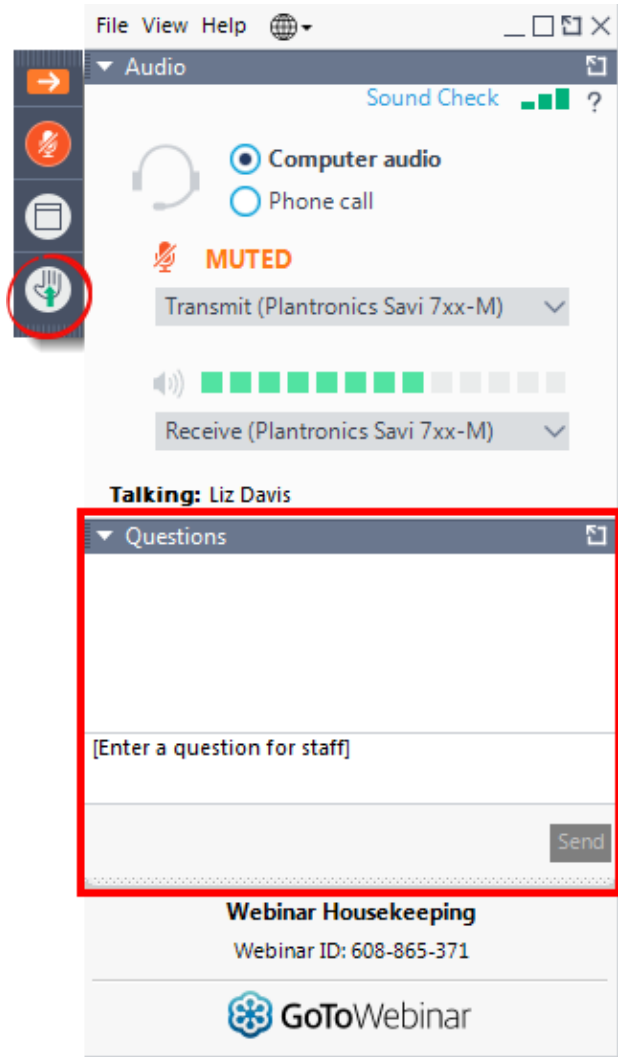


# Solar+Storage in Net Metering Programs

**September 13, 2018**

# Housekeeping



Use the orange arrow to open and close your control panel.

## Join Audio:

- Choose Mic & Speakers to use VoIP
- Choose Telephone and dial using the information provided

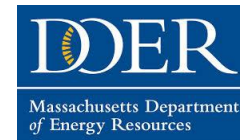
## Questions:

- Type in questions and comments via the “Questions” panel.
- Raise your hand to be unmuted for verbal questions.



This webinar is being recorded. Slides and a webinar recording will be sent to you via email within 48 hours.

# CleanEnergy States Alliance



# Energy Storage Technology Advancement Partnership (ESTAP) ([bit.ly/ESTAP](http://bit.ly/ESTAP))

ESTAP is supported by the U.S. Department of Energy Office of Electricity and Sandia National Laboratories, and is managed by CESA.

## ESTAP Key Activities:

### 1. Disseminate information to stakeholders

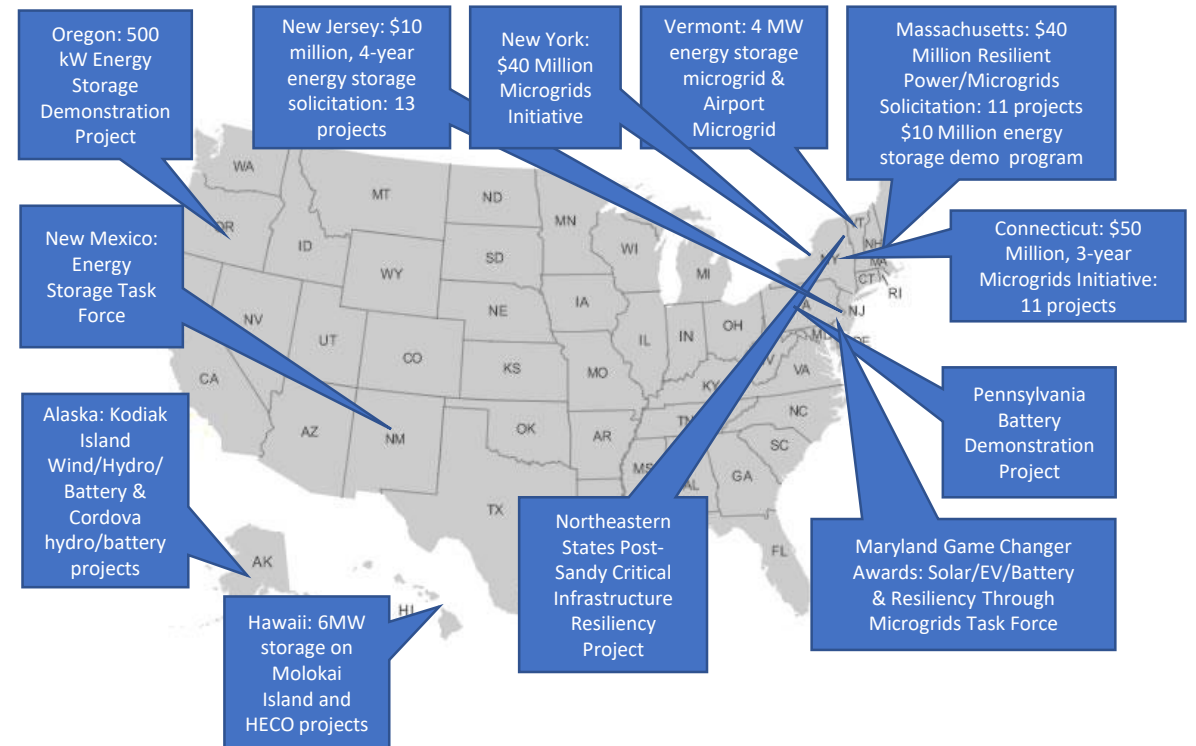
- ESTAP listserv >5,000 members
- Webinars, conferences, information updates, surveys.

### 2. Facilitate public/private partnerships to support joint federal/state energy storage demonstration project deployment

### 3. Support state energy storage efforts with technical, policy and program assistance



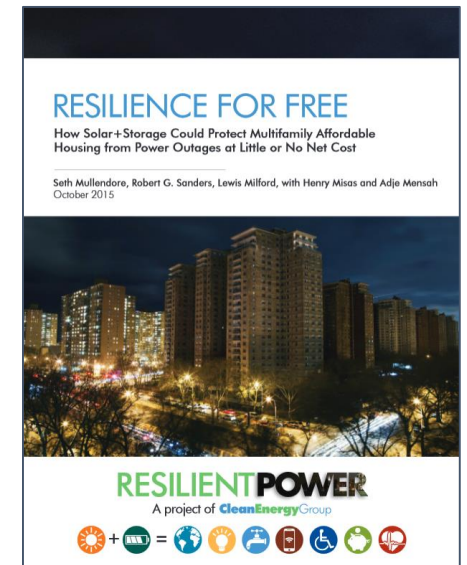
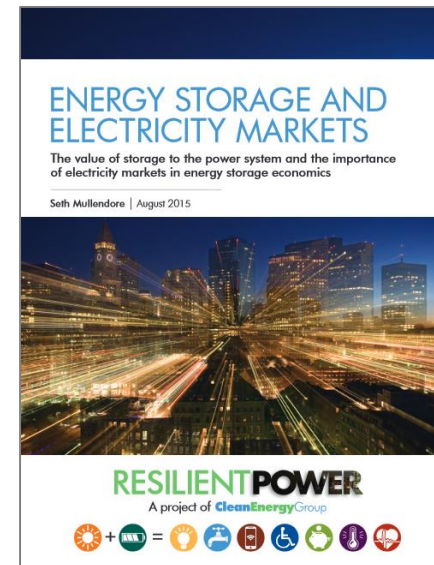
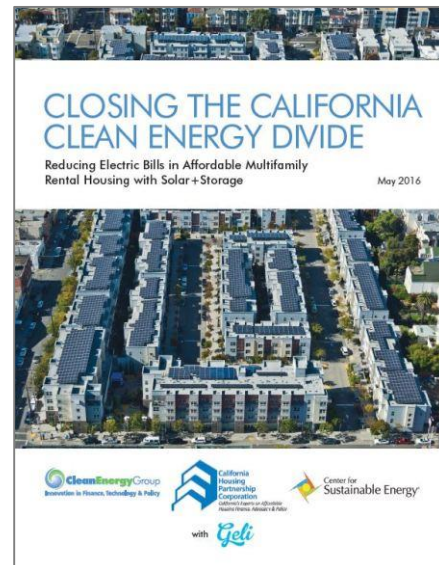
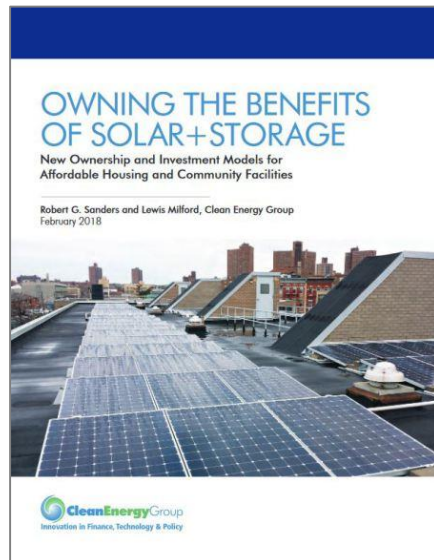
## ESTAP Project Locations:



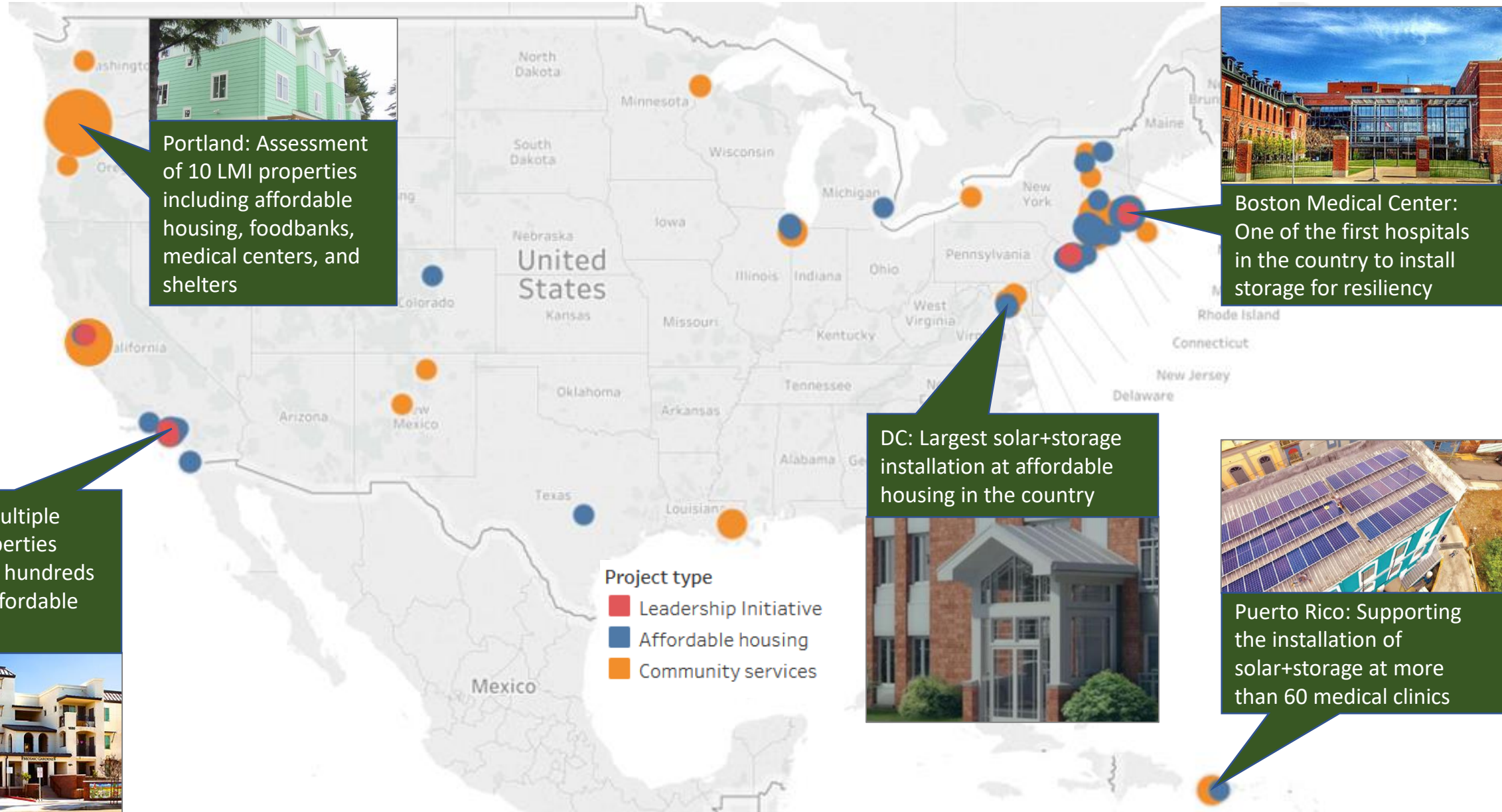


# The Resilient Power Project

- Increase public/private investment in clean, resilient power systems (solar+storage)
- Protect low-income and vulnerable communities, with a focus on affordable housing and critical public facilities
- Engage city, state and federal policy makers to develop supportive policies and programs



# Supporting 100+ Projects across the Country







# Speakers



**Jin Noh**

Senior Consultant,  
Strategen



**Jamie Dickerson**

Policy Analyst,  
NECEC



**Todd Olinsky-Paul**

Project Director,  
CESA/CEG  
(Moderator)





# Exploring California's NEM + Storage Policies & Lessons Learned

Clean Energy Group Webinar

September 13, 2018



## About CESA

- The **California Energy Storage Alliance (CESA)** is a 501c(6) membership-based advocacy group committed to advancing the role of energy storage in the electric power sector through policy, education, outreach, and research.
- **CESA's mission** is to make energy storage a mainstream energy resource in helping to advance a more affordable, clean, efficient, and reliable electric power system in California



California ISO  
Shaping a Renewed Future



# CESA Members

## Board Members



## General and Series A Members

Able Grid  
Amber Kinetics  
American Honda Motor  
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Brenmiller Energy  
Bright Energy Storage Technologies  
Brookfield Renewables  
Centrica Business Solutions  
Clean Energy Associates  
Consolidated Edison Development  
Customized Energy Solutions  
Dimension Renewable Energy  
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Eagle Crest Energy  
E.ON  
EDF Renewable Energy  
ElectrIQ Power  
eMotorWerks  
Energoport  
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Form Energy  
GAF  
Greensmith Energy  
Iteros  
Johnson Controls  
Lendlease Energy Development

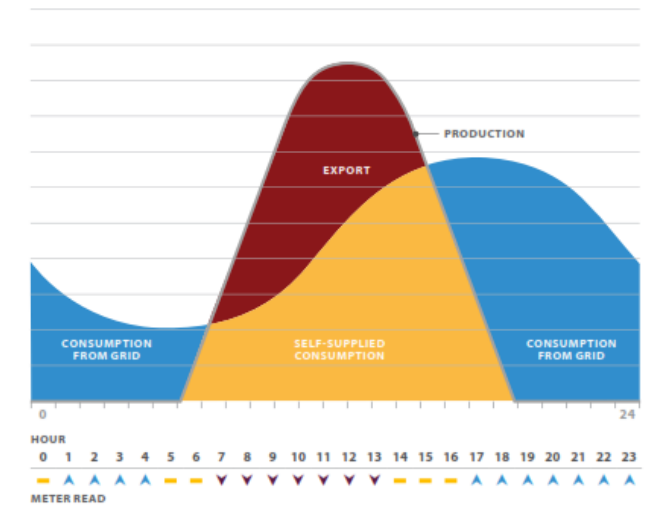
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National Grid  
NEC Energy Solutions  
NGK Insulators  
NRG Energy  
Parker Hannifin  
Pintail Power  
Primus Power  
Range Energy Storage Systems  
Recurrent Energy  
RES Americas

Sempra Renewables  
Sharp Electronics  
Sovereign Energy  
Stem  
STOREME  
Sumitomo Electric  
Sunrun  
Swell Energy  
Viridity Energy  
VRB Energy  
Yunicos

# How California NEM Works

- **The Net Energy Metering (NEM) Tariff is intended to offset part or all of the customer's electrical requirements with electricity provided directly by their renewable facilities:**
  - Eligible NEM facilities cannot exceed 1 MW in capacity
  - NEM systems are eligible for financial credits for power generated by their onsite systems that is fed back into the grid for use by other customers over the course of a billing cycle:
    - The credits are valued at the same \$/kWh that customers would otherwise be charged for electricity consumed
    - Net credits created in one billing period carry forward to offset customer generators' subsequent electricity bills, with an annual true-up of any accrued credits and charges
    - A customer producing power in excess of its onsite load over the 12-month period may be eligible for "net surplus compensation"
    - Meter readings are done in hourly intervals for residential customers and 15-minute intervals for commercial customers

ILLUSTRATING PHYSICAL NET METERING CONCEPTS





# Adoption of NEM 2.0 Tariff

- On January 28, 2016, a Final Decision (D.16-01-044) adopted a NEM successor tariff that preserved the current NEM tariff with a few modifications:
  - **Retail rates:** Maintained full retail rate compensation for exports
  - **Nonbypassable charges (NBCs):** Required to pay NBCs (e.g., public purpose programs, nuclear decommissioning, water resource bonds) on total, not net, amount of electricity the customer obtains from the utility (adding costs of about \$0.03/kWh or \$6-8/month to NEM 2.0 customers)
  - **Interconnection fees:** Eliminated interconnection fee exemptions and must now pay "reasonable" interconnection fees (usually between \$75-100 for systems under 30 kW)
  - **TOU rates:** Must take service under one of IOUs' residential TOU rates
  - **Virtual NEM:** Maintains programs elements but with similar NBC payment requirements and removal of interconnection fee exemptions
  - **Grandfathering:** Grandfathered onto the NEM Successor Tariff for 20 years (similar to NEM 1.0 customers)

# How California NEM Policy Drives +Storage

- **NEM Paired Storage (NEM-PS) factors:**
  - NEM-PS interconnection and metering
  - NEM-PS sizing limitations
  - NEM bill credit estimation methodology
  - NEM-PS incentive eligibility
  - NEM 2.0 TOU requirement and TOU periods shift
  - NEM-PS eligibility in utility solicitations

# NEM-PS Interconnection & Metering

- **NEM-PS is defined as qualifying energy storage devices paired with a eligible renewable generator that meet the RPS Guidebook requirements as an "addition or enhancement":**
  - Integrated storage are storage devices that are only capable of storing energy from the eligible renewable generator
  - Directly connected storage are storage devices that are directly connected to the eligible renewable generator via an internal power line:
    - Storage devices paired with NEM-eligible generation facilities are exempt from interconnection application fees, supplemental review fees, distribution upgrade costs, and standby charges
    - D.16-01-044 clarified that NEM "additions or enhancements" such as energy storage should be treated the same when it comes to interconnection as standalone NEM-eligible generators

## NEM-PS Interconnection & Metering

- **D.14-05-033 established self-contained, single-phase metering requirements to ensure NEM integrity and prevent gaming:**
  - “Large” systems (paired storage device  $> 10$  kW-AC) are required to comply with metering requirements similar to those in the NEM Multiple Tariff (MT) Special Condition:
    - Install a non-export relay on the storage device(s)
    - Install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at point of common coupling (PCC)
    - Install interval meter directly to the NEM-eligible generator(s)
  - “Small” systems, (paired storage device  $\leq 10$  kW-AC) can use an estimation methodology to validate the eligible NEM credits – more on this later
  - Fees associated with this metering requirement are limited to \$600 (exceptions apply for complex metering arrangements)



# NEM-PS Interconnection & Metering

- **Key areas of uncertainty and potential improvements include:**
  - In lieu of metering everything, can we rely on inverter software controls?
    - Benefits: Avoid costly metering, offers more operational flexibility
    - Challenges: Utility engineers not equipped to review software (standards needed); cybersecurity
  - Is there a metering configuration that can work with DC-coupled NEM-PS systems?
    - The above metering arrangements do not work for DC-coupled systems
    - There are no revenue-grade meters yet, though eMerge Alliance is developing a standard
    - No grid charging controls or non-import relays, and no storage export controls are possibilities

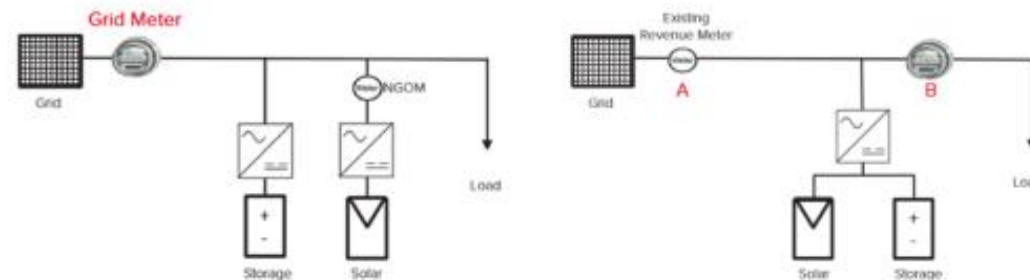


Figure 1 – AC-coupled systems left with a NGOM directly metering the AC output of the solar and DC-coupled system right, where no AC point exists to directly monitor the solar

## NEM-PS Sizing Limitations

- **D.14-05-033 placed some limitations on the size of energy storage systems paired with NEM-eligible generators:**
  - All NEM-paired storage systems with storage devices 10 kW or smaller are not required to be sized to the customer demand or NEM generator
  - NEM-paired storage systems with storage devices larger than 10 kW will be required to have a maximum output power no larger than 150% of the NEM generator's maximum output capacity
  - For NEM-paired storage systems with storage devices larger than 10 kW, the discharge capacity of the storage system shall not exceed the NEM generator's maximum capacity and the maximum energy discharged by the storage device shall not exceed 12.5 hours of storage per kW

# NEM-PS Bill Credit Estimation Methodology

- **For small NEM paired storage, an estimation methodology can be used to cap maximum allowable NEM bill credits based on a monthly output profile:**
  - The rationale for this was the cost of meters representing a much larger share of residential NEM-PS projects, and the risk of gaming was determined to be slim
    - Gaming risks were identified as being low due to TOU arbitrage being of limited value at the time, but that may change if residential NEM-PS faces higher-differential TOU rates
  - Alternatively, small NEM paired storage can elect to implement the NEM-MT metering provisions rather than utilizing the bill credit estimation methodology
- **Production estimates are generated using the Expected Performance-Based Buydown (EPBB) calculator used in the California Solar Initiative (CSI):**
  - Any exports exceeding this limit would not be eligible for NEM credits and thus forfeited
  - Peak period exports would be reduced first, followed by partial peak and off-peak
  - Utilities have faced implementation challenges but now use a single per-kW profile for each climate zone, in place of the customer-specific estimation using the EPBB calculator

# NEM-PS Incentive Eligibility

- **Projects participating in the NEM program are eligible to participate in the Self-Generation Incentive Program (SGIP):**
  - Paired storage devices are eligible to receive SGIP incentives
    - Depending on project size, there are all upfront or some upfront plus rest performance-based incentives

	Step 1	Step 2	Step 3	Step 4	Step 5
Large Storage (> 10 kW) without ITC	\$0.50/Wh	\$0.45/Wh	\$0.40/Wh	\$0.35/Wh	\$0.30/Wh
Large Storage (> 10 kW) with ITC	\$0.36/Wh	\$0.32/Wh	\$0.29/Wh	\$0.25/Wh	\$0.22/Wh
Small Storage (≤ 10 kW)	\$0.50/Wh	\$0.45/Wh	\$0.40/Wh	\$0.35/Wh	\$0.30/Wh

	Step 1	Step 2	Step 3	Step 4	Step 5
Large Storage (> 10 kW) without ITC	\$0.50/Wh	\$0.40/Wh	\$0.30/Wh	\$0.20/Wh	\$0.10/Wh
Large Storage (> 10 kW) with ITC	\$0.36/Wh	\$0.29/Wh	\$0.22/Wh	\$0.14/Wh	\$0.06/Wh



# NEM 2.0 TOU Requirement & TOU Period Shift

- The value of standalone NEM resources may decrease while the value proposition of adding storage may increase with TOU period shift, but much still depends on balance between rate differentials and storage costs

## SCE C&I Rates Effective March 2019

Table 3-A  
Adopted TOU Periods (Weekdays)

TOU Period	Summer (June – September)	Winter (October – May)
On-peak	4 p.m. - 9 p.m.	
Mid Peak		4 p.m. - 9 p.m.
Off-peak	All hours except 4 p.m. - 9 p.m.	9 p.m.- 8 a.m.
Super-off-peak		8 am - 4 p.m.

Table 3-B  
Adopted TOU Periods (Weekends)

TOU Period	Summer (June – September)	Winter (October – May)
On-peak		
Mid Peak	4 p.m. - 9 p.m.	4 p.m. - 9 p.m.
Off-peak	All hours except 4 p.m. - 9 p.m.	9 p.m.- 8 a.m.
Super-off-peak		8 am - 4 p.m.

## SDG&E C&I Rates Effective December 2017

TABLE 1: Adopted TOU Periods (Weekdays)

TOU Period	Summer	Winter
On-peak	4:00 p.m.-9:00 p.m.	4:00 p.m.-9:00 p.m.
Off-peak	6:00 a.m.-4:00 p.m.; 9:00 p.m.-midnight	6:00 a.m.-4:00 p.m. excluding 10:00 a.m.-2:00 p.m. in March and April; 9:00 p.m.-midnight
Super-off-peak	Midnight- 6:00 a.m.	Midnight- 6:00 a.m.; 10:00 a.m.-2:00 p.m. in March and April

## NEM 2.0 TOU Requirement & TOU Period Shift

- **PG&E recently approved similar shifts in TOU periods and seasons but also included a number of storage-specific rates:**
  - New Option S rate is an opt-in rate with limited enrollment that collects more revenue through peak daily demand charges instead of non-coincident demand charges
  - Rate EV-A for residential customers is opened to energy storage systems
  - Unlike other non-residential rates, A-1 STORE has a part-peak TOU period for both summer and winter months
- **Each of the IOUs are working through Residential Rate Design Window Applications to implement default TOU rates for all residential customers:**
  - SDG&E (Oct 2019)
  - PG&E and SCE (Oct 2020)

# NEM-PS Eligibility in Utility Solicitations

- **NEM-PS systems are being considered for grid services in utility solicitations, which represents a new revenue stream and potential additional value-add:**
  - Given the ‘all-in’ rate from NEM compensation, the challenge for procurement evaluations have been in assessing incrementality of bids:
    - Example: Consider only the non-NEM portion at a site (*i.e.*, separately metered output of paired storage) with existing NEM generation would be considered incremental, but the paired storage will then be assumed as not participating in NEM
  - No actual procurements have occurred yet, but some NEM-PS systems were selected in the Demand Response Auction Mechanism (DRAM) that procures RA capacity from DR resources
- **Note that NEM systems do not provide RA capacity as they generally reduce RA capacity**

## Key Takeaways and Lessons Learned

- Address NEM integrity and gaming concerns through approved metering configurations and software/firmware control schemes, but without defaulting to “metering everything”
- Reduce the cost barriers for pairing storage to NEM systems by providing capital-cost incentives and consistent but reasonable exemptions for small residential systems (bill credit estimation, interconnection fees)
- Create economic incentives through rates aligned with cost causation principles but also with policy considerations
- Clarify methodologies for determining incrementality of NEM and NEM-PS systems



## NEM 3.0 Just Ahead

- **In 2019, the CPUC will kickstart a new proceeding to develop a new NEM 3.0 tariff:**
  - The CPUC will be able to better quantify the locational and avoided cost values:
    - California utilities have developed hosting capacity and locational net benefits methodologies to support the siting and compensation of DERs, as part of the DRP, IDER, and IRP proceedings
  - The CPUC may re-consider previous alternative proposals that break out cost-driving components and address cost-shift concerns:
    - In addition, residential customers will have experience with default TOU rates by the time any NEM 3.0 tariff is developed and later implemented

# Questions?

**Jin Noh**

Policy Manager

CALIFORNIA ENERGY STORAGE ALLIANCE (CESA)

[jnoh@storagealliance.org](mailto:jnoh@storagealliance.org)

## Additional Backup Slides

# Grandfathering of TOU Periods under NEM 2.0

- **On January 23, 2017, D.17-01-006 was adopted that set grandfathering provisions of existing systems during TOU period transitions:**
  - Applies a five-year grandfathering period for NEM customers who opt in to existing TOU rates (but will not continue to be grandfathered beyond July 31, 2022)
  - Applies a ten-year grandfathering period for non-residential customers who complete interconnection under existing TOU rates (but will not continue to be grandfathered beyond July 31, 2027, except for schools, which cannot be grandfathered beyond December 31, 2027)
  - Does not apply to customers who are already permitted to stay on TOU rate for five years pursuant to NEM decision (D.16-01-044)
- **The difference in treatment for grandfathering residential and non-residential customers was due to the fact that:**
  - Non-residential customers are on mandatory TOU rates and may have decided to invest in solar based on their initial TOU periods
  - Residential customers automatically take service on a tiered-rate unless they affirmatively opt into a TOU rate



# **Incorporating Energy Storage into Net Metering Policies**

*Lessons and considerations from the Northeast*

Jamie Dickerson  
*Policy Analyst*

Northeast Clean Energy Council (NECEC)

**Clean Energy Group Webinar**  
September 13, 2018



NECEC's mission is to create a world-class clean energy hub in the Northeast, delivering global impact with economic, energy, and environmental solutions.

NECEC helps clean energy companies start, scale, and succeed with our unique business, innovation, and policy leadership.

# Net Metering: Driving Distributed Solar Growth in New England

- All six (6) New England states have some form of net metering policy, providing the foundation for the growth of solar in the region.

State	Net Metering Policy	Statute/Regulation	Notes
Connecticut	Net Metering	Old: Ch. 283, §16-243h New: P.A. 18-50	<i>NM statute modified in 2018.</i>
Maine	Net Energy Billing	35-A M.R.S.A. §3209-A PUC Rule Ch. 313	<i>Jan. '17 PUC ruling imposed changes</i>
Massachusetts	Net Metering	MGL Ch. 164 §138-140 220 CMR 18.00	<i>Multiple DPU dockets on NM+ES</i>
New Hampshire	Net Metering	RSA 362-A:9	<i>2017 PUC ruling in DE 16-576</i>
Rhode Island	Net Metering	Chapter 39-26.4	<i>PUC docket on NM+ES expected</i>
Vermont	Net-Metering	30 V.S.A. § 8010 PUC Rule 5.100	<i>Revised PUC rule in 2017</i>

# Where does storage fit in?

- Energy Offices and PUCs began to take a close look at net metering and energy storage starting in 2017.
  - Massachusetts
    - Tesla residential petition in DPU 17-105
    - Wider net metering+storage inquiry in DPU 17-146
    - SMART program tariff proceeding in DPU 17-140
  - Rhode Island
    - Tesla/Sunrun residential petition in PUC 4743
    - Wider net metering+storage inquiry expected at PUC soon
- Other activity:
  - VT: GMP's Bring Your Own Device (BYOD) pilot
  - NH: Liberty Utilities residential battery proposal
  - CT: new tariff/NM program considering role of storage.

# Residential Solar+Storage Gets the Ball Rolling

- Massachusetts DPU 17-105
  - Tesla petition seeks emergency declaratory relief for residential net metering+storage in May 2017.
    - Spurred by National Grid notice indicating that solar facilities paired with ES would be not be eligible to receive net metering services.
    - Limited to: <60 kW, NM-charging only, and no ES export.
  - DPU issues favorable advisory ruling in Sep. 2017
- Rhode Island PUC 4743
  - Tesla/Sunrun file similar petition in RI in Sep. 2017.
  - PUC rules favorably in Dec. 2017
    - Eligibility affirmed for: <25kW, NM-charging only, no TOU.
  - PUC indicated intent to open broader net metering+storage inquiry soon.

# In the spotlight: MA DPU 17-146

- Massachusetts DPU opened an in-depth inquiry into NM+ES technical considerations in DPU 17-146.
- Topics raised by DPU and addressed by commenters:
  - Foundational questions: should renewable facilities paired with storage even be able to net meter?
  - ISO-NE energy and capacity market participation.
  - NM Integrity: safeguarding against “gaming and manipulation” of the NM rules and regulations.
  - What charging restrictions are needed for the ESS?
  - What export restrictions are needed for the ESS?
  - How to ensure & enforce compliance?
  - Implications for the net metering caps.



# Should net metering facilities paired with storage be able to net meter?

- *What the clean energy stakeholders said:* Yes, a broad range of NM+ESS pairings should be eligible to net meter.

*"There is no rationale or legal basis to suggest that the presence of a co-located energy storage system should make an otherwise net metering-eligible facility ineligible."*

*"The net metering statute speaks only to the sources of energy from which net metering facilities must create electricity (i.e., the sun, the wind, etc.). The statute does not in any way limit the eligibility of these facilities based on the presence of other electrical equipment behind the same meter."*

*"the legislature's silence ... reflects the proper interpretation of energy storage as an enabling technology, not a fuel source or generating resource that would or would not be eligible for net metering on its own."*

# What type of NM+ESS configurations should be allowed?

- *What the clean energy stakeholders said:* DPU should affirm eligibility for 4 acceptable configurations:

		Exports from Storage	
		Not Allowed	Allowed
Charging	NEM-only	1 Onsite NEM	2 NEM+Exports
	NEM & Grid	3 Non-Export	4 Net Generation Output Meter

# NM+ESS configurations and architectures

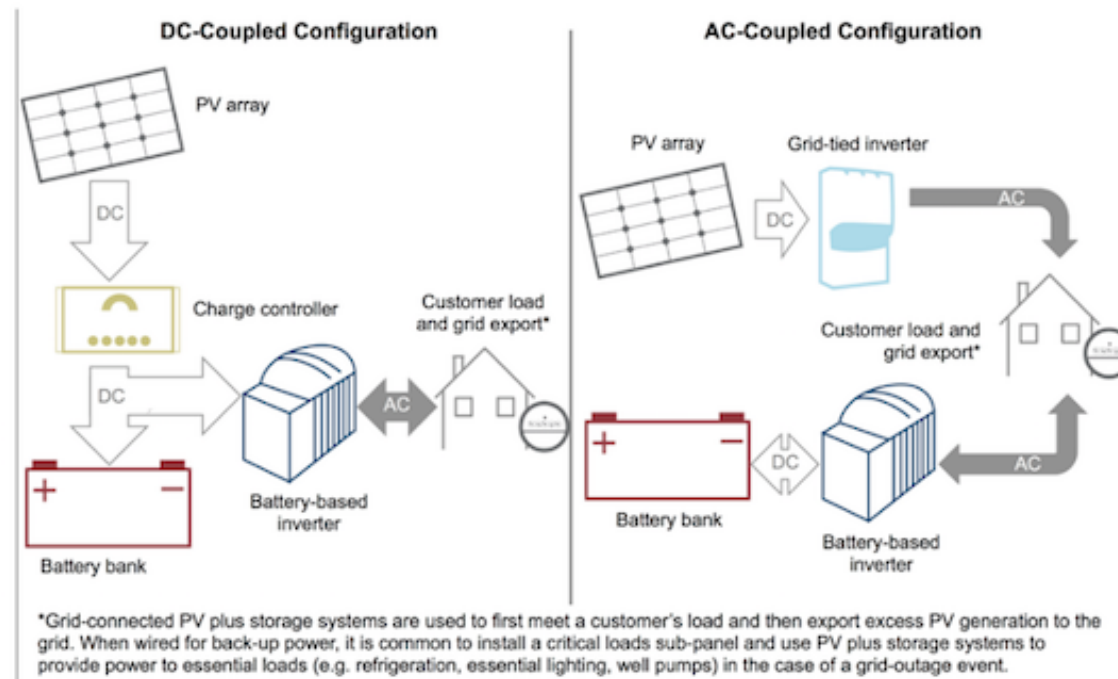


Figure 1. Modeled DC- and AC-coupled system configurations (simplified for illustrative purposes)

# Four Scenarios: How to Ensure Integrity of Crediting

- Clean energy stakeholders proposed reliable safeguards against gaming and manipulation for all 4 scenarios:
  - **1 – Onsite NEM:** no additional monitoring/verification equipment needed (~Tesla petition, but up to 2 MW).
  - **2 – NEM+Exports:** NM charging only via DC-coupling, or AC metering to show charging occurs only during solar production.
  - **3 – Non-Export:** Hardware (e.g., non-export relay) and software options (e.g., inverter/controller settings) acceptable, documented in ISA. *Modest additional cost.*
  - **4 – Net Generation Output Meter:** NGOM data and data from export at bidirectional meter used to calculate appropriate net metering credit. The net metering credit is the lower of the two readings. *Highest cost.*

# DOER Endorses Four Scenarios

- In written comments and technical session remarks from Commissioner Judson (right), DOER pushed for broadest possible flexibility for pairing ESS with NEM (with technical controls in place), specifically supporting the four scenarios we called for.
- DOER underscored benefits and rationale for DOER's inclusion of a storage adder in the SMART program.

## Commissioner Judith Judson Talking Points DPU 17-146 Storage/Net Metering Technical Conference

1/31/2018

### Technical Conference Speaking Introduction

Good Morning, I'm Judith Judson, Commissioner of the Department of Energy Resources, and I am joined here by Will Lauwers our Director of Emerging Technology, and Mike Judge our Director of Renewables.

Thank you, Chairwoman O'Connor, Commissioner Hayden, Commissioner Fraser, Madam Hearing Officer Rubin, and Department Staff, for providing the opportunity and forum to discuss technical solutions to safeguard against gaming and manipulation of the net metering rules and regulations while allowing operational flexibility for the pairing of net metering facilities with energy storage systems.

As identified in the DOER's *State of Charge* report, and as reflected by the Baker-Polito Administration's support for incorporating energy storage into its grant programs and policy initiatives, energy storage systems have the potential to provide a range of benefits to the electric grid and ratepayers, including the ability to reduce peak demand by storing onsite energy for use during peak hours, increasing resiliency by enabling distributed generation resources to island, alleviating reverse power flows on saturated circuits, and reducing reliability issues associated with intermittency. The value of pairing an energy storage system with a distributed solar generator led the DOER to include an adder for energy storage in our new solar incentive SMART program regulations. Pairing a solar net metering facility with storage, allows excess solar generation during the day to be stored for later use by the on-site load thereby reducing the amount of energy exported to the grid and lowering the amount of the net metering credits paid by all ratepayers.

In November, DOER submitted initial and reply comments in this proceeding wherein we recommended the broadest possible flexibility for an energy storage system to be paired with an eligible net metering facility; provided, it has the technical controls in place to ensure that net metering credits will only be provided for the net generation of the eligible net metering facility. Specifically, DOER supported four configurations for pairing storage with net metering facilities, along with technical solutions to safeguard against gaming or manipulation for each of the four configurations.

### A. Four Configurations Overview

1 [Onsite NEM]. The first configuration supported by DOER is where an energy storage system only charges from the net metering facility and does not export to the grid. This configuration is essentially the same as the configuration in the Tesla 17-105 docket. However, we note, that in that docket it only applied to facilities under to 60kW. As an initial matter, DOER recommends this configuration be available to all sizes of eligible net metering facilities.

In this configuration, appropriate safeguards can be achieved by the facility having both charge and export controls typically found within modern off-the shelf inverters. The energy storage's inverter can be set to a "Self Consumption" mode and the export limitation can be set to "zero". Both these settings are standard features of today's inverters.<sup>1</sup>

<sup>1</sup> Today there are UL-1741 SA compliant inverters that have these capabilities; ongoing IEEE-1547 revision will ensure all UL-1741 tested inverters have the charge and export control capabilities in the future.



# Who should own the capacity rights of NM and ES systems?

- *What the clean energy stakeholders said:* The capacity market rights of a co-located energy storage system should be excluded from any transfer of NM facility capacity rights to utilities/ratepayers.
  - Issue dates back to unique development of MA NM program, starting with DPU Order 09-03-A.

*"Irrespective of utilities' rights and obligations regarding the capacity of a net metering facility, no sound justification exists for suggesting that the same treatment should extend to the capacity of a customer's co-located energy storage system."*

*"Nothing about [NM+ESS] pairings ... creates a situation where the energy storage system is itself acting as a net metering generator that would potentially be required to give up its capacity or ancillary service rights."*

# DPU 17-146: Current Status

- Stakeholders continue to await a series of orders from the DPU with bearing on the participation of energy storage under the net metering and SMART programs:
  - 17-146 Phase 1 – NEM+Storage rules.
  - 17-140 – SMART Tariff proceeding.
  - 17-146 Phase 2 – Capacity rights of NEM facilities.
- DPU orders expected imminently, by mid-September (originally expected as early as June).

# Takeaways & Principles for NEM+Storage in Other States

- Affirm rules for co-located energy storage systems to provide certainty for major solar+storage use-cases, unlock deployment opportunities.
- Allow a wide range of charging & export configurations with appropriate rules to preserve critical operational flexibility and optionality.
- Ensure that storage and NM capacity rights reside with customer/owner to avoid complications and market uncertainty.
- Provide rules for retrofits of existing NM facilities to promote installations boosting yield from existing fleet.
- Preserve and create new TOU rate offerings and move expeditiously towards AMF deployment.
- Be cognizant of how alternative NM/tariff structures will affect the value proposition and benefits of storage.

# Near-term opportunities in the Northeast

- Rhode Island
  - Follow on docket to 4743– NEM+Storage rules for larger and more sophisticated pairings of NEM+Storage.
    - *No immediate timeline; expected soon.*
- Connecticut
  - Considering incorporation of energy storage (potentially through energy storage “adder”) into successor NM and incentive program design.
  - Preliminary docket: PURA 18-06-15.
  - Procurement plan and tariff docket: PURA 18-08-33.
    - *Program rules will be in development over next 12-18 months.*

- Questions, clarifications?



# Thank you!

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# Upcoming Webinars

## **Offshore Wind Plus Energy Storage**

Monday, October 5

## **Supporting Housing and Mobility with Resilient Power in Boulder**

Thursday, October 11

## **Energy Storage in the Clean Peak Standard**

Thursday, November 8

Details: [www.cesa.org/webinars](http://www.cesa.org/webinars)