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Group Net Metering in New Hampshire:
How it Works and CPCNH Involvement

COMMUNITY POWER COALITION OF NEW HAMPSHIRE

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Outline

- "Group Net Metering" is how New Hampshire does "Community Solar"
- Group Net Metering 101
  - Group Net Metering requires a "Host" and one or more "Members" of the group
  - The capacity of the Host's project governs both compensation and group composition
- Typical arrangement between Host and Members
  - Numerical example
- CPCNH involvement with Group Net Metering
  - Poverty Plains Solar project in Warner, NH
  - CPCNH's *Annual Solicitation Program to Increase Renewable Energy* (ASPIRE)

“Group Net Metering” is how New Hampshire currently does “Community Solar”

- “Community Solar” is one of several generic terms (another being “Shared Solar”) used throughout the United States to describe an arrangement through which multiple ratepayers share the output of a relatively large and often off-site solar array
- The general idea is to provide renters and others for whom on-site solar is not a viable option with a way to support solar and capture some of its economic benefits
- Community Solar programs are often extensions of a state’s net metering program
- This is the case in New Hampshire, where Community Solar is implemented through what is known as “Group Net Metering”
  - Other states with similar programs sometimes call this “Virtual Net Metering” because the solar array is not tied directly to subscriber loads, and so only “virtually” offsets those loads

Group Net Metering 101

Group Net Metering requires a “Group Host” and one or more “Group Members”

- The “Group Host” is the customer-generator and typically owns the project
  - The Host’s project can either be “behind the meter” of an on-site/native load (sharing any excess generation with the rest of the group) or else solely an exporter (net of any minimal “station service”—e.g., security lighting and parasitic load of the inverter(s))
  - To be fully compensated for supply, the Host should stay on utility default service
- “Group Members” subscribe to a portion of the generation from the Host’s project
  - Members must be in the same utility service territory as the Host but do not need to be on utility default service—i.e., Members can buy electricity from a competitive supplier or from a community power aggregation (CPA)
  - The combined annual load of all Members must exceed the annual generation from the Host’s project

Group Net Metering 101 (continued)

The capacity of the Host's project governs both compensation and group composition

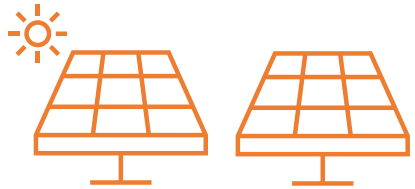
- **≤100 kW_{AC}**
  - NEM credit for exports equals 100% of supply rate + 100% of transmission rate + 25% of distribution rate
  - Members can be any type of customer—residential, commercial, municipal, etc.
- **>100 kW_{AC} to ≤1 MW_{AC}**
  - NEM credit for exports equals 100% of supply rate
  - Members can be any type of customer—residential, commercial, municipal, etc.
- **>1 MW_{AC} to <5 MW_{AC}**
  - NEM credit for exports equals 100% of supply rate
  - Members MUST be governmental loads—e.g., town office buildings, wastewater treatment plants, state or local correctional facilities, public schools, public libraries, court houses, etc.

Typical Arrangement between Host and Members

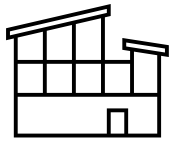
- Host ***needs*** Member load in order to access the net metering credit
- To entice Members to subscribe, the Host shares a portion of the net metering credit
  - 10% of the net metering credit seems to be the going rate in New Hampshire for new solar projects
  - Members do not pay any fees to subscribe
- Member shares are typically proportional to amount of load subscribed…but do not have to be
  - NH provides significant leeway in the contractual arrangement between Host and Members
  - But in some cases there are minimal requirements that must be met (e.g., for LMI-qualifying projects)
- Members are compensated via a check from the Host (under "traditional" group net metering) or directly on their electricity bills via the local distribution utility (under a more-recently added "on-bill crediting" option)

Example: Group Members get 12.5% of 10¢/kWh credit

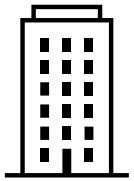
3.25 MW_{AC} PV generates 5,300,000 kWh per Year



Host:
a) Average Annual Load: 11,000 kWh
b) Subscribed Load: 10,000 kWh
c) Share of Total Subscribed Load: 0.18%
d) Share of Net Metering Credit: 87.52% (= 87.5% + c x 12.5%)
e) Annual Compensation: $463,868



Wastewater Treatment Plant:
a) Average Annual Load: 2,780,000 kWh
b) Subscribed Load: 2,500,000 kWh
c) Share of Total Subscribed Load: 44.40%
d) Share of Net Metering Credit: 5.55%
e) Annual Compensation: $29,418



Courthouse:
a) Average Annual Load: 1,786,000 kWh
b) Subscribed Load: 1,600,000 kWh
c) Share of Total Subscribed Load: 28.42%
d) Share of Net Metering Credit: 3.55%
e) Annual Compensation: $18,828

Library:
a) Average Annual Load: 448,000 kWh
b) Subscribed Load: 400,000 kWh
c) Share of Total Subscribed Load: 7.10%
d) Share of Net Metering Credit: 0.89%
e) Annual Compensation: $4,707

Public School (this example includes formulae):
a) Average Annual Load: 670,000 kWh (illustrative assumption)
b) Subscribed Load: 600,000 kWh (= 90% x a)
c) Share of Total Subscribed Load: 10.66% (= b / 5,630,000 kWh)
d) Share of Net Metering Credit: 1.33% (= c x 12.5%)
e) Annual Compensation: $7,060 (= d * 5,300,000 kWh * 10¢/kWh)

Town Office:
a) Average Annual Load: 585,000 kWh
b) Subscribed Load: 520,000 kWh
c) Share of Total Subscribed Load: 9.24%
d) Share of Net Metering Credit: 1.15%
e) Annual Compensation: $6,119

A simpler illustrative numerical example

Municipal Account Type	Annual Subscribed kWh	Annual Bill Credit
Small (e.g., small town office)	10,000	$125
Medium (e.g., municipal complex)	100,000	$1,250
Large (e.g., wastewater treatment plant)	1,000,000	$12,500

- Assumes Eversource supply rate (=net metering credit) is 10 ¢/kWh
- Group Members receive 12.5% of that net metering credit
- Group Member savings = 1.25 ¢/kWh

CPCNH involvement with Group Net Metering

- CPCNH would prefer to support distributed solar projects by compensating them directly for the significant value that they provide as “Load Reducers”
  - Namely: Avoided energy, capacity, ancillary services, and transmission costs; avoided line losses (~6-8%); significant capacity multiplier (~1.4x)
  - But “load settlement” issues current prevent this (we’re trying to fix this)
- Until “load settlement” is fixed, we are seeking opportunities to work within the current system of Group Net Metering, in two ways:
  - The 4.999 MW_{AC} **Poverty Plains Solar** project in Warner, NH (Eversource territory)
  - CPCNH’s ***Annual Solicitation Program to Increase Renewable Energy*** (ASPIRE), which we hope to launch in 2025

Poverty Plains Solar Project in Warner, NH

- 4.999 MW_{AC} on an old, largely cleared gravel pit along I-89 northbound (coordinates are 43.263125, -71.758021)
- Developed and owned by Encore Renewable Energy
- Estimated first-year generation of ~8,800,000 kWh, starting in 2Q26
- **CPCNH is actively seeking Group Members (aka subscribers)!**
  - **Must be governmental loads in Eversource service territory**
  - **Members will get 12.5% of the net metering credit**
  - **Email mark.bolinger@communitypowernh.gov with questions or expressions of interest**
- As part of the arrangement, CPCNH will buy the project's RECs to supply a portion of the renewable content in our electricity products

Poverty Plains Solar site (before)

The solar project will cover an old gravel pit located just off I-89 North between Exits 7 and 8 in Warner, New Hampshire

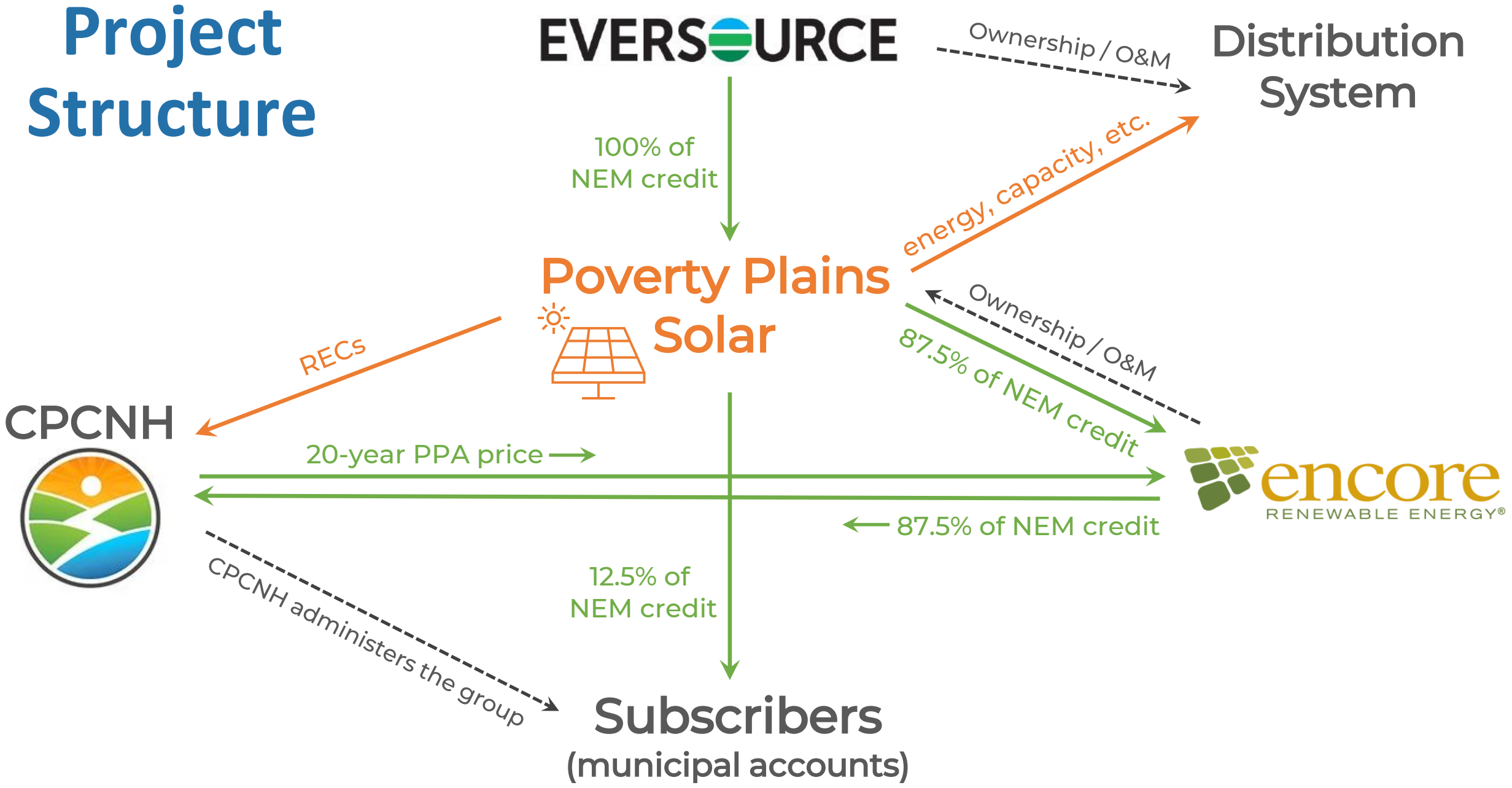
General concept and contract structure

General concept: A 20-year PPA with a Load Reducer that we initially structure as a Group Net Metering arrangement to maximize member value while "load settlement" is still a problem. If/when "load settlement" is fixed, we can easily pivot and restructure.

How it works:

- CPCNH recruits municipal loads in Eversource territory to subscribe to the project by promising them 12.5% of the net metering credit (which equals the default supply rate)
- Once the project is operational, Eversource pays Encore 87.5% of the net metering credit and credits subscriber bills with 12.5% of the net metering credit
- CPCNH pays Encore the difference between the agreed-upon PPA price and 87.5% of the net metering credit (which comes from Eversource)
- **Outcome:** Encore gets its desired stable PPA price, subscribers get significant bill discounts (~1 ¢/kWh), and CPCNH gets competitively priced RECs (see Monte Carlo)

Project Structure



What would this arrangement look like today?

From February-July 2025, Eversource's default supply rate = 8.929 ¢/kWh

- This is also the net metering credit for projects >100 kW in Eversource territory

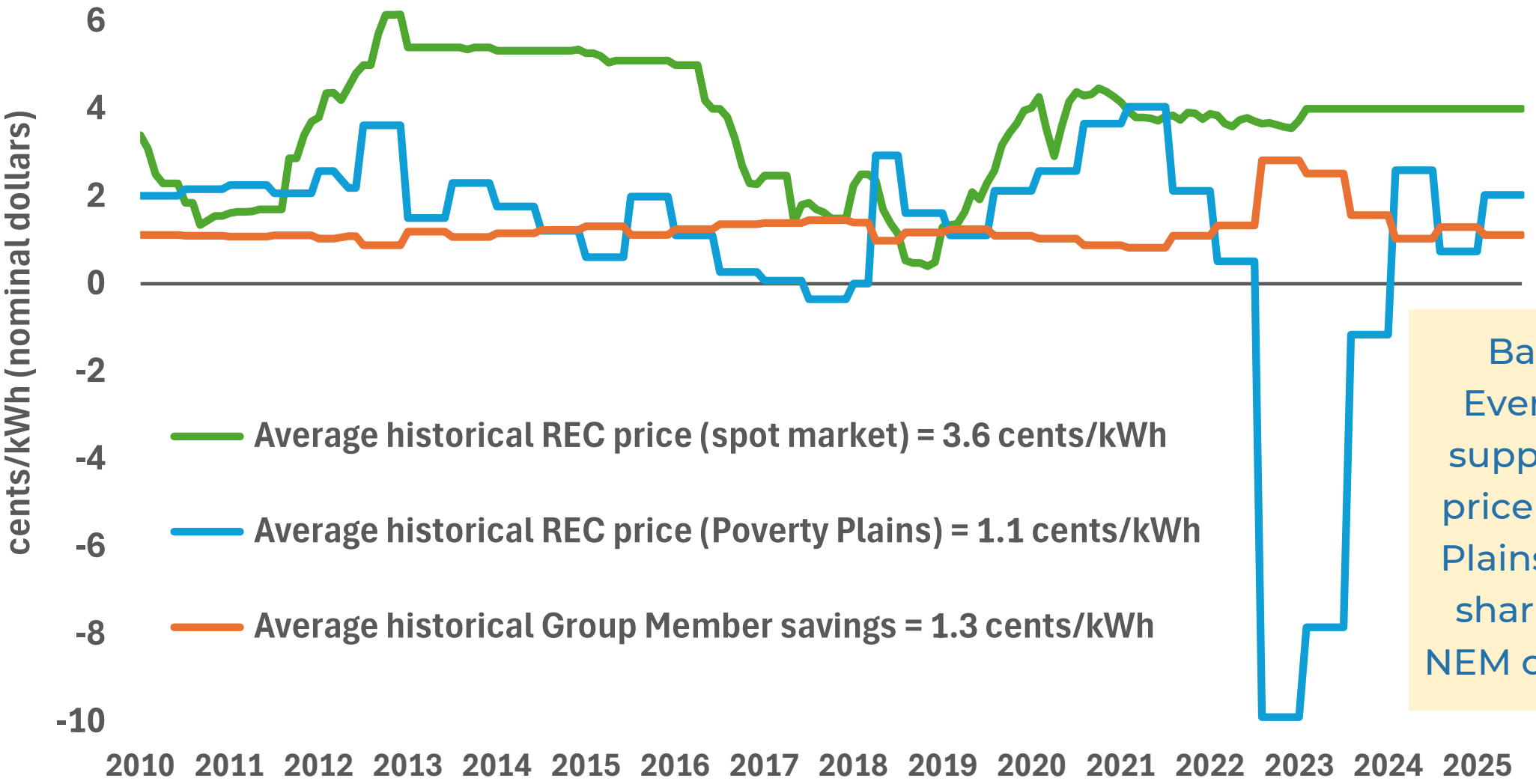
If Poverty Plains were operational today, then through July 2025:

- Eversource would pay the Group Host (Encore) 7.81 ¢/kWh (=87.5% of 8.929 ¢/kWh)
- Eversource would provide bill credits of 1.12 ¢/kWh (=12.5% of 8.929 ¢/kWh) to Group Members
- CPCNH would pay Encore the agreed-upon PPA price less the 7.81 ¢/kWh share of the net metering credit that Encore has retained as Group Host
- CPCNH would take title to ALL of the RECs created by the project

Net effect on each party from today through July 2025:

- Encore earns the agreed-upon PPA price
- Group Members earn bill credits of 1.12 ¢/kWh for pledging their load to the project
- CPCNH buys RECs for much less than the current market price of ~4.0 ¢/kWh

What would this arrangement have looked like historically?



Based on actual Eversource default supply rate and REC price history, Poverty Plains PPA price, and sharing 12.5% of the NEM credit with Group

What might this arrangement look like in the future?

The graphs on the next page show results from Monte Carlo analysis (10,000 trials each) under four different scenarios:

Scenario 1: Assumes that the mean and standard deviation of Eversource default supply rate (=net metering credit) going forward will equal the historical numbers from 01/2010-07/2025 (after excluding the price spike from 08/2022-07/2023)

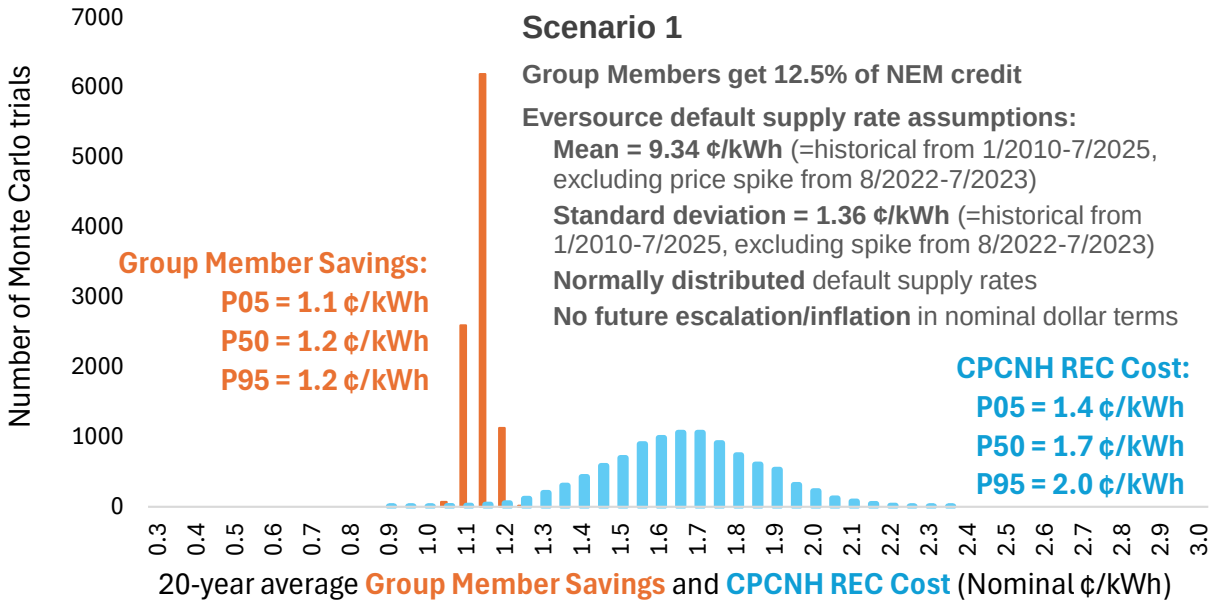
Scenario 2: Same as Scenario 1 but doubles the historical standard deviation

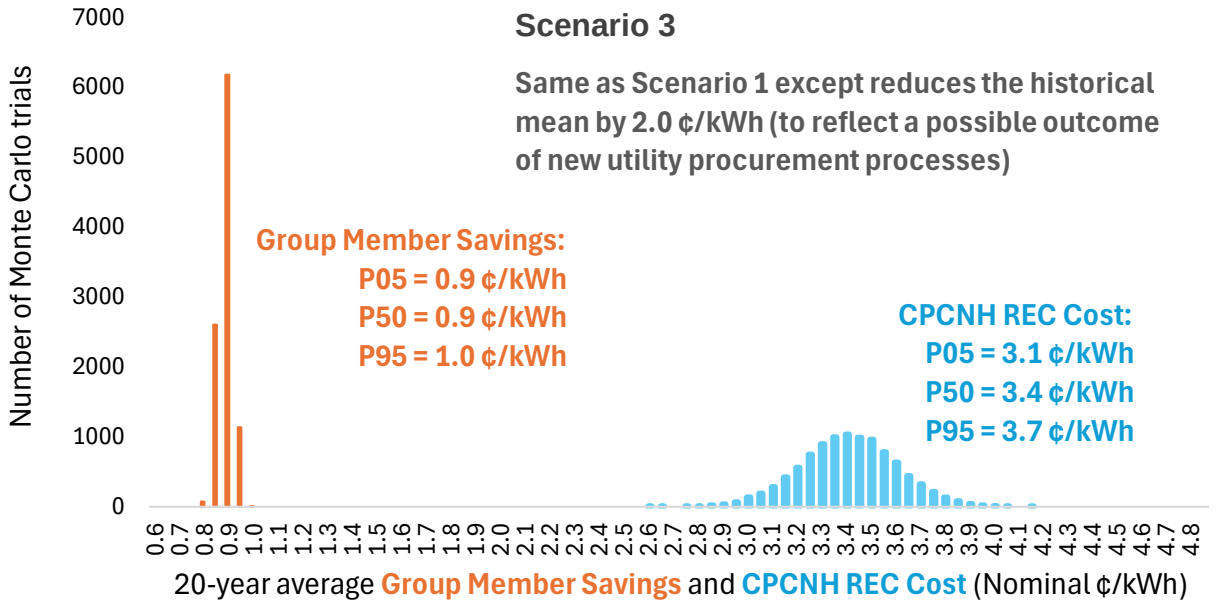
Scenario 3: Same as Scenario 1 but reduces the historical mean by 2.0 ¢/kWh to reflect a possible outcome of new utility procurement processes and PUC-endorsed cost shift

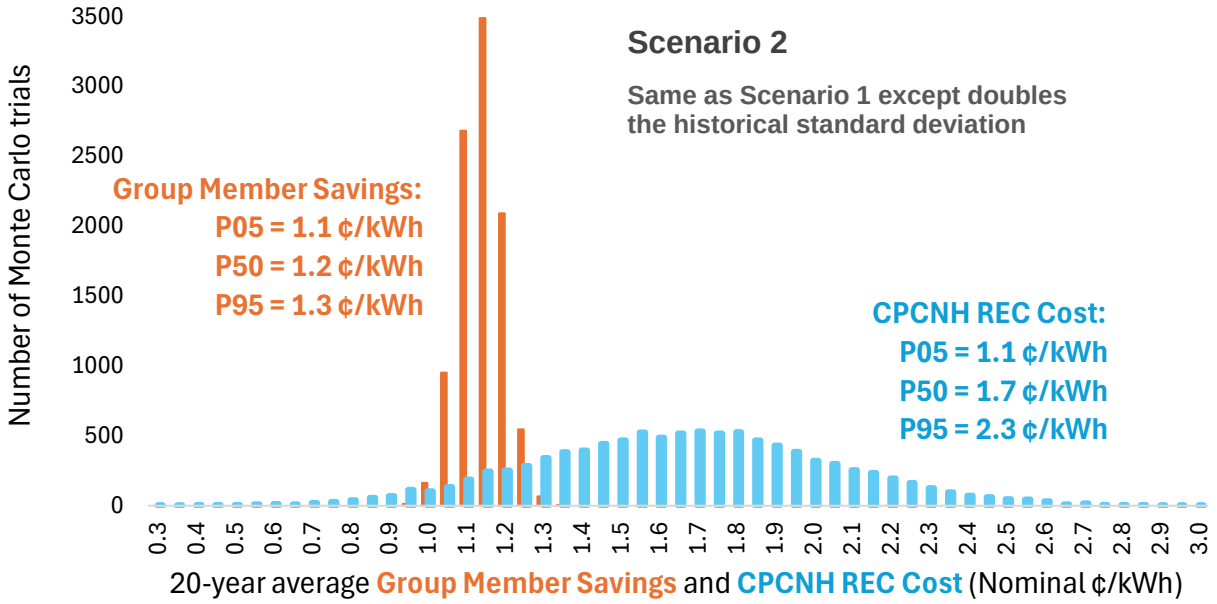
Scenario 4: Same as Scenario 3 but doubles the historical standard deviation

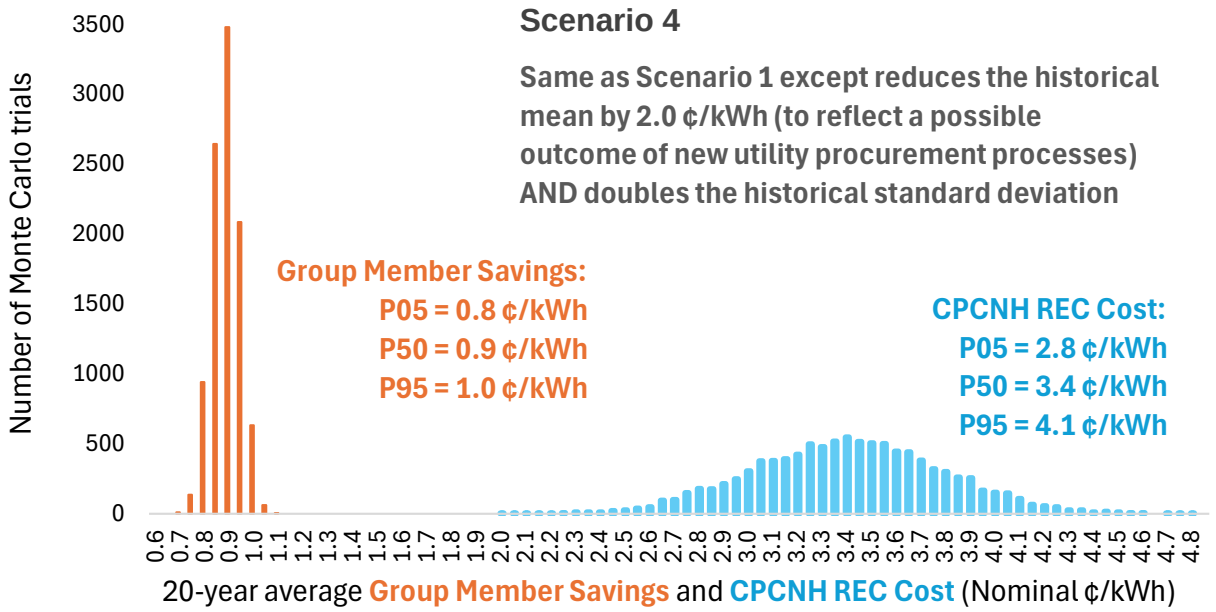
All 4 scenarios share 12.5% of the net metering credit with subscribers and assume that Eversource default supply rates are normally distributed (true historically) and will not escalate (in nominal $) in future years.

Monte Carlo results offering 12.5% of NEM credit









A dozen benefits of this project

- Great site: degraded land (already cleared), member community, interconnection agreement/permits in hand
- Member community (Warner) gets a PILOT agreement plus a bonus payment
- Strong developer: good reputation, financially sound, willing to work with us to maximize value
- Group Members (aka subscribers) get significant bill discounts
- CPCNH gets competitively priced RECs (see Monte Carlo analysis)
- Floating REC price is counter-cyclical—i.e., low when supply rates are high—which provides hedge value
- Portfolio diversification—at present, we are entirely concentrated in short-term instruments
- 100% “additionality”—i.e., this project will not move forward (at least any time soon) without CPCNH
- Flexibility: Can convert from Group Net Metering to other structure mid-stream if that makes more sense
- The Group Net Metering aspect (i.e., the fact that Eversource—not CPCNH—will be responsible for much of Encore’s revenue) helps to mitigate any concerns that Encore might have with CPCNH’s credit
- Even when structured as Group Net Metering, this project is still a Load Reducer that provides benefits to CPCNH (and other suppliers) through the socialization of reduced losses from “unaccounted-for energy”
  - We estimate that CPCNH will benefit by >1 ¢/kWh…but have NOT factored this into the Monte Carlo analysis (we consider it gravy)
- It is a relatively small project and we are learning valuable lessons (e.g., for ASPIRE) by working through this

Frequently Asked Questions (1)

- What happens if CPCNH can't fully subscribe the project initially?
  - We can get out of the PPA without penalty prior to the developer commencing construction.
- What happens if the project comes online but then one or more subscribers drop out?
  - The Group Net Metering Membership Agreement requires subscribers to provide 12 months' notice before dropping out or otherwise pay an early termination penalty equal to ~1 year of bill credits.
  - The 12-month notice gives CPCNH time to find a replacement subscriber.
  - Any unsubscribed generation is compensated at Eversource's "avoided cost" rate, which is lower than the default service rate (i.e., net metering credit), but still provides some compensation.
  - Subscribers must be governmental accounts, which tend to be more stable than commercial/residential.
  - Offering subscribers 12.5% of the net metering credit (rather than 10%) will hopefully help with retention.
- What happens if most subscribers (group members) depart, without replacements?
  - CPCNH and the Host can terminate the Group Net Metering arrangement with 90 days' notice and instead either treat the project like the Load Reducer that it is or else ask it to register with ISO-NE as a generator
  - Any remaining subscribers would stop receiving bill credits (no other implications) and would then be free to seek out and pursue other group net metering arrangements.

Frequently Asked Questions (2)

- What happens if the project generates significantly less energy than estimated?
  - Subscribers will earn fewer dollars and CPCNH will buy fewer RECs—no other implications
  - Article IX of the PPA: Seller represents and warrants that the project will generate at least 80% of Projected Energy (in Exhibit F) over any two consecutive years; failure to do so is an event of default
  - Article XI of the PPA: Seller also defaults if it fails to deliver energy for 180 consecutive days or 240 non-consecutive days in any rolling 2-year period
- Isn't net metering (and Group Net Metering) scheduled to sunset at the end of 2040?
  - Yes. If we have not already switched from Group Net Metering to some other structure before the end of 2040, we will do so at that time. This potentially leaves the last 5-6 years of the PPA exposed, but other structures are possible and will provide some value (exactly how much is hard is hard to predict now).
- Is there any downside for subscribers?
  - Subscribers will need to coordinate any plans to add new onsite generation or to conduct deep energy retrofits, as those types of projects will reduce the load available to the Group.
  - Given that these types of projects typically involve advance planning, in many cases subscribers will have, and be able to provide, 12 months' notice of any such impending projects.

How to sign up?

- Start by compiling information on your eligible municipal loads
  - For example: average annual load (kWh), existence of (or any plans for) on-site generation, participation in other group net metering projects, etc.
- Reach out to discuss potential enrollment!
  - Email me at mark.bolinger@communitypowernh.gov to set up a time
- Review our Group Net Metering Membership Agreement
  - Available at https://www.cpcnh.org/group-net-metering
- Talk to your local officials/decision-makers to see what they need
- Refer to our Group Net Metering / Poverty Plains website
  - https://www.cpcnh.org/group-net-metering

CPCNH's *Annual Solicitation Program to Increase Renewable Energy* (ASPIRE)

- Goal is to support new renewable generation in NH by offering long-term contracts for energy and/or RECs
  - Targeting 20 MW per year, with a mid-term goal of 100 MW under contract by 2030
  - Hoping to issue our first RFP for the first 20 MW in 2025 (and then annually thereafter)
- We expect many of the projects that respond to these RFPs to be Group Net Metering projects that might still need more Members
  - Perhaps spread across all four utility service territories: Eversource, Liberty, Unitil, NHEC
  - Could be ≤ 1 MW_{AC} (open to any type of customer) and 1-5 MW_{AC} (open to govt accounts only)
- **If you are potentially interested in subscribing to one of these projects, please let us know!**

COMMUNITY POWER COALITION OF NEW HAMPSHIRE

For communities, by communities.

Thank you! For more information, contact:

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