



NEM Successor Tariff

Sierra Club Proposal



Overview



NEM 1.0 and 2.0 Customers Transition to Electrification-Friendly Rates at 8 Years from Interconnection



Net Billing Model for Successor Tariff Customers Starting at Electrification-Friendly Rates



Export Compensation Glide Path from Electrification-Friendly Rates to Avoided Cost in 1 GW Tranches



System Sizing Based on Demand for All-Electric Home + 2 Electric Vehicles



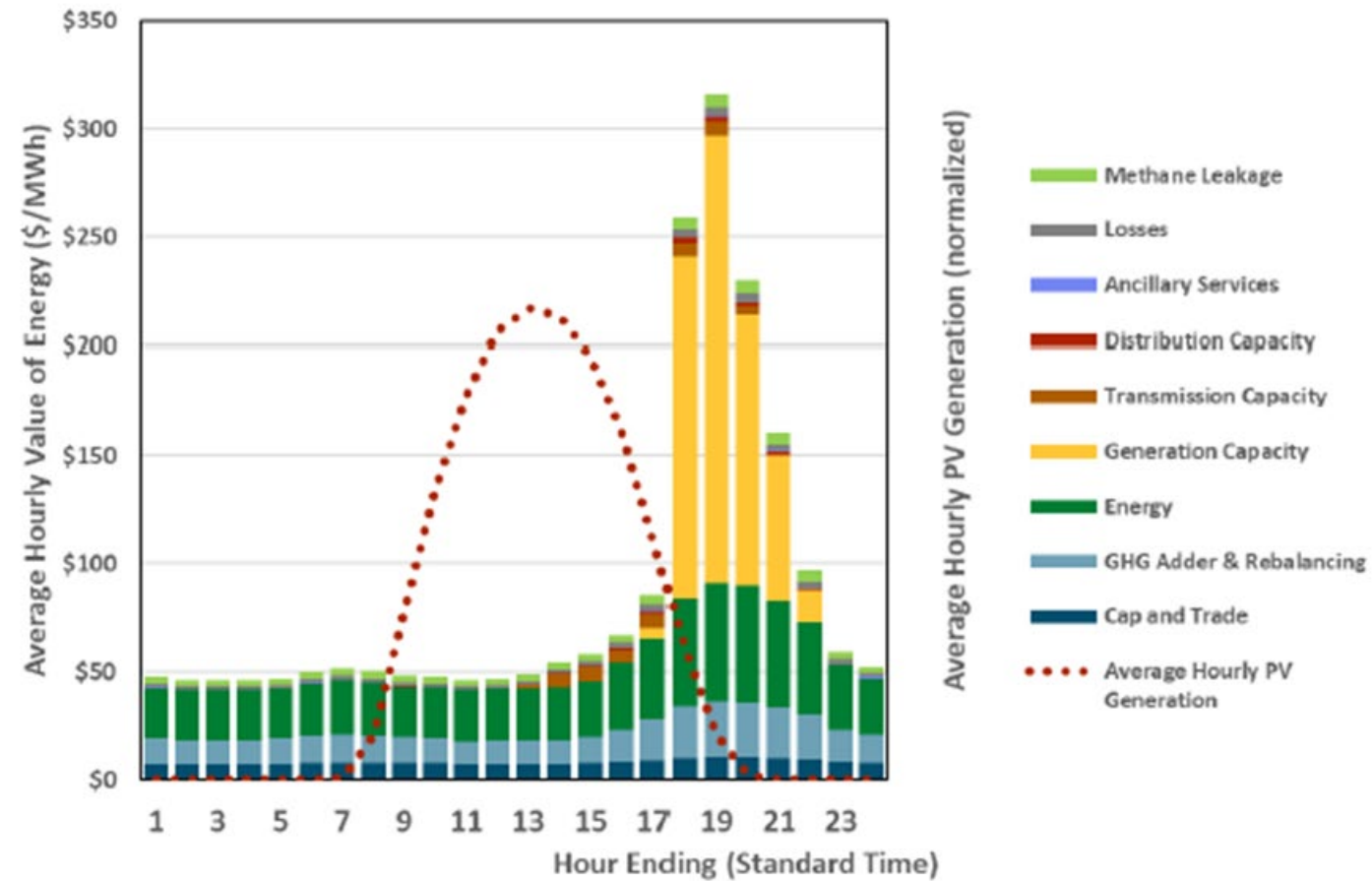
NEM 1.0 and 2.0 Customers Transition to Electrification-Friendly Rates at 8 Years From Interconnection

Why electrification-friendly rates?

- + Export compensation better aligned with value
- + At least a 2:1 differential between evening and midday rates
- + Reduced rate impact on non-participants
- + Price signals embedded in rates that incentivize further adoption of decarbonization technologies (e.g., battery storage, heat pump water heaters, EVs, smart thermostats)

Peak solar generation hours are no longer aligned with net peak capacity hours

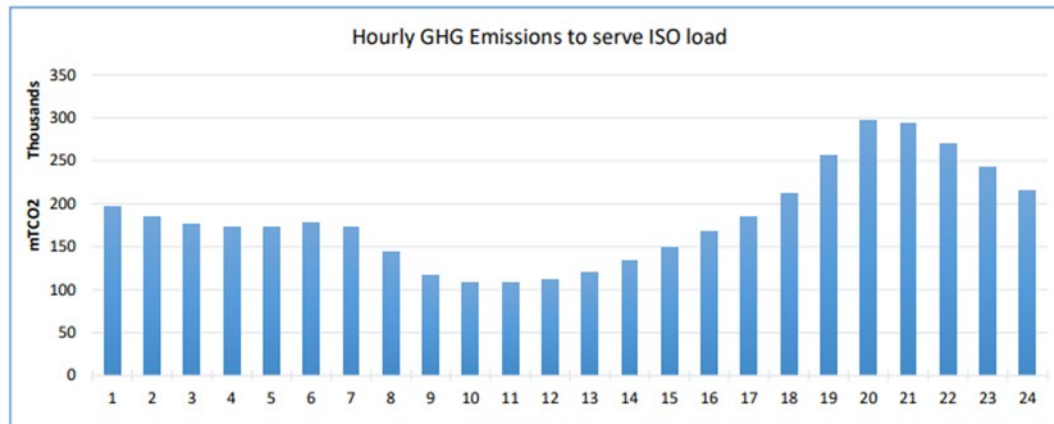
Figure 4. 2020 Hourly Average Avoided Costs and Solar Generation, Annual Averages



Source: E3, Alternative Ratemaking Mechanisms for Distributed Generation in California (Jan. 28, 2021) at 11.

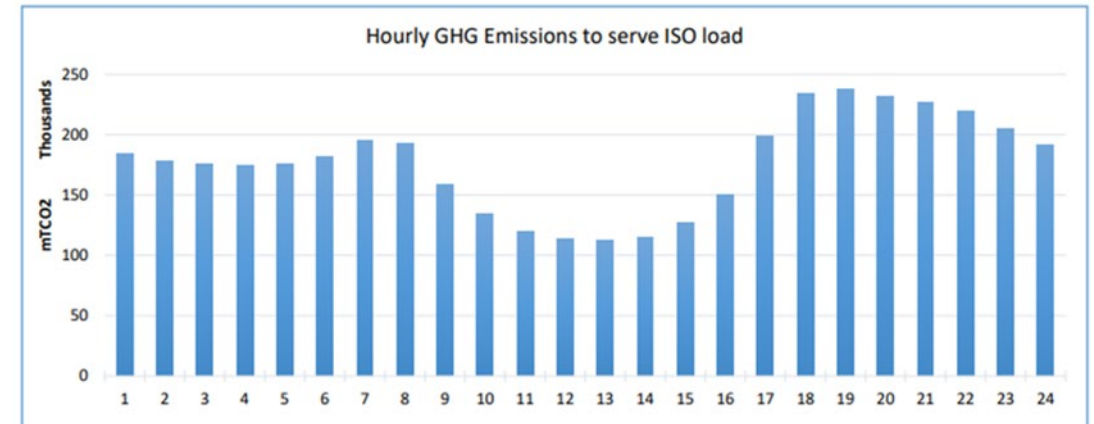
Grid generation in the evening hours is also more GHG-intensive than midday generation.

FIGURE 3 – Total hourly GHG emissions to serve ISO load. This figure reflects the hourly sum of GHG emissions from internal ISO dispatches and GHG emissions from imports serving ISO load for the month of July 2020.



Source: CAISO, *Greenhouse Gas Emission Tracking Report* (July 2020),
<http://www.caiso.com/Documents/GreenhouseGasEmissions-TrackingReport-Jul2020.pdf>

FIGURE 3 – Total hourly GHG emissions to serve ISO load. This figure reflects the hourly sum of GHG emissions from internal ISO dispatches and GHG emissions from imports serving ISO load for the month of January 2021.



Source: CAISO, *Greenhouse Gas Emission Tracking Report* (January 2021),
<http://www.caiso.com/Documents/GreenhouseGasEmissions-TrackingReport-Jan2021.pdf>

| PG&E Schedule E-TOU-C | | |
|---|----------------------------------|-------------------------------|
| | Peak (4 pm to 9 pm, all days) | Off-Peak (All other hours) |
| Summer Rates (June 1 – Sept. 30) | \$0.42/kWh | \$0.35/kWh |
| Winter Rates (Oct. 1 – May 31) | \$0.32/kWh | \$0.30/kWh |
| With a \$0.07 baseline credit applied to baseline usage and a minimum bill of \$.033/day. | | |

All rates sourced from IOUs' tariff sheets as of March 2021, available online

The PUC Has the Legal Authority to Change Underlying Rates for NEM 1.0 and 2.0 Customers



NEM 1.0 and NEM 2.0 customers (“existing NEM customers”) are both guaranteed 20 years from interconnection on their respective NEM tariffs.



This means that existing NEM customers are guaranteed continued access to the net metering structure as set forth in the NEM 1.0 and 2.0 tariffs.



This does NOT mean that existing NEM customers are guaranteed any particular underlying rate or rate structure.

Commission Case Law

- D.14-03-041 (establishing NEM 1.0 20-year transition period)
- D.15-07-001 (determining “contentions regarding customers’ reliance on existing rates and rate structures to be unreasonable,” and reiterating that there is no right for NEM customers to retain their underlying rate structure”)
- D.16-01-044 (establishing NEM 2.0 and setting 20-year transition period)
 - “To avoid any misunderstanding, we reiterate . . . that [NEM] customers do not have any entitlement to the continuation of any particular underlying rate design, or particular rates. The 20-year period we designate applies only to a customer-generator’s ability to continue service under [NEM].” (D.16-01-044)

Electrification-Friendly Rates

| PG&E EV2 | | | |
|---|----------------------|--|------------------------------|
| | Peak 4 pm to 9 pm | Part-Peak 3 pm to 4 pm; 9 pm to midnight | Off-Peak Midnight to 3 pm |
| Summer Rates (June 1 – September 30) | \$0.50/kWh | \$0.39/kWh | \$0.18/kWh |
| Winter Rates (October 1 – May 31) | \$0.37/kWh | \$0.35/kWh | \$0.18/kWh |
| Minimum bill of \$0.33/day. | | | |

Electrification-Friendly Rates

| SCE TOU-D-Prime | | | | |
|--|--------------------------------------|---|--------------------------------------|--|
| Summer Rates (June 1 to October 1) | On-Peak Weekdays: 4 pm to 9 pm | Mid-Peak Weekends and Holidays: 4 pm to 9 pm | Off-Peak All other hours | Super Off-Peak N/A during Summer |
| | \$0.44/kWh | \$0.33/kWh | \$0.17/kWh | N/A |
| Winter Rates (October 1 to June 1) | On-Peak N/A during Winter | Mid-Peak 4 pm to 9 pm all days | Off-Peak 9 pm to 8 am all days | Super Off-Peak 8 am to 4 pm all days |
| | N/A | \$0.41/kWh | \$0.16/kWh | \$0.16/kWh |
| Fixed daily basic charge of \$0.40 (“approximately \$12 per month”). | | | | |

Compensation Under Current Rates vs. Electrification-Friendly Rates

| Comparison between E-TOU-C Baseline and EV2/Proposed E-ELEC Rates | | | | | |
|---|--------------|----------|--------------------------------------|-------------|---|
| Time of Day (Summer) | E-TOU-C Rate | EV2 Rate | Percent Difference (E-TOU-C vs. EV2) | E-ELEC Rate | Percent Difference (E-TOU-C vs. E-ELEC) |
| Midnight to 3 pm | \$0.28 | \$0.18 | -36% | \$0.21 | -25% |
| 3 pm to 4 pm | \$0.28 | \$0.39 | +39% | \$0.26 | -7% |
| 4 pm to 9 pm | \$0.35 | \$0.50 | +43% | \$0.42 | +20% |
| 9 pm to Midnight | \$0.28 | \$0.39 | +39% | \$0.26 | -7% |

Compensation Under Current Rates vs. Electrification-Friendly Rates

| SUMMER Comparison between TOU-D (4-9pm Option) Baseline and TOU-D-PRIME Rates | | | |
|--|---------------------------|-------------------------|-----------------------|
| Time of Day (Summer) | TOU-D Baseline Rate | TOU-D- PRIME Rate | Percent Difference |
| 4 to 9 pm Weekdays | \$0.36 | \$0.44 | +22% |
| 4 to 9 pm Weekends | \$0.28 | \$0.33 | +18% |
| All Other Hours | \$0.20 | \$0.17 | -15% |

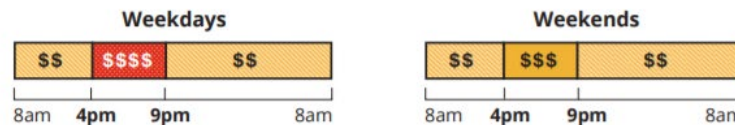
| WINTER Comparison between TOU-D (4-9pm Option) Baseline and TOU-D-PRIME Rates | | | |
|--|---------------------------|-------------------------|-----------------------|
| Time of Day (Winter) | TOU-D Baseline Rate | TOU-D- PRIME Rate | Percent Difference |
| 4 to 9 pm All Days | \$0.30 | \$0.41 | +37% |
| 9 pm to 8 am All Days | \$0.21 | \$0.16 | -24% |
| 8 am to 4 pm All Days | \$0.19 | \$0.16 | -16% |

Utilities can provide educational materials for existing NEM customers about ways to maximize the value of their system through electrification and load-shifting under their new electrification-friendly rates.

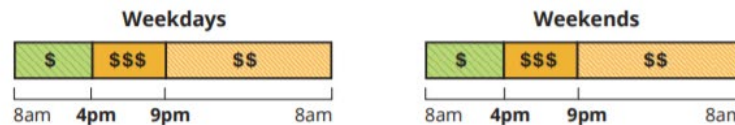
Its about when and how much.

As with all TOU rates, its about when and how much energy you use. Under TOU-D-PRIME, the lowest price periods are from 8 a.m. – 4 p.m. and 9 p.m. – 8 a.m., with the lowest-cost Super Off-Peak period in the winter season from 8 a.m. – 4 p.m. Shift daily energy usage outside of the 4 – 9 p.m. time period when energy demand is high.

SUMMER RATES June 1 – September 30 (4 Months)



WINTER RATES October 1 – May 31 (8 Months)



Super Off-Peak Off-Peak Mid-Peak On-Peak

When you enroll...

You must have an electric or plug-in hybrid vehicle, a residential battery, or electric heat pump system for water or space heating to enroll in TOU-D-PRIME. You will also need to confirm ownership (or lease) of one or more of these clean energy technologies when you enroll, unless you are currently enrolled in TOU-D-A, TOU-D-B, or TOU-D-T rate plans.

Ways to save with TOU-D-PRIME.

Households that use energy during the lower-cost Off-Peak and Super Off-Peak time periods — rather than On-Peak or Mid-Peak time periods — can maximize their savings and enjoy lower energy bills.

Try these no-cost savings tips:

- Charge your electric or plug-in hybrid vehicle overnight after 9 p.m.
- When possible, shift energy usage, such as running large household appliances like pool pumps, to Super Off-Peak and Off-Peak time periods.
- Utilize stored energy from your residential battery during Mid- and On-Peak hours from 4 – 9 p.m.

DID YOU KNOW?

If you charge your electric or plug-in hybrid vehicle at home when rates are lowest, it's roughly equivalent to paying less than \$2 per gallon for a gas-powered vehicle.

Existing NEM customers would transition to electrification-friendly rates at the start of the year following eight years from interconnection.

FIGURE 3-1: NUMBER AND CAPACITY OF NEM SYSTEMS INSTALLED BY NEM 1.0 VS. NEM 2.0

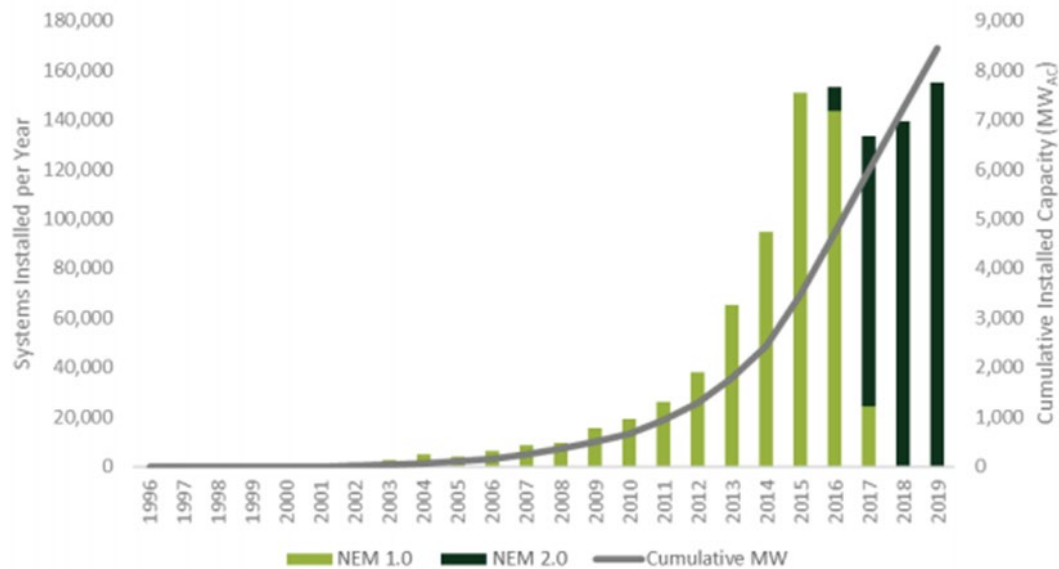
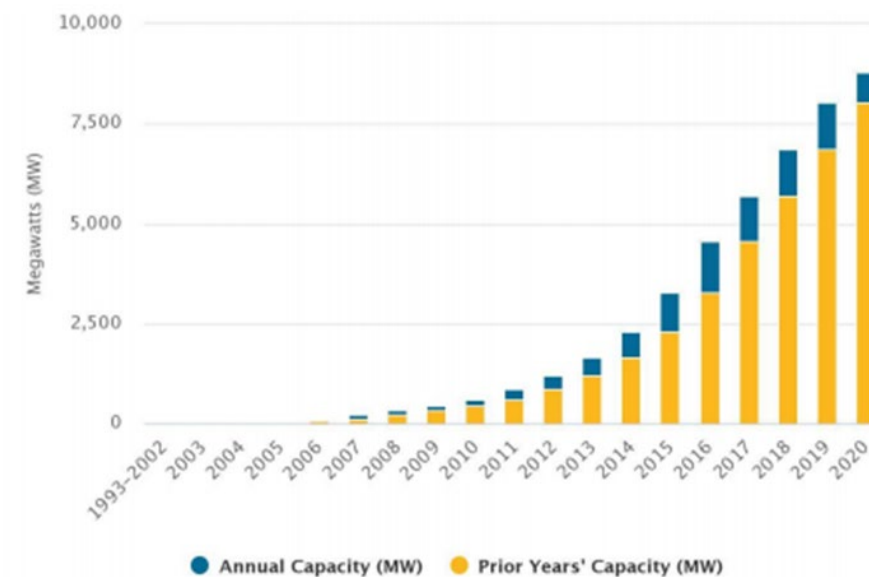
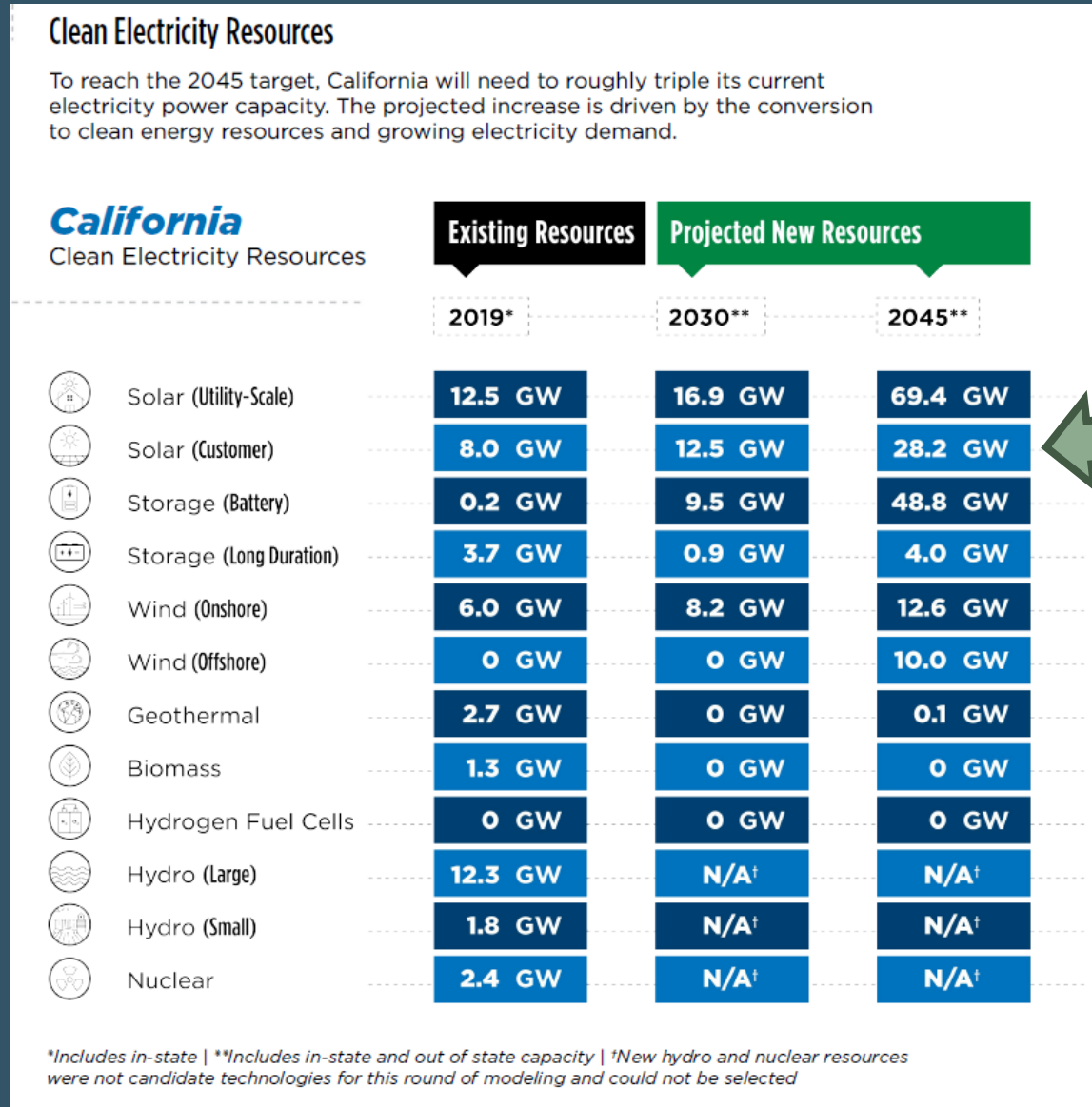


Figure 3. California BTM Solar Penetration, Large Investor-Owned Utilities³



Source: NEM 2.0 Lookback Study at 24; E3 White Paper at 8.

Substantial Growth of Customer-Sited Solar is Still Necessary under a Successor Tariff



Source:
2021 SB 100 Joint
Agency Report at 10.



Successor Tariff:

Net Billing with Export Compensation Glide
Path from Electrification-Friendly Rates to
Avoided Cost

- Promote electrification by starting export compensation at equal value to the electrification-friendly rates
 - PG&E: EV2 or Proposed E-ELEC
 - SCE: TOU-D-PRIME
 - SDG&E: TBD
- Decrease compensation in capacity-based tranches by 10% between electrification-friendly rate and avoided cost per tranche as glide path to avoided cost compensation
- Guarantee each tranche of customers their assigned export rate for 20 years
- Avoid market shock and provide pathway for sustainable growth while addressing California's unique circumstances

Export Compensation Example

If retail rate during off-peak hours was \$0.17 (e.g., current summer TOU-D-PRIME rate for daytime hours until 4 pm) and average avoided cost for those hours was \$0.07:

Tranche 1: \$0.17

Tranche 2: \$0.16

[Avoided Cost (\$0.07) + 90% difference between retail and AC (\$0.09) = \$0.16]

Tranche 3: \$0.15

[Avoided Cost (\$0.07) + 80% difference between retail and AC (\$0.08) = \$0.15]

Continue until final tranche, where export compensation = avoided cost

| 0 GW | 1 GW | 2 GW | 3 GW | 4 GW | 5 GW | 6 GW | 7 GW | 8 GW | 9 GW | 10+ GW |
|---------------|---------------------------------|------|------|------|------|------|------|------|------|--------|
| Export Credit | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
| | Percent decline to avoided cost | | | | | | | | | |



System Sizing Based on Projected Demand for All-Electric Home + 2 Electric Vehicles

- Basing system sizing off projected load for full electrification of the home plus two electric vehicles facilitates deeper decarbonization and optimal use of rooftop solar
- Any marginal increases in net surplus compensation can be directed to fund low-income programs, an approach used in Oregon

Thank you.

We welcome your
questions and comments.