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July 5, 2018

Sam Wade
Branch Chief, Transportation Fuels
California Air Resources Board
1000 I Street
Sacramento, CA 95814

Subject: ChargePoint Comments on the Low Carbon Fuel Standard Proposed Modifications to the Regulation Order Posted on June 20, 2018

Dear Mr. Sam Wade,

ChargePoint respectfully submits these comments in regards to the California Air Resources Board (ARB) Low Carbon Fuel Standard (LCFS) 2018 Proposed Modifications to the Regulation Order. Given Governor Brown's Executive Order B-48-18, which aims to have 250,000 electric vehicle chargers installed by 2025 and 5 million zero emission vehicles (ZEVs) on the road by 2030, enhancements and amendments to the LCFS Program in this rulemaking cycle are critical to reach the State's ambitious goals.

ChargePoint is the leading electric vehicle (EV) charging network in the world, with charging solutions in every category EV drivers charge, at home, work, around town and on the road. With more than 50,000 independently owned public and semi-public charging spots and thousands of customers (businesses, cities, agencies and service providers), ChargePoint is the only charging technology company on the market that designs, develops and manufactures hardware and software solutions across every use case. Leading EV hardware makers and other partners rely on the ChargePoint network to make charging station details available in mobile apps, online and in navigation systems for popular EVs. ChargePoint drivers have completed more than 38 million charging sessions, saving upwards of 39 million gallons of gasoline and driving more than 939 million gas-free miles.

Residential EV Charging

ChargePoint recommends amending the prioritization of the incremental credits for EV charging at Single-family residences. Our understanding is that the goal of these incremental credits is to encourage more charging when there is benefit to the grid and/or there is lower carbon



intensity of the electric fuel, smart chargers enable EV drivers to easily participate in charging that meets these goals. Currently, the hierarchy does not acknowledge the differences in sources of metered data and the associated quality of the data as well as omits opportunities for EVSEs to capture credits outside of programs with LSEs. ChargePoint recommends the following hierarchy:

1. The Load Serving Entity (LSE) supplying electricity to the EV associated with the FSE ID and metered EVSE data has first priority to claim credits;
2. The Load Serving Entity (LSE) supplying electricity to the EV associated with the FSE ID and metered on-vehicle telematics data has second priority to claim credits;
3. The manufacturer of the EVSE associated with the FSE ID has third priority;
4. The manufacturer of the EV associated with the FSE ID has fourth priority; and
5. Any other entity has fifth priority.

It is imperative that ARB aligns its goal of reducing CI with the hierarchy for residential credits—different sources of data have greater quality and ability to shape charging behavior. For example, our chargers are tested to operate with the same accuracy as utility meters, which requires stringent measurement standards specific to energy metering. To participate in the California IOU sub metering pilot and SDG&E utility programs, ChargePoint chargers were test by SDG&E, PG&E, Nexant, and an independent lab. ChargePoint and other networked charging companies are naturally integrating with third-party Distributed Energy Resource Management Software (DERMS) providers that utilities and grid operators already utilize for grid optimization and demand response, and thus smart chargers can communicate more directly with utilities and grid operators than telematics.

Additionally, the consumer experience and ability to shape consumer behavior for EVSE is superior compared to on-vehicle telematics. The user experience of networked home level 2 chargers is simple and easy. Often, setting schedules and attempting to otherwise manage EV charging through the vehicle or manufacturer’s mobile app is confusing and can impede public charging. For example, nighttime charging schedules set via the vehicle sometimes conflict with the driver’s ability to charge at a public charging station on-the-go, because the vehicle has been directed not to charge except for the nighttime hours. Additionally, the user experience of managed charging, software/mobile app functionality, and integrations vary significantly by EV model and EV manufacturer. Thus, incentivizing networked home level 2 EVSEs provides a better driver experience.

ChargePoint strongly supports EV Charging at Multifamily Residences as a separate category from residential charging collectively, which previously included both single-family and multi-family. Multi-family charging can often be located in the “visitor”, “mixed-use”, or “common”



areas of a multi-family residence, which are closer to “non-residential” in the usage. Without separation, it could be an area of significant verification confusion if vehicles can register credits from chargers with multiple users, including non-residents, given the many changes proposed in the residential EV charging modifications to LCFS. We believe that this modification to the proposed regulations will facilitate faster deployment of EV charging infrastructure in multi-family residences, which is arguably the most challenging location within the built environment to bring EV infrastructure. We commend ARB Staff for making this change to hopefully bring more EV charging to Multi-family residents, and thus bringing more equity to clean technology.

ChargePoint acknowledges the challenge of preventing double-counting for EV charging at Single-family residences, specifically incremental credits, given the many different entities that will be able to register and generate credits. ChargePoint agrees that using one identification type is the best way to avoid double counting violations. While VIN is a piece of information that ChargePoint can gather from our EV drivers, we do not believe that it is the best information to use for FSE registration. The main issue with VIN is that it “stays” with the vehicle for the lifetime of the vehicle. Currently, many EV drivers lease EVs (given the quickly evolving technology and greater number of models available within short periods of time). It’s very plausible and perhaps even likely that an EV driver will register a station using the VIN of their current vehicle but the lease may end or the owner might sell the vehicle and get a new EV and start reporting charging off of the same EVSE but with a different vehicle, even though the registered VIN is still the same. Meanwhile, that same vehicle with the registered VIN is charging elsewhere. It would be very difficult to avoid this situation as an EVSE provider. We recommend using utility account numbers given that they are unique to both a location and resident. Additionally, it seems that EVSE are required to provide much more info than on-vehicle telematics for FSE registration. Not only is it unfairly onerous, but by not requiring on-vehicle telematics to register a location, it’s extremely likely that vehicles will claim credits off of nonresidential and multifamily chargers. As it is, on-vehicle telematics cannot ensure the same level of protection that the chargers provide because they have don’t have a fixed physical location. This can easily lead to reduced accuracy in vehicle charging attribution, which is potentially a huge source of double-counting violation.

DC Fast Charging Infrastructure (FCI) Pathways

ChargePoint strongly recommends that the FCI language regarding payment methods reference the final SB 454 guidelines that will be adopted later this year. If the LCFS program preempts or creates a different set of requirements, it could cause confusion, lack of participation in the program, or worse, violations because there are potentially two different sets of language/requirements around payment methods for public stations. Cross-referencing the



current rulemaking will make it more streamlined and easier for EVSE manufacturers and site hosts to meet the requirements.

ChargePoint recommends that the FCI Pathway Requirements include serial number by the OEM. The FCI Pathways encourage colocation, but without serial number as part of the registration requirement, it will be difficult to divvy up credits for the site. ChargePoint would also like to respectfully point out that in cases of Expanded FCI Capacity, there should not necessarily a requirement for an updated “number” of DCFC, just a requirement for reporting the increased capacity. ChargePoint’s DCFC technology is modular and scalable, allowing us to add capacity without adding stations (or ripping and replacing stations).

Please see below for a chart of the estimated cost of electricity, including demand charges, in the three major IOU service territories in California, along with LADWP and SMUD.

		Sessions per Day per Location - Annual Driver Fee's Collected											
		Demand and Meter Charges	5	10	15	20	25	30	35	40	45	50	<<
Two 50kW Chargers (100kW total)	PG&E	\$ 19,554	\$ (10,429)	\$ (1,304)	\$ 7,821	\$ 16,946	\$ 26,071	\$ 35,196	\$ 44,321	\$ 53,446	\$ 62,571	\$ 71,696	<<
	SCE	\$ 18,225	\$ (9,100)	\$ 25	\$ 9,150	\$ 18,275	\$ 27,400	\$ 36,525	\$ 45,650	\$ 54,775	\$ 63,900	\$ 73,025	<<
	SDG&E	\$ 44,150	\$ (35,025)	\$ (25,900)	\$ (16,775)	\$ (7,650)	\$ 1,475	\$ 10,600	\$ 19,725	\$ 28,850	\$ 37,975	\$ 47,100	<<
	LADWP	\$ 17,868	\$ (8,743)	\$ 382	\$ 9,507	\$ 18,632	\$ 27,757	\$ 36,882	\$ 46,007	\$ 55,132	\$ 64,257	\$ 73,382	<<
	SMUD	\$ 10,445	\$ (1,320)	\$ 7,805	\$ 16,930	\$ 26,055	\$ 35,180	\$ 44,305	\$ 53,430	\$ 62,555	\$ 71,680	\$ 80,805	<<

		Sessions per Day per Location - Annual Driver Fee's Collected											
		Demand and Meter Charges	5	10	15	20	25	30	35	40	45	50	<<
Two 300kW Chargers (100kW total)	PG&E	\$ 54,630	\$ (45,505)	\$ (36,380)	\$ (27,255)	\$ (18,130)	\$ (9,005)	\$ 120	\$ 9,245	\$ 18,370	\$ 27,495	\$ 36,620	<<
	SCE	\$ 49,905	\$ (40,780)	\$ (31,655)	\$ (22,530)	\$ (13,405)	\$ (4,280)	\$ 4,845	\$ 13,970	\$ 23,095	\$ 32,220	\$ 41,345	<<
	SDG&E	\$ 129,654	\$ (120,529)	\$ (111,404)	\$ (102,279)	\$ (93,154)	\$ (84,029)	\$ (74,904)	\$ (65,779)	\$ (56,654)	\$ (47,529)	\$ (38,404)	<<
	LADWP	\$ 52,932	\$ (43,807)	\$ (34,682)	\$ (25,557)	\$ (16,432)	\$ (7,307)	\$ 1,818	\$ 10,943	\$ 20,068	\$ 29,193	\$ 38,318	<<
	SMUD	\$ 28,745	\$ (19,620)	\$ (10,495)	\$ (1,370)	\$ 7,755	\$ 16,880	\$ 26,005	\$ 35,130	\$ 44,255	\$ 53,380	\$ 62,505	<<

		Sessions per Day per Location - Annual Driver Fee's Collected											
		Demand and Meter Charges	10	20	30	40	50	60	70	80	90	100	<<
Four 150kW Chargers (600kW total)	PG&E	\$ 472,383	\$ (463,258)	\$ (435,883)	\$ (417,633)	\$ (399,383)	\$ (381,133)	\$ (362,883)	\$ (344,633)	\$ (326,383)	\$ (308,133)	\$ (289,883)	<<
	SCE	\$ 97,425	\$ (88,300)	\$ (79,175)	\$ (70,050)	\$ (60,925)	\$ (51,800)	\$ (42,675)	\$ (33,550)	\$ (24,425)	\$ (15,300)	\$ (6,175)	<<
	SDG&E	\$ 225,981	\$ (216,856)	\$ (207,731)	\$ (198,606)	\$ (189,481)	\$ (180,356)	\$ (171,231)	\$ (162,106)	\$ (152,981)	\$ (143,856)	\$ (134,731)	<<
	LADWP	\$ 105,528	\$ (96,403)	\$ (87,278)	\$ (78,153)	\$ (69,028)	\$ (59,903)	\$ (50,778)	\$ (41,653)	\$ (32,528)	\$ (23,403)	\$ (14,278)	<<
	SMUD	\$ 46,943	\$ (37,818)	\$ (28,693)	\$ (19,568)	\$ (10,443)	\$ (1,318)	\$ 7,807	\$ 16,932	\$ 26,057	\$ 35,182	\$ 44,307	<<

		Sessions per Day per Location - Annual Driver Fee's Collected											
		Demand and Meter Charges	50	100	150	200	250	300	350	400	450	500	<<
1,500kW Charging Depot	PG&E	\$ 472,383	\$ (463,258)	\$ (289,883)	\$ (198,633)	\$ (107,383)	\$ (16,133)	\$ 75,117	\$ 166,367	\$ 257,617	\$ 348,867	\$ 440,117	<<
	SCE	\$ 239,985	\$ (230,860)	\$ (221,735)	\$ (212,610)	\$ (203,485)	\$ (194,360)	\$ (185,235)	\$ (176,110)	\$ (166,985)	\$ (157,860)	\$ (148,735)	<<
	SDG&E	\$ 556,569	\$ (547,444)	\$ (538,319)	\$ (529,194)	\$ (520,069)	\$ (510,944)	\$ (501,819)	\$ (492,694)	\$ (483,569)	\$ (474,444)	\$ (465,319)	<<
	LADWP	\$ 263,316	\$ (254,191)	\$ (245,066)	\$ (235,941)	\$ (226,816)	\$ (217,691)	\$ (208,566)	\$ (199,441)	\$ (190,316)	\$ (181,191)	\$ (172,066)	<<
	SMUD	\$ 73,655	\$ (64,530)	\$ (55,405)	\$ (46,280)	\$ (37,155)	\$ (28,030)	\$ (18,905)	\$ (9,780)	\$ (655)	\$ 8,470	\$ 17,595	<<

Please note that we made the following assumptions/used the following information:

- We used publicly available information from EVgo on pricing (\$0.20 per minute) and session length (average 25 minute sessions)
 - We did not factor in the assumption that EVgo raises price per minute for cars that charge at higher rates
- Color-coded delate numbers in the chart represent the difference between demand and meter charges owed vs. what driver revenue is estimated to be



- No demand limit was used on these sites to keep demand charges down

Data Collection

Given the changes proposed in this rulemaking cycle to the electricity portion of the LCFS program, ChargePoint recommends that ARB develop a streamlined data collection system. With thousands of chargers currently registered in the program, as well as a proposed Time-of-Use (TOU) program that would require hourly data reporting, the current system of emailing Excel files as back-up verification data is neither secure nor efficient.

ChargePoint appreciates the opportunity to submit these comments and looks forward to continuing to work with the Air Resources Board, as well as other stakeholders, on continuing carbon emission reductions associated with alternative fuels through the Low Carbon Fuel Standard Program.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony Harrison", with a long horizontal flourish extending to the right.

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