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February 3, 2021

California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

RE: 20-FDAS-01 promoting flexible demand capabilities for Electric Vehicle Chargers as DR and DER

Andromeda Power wishes to thank the California Energy Commission (CEC) for being a leader in the growing international recognition that greenhouse gas emissions are changing the climate and for their multiple programs to advance clean transportation and protect the environment.

The mission of Andromeda Power is to make the world's smart mobility a practical opportunity for everyone. Creating solutions for optimal fast charging anytime, anywhere, from any energy source.

Andromeda Power (facility in Long Beach, California) has designed and produced lightweight and compact fast chargers (CHAdEMO, CCS, and J1772) for EV since 2012. ORCA Mobile is on wheels, ORCA Inceptive is transportable onboard an EV. These fast chargers are certified and operate on network up to 50 kW. ORCA Incisive is capable of V1G Demand Response and V2G Distributed Energy Resource.

In connection with the 20-FDAS-01 Flexible Demand Appliance Standards, we support the scheme presented by Dr. Walt Johnson at the Workshop on Senate Bill 49 Flexible Demand Appliance Standards held on December 14, 2020.¹

We suggest to add the following mapping between OpenADR and CTA-2045 Signals as in Table below to include V1G and V2G. In fact CTA-2045 can be used not only for V1G (Demand Response), but also for V2G (Distributed Energy Resource) with or without an Aggregator to connect the resources to the Power Utilities' VTN.

¹ Presentation detailing the various methods on communication standards for flexible demand appliances. - By Walt Johnson IEEE SB 49 Lead Commissioner Workshop December 14 2020.

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=236117&DocumentContentId=69104>

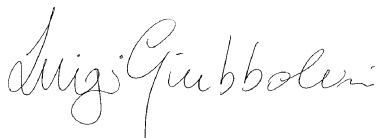
Program Messages	Tier	OpenADR Messages (Signal, Value)	CTA-2045 Messages
Load Up	1	Simple, 0	LoadUp (LU)
Moderate	2	Simple, 1	Shed (S)
Critical Peak	3	Simple, 2	Critical peak Event (CPE)
Grid Emergency	4	Simple, 3	Grid Emergency (GE)
Time of Use	Up to Four	Simple, 0-3	LU, S, CPE, or GE
Real-time Price	N/A	PriceMultiplier, Variable	RelativePrice
V1G (DR 25%)	5	Simple, 4	<i>To be defined (i.e. DR25%)</i>
V1G (DR 50%)	6	Simple, 5	<i>To be defined (i.e. DR50%)</i>
V1G (DR 75%)	7	Simple, 6	<i>To be defined (i.e. DR75%)</i>
V1G (DR 100%)	8	Simple, 7	<i>To be defined (i.e. DR100%)</i>
V1G Time of Use	4-7	Simple, 4-7	DR25%, DR50%, DR75%, DR100%
V2G (DER 25%)	9	Simple, 8	<i>To be defined (i.e. DER25%)</i>
V2G (DER 50%)	10	Simple, 9	<i>To be defined (i.e. DER50%)</i>
V2G (DER 75%)	7	Simple, 10	<i>To be defined (i.e. DER75%)</i>
V2G (DER 100%)	8	Simple, 11	<i>To be defined (i.e. DER100%)</i>
V2G Time of Use	8-11	Simple, 8-11	DER25%, DER50%, DER75%, DER100%

The added mapping facilitates and accelerates the implementation of VGI business.

This will require the addition of ten CTA-2045 Messages to the standard.

We thank you for your consideration of this comment and look forward to continuing to work with the Energy Commission to make the world’s smart mobility a practical opportunity for everyone.

Sincerely,



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