

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF OREGON**

**Docket No. UE 374**

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In the Matter of

PACIFICORP d/b/a PACIFIC POWER

Request for a General Rate Revision

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**OPENING TESTIMONY OF ANNE SMART  
ON BEHALF OF CHARGEPOINT, INC.**

**June 4, 2020**

1       **I. Introduction and Summary of Recommendations.**

2       **Q: Please state your name and business address.**

3       A: My name is Anne T. Smart. My business address is 254 E. Hacienda Ave., Campbell, CA  
4       95008.

5       **Q: By whom are you employed and in what position?**

6       A: I am Vice President, Public Policy at ChargePoint, Inc.

7       **Q: Please describe your educational background and professional experience.**

8       A: My educational background includes a Bachelor of Arts in Public Administration and a  
9       Bachelor of Philosophy in Environmental Studies from Miami University in Oxford, Ohio,  
10       and a Master of Energy and Environmental Policy from the University of Delaware in  
11       Newark, Delaware. I have been an employee of ChargePoint for five years, formally in the  
12       role of Director of Government Relations and Regulatory Affairs, and now as Vice  
13       President of Public Policy for the past three years. Prior to ChargePoint, I was the Executive  
14       Director of The Alliance for Solar Choice (TASC), a rooftop solar advocacy organization  
15       founded by SolarCity and Sunrun. I have also been the Director of Energy for the Silicon  
16       Valley Leadership Group, a business trade association of Silicon Valley employers, leading  
17       federal and California legislative and regulatory policy on energy issues.

18       **Q: Please describe ChargePoint.**

19       A: ChargePoint is the leading electric vehicle (EV) charging network in the world, with  
20       scalable solutions for every charging need and for all of the places that EV drivers go:  
21       home, work, around town, and on the road. ChargePoint's network offers more than  
22       112,000 places to charge, including more than 1,200 spots in Oregon, and those numbers

1 continue to grow. With thousands of customers in several verticals including workplaces,  
2 cities, retailers, apartments, hospitals, and fleets, ChargePoint provides an integrated  
3 experience enabling consistent performance, efficiency and reliability at every touchpoint  
4 whether one is using a mobile app, plugging into a charger, managing the station or  
5 analyzing charging data. On the network, drivers have completed more than 78.3 million  
6 charging sessions, saved upwards of 92 million gallons of fuel, and driven more than 2.2  
7 billion electric miles.

8 ChargePoint delivers scalable solutions that enable businesses to support more  
9 drivers, add the latest software features and expand their electric vehicle and fleet needs  
10 with minimal disruption to overall business. Hardware offerings include Level 2 (L2) and  
11 DC fast charging (DCFC) products, and ChargePoint provides a range of options across  
12 those charging levels for specific use cases including light and medium duty and transit  
13 fleets, multi-unit dwellings, residential (multi-family and single family), destination,  
14 workplace, and more. ChargePoint's software and cloud services enable site hosts to  
15 manage charging onsite with features like Waitlist, access control, charging analytics, and  
16 real-time availability. All products are UL-listed, ENERGY STAR® and CE (EU)  
17 certified, and the modular design minimizes downtime and makes maintenance and repair  
18 more seamless.

19 ChargePoint's primary business model consists of selling its smart charging  
20 solutions directly to businesses and organizations while offering tools that empower site  
21 hosts and station owners to deploy charging designed for their individual application and  
22 use case. ChargePoint provides charging network services and data-driven and cloud-

1 enabled capabilities that enable site hosts to better manage their charging assets and  
2 optimize services. For example, with those network capabilities, site hosts can view data  
3 on charging station utilization, frequency and duration of charging sessions, set access  
4 controls to the stations, and set pricing for charging services. These features are designed  
5 to maximize utilization and align the EV driver experience with the specific use case  
6 associated with the specific site host. Additionally, ChargePoint has designed its network  
7 to allow other parties, such as electric utilities, the ability to access charging data and  
8 conduct load management to enable efficient EV load integration onto the electric grid.

9 **Q: Please describe ChargePoint’s previous involvement in transportation electrification**  
10 **efforts in Oregon.**

11 **A:** ChargePoint has participated in numerous transportation electrification efforts in Oregon,  
12 including dockets UM 1811, UM 1810, ADV 485, AR 599, UM 2033, and UM 2035.  
13 ChargePoint was also involved in discussions at the legislature that led to the passage of  
14 the transportation electrification sections of Senate Bill 1547 and Senate Bill 1044.

15 **Q: What is the purpose of your Opening Testimony?**

16 **A:** The purpose of my Opening Testimony is to provide information related to the importance  
17 of providing rate options that will work with the unique characteristics of EV charging.  
18 ChargePoint greatly appreciates that Pacific Power accounted for these unique  
19 characteristics in its rate design for proposed Rate Schedules 6 and 29 and in its proposed  
20 modifications to existing Rate Schedule 4.

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1 **Q: Please summarize your recommendations to the Commission.**

2 A: I recommend that:

- 3 • The Commission approve Pacific Power's proposed modifications to Rate Schedule 4;
- 4 • The Commission approve Pacific Power's proposed Residential Time-of-Use (TOU)  
5 Pilot (Schedule 6);
- 6 • The Commission approve Pacific Power's proposed Non-Residential TOU Pilot  
7 (Schedule 29); and,
- 8 • The Commission direct Pacific Power to make the results of the Schedule 6 and  
9 Schedule 29 Pilots publicly available after 36 months so that the Commission, the  
10 Company, and stakeholders may utilize information learned through the Pilots to  
11 further develop rate options that encourage beneficial EV charging under various use  
12 cases.

13 **II. Summary of Pacific Power's Proposal**

14 **Q: Please provide a brief summary of the Company's proposals that you will address in**  
15 **your testimony.**

16 A: As Company witness Meredith has outlined, the Company has proposed to modify  
17 Schedule 4, and has proposed rate Schedule 6, a Residential TOU Pilot, and Rate Schedule  
18 29, a Non-Residential TOU Pilot. I do not plan to address any of Pacific Power's other rate  
19 proposals.

- 1       • **Residential Service (Schedule 4)** – The Company proposes to modify the current basic  
2       charge for residential customers in addition to reducing the price differential between  
3       tier 1 and tier 2 by 50%.<sup>1</sup>
- 4       • **Residential TOU Pilot (Schedule 6)** – The Company proposes creating a new time-  
5       of-use residential rate pilot, Schedule 6. Under Schedule 6, residential customers would  
6       pay 17.917 cents per kWh during on-peak periods, which are defined for this schedule  
7       as 3:00 p.m. to 9:00 p.m. during the summer months of July through September, and  
8       6:00 a.m. to 8:00 a.m. and 5:00 p.m. to 11:00 p.m. in the non-summer months of  
9       October through June. During all other times considered off-peak, residential  
10      customers would pay 6.633 cents per kWh. Schedule 6 would be available for up to  
11      5,000 customers on a first-come, first-served basis.<sup>2</sup>
- 12     • **Non-Residential TOU Pilot (Schedule 29)** – The Company proposes a new optional  
13      time-of-use pilot program for non-residential customers whose loads are less than 1  
14      MW. Schedule 29 would have on-peak periods of 1:00 p.m. to 11:00 p.m. all days July  
15      through September, and 5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 12:00 a.m. (midnight)  
16      all days October through June. All other times would be considered off-peak.  
17      Customers would receive a sur-credit for energy used during off-peak energy to “keep  
18      the pricing structure as simple as possible.”<sup>3</sup> Schedule 29 would also recover demand  
19      charges based on utilization. The pilot would be limited to 100 customers.<sup>4</sup>

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<sup>1</sup> PAC/1400, Meredith/39.

<sup>2</sup> PAC/1400, Meredith/41-46.

<sup>3</sup> PAC/1400, Meredith/58.

<sup>4</sup> PAC/1400, Meredith/54-61.

1 **III. Evaluation of Pacific Power's Proposals**

2 **Schedule 4 – Residential Service:**

3 **Q: Does ChargePoint support Pacific Power's proposed changes to the pricing tiers in**  
4 **Schedule 4 – Residential Service?**

5 A: Yes. ChargePoint understands the original rationale for tiered residential rates is to  
6 encourage conservation – the idea being that customers might decrease their electricity  
7 consumption if the price increases after a certain amount of usage.<sup>5</sup> However, Witness  
8 Meredith discusses several concerns with tiered pricing, including the effect on EV  
9 charging and a residential customer's decision to purchase an EV.<sup>6</sup> ChargePoint shares this  
10 concern. Most EV drivers that charge at home use more electricity than an average  
11 customer and consequently pay the higher rate of the second tier for a significant amount  
12 of their monthly electricity consumption. For that reason, I agree with Witness Meredith  
13 that tiered pricing structures can disincentivize transportation electrification. Pacific  
14 Power's proposal to reduce the differential between the two pricing tiers lessens an  
15 unfortunate negative impact to residential customers that charge their electric vehicle at  
16 home. ChargePoint supports the proposed changes to the pricing tier in Schedule 4.

17 **Schedule 6 - Residential TOU Pilots**

18 **Q: Does ChargePoint support Pacific Power's proposed Residential TOU Pilot Schedule**  
19 **6?**

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<sup>5</sup> PAC/1400, Meredith/39.

<sup>6</sup> PAC/1400, Meredith/40.

1 A: Yes. ChargePoint supports the proposed pilot because the Company has designed the rate  
2 such that there is a meaningful difference between the peak and off-peak rate, which will  
3 incentivize customers to shift their energy use, including EV charging, to off-peak periods.  
4 This not only has the benefit of saving customers money, it also increases overall grid  
5 utilization, providing benefits to all Pacific Power customers, not just those on the rate.

6 **Q: How can TOU rates save residential customers money?**

7 A: TOU rates provide price signals that encourage consumers to shift energy use to off-peak  
8 periods. While not all energy use can be shifted, lower prices during off-peak periods  
9 encourage customers to change their behavior by shifting flexible energy use, such as EV  
10 charging, to off-peak periods – times that are most beneficial for the grid thus, saving them  
11 money.

12 **Q: How do TOU rates increase grid utilization?**

13 A: TOU pricing is an important tool to encourage consumers to change their charging behavior  
14 so that it aligns with grid system needs. Demands on all aspects of the electric system  
15 (generation, transmission, and distribution) vary with time. The addition of new load during  
16 off-peak hours can result in the wider distribution of fixed costs across customers, leading  
17 to lower rates for all customers.<sup>7</sup> If TOU rates successfully move significant amounts of

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<sup>7</sup> NARUC, Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators, at 21 (Oct. 2019) (“NARUC EV White Paper”), available at <https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE> (citing Jones et al. “The Future of Transportation Electrification: Utility, Industry and Consumer Perspectives,” Lawrence Berkeley National Laboratory (2018), at [http://eta-publications.lbl.gov/sites/default/files/feur\\_10\\_transportation\\_electrification\\_final\\_20180813.pdf](http://eta-publications.lbl.gov/sites/default/files/feur_10_transportation_electrification_final_20180813.pdf)).



1 EV load to off-peak hours, increased EV adoption can be expected to lower rates for all  
2 customers.

3 **Q: Will all customers save money on TOU rates?**

4 A: No, not all customers will be able to shift usage to lower priced off-peak periods. However,  
5 Pacific Power has addressed this concern in two ways. First, as part of the pilot, Pacific  
6 Power is proposing to protect customers from potential high bills by capping any potential  
7 bill increase due to participating in the TOU pilot at 10 percent. Second, customers unable  
8 to shift energy consumption can stay on Pacific Power's residential Schedule 4, which does  
9 not vary based on time of day.

10 **Q: Do you have any recommendations regarding the proposed Residential TOU Pilot?**

11 A: Yes. I recommend the Commission or the Company establish a defined period of time for  
12 the pilot, for example 36 months, otherwise it is simply a limited participation rate schedule.  
13 By establishing a timeframe that the pilot will be in effect, there will be a defined window  
14 in which to make the results of the pilot public so the Company, Commission, and  
15 stakeholders may analyze the impacts of the pilot and implement broader rate reforms. I  
16 recommend data from the pilot be made public via an interim report after 18 months and a  
17 final report at the conclusion of 36 months. Schedule 6 should remain available both to  
18 customers that have been taking service under the rate and customers that would like to  
19 sign up (up to Pacific Power's proposed 5,000 participant limit) until the rate schedule is  
20 either made permanently available to all residential customers or is replaced by a different  
21 time-based residential rate schedule available to all customers.

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1 **Non-Residential TOU Pilot Schedule 29**

2 **Q: Do you support Pacific Power’s proposed Non-Residential TOU Pilot Schedule 29?**

3 A Yes. Schedule 29 is an optional TOU pilot program that pairs a TOU rate with a demand  
4 charge based on utilization (or load factor) in which the average energy price declines as  
5 utilization increases. In designing Schedule 29, the Company acknowledges that an  
6 impediment to the expansion of DCFC stations is the very high cost of energy that stations  
7 with low utilization face because of traditional demand charges. In many cases, these high  
8 demand charges make DCFC deployment difficult for site hosts to justify economically,  
9 especially in the early years of EV adoption when station utilization rates are still growing.

10 While I support the proposed pilot, TOU rates may not be a perfect application for  
11 public DCFC. However, Pacific Power’s on-peak and off-peak windows generally align  
12 with standard hours of business operations and should have minor, if any, impacts on driver  
13 experience.<sup>8</sup>

14 **Q: What is a “traditional demand charge”?**

15 A: Demand charges are charges based on the customer’s peak capacity usage, traditionally  
16 used to recover the nonfuel costs of electricity. Demand charges are typically based on the  
17 highest average 15-minutes of power use in a monthly billing cycle. They are designed to  
18 incentivize customers to level out their load and avoid steep increases in usage that could  
19 overload the distribution system.

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<sup>8</sup> DCFC stations are often used by EV drivers that cannot adjust their usage to avoid the impact of higher priced TOU time periods. This user group may include drivers traveling longer distances on highways unable to schedule their stops to align with changes in pricing or charger availability caused by higher priced TOU time periods.

1 DC fast charging stations can have low load factors, with sporadic instances of high  
2 demand when a vehicle or multiple vehicles are charging. Under traditional demand-based  
3 rates, site hosts can face high demand charges due to the few peak charging sessions that  
4 occur each month, which effectively penalizes site hosts for providing charging services in  
5 earlier-stage EV markets. In some markets, demand charges can account for as much as  
6 90% of a site host's electricity costs.<sup>9</sup>

7 **Q: Why can traditional demand rates make DCFC deployment difficult for site hosts to**  
8 **justify economically?**

9 A: As mentioned above, traditional demand rates for operators of DCFC stations can impose  
10 disproportionately high costs on customers providing low utilization charging equipment.  
11 With very few exceptions (e.g. for very small customers) commercial customers are on  
12 rates that include demand charges that are based on the customer's highest measured  
13 demand, measured in kilowatts (kW) in a given month. A DCFC station site host may only  
14 have a few vehicles use the station in a month during the early years of EV adoption. The  
15 power demand of these charging sessions will set the demand charge for the month, likely  
16 resulting in a significant bill for the site host but the site host will only have a few charging  
17 sessions over which to spread these costs (if the site host chooses to pass along its own  
18 costs to drivers). This impact is amplified for fleets and other customers that need to charge  
19 multiple vehicles simultaneously at high power levels and/or that do not have the flexibility  
20 to adjust the timing of charging sessions for multiple vehicles. Thus, for DCFC sites,

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<sup>9</sup> Rocky Mountain Institute, 2017. "EVgo Fleet and Tariff Analysis." Available at: [https://rmi.org/wp-content/uploads/2017/04/eLab\\_EVgo\\_Fleet\\_and\\_Tariff\\_Analysis\\_2017.pdf](https://rmi.org/wp-content/uploads/2017/04/eLab_EVgo_Fleet_and_Tariff_Analysis_2017.pdf)

1 conventional commercial rate design often can make otherwise viable and desirable  
2 projects uneconomic.

3 Furthermore, unlike traditional commercial customers on demand-based rates,  
4 public EV charging station site hosts have very limited ability to manage or mitigate the  
5 impact of demand charges without negatively impacting the EV driver experience. For  
6 example, a factory or large commercial facility may be able to avoid turning on several  
7 large loads at the same time in order to avoid higher demand charges. By contrast, if a  
8 public DCFC site host offers four charging ports, the site host could only avoid significant  
9 demand charges by limiting the number of ports in use simultaneously or by restricting the  
10 amount of power to each port, or both. Either action could negatively impact the driver  
11 experience and thus defeat the purpose of expanding public DCFC infrastructure. Simply  
12 put, high demand charges coupled with low utilization can be an impediment to the  
13 widespread deployment of EV charging stations.

14 **Q: Will Schedule 29 only benefit DCFC charging stations?**

15 A: No. While Schedule 29 will address the impacts of traditional demand-based rates on  
16 public DCFC charging stations, other use cases can benefit as well. As Pacific Power  
17 Witness Meredith stated in testimony, other forms of transportation electrification could  
18 take advantage of proposed Schedule 29 such as bus charging or fleet charging where the  
19 TOU rates could lower the incremental cost of off-peak charging and help the Company  
20 better manage around its peak periods.<sup>10</sup> Witness Meredith also suggests that fruit growers,

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<sup>10</sup> PAC/1400, Meredith/56.

1 as another example, might benefit from Schedule 29.<sup>11</sup> By combining TOU rates with a  
2 demand charge that scales based on utilization rates, other customers and use cases may  
3 benefit as well.

4 **Q: Do you have any recommendations regarding the proposed Schedule 29 Pilot ?**

5 A: Yes. As with the Company's proposed Residential TOU pilot (Schedule 6), I also  
6 recommend the Commission or the Company establish a defined period of time for the  
7 Non-Residential TOU pilot (Schedule 29), again, 36 months would be appropriate. An  
8 established timeframe will provide market participants clarity around when the Company  
9 will make results of the pilot public so that the Company, the Commission, and  
10 Stakeholders may analyze the results of the pilot, including the impact of TOU rates on  
11 public DCFC stations, and implement broader rate reform. I recommend data from the pilot  
12 be made public via an interim report after 18 months and a final report at the conclusion of  
13 36 months. Similar to my recommendation with respect to the Schedule 6 pilot rate,  
14 Schedule 29 should remain available both to customers that have been taking service under  
15 the rate and customers that would like to sign up until the rate schedule is either made  
16 permanently available to all qualifying customers or is replaced by a different time-based  
17 rate schedule that mitigates the impact of demand charges on low-load factor commercial  
18 customers.

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<sup>11</sup> *Id.*

1 **IV. Conclusion and Recommendations.**

2 **Q: Please summarize your recommendations for the Commission.**

3 A: I recommend that:

- 4 • The Commission approve Pacific Power's proposed modifications to Rate Schedule 4;
- 5 • The Commission approve Pacific Power's proposed Residential Time-of-Use (TOU)
- 6 Pilot (Schedule 6); and,
- 7 • The Commission direct Pacific Power to make the results of the Schedule 6 and
- 8 Schedule 29 pilots publicly available after 36 months so that the Commission, the
- 9 Company, and stakeholders may utilize information learned through the pilots to
- 10 further develop rate options that encourage beneficial EV charging under various use
- 11 cases.

12 **Q: Does this conclude your testimony at this time?**

13 A: Yes.