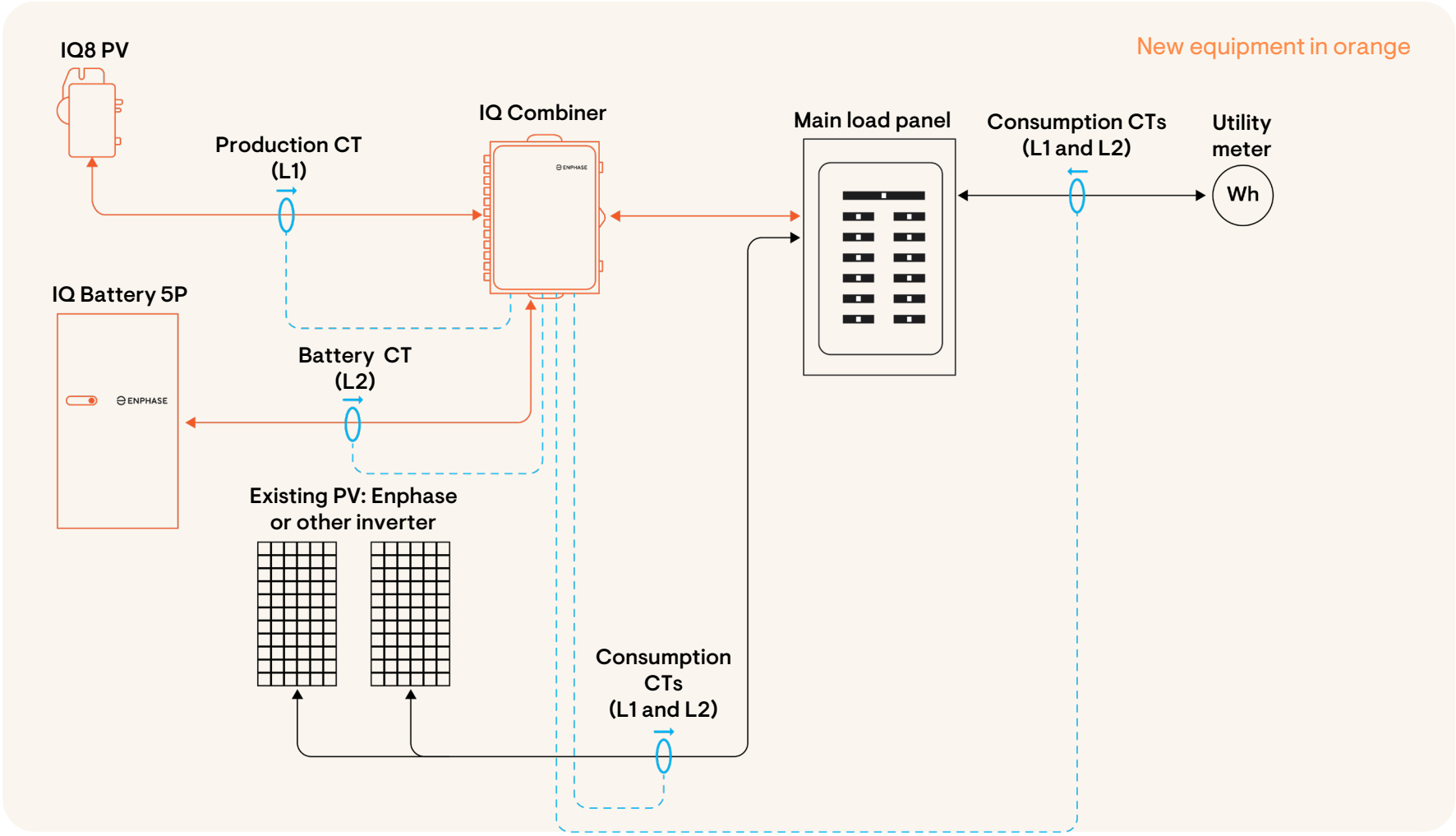
Zero export with Enphase Power Control

RECOMMENDED

$ Most economical approach

The simplest and least expensive option to add a grid-tied expansion system, with or without batteries.

Note: See sub-configurations section for variants of Configuration 1



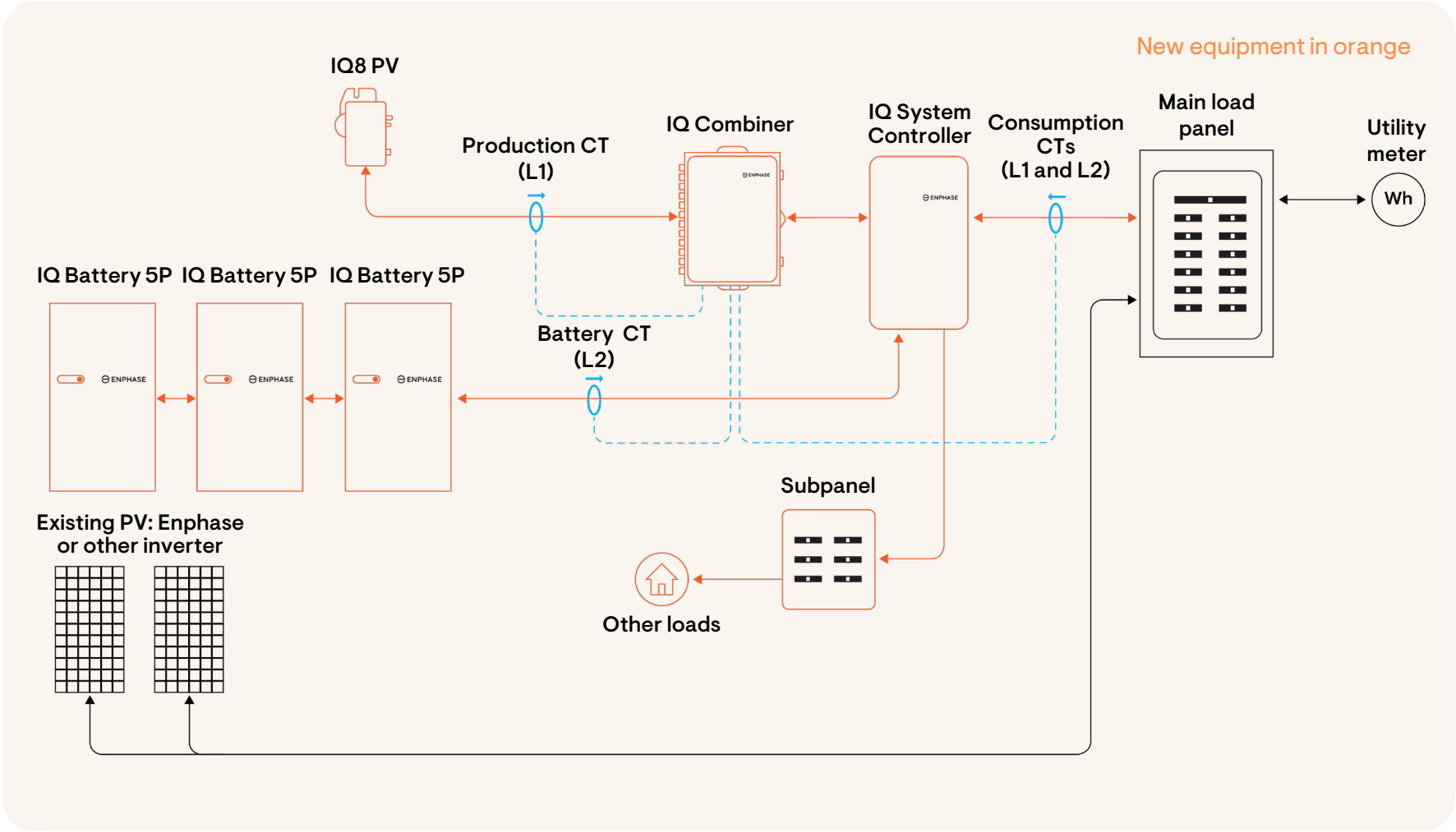
CONFIGURATION 2

Circuit relocation with zero export Enphase Power Control

$$ Requires circuit relocation

The best option for homeowners wanting to add an expansion with battery backup capability.

Note: See sub-configurations section for variants of Configuration 2



CONFIGURATION 3

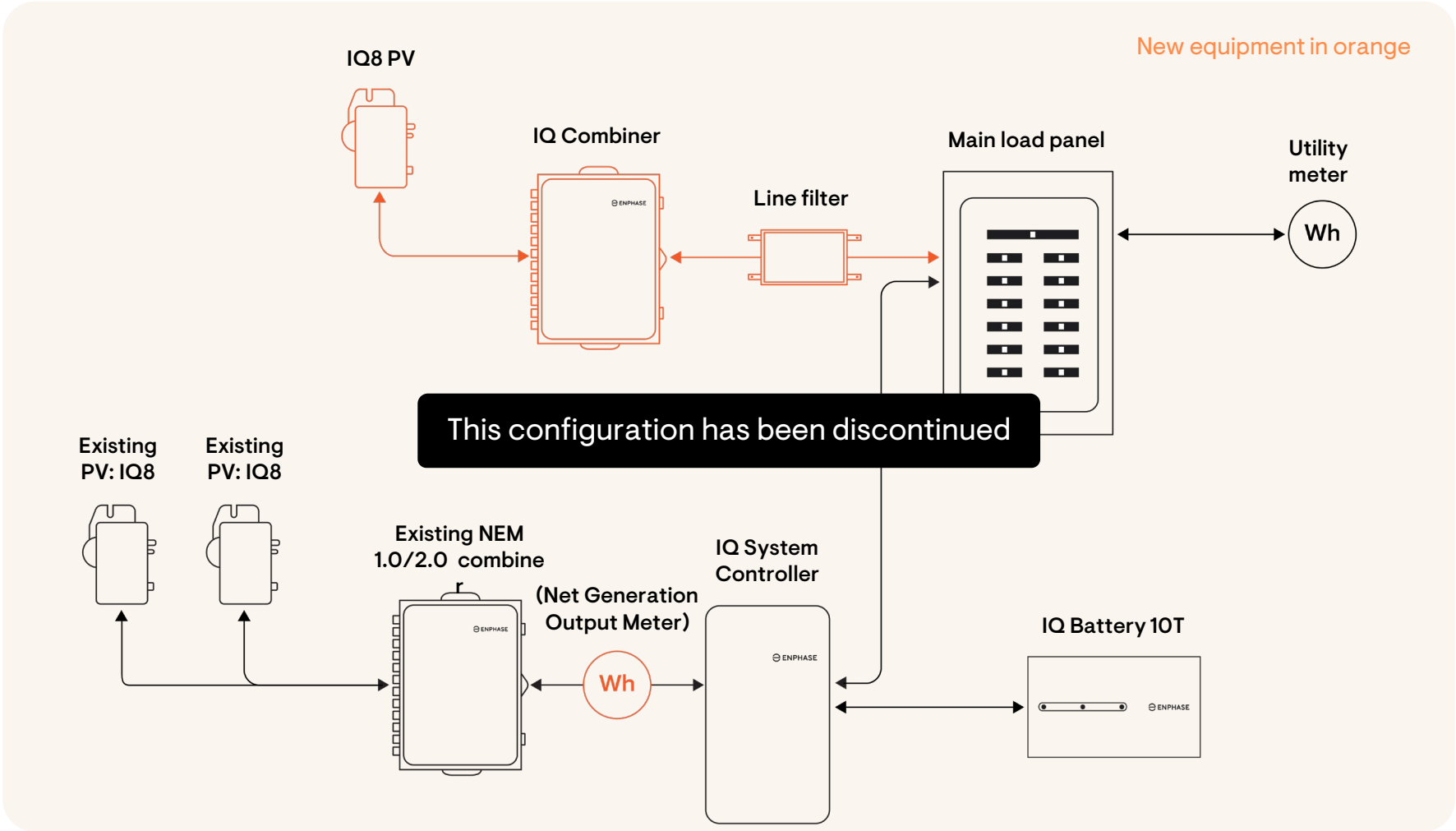
Net generation output meter (NGOM)

DISCONTINUED

$$$ Requires utility fees and coordination

NOTE: Effective November 2024, utility companies have stopped accepting NGOM for system expansions.

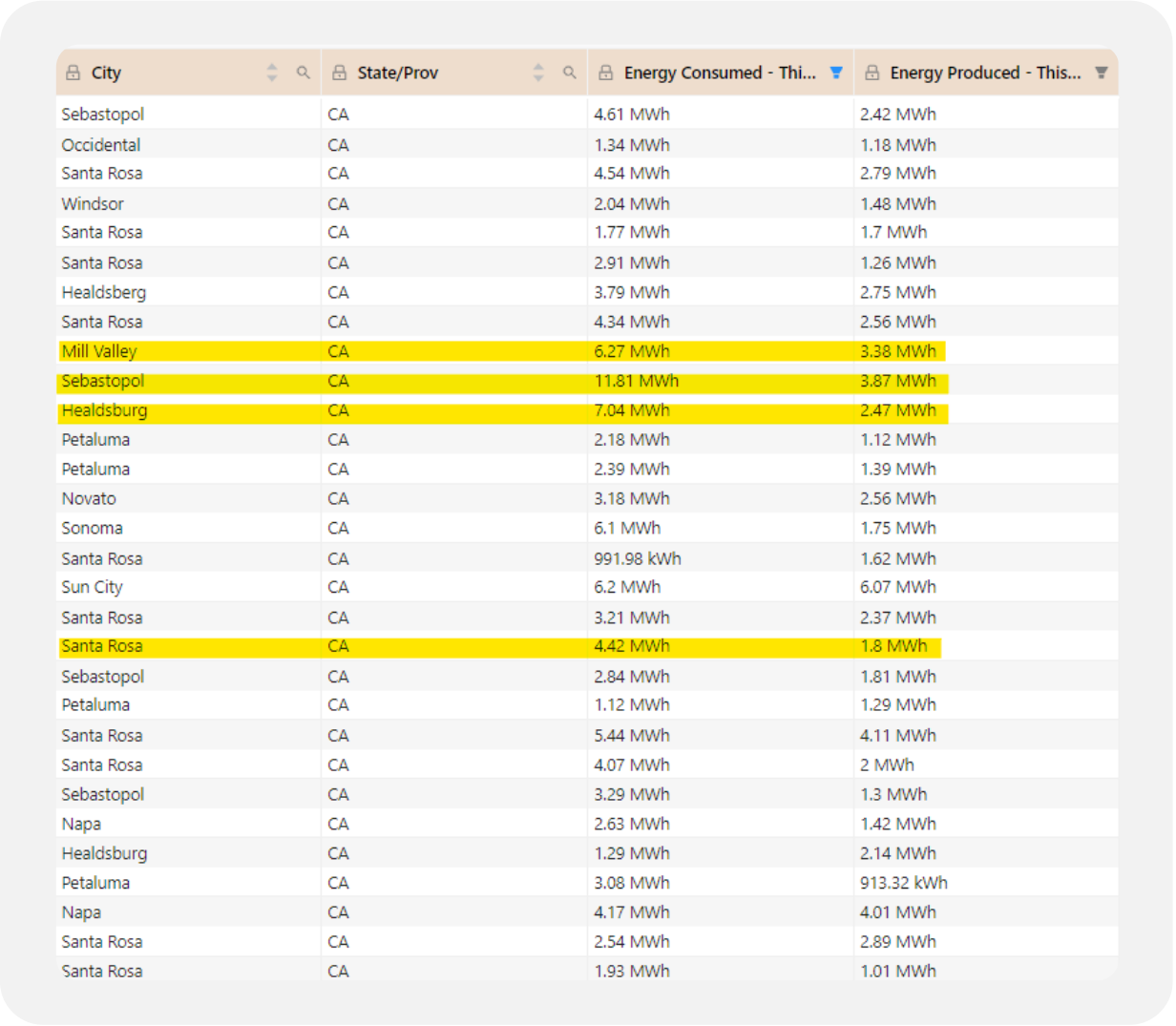
As an alternative, use configuration 1 or 2.



How to sell NEM 1.0/2.0 expansion

Identifying candidate sites in Enlighten Manager

1. Log in to Enlighten Manager and navigate to the **Systems** tab.
2. Using the filters at the right side of the screen, run a report that displays **Energy Consumed - This year** vs **Energy Produced - This Year**.
3. Target the sites with the largest delta between the consumption and production amounts.



City	State/Prov	Energy Consumed - Thi...	Energy Produced - This...
Sebastopol	CA	4.61 MWh	2.42 MWh
Occidental	CA	1.34 MWh	1.18 MWh
Santa Rosa	CA	4.54 MWh	2.79 MWh
Windsor	CA	2.04 MWh	1.48 MWh
Santa Rosa	CA	1.77 MWh	1.7 MWh
Santa Rosa	CA	2.91 MWh	1.26 MWh
Healdsberg	CA	3.79 MWh	2.75 MWh
Santa Rosa	CA	4.34 MWh	2.56 MWh
Mill Valley	CA	6.27 MWh	3.38 MWh
Sebastopol	CA	11.81 MWh	3.87 MWh
Healdsburg	CA	7.04 MWh	2.47 MWh
Petaluma	CA	2.18 MWh	1.12 MWh
Petaluma	CA	2.39 MWh	1.39 MWh
Novato	CA	3.18 MWh	2.56 MWh
Sonoma	CA	6.1 MWh	1.75 MWh
Santa Rosa	CA	991.98 kWh	1.62 MWh
Sun City	CA	6.2 MWh	6.07 MWh
Santa Rosa	CA	3.21 MWh	2.37 MWh
Santa Rosa	CA	4.42 MWh	1.8 MWh
Sebastopol	CA	2.84 MWh	1.81 MWh
Petaluma	CA	1.12 MWh	1.29 MWh
Santa Rosa	CA	5.44 MWh	4.11 MWh
Santa Rosa	CA	4.07 MWh	2 MWh
Sebastopol	CA	3.29 MWh	1.3 MWh
Napa	CA	2.63 MWh	1.42 MWh
Healdsburg	CA	1.29 MWh	2.14 MWh
Petaluma	CA	3.08 MWh	913.32 kWh
Napa	CA	4.17 MWh	4.01 MWh
Santa Rosa	CA	2.54 MWh	2.89 MWh
Santa Rosa	CA	1.93 MWh	1.01 MWh

Sizing expansion system with a true-up bill

Check a candidate's true-up bill to see if they have an energy shortfall and then use that delta to guide sizing.

Solar sizing:
The expansion solar system should be designed to meet the delta between annual consumption and production, plus, new electrical loads to be added.

Battery sizing:
The new storage system should be sized to 2x the solar DC nameplate.

Example:
A 2.5 kW solar system would be paired with a 5 kWh battery.

Energy consumption patterns impact battery sizing. If energy consumption skews toward the daytime, a smaller battery is acceptable (1:1 ratio).

PG&E true up bill

Summary of NEM Charges

Bill Period End Date	Net Peak Usage (kWh)	Net Off Peak Usage (kWh)	Net Usage (kWh)	Estimated NEM Charges Before Taxes	Estimated Total NEM Charges
08/15/2022	84	616	700	$166.40	$167.06
09/14/2022	142	778	921	225.12	225.99
10/13/2022	194	1065	1259	286.80	288.00
11/14/2022	176	1150	1327	282.43	283.69
12/13/2022	154	970	1123	239.10	240.17
01/12/2023	180	1256	1435	295.30	296.75
02/13/2023	182	1158	1340	262.64	264.15
03/15/2023	204	1746	1950	395.17	397.37
04/16/2023	195	1619	1814	383.81	385.86
05/15/2023	135	1232	1368	289.51	291.06
06/13/2023	125	1002	1127	247.73	249.01
07/16/2023	176	1463	1640	397.16	399.01
TOTAL	1947	14055	16004	$3,471.17	$3,488.12

Size the new zero export system to produce the kWh reflected in the true up bill

Sizing an expansion system

Here's an example of how to size a new expansion system to address a homeowner's current shortfall and meet their future energy needs.

Existing home consumption

12,000 kWh

+

Energy for upcoming needs

5,000 kWh

Examples:
Additional EV: 5,000 kWh
Electric appliances: 3,000 kWh
Larger family: 2,000 kWh

−

Existing solar production

7,500 kWh

=

New solar production requirements

9,500 kWh

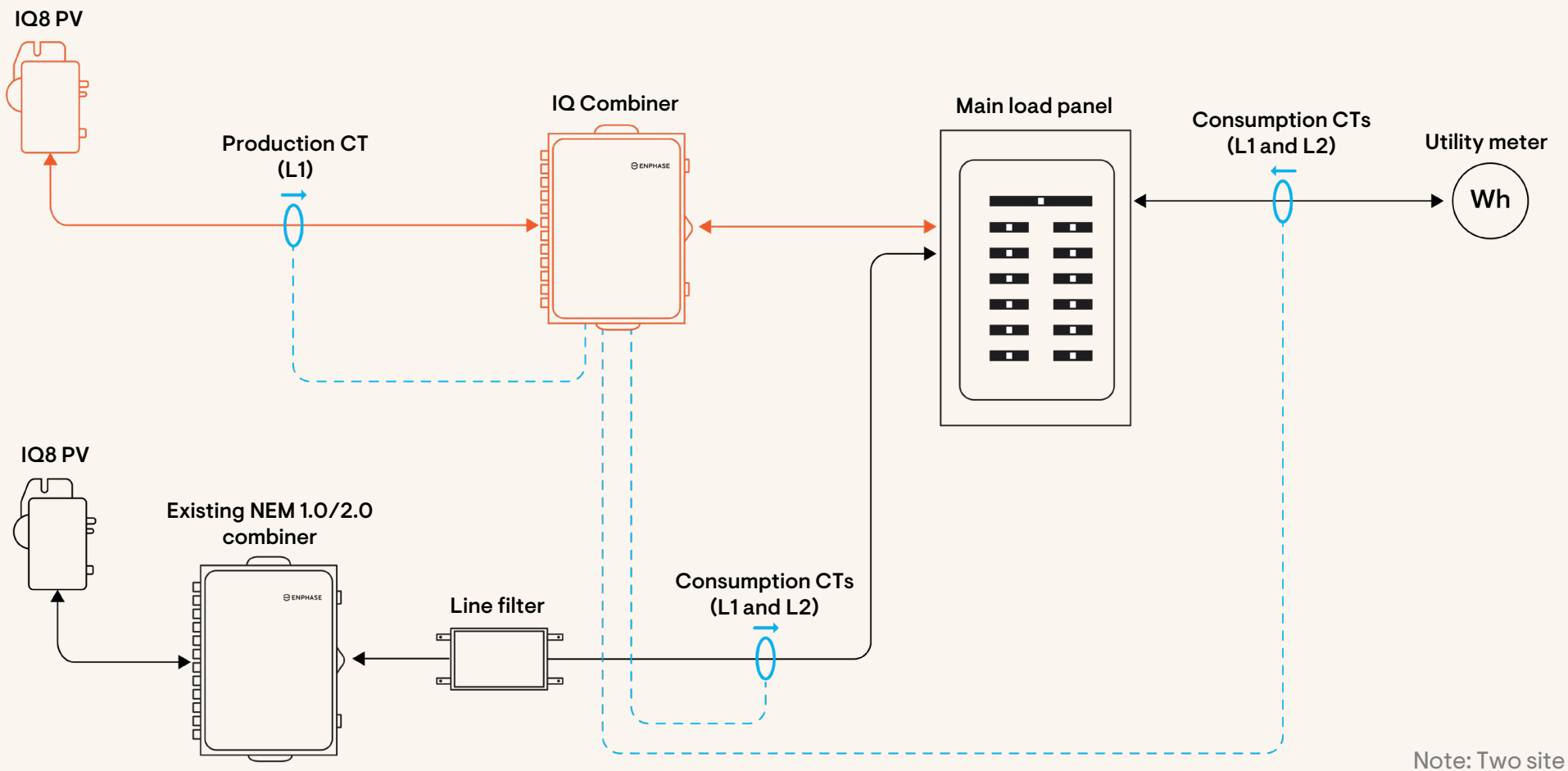
Consider adding a battery to store excess solar energy that's not being consumed in real time

Sub-configurations

CONFIGURATION 1A

Zero export with Enphase Power Control

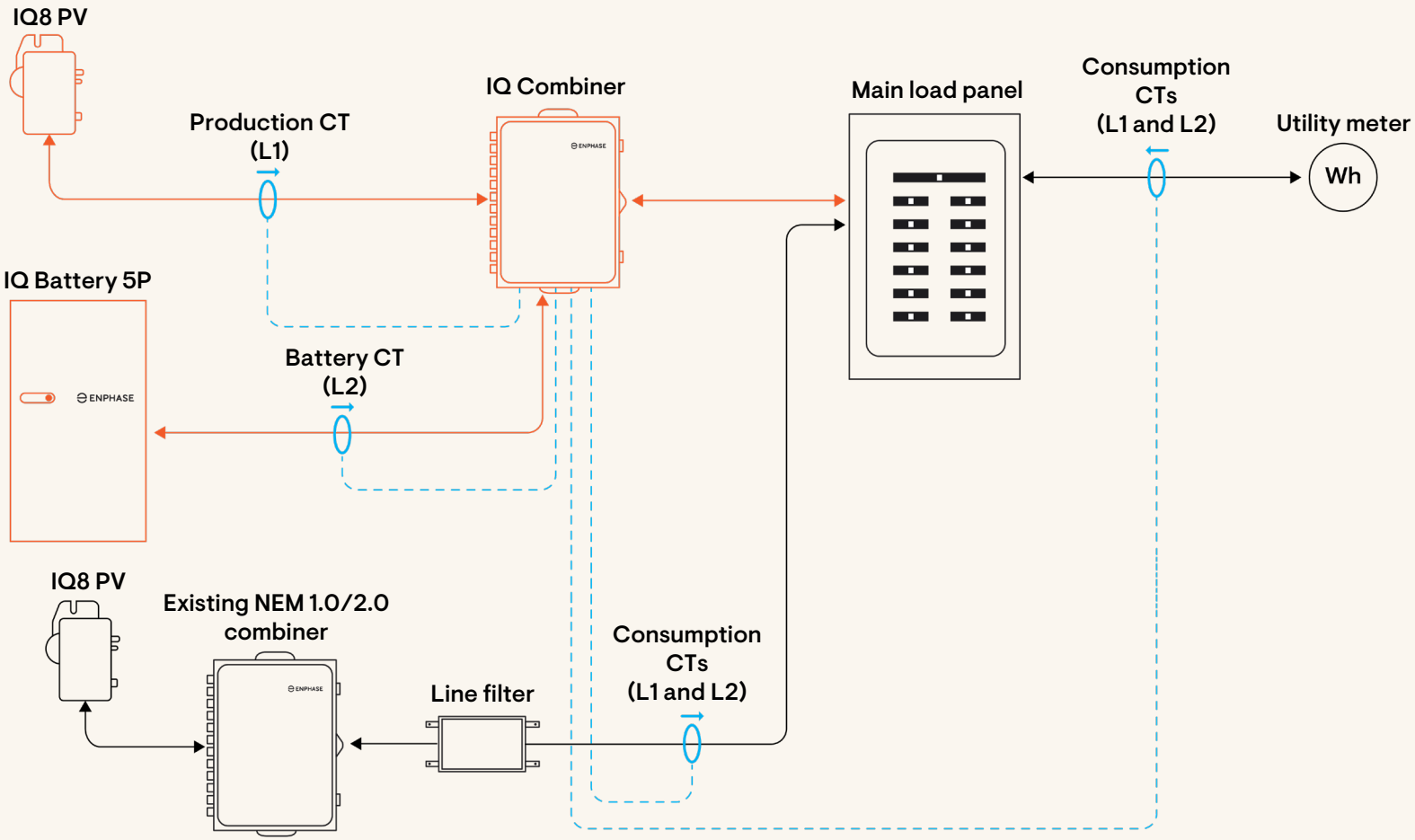
Sub-configuration used with an existing Enphase solar only system



CONFIGURATION 1B

Zero export with Enphase Power Control

Sub-configuration used with an existing Enphase solar only system



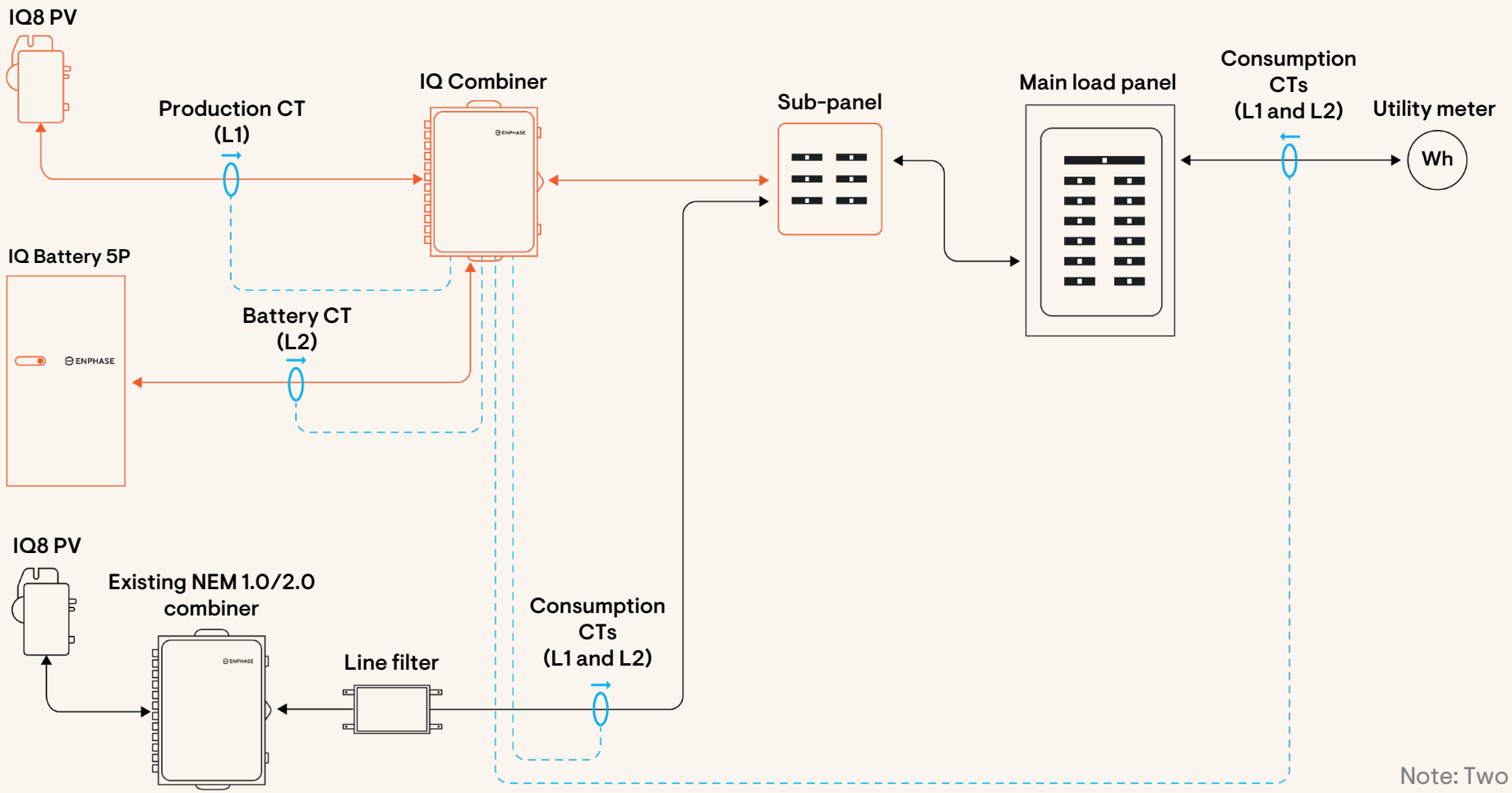
New equipment in orange

Note: Two site IDs required for this approach

CONFIGURATION 1C

Zero export with Enphase Power Control

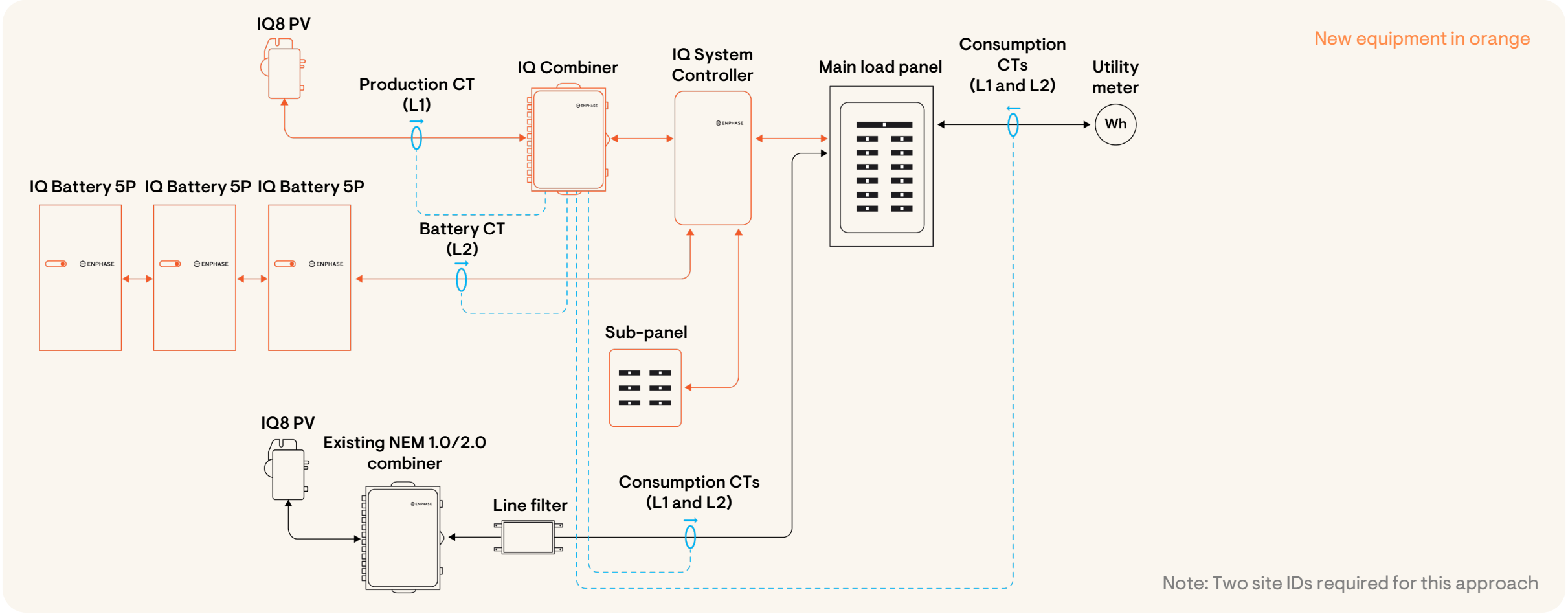
Sub-configuration used when the AHJ requires a single disconnect



CONFIGURATION 1D

Zero export with Enphase Power Control

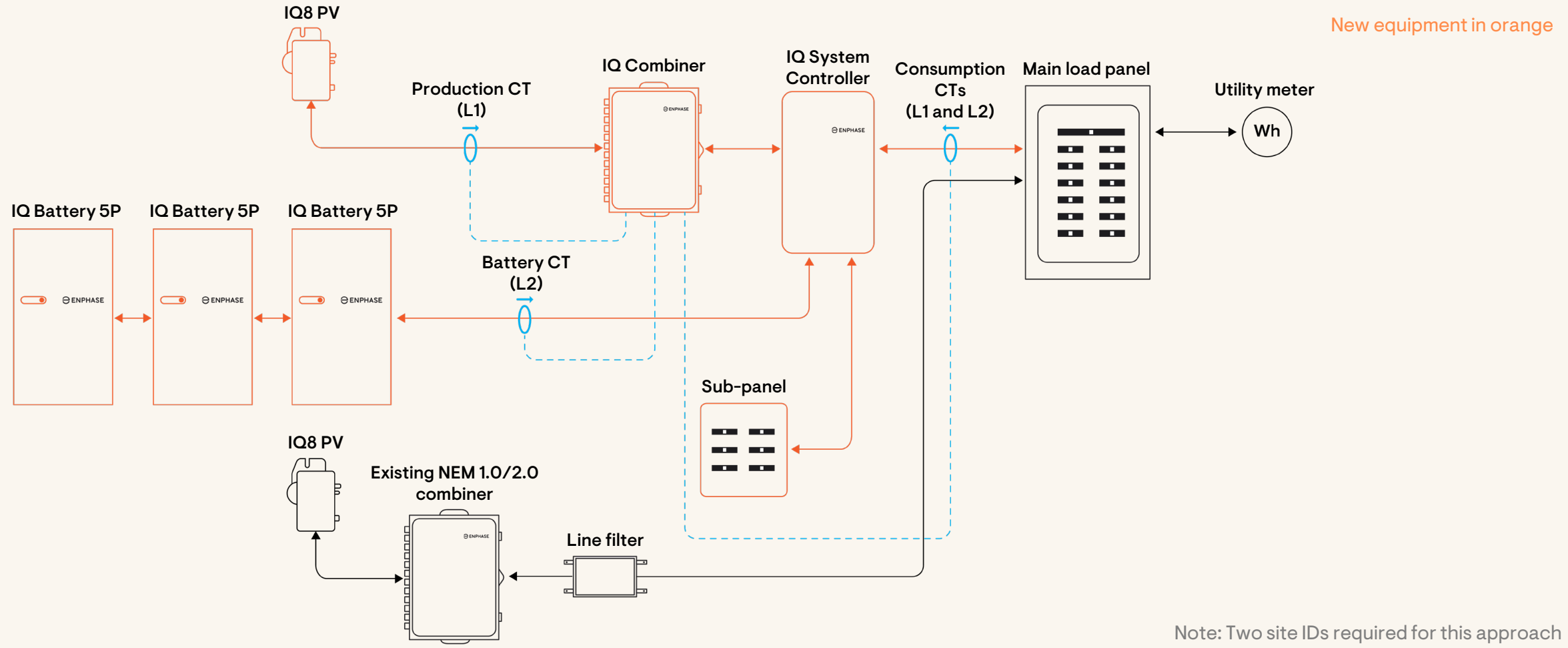
Sub-configuration used with an existing Enphase solar only system
Alternative to Configuration 2 enabling whole home consumption monitoring



CONFIGURATION 2A

Circuit relocation with zero export Enphase Power Control

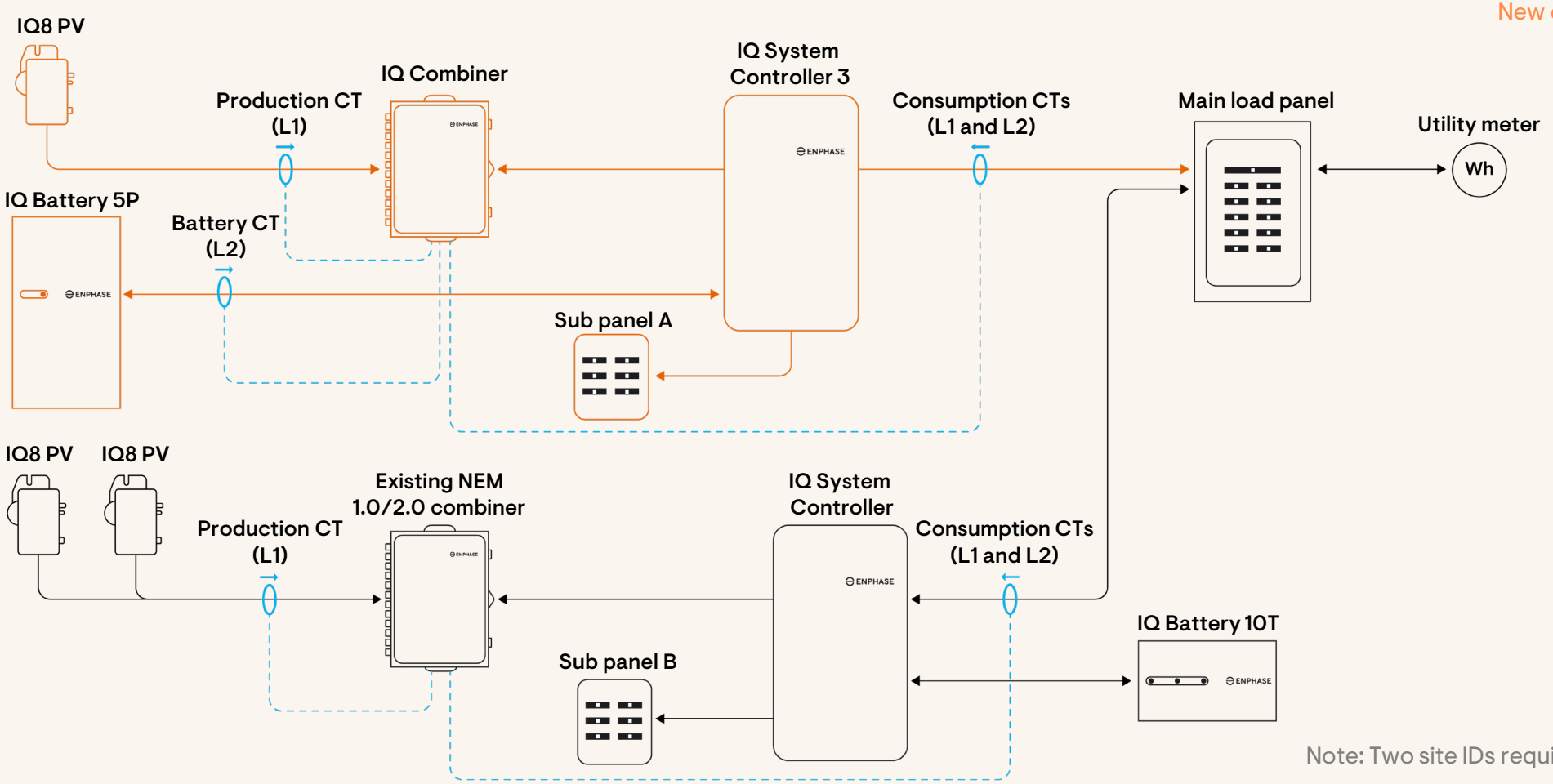
Sub-configuration used with an existing Enphase solar only system (partial home backup)



CONFIGURATION 2B

Circuit relocation with double microgrid, metering separate loads

Battery backup on two parallel systems, metering separate loads



Appendix

Interconnection discussion forum written response: Pacific Gas and Electric

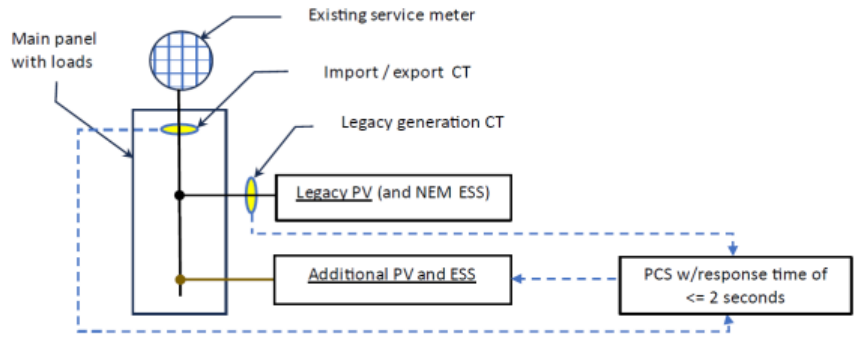
CALSSA NEM non-export capacity additions

PG&E Response:

Following the IDF, CALSSA provided us with a PDF showing the 1-lines they had presented (#2 and #3), as well as additional two additional 1-lines (#1 and #4). Our feedback is based on what is presented, at a high level. Additions or omissions could change our view, and we are assuming that controls are configured correctly:

Drawing #1 is ok with PG&E and would be approved

Non-Export with PCS



CALIFORNIA SOLAR + STORAGE ASSOCIATION

Pacific Gas and Electric Company
U 39 San Francisco, California

Cancelling Revised Cal. P.U.C. Sheet No. 57286-E
Revised Cal. P.U.C. Sheet No. 56753-E

ELECTRIC SCHEDULE NEM2 Sheet 31
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

8. NEM2 Legacy Provision (Cont'd.)

b. Modifications[7]. REGFs eligible for the 20-year transition period outlined above that are modified and/or repaired shall remain eligible for the remainder of their 20-year transition period as long as the modifications and/or repairs do not increase the REGF by more than the greater of:

1) 10 percent of the REGF's nameplate rating capacity, as established when the REGF was originally interconnected, or

2) 1 kW;

and provided the modifications and/or repairs do not result in the REGF exceeding the Customer's annual onsite load.

Pursuant to D.22-12-056, the addition of energy storage to the Customer's existing Generating Facility shall not disqualify Customer from the remainder of their 20-year Transition Period on this Schedule.

c. Transferability. REGF eligible for the 20-year transition period shall not lose their eligibility if transferred to a new owner, operator, or PG&E account, provided the REGF remains at its original location.[8]

[7] This provision will only be enforced after April 14, 2023, and for Load Aggregation after February 14, 2024. 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 interconnecting the additions and/or modifications separately under another eligible tariff (i.e., Rule 21 non-export), or have the entire REGF served under the Net Billing Tariff (NBT) subject to the terms and conditions contained therein. If an existing NEM2 customer chooses to interconnect the addition under Rule 21 non-export, the Customer's original 20-year/9-year transition period is not altered. If an existing NEM2 customer chooses to have the entire system served on the NBT, then the customer will be eligible for the same 9-year legacy period under the NBT as a new NBT customer and, if applicable, they will also receive the 9-year export compensation rate lock-in period and ACC Plus based on the calendar year that they receive PTO of the upgraded system on NBT. (T) (T) (T) (T)

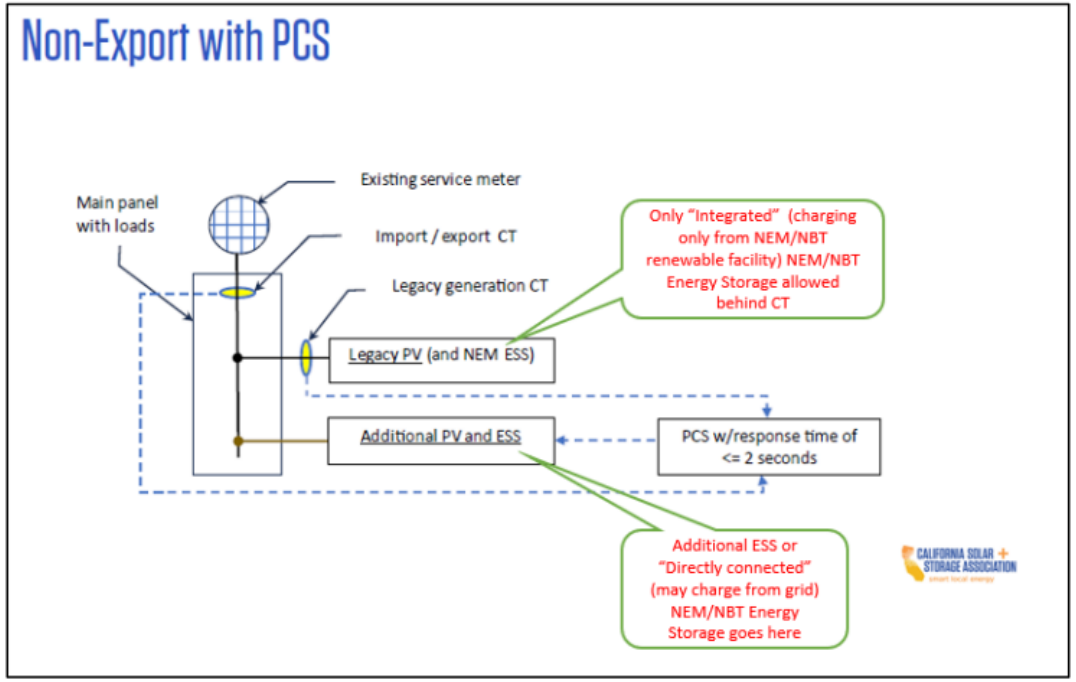
[8] The transfer of an existing REGF to a new location is considered a new installation requiring a new Interconnection Agreement that is subject to the applicable tariffs in place at the time the new Interconnection Request is completed.

Interconnection discussion forum written response: Southern California Edison

SCE's 2/16/24 Responses to Energy Division Questions from January 30, 2024, IDF meeting

CALSSA NEM non-export capacity additions

Configuration #1 – PCS Solution



SCE Response: This configuration is acceptable so long as only "integrated" NEM/NBT energy storage is placed behind CT.

ENPHASE.

Interconnection discussion forum written response: San Diego Gas and Electric

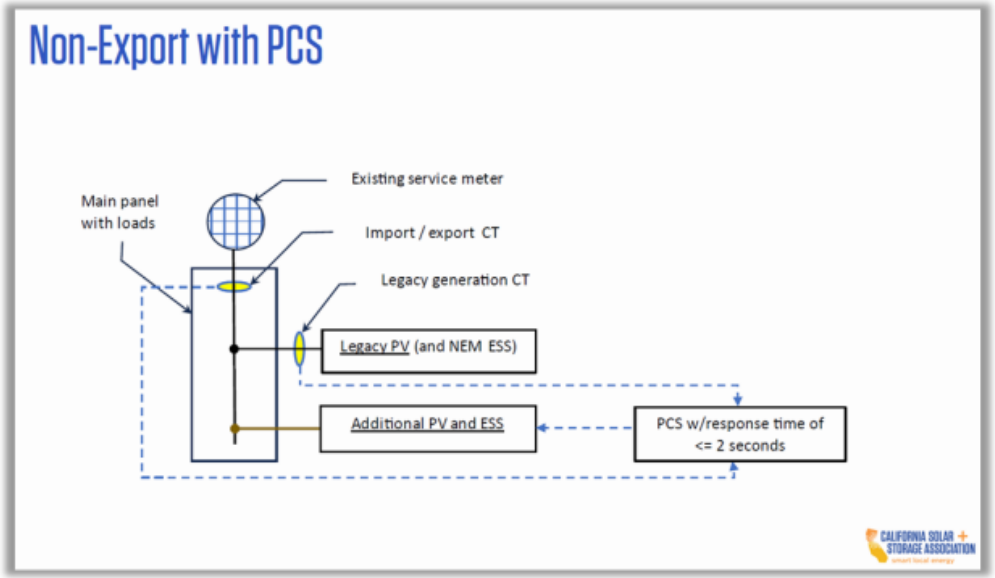
CALSSA – NEM non-export capacity additions

Request: Put into writing the responses provided during the IDF discussion, which indicated that both of CALSSA's proposed single-line configurations were deemed acceptable for purposes of adding non-export capacity under a NEM-MT tariff, at least with NGOM required for the first single-panel single-line. The two configurations are shown on Slides #4 and #5 of CALSSA's Jan 30 presentation.

"Deemed acceptable" would constitute confirmation that IOUs will approve future applications with the configurations shown, for purposes of non-export capacity additions to existing NEM systems under the NEM-MT tariff.

Response: SDG&E deems both configurations presented by CALSSA during the January 30th IDF presentation (slides 4 and 5 of CALSSA's slide deck) acceptable. Additionally, CALSSA presented two additional configurations during a separate call after the January 30 IDF. Please see each configuration below with SDG&E's comments...

- **Configuration 1**: Non-Export with PCS (also referred to as "CALSSA Proposed Non-Export Configuration" on slide 4 of CALSSA's slide deck)
- **SDG&E Response to Configuration 1:** Acceptable if only "integrated" NEM/NBT energy storage is allowed behind the CT meter.



Revision history

Revision	Date	Description
MKT-00951-1.0	November 2024	Initial release.