

Executive Committee Meeting

October 16, 2023

Agenda

- Call to Order / Roll Call
- Public Comment (for items not on the Agenda)
- Action to set the Agenda

 Public Comment
- Regular Agenda
- Committee Members Reports
- Adjourn



Solar Billing Plan (SBP) (Previously Net Billing Tariff (NBT))

Leslie Brown Executive Committee October 16th, 2023

What is Solar Billing Plan?

- New solar interconnection policy for all new interconnection applications after April 15, 2023.
 - PG&E is currently scheduled to begin billing customers on the Solar Billing Plan (SBP) on December 15th, 2023.
- Per the California Public Utilities Commission(CPUC), the new policy changes are intended to:
 - Credit excess solar generation at its grid value (vs retail prices).
 - Charge SBP customers for grid electricity based on high differential Time Of Use (TOU) tariffs and encourage solar + battery storage installations.
 - Discourage mid-day solar exports to the grid and encourage shifting exports to later in the day with battery storage to help curb demand during On Peak hours (4pm-9pm).

PCE SBP Policy

- Primary Billing: PCE's proposed Solar Billing Plan will closely model PG&E's SBP tariff.
 - Customers will be charged for consumption at the standard retail rates for their applicable rate schedule and credited at the Energy Export Credit (EEC) rate.
- The Export Credit Rates are determined through a public proceeding managed by the CPUC using the Avoided Cost Calculator.
 - Energy Export Credit rates vary by the hour and day throughout the year. Credit values for solar systems connected by 2027 will be predetermined and set for nine years. Credit values for systems connected after 2027 will updated every two years to reflect the most current energy prices.

Example Monthly Energy Export Credit Table

	01:00	02:00	02:00*	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00
11/1/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/2/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/3/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/4/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/5/2023	0.02	0.02	100	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/6/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/7/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/8/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/9/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/10/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/11/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/12/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/13/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/14/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/15/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/16/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/17/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/18/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/19/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/20/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/21/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.04	0.04	0.04	0.04
11/22/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/23/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/24/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/25/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/26/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/27/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/28/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/29/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
11/30/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
12/1/2023	0.02	0.02		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04

Annual Cash Out on SBP

- SBP customers will follow the Annual Cash Out timeline that occurs after each April billing cycle, similar to NEM customers.
 - The Annual Cash Out for SBP customers will be calculated under the Net Surplus Compensation (NSC) model, as mentioned previously they will be credited at the EEC rate monthly rather than retail.
 - Cash out amounts will be calculated based off the net kWh quantity at the end of their 12-month period and PG&E NSC rate. PCE will include an additional \$0.01 per kWh adder to the PG&E NSC rate.
 - Customers with NSC credit amounts in excess of \$300 will be issued a check and amounts under \$300 will be applied as an on-bill credit.

Alterations from PG&E SBP

- The Export Credit Reversal "clawback" charge will not be assessed to PCE customers at the time of their annual cash out.
 - Since the customer is being credited monthly at the EEC rate, the customer is already losing value compared to the retail credits provided under the NEM tariff.
 - Adding the NSC cash out payment on top of monthly EEC credits increases value of excess generation for customers, while still falling below the retail rate earned on the NEM tariff.

PCE Policy Considerations

- PCE will benefit from an observational approach, as only ~1% of our NEM customers will transition to SBP in it's first year.
 - EEC values will still apply to T&D exports regardless of CCA Generation export rates, so any variance in PCE credit rates could create a confusion.
 - Analyzing the first year of billing on this tariff will provide a better assessment of its success and how programmatic incentives and/or export credit adders can be most impactful.



Distributed Energy Resource Framework and Future Programs

Agenda

- 1. DERs in PCE Programs
- 2. Definition of Distributed Energy Resources & Objectives
- 3. Scale Comparisons
- 4. Virtual Power Plants (VPP)
- 5. Outages
- 6. PCE's Portfolio & Next Steps

Context: Distributed Energy Resources Framework

Programs Overview



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Definition

Distributed Energy Resources (DERs) are assets on the distribution grid, typically close to load, and usually behind the meter, which can be used individually or in aggregate to provide value to the grid and individual customers.

PCE DER Objectives

- Provide **grid benefits**, especially peak shaving to reduce wholesale costs and carbon intensity, aiding further penetration of renewables
- Provide **resilience**
- Lower operating costs for customers
- Make electrification more economically beneficial
- Deepen PCE-customer relationships and foster retention
- Reduce PCE costs and support self-sufficient business model



Scale Comparison: Typical Residential

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Capacity/day: 13 kWh Shift potential/day: 9 kWh* Deployed: 3,600+

44	
40	

Capacity/day: 7 kWh** Shift potential/day: 7 kWh Deployed: 45,000+



Capacity/day (HPWH): 0.45 kWh*** Shift potential/day: 0.225 kWh Deployed: 1,300+

* 30% reserve

** 25 miles/day / 3.5 mi/kWh

*** 240V HPWH, more potential with HVAC if actively heating or cooling 17

Commercial Scale Systems

- GovPV program scoped battery sizes
 - $_{\odot}$ GovPV1: 200-400 kWh
 - $_{\odot}$ GovPV2: up to 4.5 MWh
- Microgrid: Arcata Airport and US Coast Guard Station in Humboldt Co.

 2.2 MW PV array DC-coupled to 2.2 MW/8.8 MWh battery storage
 CAISO wholesale market participation
 \$11M in ~2021

Virtual Power Plants

Virtual Power Plant (VPP): Definition

Network of distributed energy resources dispatchable for grid services

DER VPP Supply Chain (BTM)



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Outages



Outage classes

- Extreme heat > extreme demand or fire
 - $_{\odot}$ Generation or transmission
 - $_{\odot}$ Local distribution
 - Rolling blackouts
- Extreme heat > preventative shutoff (PSPS)
- High wind accidents
- Site failures
- Planned maintenance



Preliminary Outage Findings – 2021 & 2022 in SMC

- Total outages: 6,210
 - Accounts: 76% outage events < 100; 10% > 900 accounts
 - Duration: 22% < 1 hr; 62% < 5 hrs; 4% > 1 day
- 50% of outages are unplanned (locations & times vary widely)
- Hotspots circuits in Belmont, Daly City, HMB, Menlo Pk, Woodside

Class	Typical Customer Impact	Possible Resolution				
Low/None	No outages or very short	None required				
Medium	One 5-hour outage*	Site level				
High (Hotspot)	Frequent &/or long duration	Distribution level (and possibly site level)				

*Not all customers were affected. An outage on a circuit does not mean all customers on the circuit are affected

Resilience Tactics (PCE could deliver)

- Grid support: VPPs/RA/Local Generation
- Microgrid circuit/neighborhood(?)
- Microgrid campus
- Commercial site battery (& generators)
- Residential site battery
- End use storage



PCE's Portfolio & Next Steps

Programs Overview



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DER Next Steps

1. Execute on GovPV including adding storage

2. Develop new residential solar and storage program

3. Scaling EV managed charging and FLEXmarket

4. Develop end use storage approach



Adjournment

