



AK EV INFRASTRUCTURE ECOSYSTEM:
5 MAJOR COMPONENTS OF BENEFICIAL EV CHARGING POLICY
March 24, 2021

5 MAJOR COMPONENTS

1. Residential EV Charging Rate
2. Residential Level 2 Charger Rebates
3. Commercial EV Charging Rates
4. Make-Ready/Beneficial Line Extension Policy
5. Commercial Charger Rebates

1 . R E S I D E N T I A L E V R A T E S

PG&E EV2-A Rate

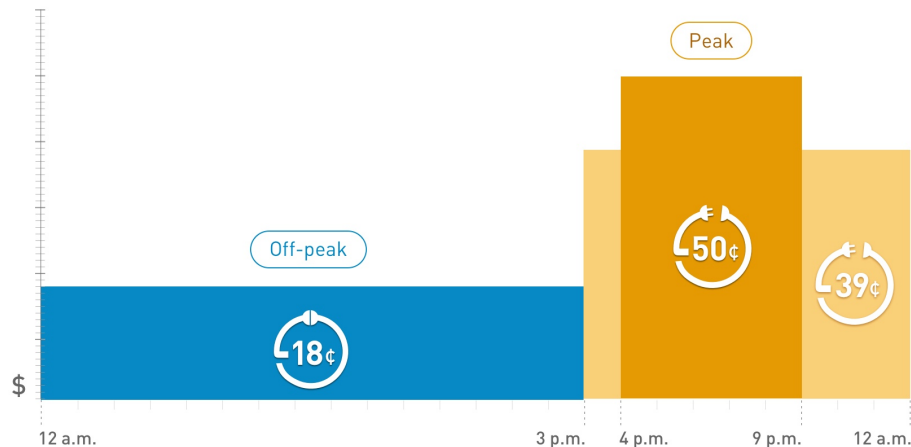
LOWEST COST

Ideal charging times: 12 a.m. - 3 p.m.

HIGHER COST

Avoid or limit charging 3 p.m. - 12 a.m.

- Keep it simple for customers!
- Whole home EV TOU rates
- Strong On-Peak to Off-Peak price differential
- Can use existing rates as a starting place and make overnight “Super Off-Peak” period.



This rate schedule applies to **whole house service** where the residential usage and the electric vehicle charging usage is metered together (that is, the electric vehicle charging usage is not metered separately.) Bills issued under Schedule EV2 will be identified as EV2A.

2 . R E S I D E N T I A L C H A R G E R R E B A T E S

- \$500 is generally sufficient for charger hardware.
- Does not matter what connector is used.
- If advanced metering infrastructure (“AMI”) already exists – pull data from AMI rather than car/charger.



3 . C O M M E R C I A L E V C H A R G I N G R A T E S



Supercharging



Destination Charging



Where You Park

A single well-designed commercial EV charging rate can take multiple use-cases into consideration.

E V C H A R G I N G A N D D E M A N D C H A R G E S

Ex. Utility Rates:

Fixed charge = \$100

Demand charge = \$8/kW

Energy charge = 10 c/kWh

Shopping Center

750 kW &
270,000 kWh

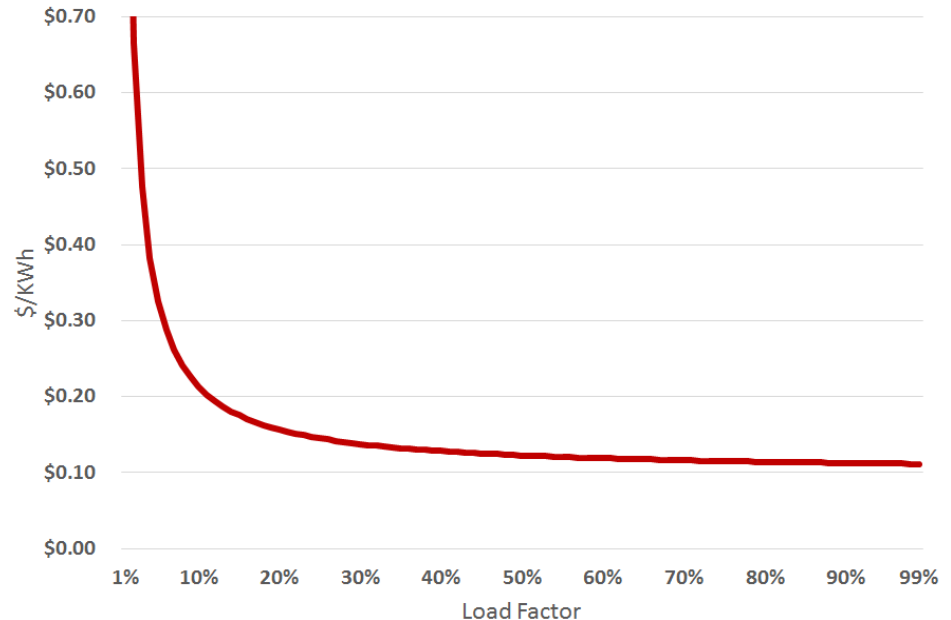
- Fixed charge = \$100
- Demand charge = \$6000
- Energy charge = \$27,000
- **Effective Rate = 12.2 c/kWh**

DCFC

750 kW & 54,000
kWh

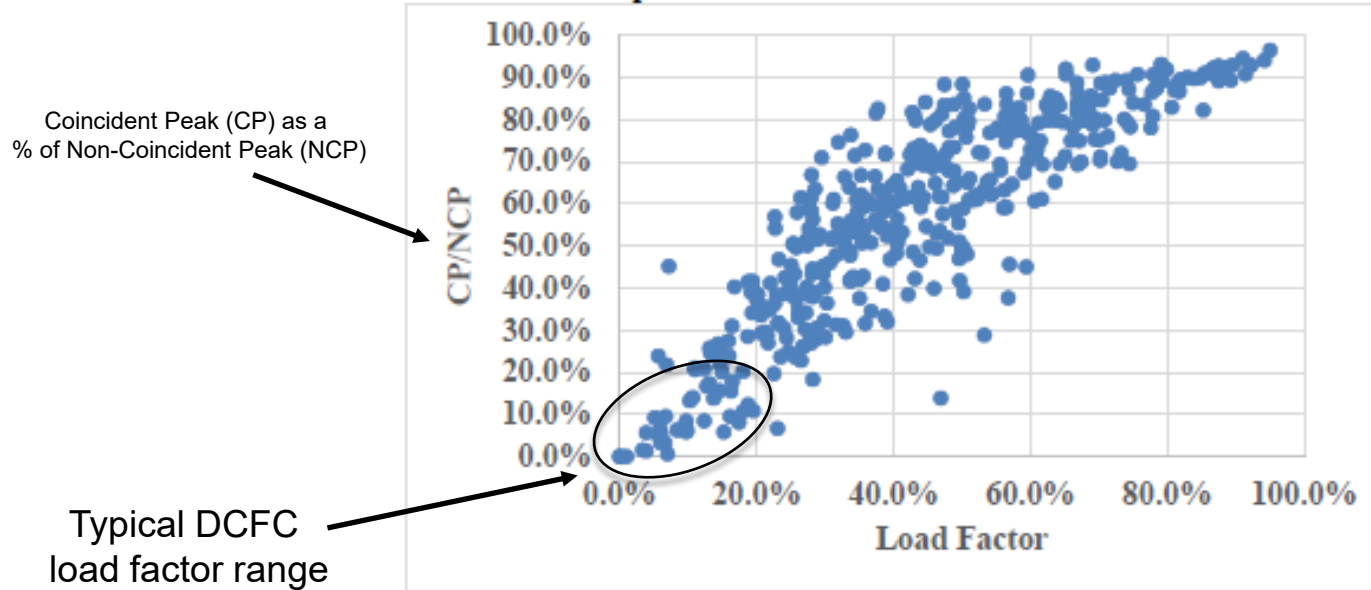
- Fixed charge = \$100
- Demand charge = \$6000
- Energy charge = \$5400
- **Effective Rate = 21.2 c/kWh**

Effective \$/kWh by Load Factor



COINCIDENCE WITH SYSTEM PEAKS

Figure 2. Schedule 23, 28 and 30 Coincidence with Monthly System Peaks as Compared to Individual Customer Load Factor



Graph is from data provided by Pacific Power Oregon in rate case UE 374.

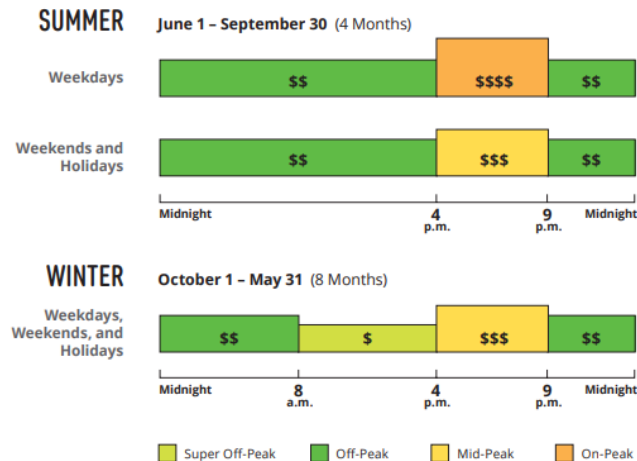
CONSIDERATIONS FOR COMMERCIAL EV RATES

Goals:

- Effective \$/kWh on par with commercial class average
- Send signals about the best times to charge
- Provide some level of certainty

NEW STANDARD TIME-OF-USE (TOU) PERIODS

March 2019



Holidays are New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, and Christmas. When any holiday falls on a Sunday, the following Monday will be recognized as a holiday. However, no change will be made for holidays falling on a Saturday.

Chart is from SCE's commercial EV-TOU flyer found on their website.

R E C O M M E N D A T I O N S F O R C O M M E R C I A L E V R A T E S

- Provide rate options.
- Available to all separately metered non-residential EV charging accounts.
- Minimize use of non-coincident demand charges.
- Utilize time-of-use volumetric components.
- Avoid short-term incentive rates.



EXAMPLES OF COMMERCIAL EV RATES

Restructured Markets

- Eversource CT
- Central Maine Power

Vertically Integrated

- SCE
- PG&E
- Alabama Power

Non-EV Specific Rates

- Dominion VA, GS-2



4 . M A K E - R E A D Y / L I N E E X T E N S I O N P O L I C Y

- Line extension policies historically defray upfront system upgrade costs for new customers.
- Can provide allowances based on “Net Annual Revenue”
- Sometimes based on multiple years of “Net Annual Revenue” – varies utility by utility.
- Utility upgrade costs can cost anywhere between \$10,000 and \$100,000 for a DCFC station.

2. BASIS OF ALLOWANCES. Allowances shall be granted to an Applicant for Permanent Service, or to an Applicant for a subdivision or development under the following conditions:
- a. PG&E is provided evidence that construction will proceed promptly and financing is adequate, and
 - b. Applicant has submitted evidence of building permit(s) or fully-executed home purchase contract(s) or lease agreement(s), or
 - c. Where there is equivalent evidence of occupancy or electric usage satisfactory to PG&E.

The allowances in Sections C.3 and C.4 are based on a revenue-supported methodology using the following formula:

$$\text{Allowance} = \frac{\text{Net Revenue}}{\text{Cost-of Service Factor}}$$

where the Cost of Service Factor is the annualized utility-financed Cost of Ownership as (N)
stated in Electric Rule 2. (N)

Example line extension allowance formula from PG&E's Rule 15.

EV SPECIFIC LINE EXTENSION POLICY

- Tampa Electric Company (TECO)
- Extended the Net Revenue Allowance period from 5 years to 10 years.
- Example shows added benefit to EV charging → more usage in future.

Table 1-1
Potential Subsidy Under Current Rule Versus Proposed Rule Waiver

Based on Line Extension cost of \$21,000 serving a single EV fast charger

Year	1	2	3	4	5	6	7	8	9	10	Total
Revenues	500	1,000	1,250	1,250	1,500	4,000	5,000	5,000	5,000	5,000	29,500

Offsetting Revenues (\$20,000)

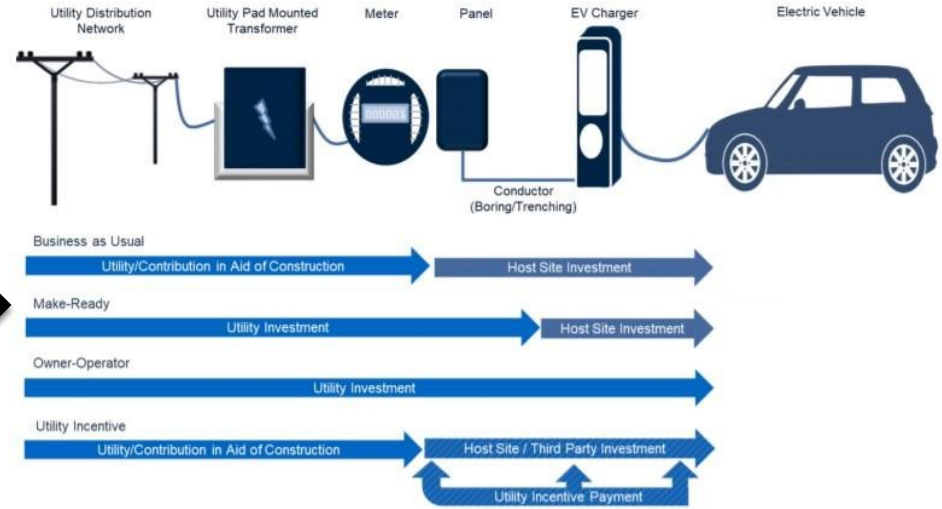
CIAC (Current) = \$21,000 - \$5,000 = \$16,000

CIAC (Proposed) = \$21,000 - \$20,000 = \$1,000

Example EV specific line extension allowance formula from Tampa Electric Company.

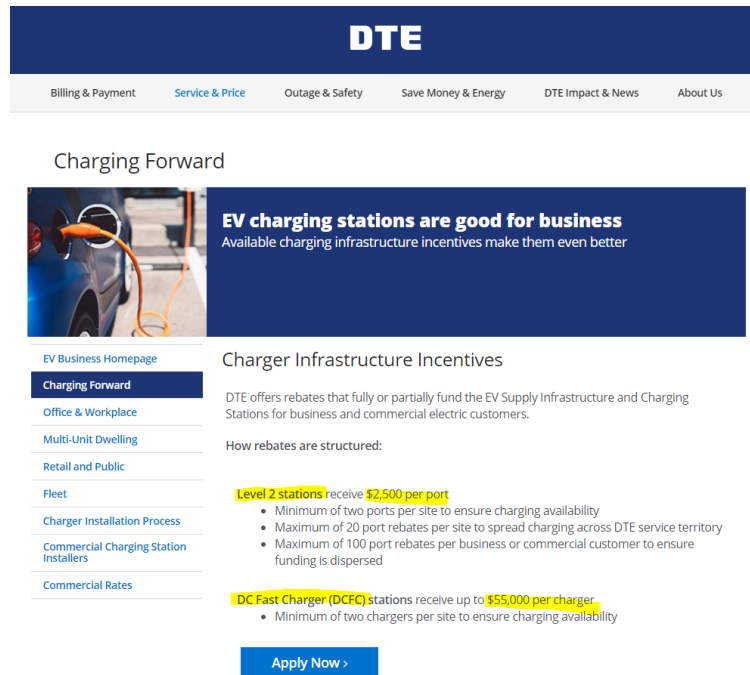
EV “MAKE READY” PROGRAMS

- Allows utility to provide EV charging utility-side infrastructure at no cost to customer.
- Sometimes utility will go beyond customer meter to bring infrastructure up to charger pedestal.
- Utility-side vs customer-side “make ready”
- Under the same umbrella as “line extension policy”



5 . N O N - R E S I D E N T I A L C H A R G E R R E B A T E S

- Non-residential charger rebate use-cases:
 - Public Level 2
 - Multi-unit Dwelling (MUD) Level 2
 - Workplace Level 2
 - Fleet Level 2
 - Government
 - Public DCFC
 - Fleet DCFC
- Adders for specific locations or other policy goals:
 - Feeders w/ excess distribution capacity
 - Specific travel corridors
 - Disadvantaged communities (DACs)
- DCFC chargers are typically considered 50 kW and above.



The screenshot shows the DTE Michigan website's 'Charging Forward' page. The header is dark blue with the DTE logo. A navigation bar includes links for Billing & Payment, Service & Price, Outage & Safety, Save Money & Energy, DTE Impact & News, and About Us. The main heading is 'Charging Forward'. Below it is a hero image of an EV being charged with an orange cable, accompanied by the text 'EV charging stations are good for business' and 'Available charging infrastructure incentives make them even better'. A sidebar on the left lists navigation options: EV Business Homepage, Charging Forward (highlighted), Office & Workplace, Multi-Unit Dwelling, Retail and Public, Fleet, Charger Installation Process, Commercial Charging Station Installers, and Commercial Rates. The main content area is titled 'Charger Infrastructure Incentives' and states that DTE offers rebates for EV supply infrastructure and charging stations for business and commercial electric customers. It details how rebates are structured: Level 2 stations receive \$2,500 per port (with a minimum of two ports per site and a maximum of 20 rebates per site), and DC Fast Charger (DCFC) stations receive up to \$55,000 per charger (with a minimum of two chargers per site). An 'Apply Now >' button is at the bottom.

DTE

Billing & Payment Service & Price Outage & Safety Save Money & Energy DTE Impact & News About Us

Charging Forward

EV charging stations are good for business
Available charging infrastructure incentives make them even better

EV Business Homepage

Charging Forward

Office & Workplace

Multi-Unit Dwelling

Retail and Public

Fleet

Charger Installation Process

Commercial Charging Station Installers

Commercial Rates

Charger Infrastructure Incentives

DTE offers rebates that fully or partially fund the EV Supply Infrastructure and Charging Stations for business and commercial electric customers.

How rebates are structured:

- Level 2 stations receive **\$2,500 per port**
 - Minimum of two ports per site to ensure charging availability
 - Maximum of 20 port rebates per site to spread charging across DTE service territory
 - Maximum of 100 port rebates per business or commercial customer to ensure funding is dispersed
- DC Fast Charger (DCFC) stations receive up to **\$55,000 per charger**
 - Minimum of two chargers per site to ensure charging availability

Apply Now >

Example EV rebates screenshot provided from DTE Michigan's website.

5 MAJOR COMPONENTS

1. Residential EV Charging Rate
2. Residential Level 2 Charger Rebates
- ➡ 3. Commercial EV Charging Rates ←
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5. Commercial Charger Rebates

