

# NEM Aggregation Tariff Overview

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# Agenda

**Overview**

**Eligibility**

**Interconnection**

**Billing**

**Other programs and tariffs**

**Resources**

**Q & A**



# NEM Aggregation Overview



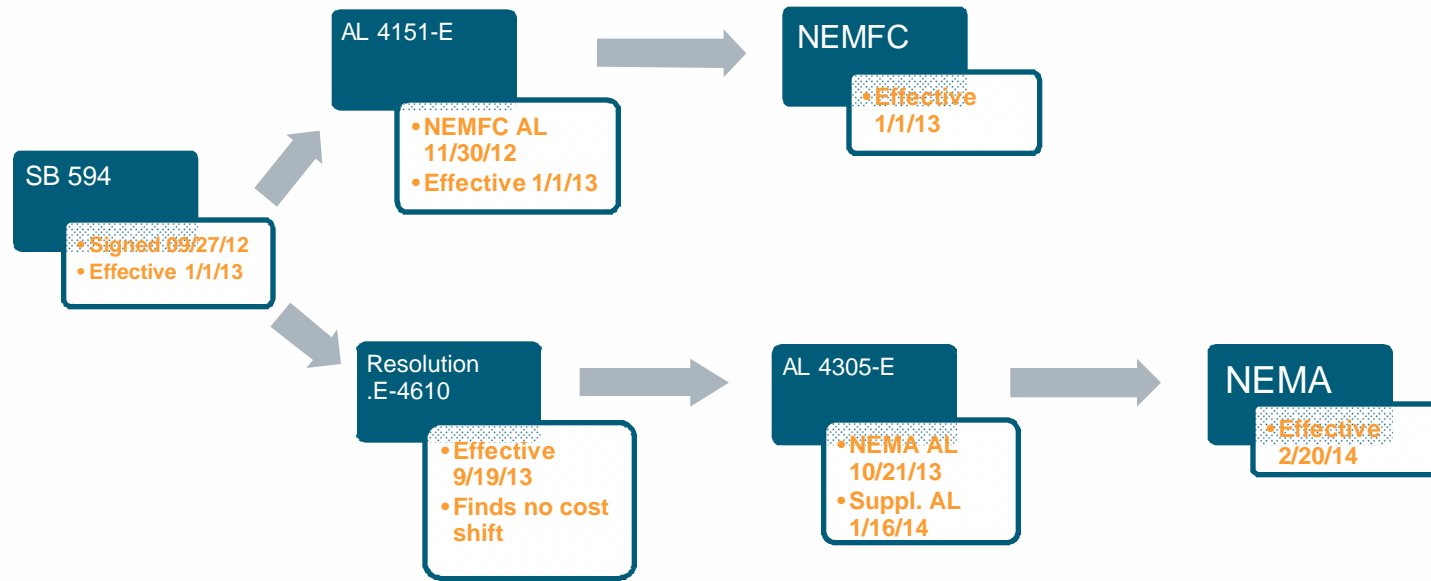
## NEMA: Overview

SB 594 allows a single customer with multiple meters on the same property, or on properties adjacent or contiguous to it, to meet their energy needs with a renewable generator sized to the aggregate load of all eligible meters under Net Energy Metering (NEM)

SB 594 led to the addition of NEMA (pronounced NEM “A”) load aggregation provision in Rate Schedule NEM under Special Condition 8



# NEMA: Timeline





## **NEMA: Potential Customers**

**Agricultural** – with multiple accounts on their properties

**Residential** – EV & Solar system separately metered

**Apartments** – NEMV SDP is too restrictive

**Shopping malls** – NEMV SDP is too restrictive

**Water districts**



# NEMA: Technologies

Eligible renewable generators include...

- **Solar photovoltaic**
- **Solar thermal**
- **Biomass**
- **Wind**
- **Geothermal**
- **Fuel cells using renewable fuels**
- **Storage (batteries)**
- **Digester gas**
- **Municipal solid waste conversion**
- **Landfill gas**
- **Ocean wave, ocean thermal, tidal current**
- **Small hydroelectric generation**



# NEMA: Definitions

**Generating Account** serves the renewable generator and may or may not have load other than that of the generator

- There can be only one Generating Account per Arrangement
- Multiple technologies can serve the Generating Account

**Aggregated Account** is any eligible load account elected by the customer for load aggregation

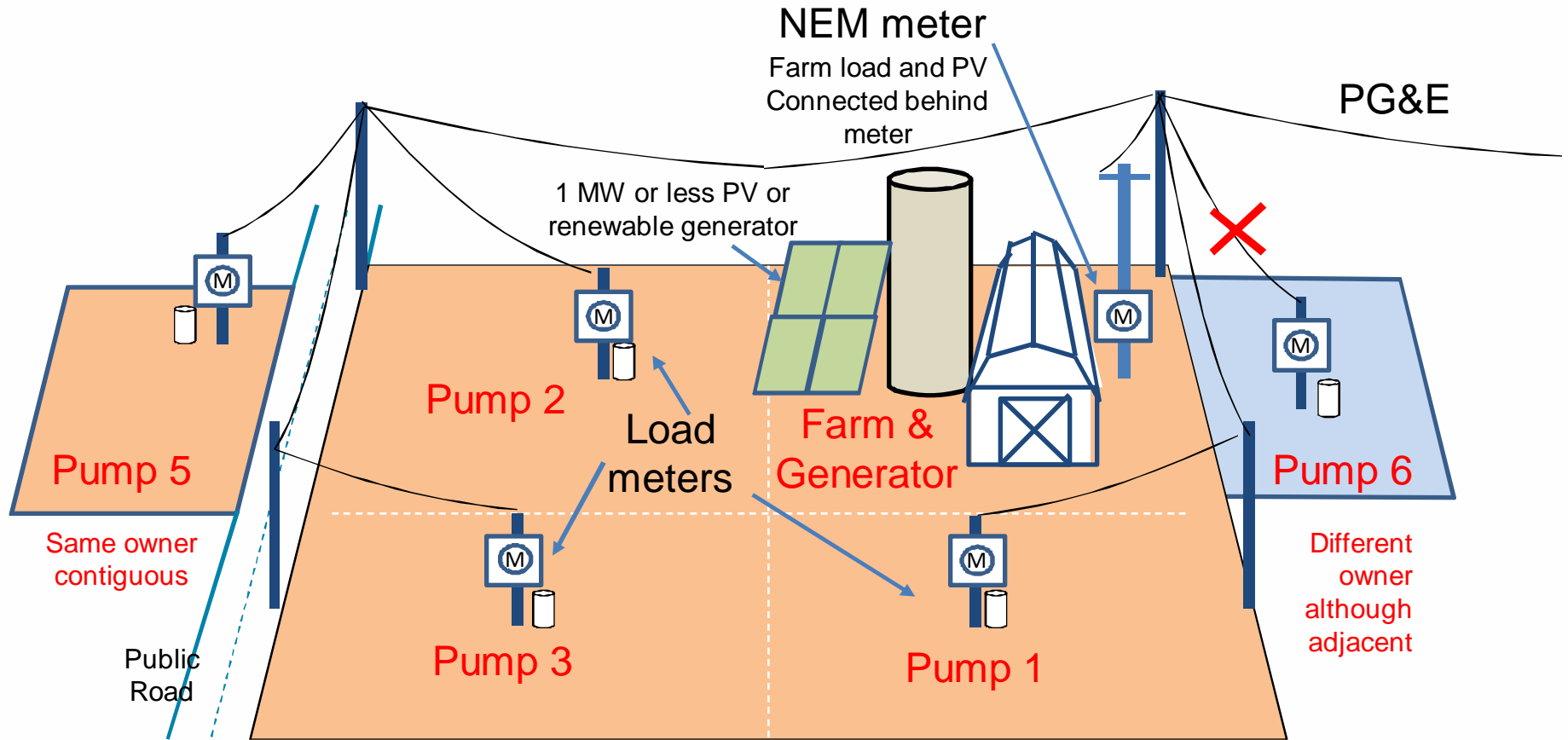
- Maybe a different rate class and under a different OAS

**Arrangement** includes all of the eligible Aggregated Accounts that would benefit from the renewable generator, including the Generating Account

- All accounts in the Arrangement are billed together under NEMA



# NEMA: Big Picture

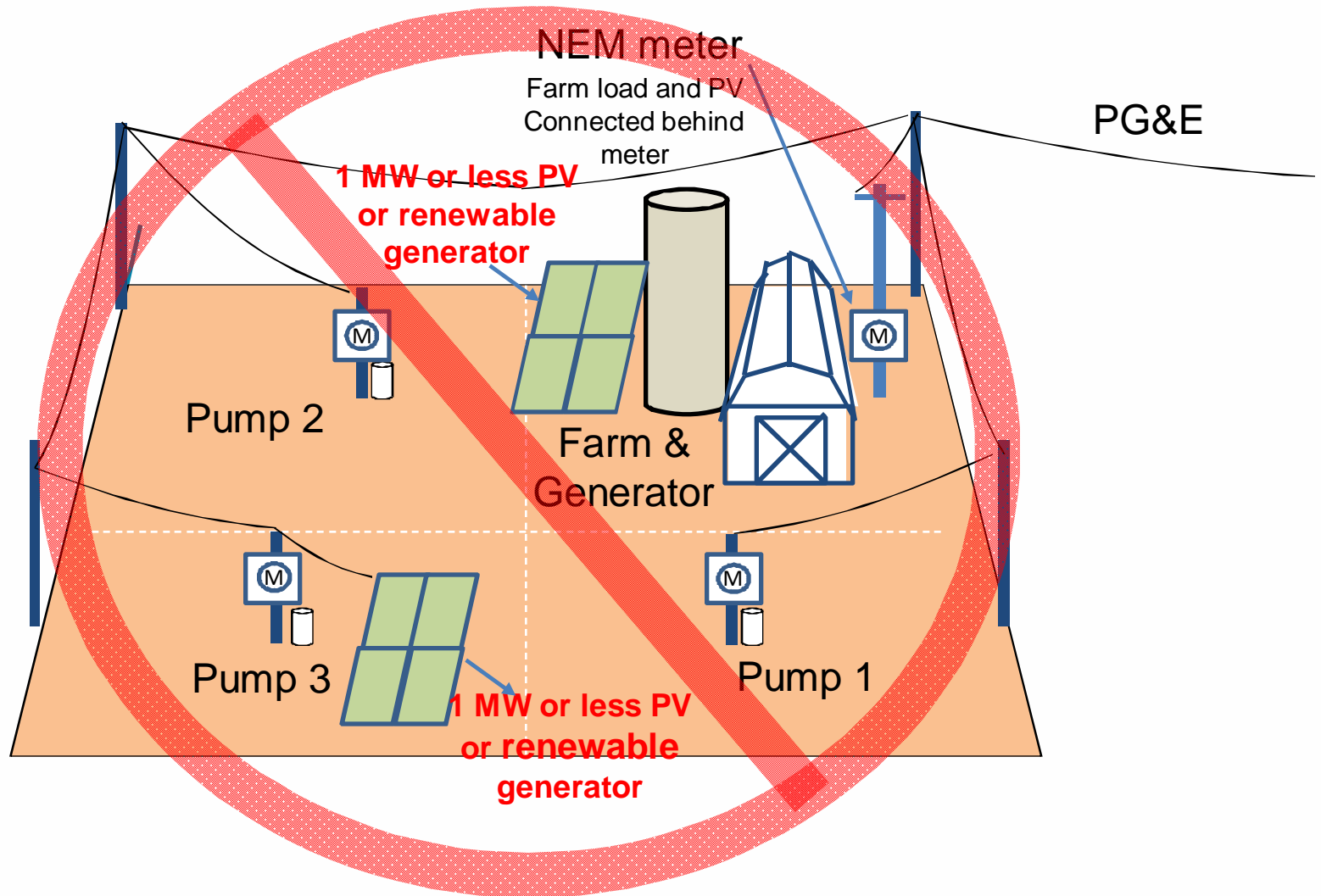


(A) Aggregated accounts are located on the property where the Eligible Renewable Electrical Generation Facility is located or on property adjacent or contiguous to that property as long as those properties are solely owned, leased, or rented by the Eligible Renewable Customer-Generator.

(F) For purposes of this paragraph, parcels that are divided by a street, highway, or public thoroughfare are considered contiguous, provided they are otherwise contiguous and under the same ownership.



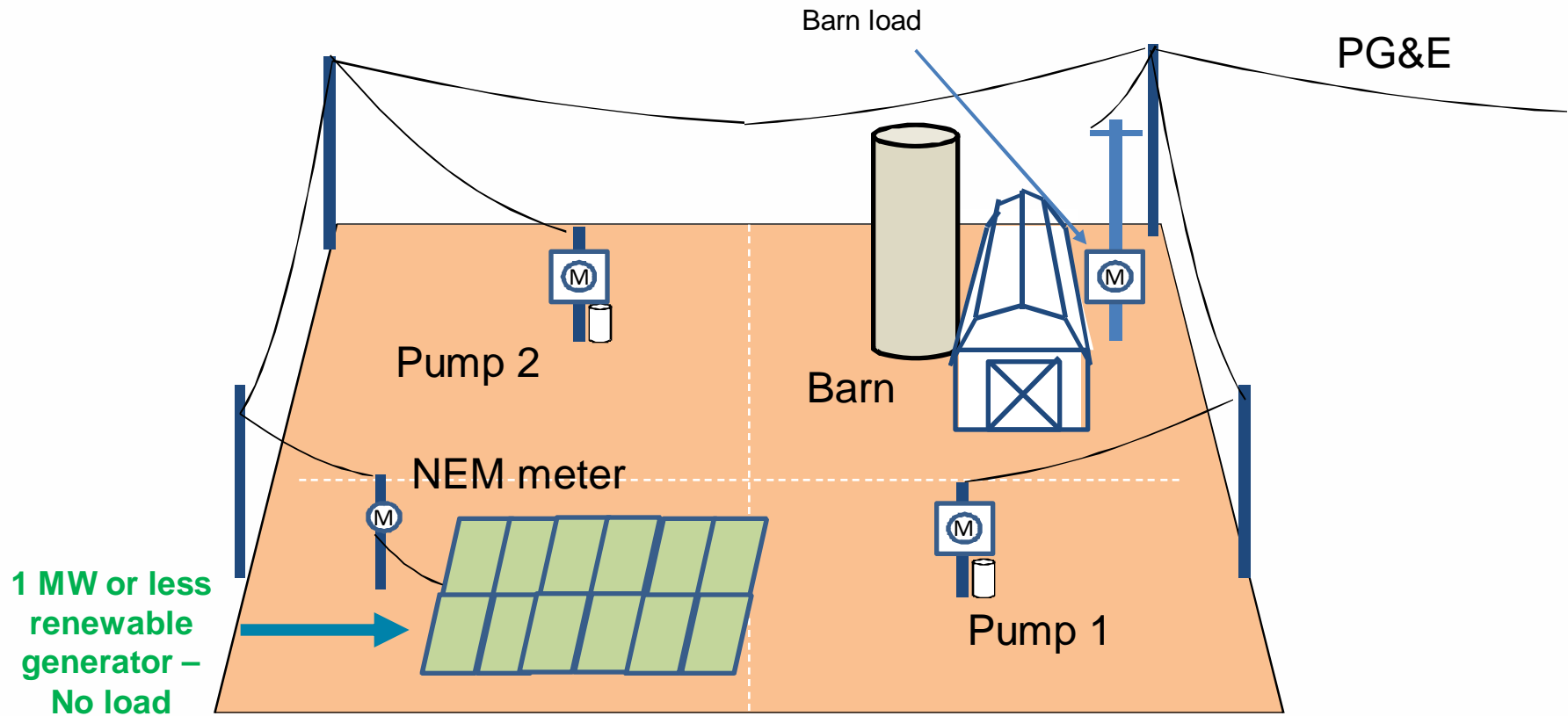
# NEMA: Single Generating Account



An arrangement can only have one generating account. This would have to be split into two arrangements.



# NEMA: Greenfield Generating Account



An arrangement can have the generating account as a no load account. This can also be done with a second service on a parcel where there is an existing load account. The generating account will need to be on a general service rate (e.g. A1, A6, A10, E19, E20)



# NEMA Eligibility



# NEMA: Eligibility Requirements

**Size** – up to 1 MW and sized to the aggregated total annual load (kWh) of the eligible accounts that are ...

**Property** – located on the property with the generator or properties adjacent or contiguous to it as long as ...

**Ownership** – all properties are solely owned, leased, or rented by the customer and...

**Accounts** – all accounts are under the same customer of record

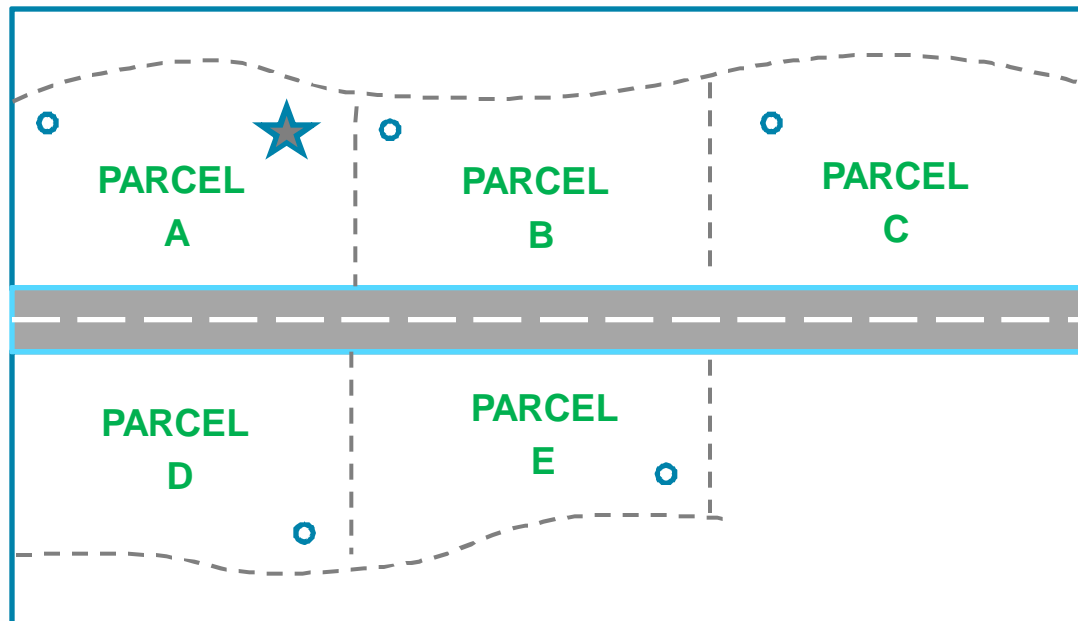


# NEMA: Adjacent or Contiguous

**Adjacent or contiguous** under this tariff allows load aggregation for customer accounts that are located:

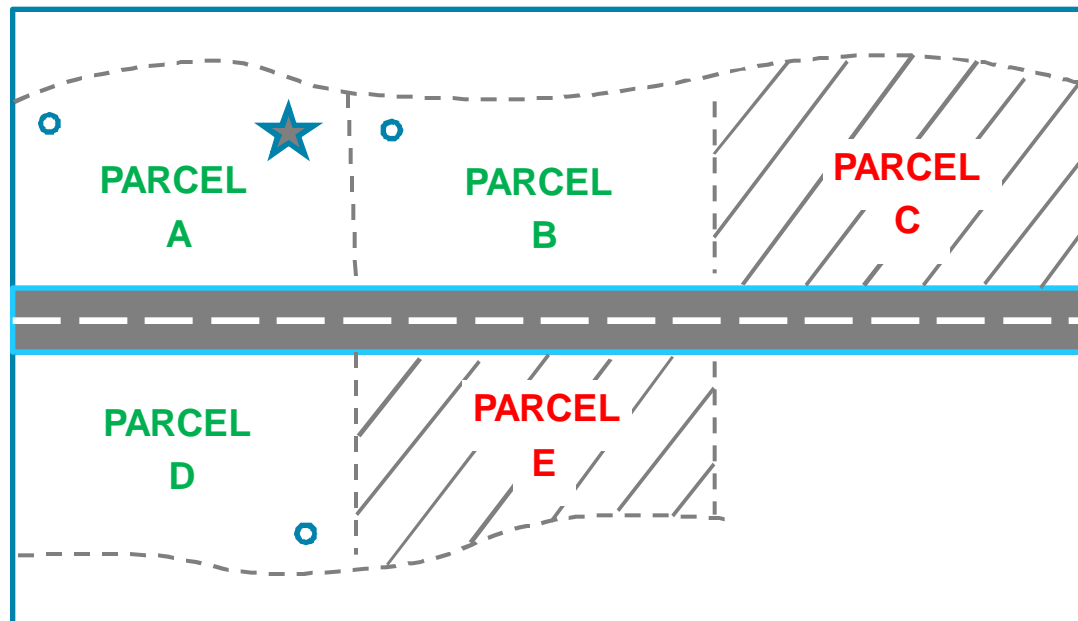
- On the property where the generator is located
- On a property touching the property with the generator
- On a property that is touching a property eligible to be in the aggregation arrangement
- On a property divided by a street, highway, or public thoroughfare are considered contiguous, provided they are otherwise contiguous
- ...where each property is under the same sole ownership or control

# NEMA: Example 1



- ★ = Renewable Electrical Generation Facility
- = Meter
- = Solely Owned, Leased or Rented
- = Eligible Parcel
- ▨ = Not Solely Owned, Leased or Rented
- = Ineligible Parcel

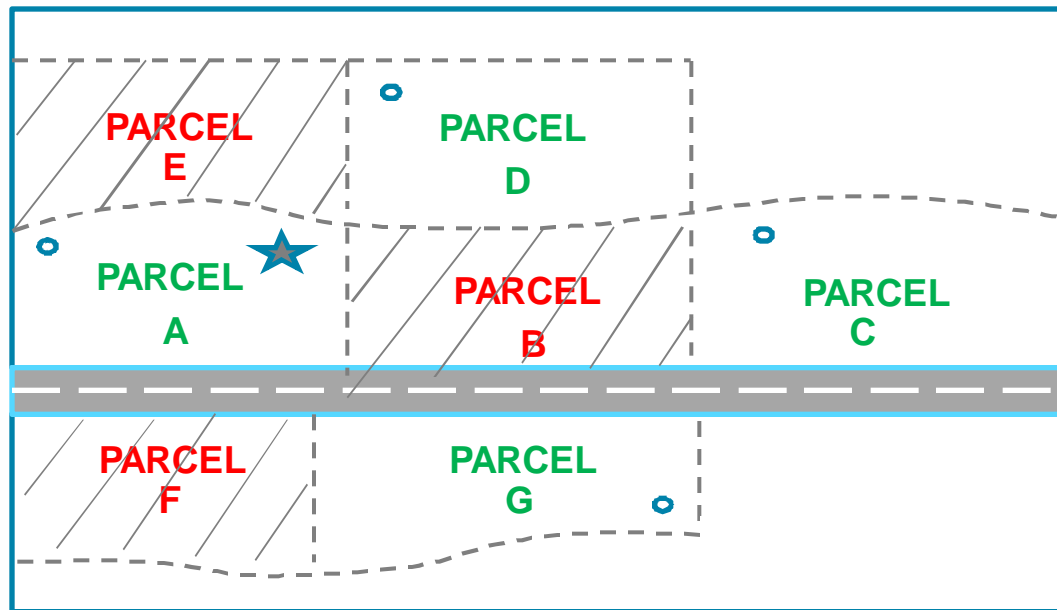
# NEMA: Example 2









- |  |  |  |                     |
|--|--|--|---------------------|
|  | = Renewable Electrical Generation Facility |  | = Meter             |
|  | = Solely Owned, Leased or Rented           |  | = Eligible Parcel   |
|  | = Not Solely Owned, Leased or Rented       |  | = Ineligible Parcel |

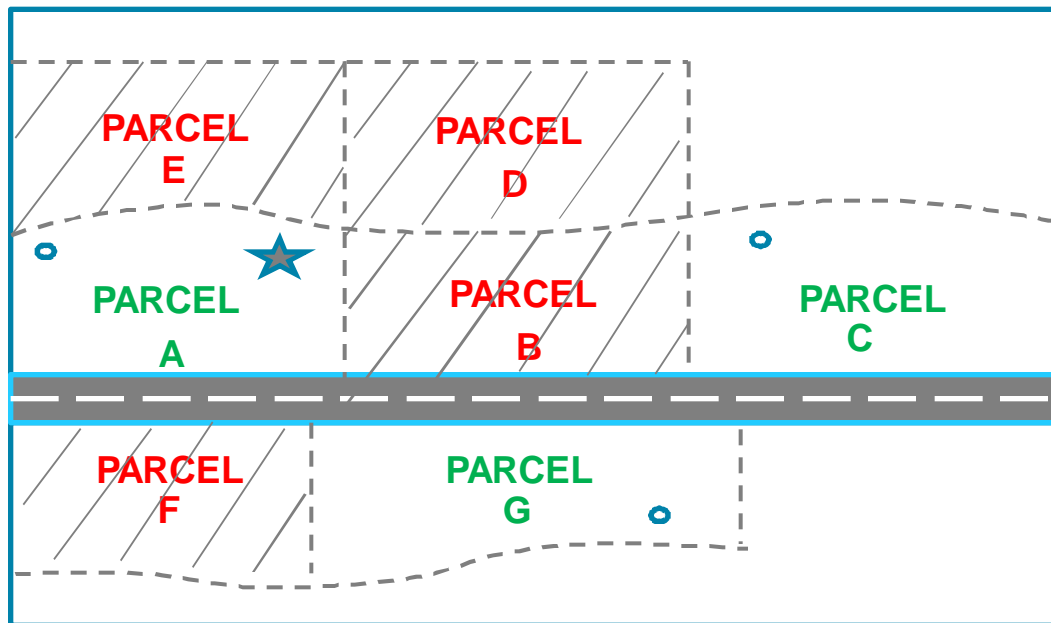


# NEMA: Example 3



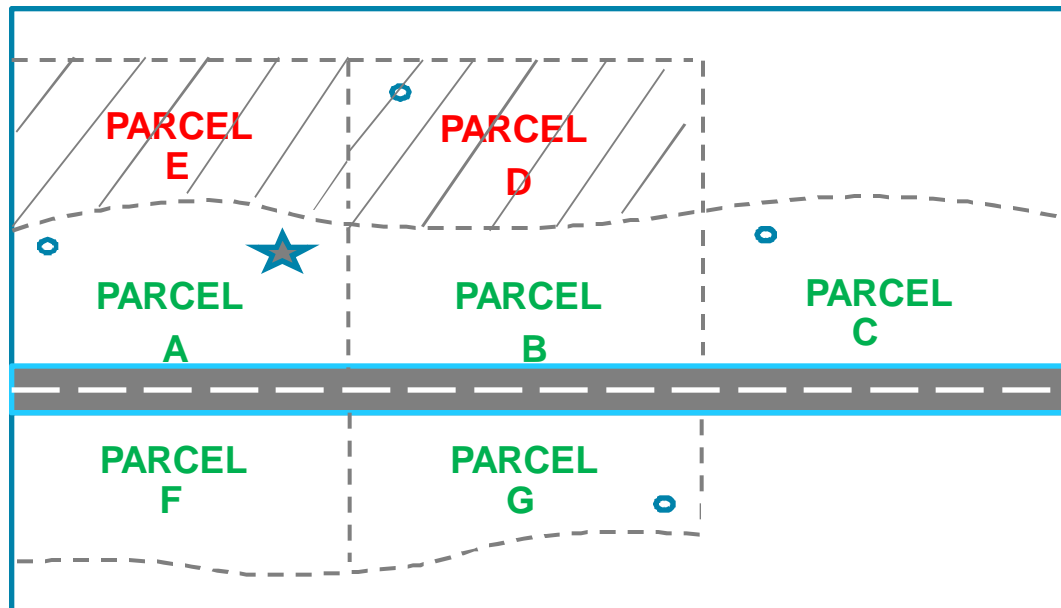
-  = Renewable Electrical Generation Facility
-  = Meter
-  = Solely Owned, Leased or Rented
-  = Eligible Parcel
-  = Not Solely Owned, Leased or Rented
-  = Ineligible Parcel







# NEMA: Example 4



- ★ = Renewable Electrical Generation Facility
- = Meter
- = Solely Owned, Leased or Rented
- = Eligible Parcel
- ▨ = Not Solely Owned, Leased or Rented
- = Ineligible Parcel

# NEMA: Example 5



-  = Renewable Electrical Generation Facility
-  = Meter
-  = Solely Owned, Leased or Rented
-  = Eligible Parcel
-  = Not Solely Owned, Leased or Rented
-  = Ineligible Parcel



# NEMA Interconnection



## NEMA: Interconnection

NEMA generator must be approved for interconnection under the applicable guidelines of Rule 21 and the NEM tariff

Customers must supplement the appropriate NEM interconnection application with the “NEM LOAD AGGREGATION APPENDIX” (form 79-1153) and parcel maps

- NEMS (form 79-1151A)
- NEMEXP PV/Wind (form 79-978)
- NEMEXP Non-PV/Wind (form 79-1137) or
- NEMMT (form 79-1069)

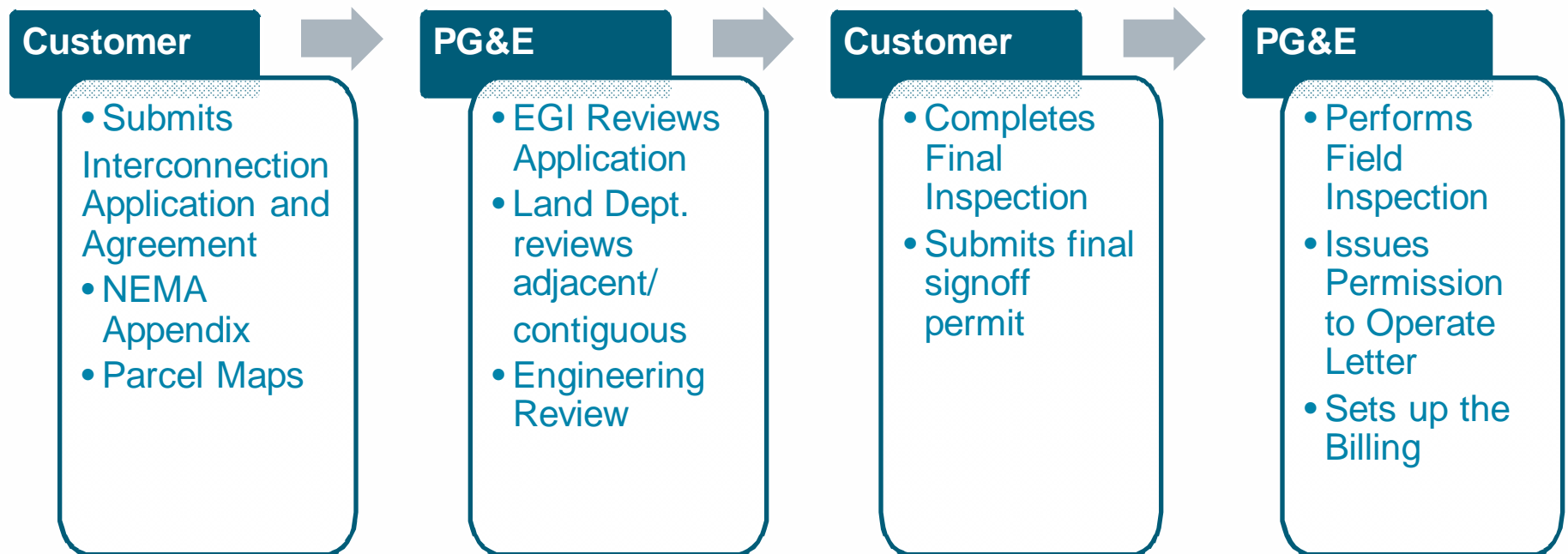


# NEMA: How to Apply

**Standard NEM (< 30 kW)** – Please submit the completed “NEM Load Aggregation Appendix” and parcel maps along with the interconnection package to [gen@pge.com](mailto:gen@pge.com).

**Expanded NEM (30 kW – 1 MW)** – Please submit the completed “NEM Load Aggregation Appendix” and parcel maps along with the interconnection application via the [online portal](#).

# NEMA: Application Process





# NEMA: Metering

**Generating Account** meter will measure excess kWh that is exported after on-site energy is netted

- Must be capable of separately measuring the kWh export to the smallest time interval used for billing for any of the Aggregated Accounts
- NGOM is allowed for no-load generator accounts
- Customers may request 2<sup>nd</sup> Service for such accounts subject to restrictions

**Aggregated Account** meter must be consistent with the otherwise applicable rate schedule (OAS) for that account

- The customer is responsible for all metering charges under the OAS





# NEMA: Distribution Upgrades

NEMA generator is likely to be oversized compared to the directly connected load

Increase in export may trigger additional interconnection studies or supplemental reviews required under Rule 21 or additional distribution upgrades

As with regular NEM, PG&E pays for system upgrades required unless the NEMA customer is the only beneficiary of a required interconnection facility

Regular process under the Green Book and Distribution Handbook



# NEMA Billing



## NEMA: Billing

The generator excess output (kWh) is allocated between the Aggregated Accounts and the Generating Account (if it has load) monthly

The allocation is based on the cumulative load of the accounts and cumulative generation from the generator

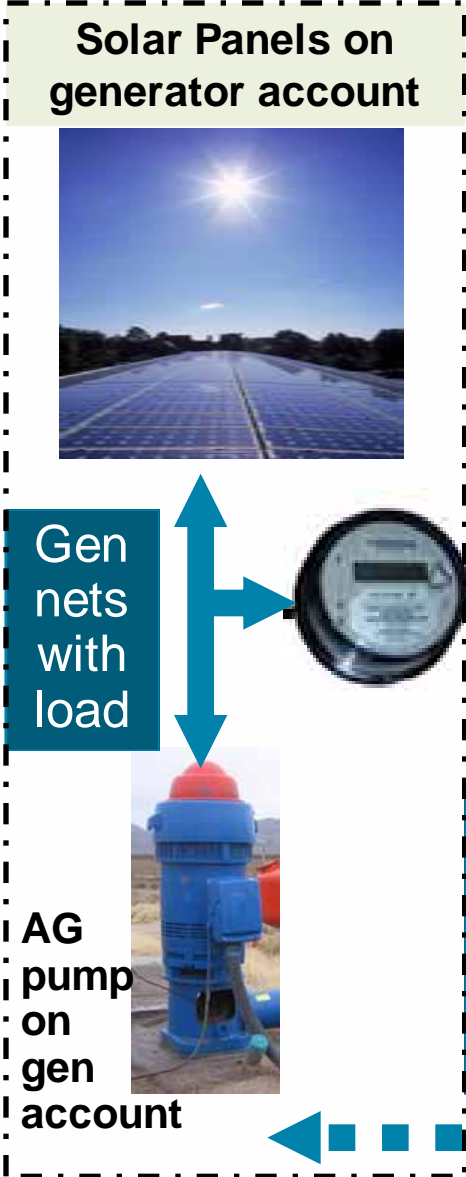
After this allocation, each account's kWh are treated like VNEM accounts

NEMA customers are billed monthly

NEMA customers are exempt from standby charges and non-bypassable charges



# NEMA Load Aggregation Illustration



Exported kWh to PG&E (after serving on-site load) is recorded & allocated to load aggregation accounts

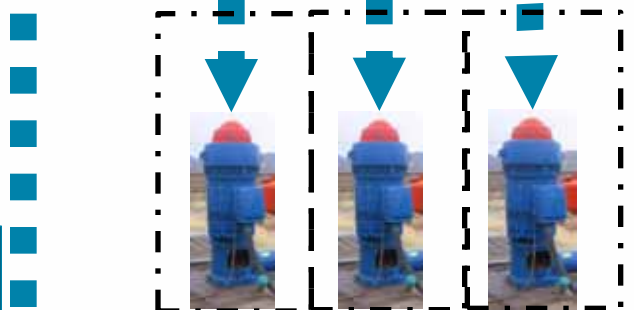
Exports to PG&E

Imports from PG&E

Imported kWh from PG&E is billed to generator account but... generator account may also receive allocated kWh offset

## PG&E's ABS Billing System

The exported kWh allocation is performed DYNAMICALLY each month by PG&E's billing system based on each aggregated account's proportion of that month's cumulative aggregate load and cumulative generation since the beginning of the true-up



**Load Aggregation Accounts**  
Allocated kWh nets with each load kWh to determine energy charges on account OAS



## NEMA: Billing Costs

**Customers** are responsible for paying billing fees, which reflect the incremental billing cost for NEMA:

- Initial set-up - \$25 for each Aggregated Account and the Generating Account, capped at \$500 per Arrangement
- Monthly fees - \$5 for each Aggregated Accounts and the Generating Account

Service Charges will be reviewed in one year after program start and are may be revised at that time.



## NEMA: True up

The Generating Account and all Aggregated Accounts will have the same monthly billing cycle

The Relevant Period will consist of 12 billing cycles based on the interconnection date, or Anniversary thereof

... or it will end the date an account is closed.

... or it will end the date and account switches electric service provider



## NEMA: Net Surplus Credit

The NEMA generator account is permanently ineligible for AB 920 Net Surplus Compensation

Any excess export kWh after the NEMA Arrangement's 12-month true-up shall be retained by the utility



# Other Programs and Tariffs





# NEMA: Demand Response

**Demand Response Programs** – NEMA customers are eligible for the same demand response programs as NEM customers.

Program elements that are affected by a customer's load (e.g., eligibility, payments) will also exclude from consideration any impacts of the generation



## NEMA: Incentive Programs

NEMA generator may receive an incentive as long as it meets the incentive program's eligibility requirements

**SGIP** - approved for incentive collections through the end of 2014 and administration of funds through 2015

- Incentives available for natural gas and CHP technologies
- Waitlist for renewable and emerging technologies
- [www.pge.com/sgip](http://www.pge.com/sgip)

**CSI** – the program has successfully reached its adoption goals and is now closed

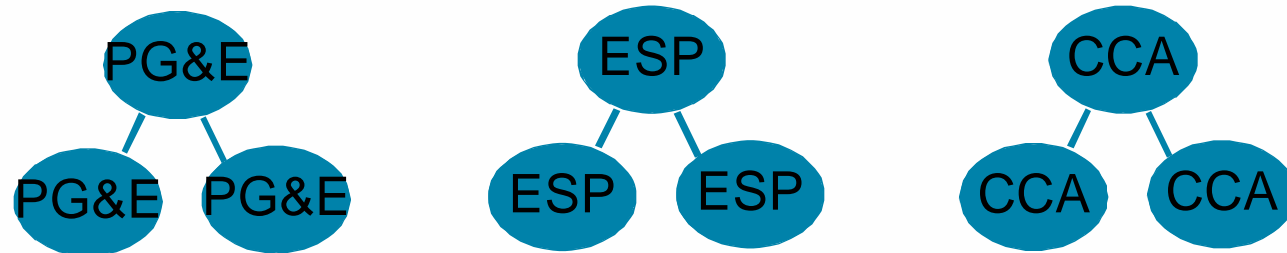
- [www.pge.com/csi](http://www.pge.com/csi)



## NEMA: ESP/CCA Customers

**Direct Access (DA) customers** may qualify for NEMA only if their Energy Service Provider (ESP) or Community Choice Aggregator (CCA) tariffs permit NEM Load Aggregation

All accounts in the Arrangement must take service either only from PG&E, a single ESP, or a single CCA.

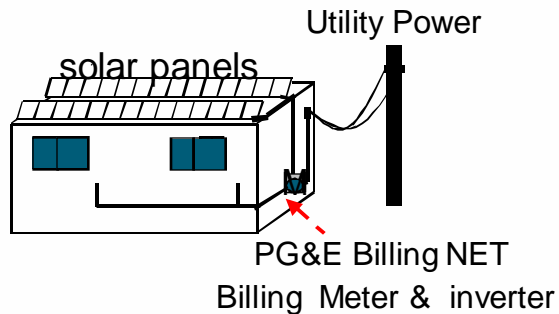


If PG&E is the billing agent and recovers the NEMA incremental billing costs from the customer's ESP and/or CCA, a mixture of ESPs may be permitted



# NEMA: Other Tariffs

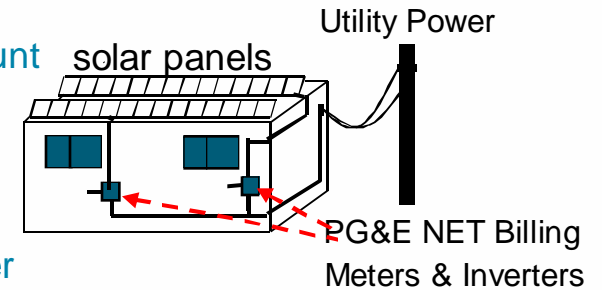
## Master Metered NEM



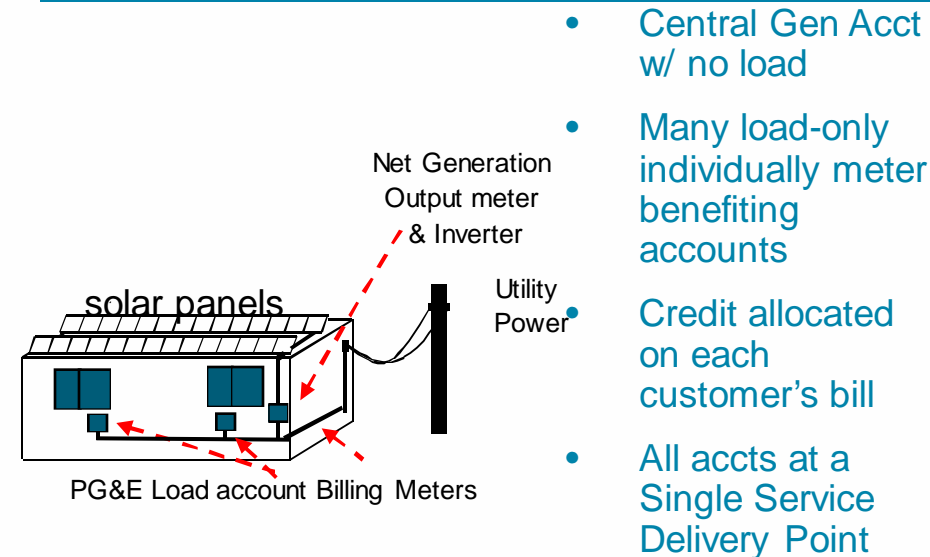
- Central Gen on single MM account
- Must be an existing MM Account
- Must be billed in accordance with Rule 18

## Individually Metered NEM

- Individual Gen for each account
- Each customer is a NEM account
- Each customer receives a bill
- More costly to install

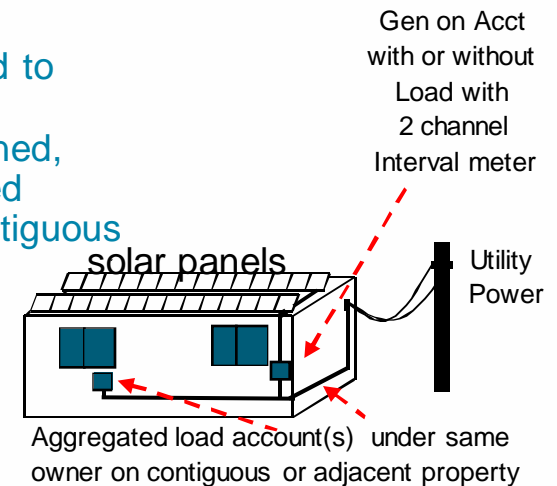


- Single Gen Acct w/ or w/o load
- Credit allocated to load on same customer's owned, leased or rented adjacent & contiguous property
- Credit allocated in relation to monthly load



- Central Gen Acct w/ no load
- Many load-only individually meter benefiting accounts
- Credit allocated on each customer's bill
- All accts at a Single Service Delivery Point

## NEMV – Virtual NEM



## NEMA – Load Aggregation



# NEM Options

	Technology	Configuration	Who	Gen Kw limit	Export	Standby	NBC	NSC
<b>Rule 21</b>	All	generator & load at single account	anyone	2 MW	uncompensated	Ask	Ask	non-eligible
<b>NEM</b>	Solar PV Wind RPS	generator and load at single account	anyone	1 MW total	sized to annual load at single account	exempt	on net usage only	eligible
<b>NEMA</b>	Solar PV Wind RPS	one generator account; many aggregated accounts	Same customer adjacent & contiguous parcel	1 MW total	sized to annual load of arrangement	Exempt	On net usage only	Non-eligible
<b>NEMV</b>	Solar PV Wind RPS	one generator account; many benefitting accounts	anyone	1 MW total	sized to annual load at service delivery point	exempt	on net usage only	eligible
<b>NEMVMASH</b>	Solar PV	one generator account; many benefitting accounts	low income MASH or NSHP participant	1 MW total	sized to annual load	exempt	on net usage only	eligible
<b>NEMFC</b>	Fuel cell w/non-renewable fuel	generator & load at one or more accounts	anyone	1 MW total	sized to annual load Can aggregate load	exempt	on net usage only	non-eligible
<b>NEMBIO</b>	biogas digester	<b>**closed**</b>	<b>**closed**</b>	1 MW total	sized to annual load	exempt	on net usage only	non-eligible
<b>NEMMT</b>	Combination of (a) 2 types of nem; or (b) nem & non-nem	generator & load at single account	anyone	Ask	Sized to annual load	NEM-portion exempt	NEM: on net usage	On retail NEM portion
<b>RES-BCT*</b>	RPS	generator account; many benefitting accounts in same city, county or district	Local Government, colleges	5 MW total/ gen acct	sized to annual load	Ask	Ask	non-eligible



# NEMA: Resources

**Tariff:** [http://www.pge.com/tariffs/tm2/pdf/ELEC\\_SCHS\\_NEM.pdf](http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHS_NEM.pdf)

**NEMA Appendix:**

[http://www.pge.com/tariffs/tm2/pdf/ELEC\\_FORMS\\_79-1153.pdf](http://www.pge.com/tariffs/tm2/pdf/ELEC_FORMS_79-1153.pdf)

**Standard NEM:**

<http://www.pge.com/mybusiness/customerservice/nonpgeutility/generateownpower/netenergymetering/standardnem/>

**Expanded NEM:**

<http://www.pge.com/mybusiness/customerservice/nonpgeutility/generateownpower/netenergymetering/expandednem/>



# NEMA: Customer Support

**General Support:** SEL, 1-877-743-4112

**Application Support:** Gen Inbox, [gen@pge.com](mailto:gen@pge.com)

**ES&S Support:** Roger Ballesteros, [R4B0@pge.com](mailto:R4B0@pge.com)



# NEMA: Q & A

