



# 2018 US ZEB Conference

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Understanding Electricity Pricing for Your Charging Strategy

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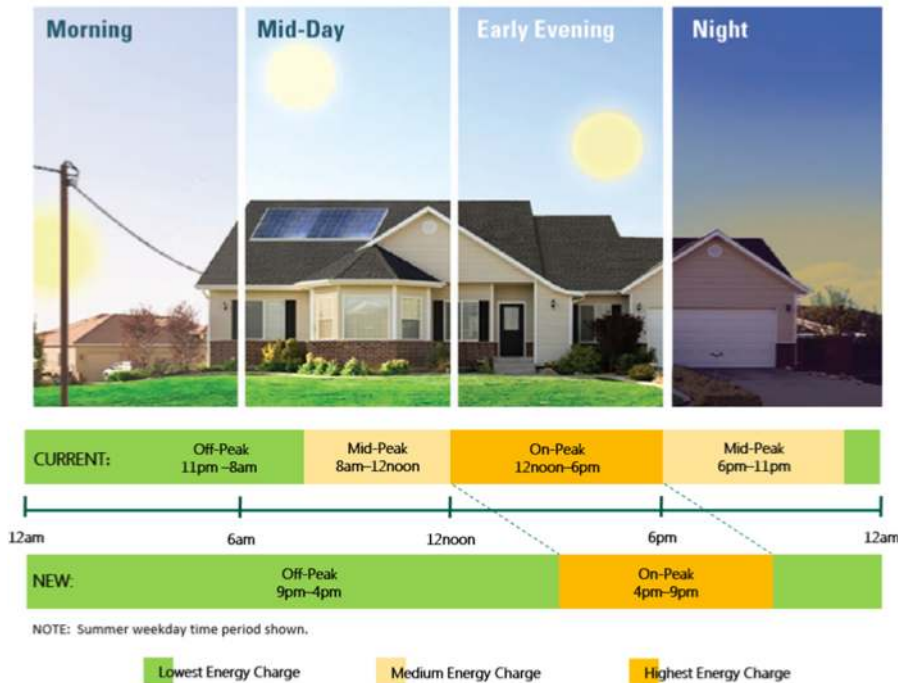
# Electricity Pricing: Time of Use & Demand Charges

- SCE's commercial & industrial customers are served on rates with:
  - Time-of-Use (TOU) volumetric energy pricing;
  - Time-of-Use (TOU) demand charges; and
  - Non-time-related demand charges.
- The most important element in determining the cost of electricity for electric vehicle charging is the charging load profile
  - The more consistent (i.e., frequent and steady) the load profile, the higher the load factor and the lower the average rate
  - Consistent load profiles lead to spreading fixed costs (typically recovered from demand charges) over a greater amount of usage
- SCE plans to change its TOU periods in 2019\*
  - Shifts Summer “on-peak” period from 12-6pm to 4-9pm weekdays
  - Winter weekdays and all weekends also have higher costs from 4-9pm
  - Introduces year-round weekend and winter weekday “super-off-peak” period (8am-4pm)
- Due to the unique nature of commercial EV charging load, SCE designed several rates exclusively for EV charging

\* As adopted in CPUC Decision (D.)18-07-006.

# SCE's New TOU Periods and EV Rates

## New TOU Periods to Reflect CA's Changing Energy Market



SCE's new TOU periods align price signal with grid friendly charging times and incentivize customers to optimize their charging patterns to minimize electricity costs.

## EV Rates<sup>1/</sup> to Support Expansion of Electric Transportation

Program economics benefit when load factor increases over the demand charge phase-in period



### Favorable Pricing for EV Charging

- Rates w/ no or low demand charges
- Suited for lower load factor – infrequent & spikey – charging (e.g., in-depot charging).

### Increased EV Adoption

- Rates w/ low demand charges + low energy charges (mid-day)
- Suited for hybrid charging strategies (e.g., **combination of overnight in-depot + in-route opportunity charging**)

### Return to Cost Based Rates

- Rates w/ demand charges + low energy charges (mid-day)
- Suited for higher load factor – frequent & steady – charging (e.g., **co-located in-depot charging**)

1/ TOU-EV-7, TOU-EV-8, and TOU-EV-9 rates are applicable to commercial customers whose monthly max demand is 20 kW or less, 21 kW to 500 kW, and above 500 kW, respectively. Rates are available starting in 2019.

2/ The distribution grid component after the 10-yr period will reflect only ~55% (rather than 100%) of distribution costs, with the balance of distribution costs recovered through energy charges.

## Charge Ready Program

SCE's premier EV infrastructure program, where SCE is partnering with businesses, local governments, and community organizations to make electric vehicle charging easier and more convenient for all types of vehicles.

SCE installs, maintains and covers installation costs for charging infrastructure, while participants own, operate and maintain the charging stations. The program also provides rebates toward the purchase of charging stations.

### Charge Ready | Transport



- Installs electric infrastructure at customer sites to support charging plug-in buses, medium- and heavy-duty trucks, forklifts and other non-road cargo handling equipment.
- Provides rebates toward the purchase of charging stations.

### Charge Ready | Home Installation Rebate



- Pilot offers rebates to approx. 4k SCE residential customers who wire their homes for electric vehicle charging.
- The rebates are for single-family residences or smaller multi-unit dwellings with dedicated garage or parking lot spaces for EV charging.

### Charge Ready | DC Fast Charge



- Fast chargers can reduce charging times to as little as 30 minutes for a full charge.
- SCE works with program participants to install electrical infrastructure at five sites that are accessible to all drivers and offer rebates on charging stations.

### Charge Ready | Transit Bus



- Fossil-fuel powered buses are a significant source of air pollution in urban communities.
- This program for transit agencies is funding the cost of installing infrastructure to support electric bus charging including a rebate on charging stations.

### Charge Ready | Port Electrification



- At the Port of Long Beach, SCE is installing infrastructure for the electrification of equipment used to move goods containers around the port. This equipment is currently powered by diesel engines, which are a significant source of air pollution.

\* For more information, please visit: <https://on.sce.com/chargeready>



# Appendix

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# SCE's EV Rates<sup>1/</sup>

- Illustrative TOU-EV-8 Rates Shown



## Year 1 – Year 5 Energy only; No Demand Charges



## Year 6 – Year 10<sup>2/</sup> Phase-in Demand Charges



## Year 11+ Return to Energy + Demand Charges<sup>3/</sup>

### Energy Charge - ¢/kWh

Summer-On-Peak	46.2
Summer-Mid-Peak	25.6
Summer-Off-Peak	11.8

45.0
24.3
11.6

37.2
16.6
9.3

Winter-Mid-Peak	29.1
Winter-Off-Peak	12.6
Winter-Super Off-Peak	6.7

27.9
12.4
6.8

20.1
10.1
5.6

### Facilities-Related Demand Charge - \$/kW

\$0.00

\$1.70

\$10.21

### Customer Charge - \$/month

\$125.25

\$125.25

\$125.25

1/ TOU-EV-7, TOU-EV-8, and TOU-EV-9 rates are applicable to commercial customers whose monthly max demand is 20 kW or less, 21 kW to 500 kW, and above 500 kW, respectively. Rates are available starting in 2019.

2/ Year 6 shown as initial year of demand charge phase-in.

3/ The distribution grid component after the 10-yr period will reflect only 55% (rather than 100%) of distribution costs, with the balance of distribution costs recovered through energy charges.