

DOCKETED

Docket Number:	20-IEPR-02
Project Title:	Transportation
TN #:	233846
Document Title:	Value of EVs as Bidirectional Energy Storage
Description:	S1 1B. Ryan Harty, Honda
Filer:	Raquel Kravitz
Organization:	Energy Commission
Submitter Role:	Commission Staff
Submission Date:	7/14/2020 9:49:40 AM
Docketed Date:	7/14/2020

Value of EVs as Bidirectional Energy Storage
Resiliency – Renewable Energy Integration – Infrastructure ROI

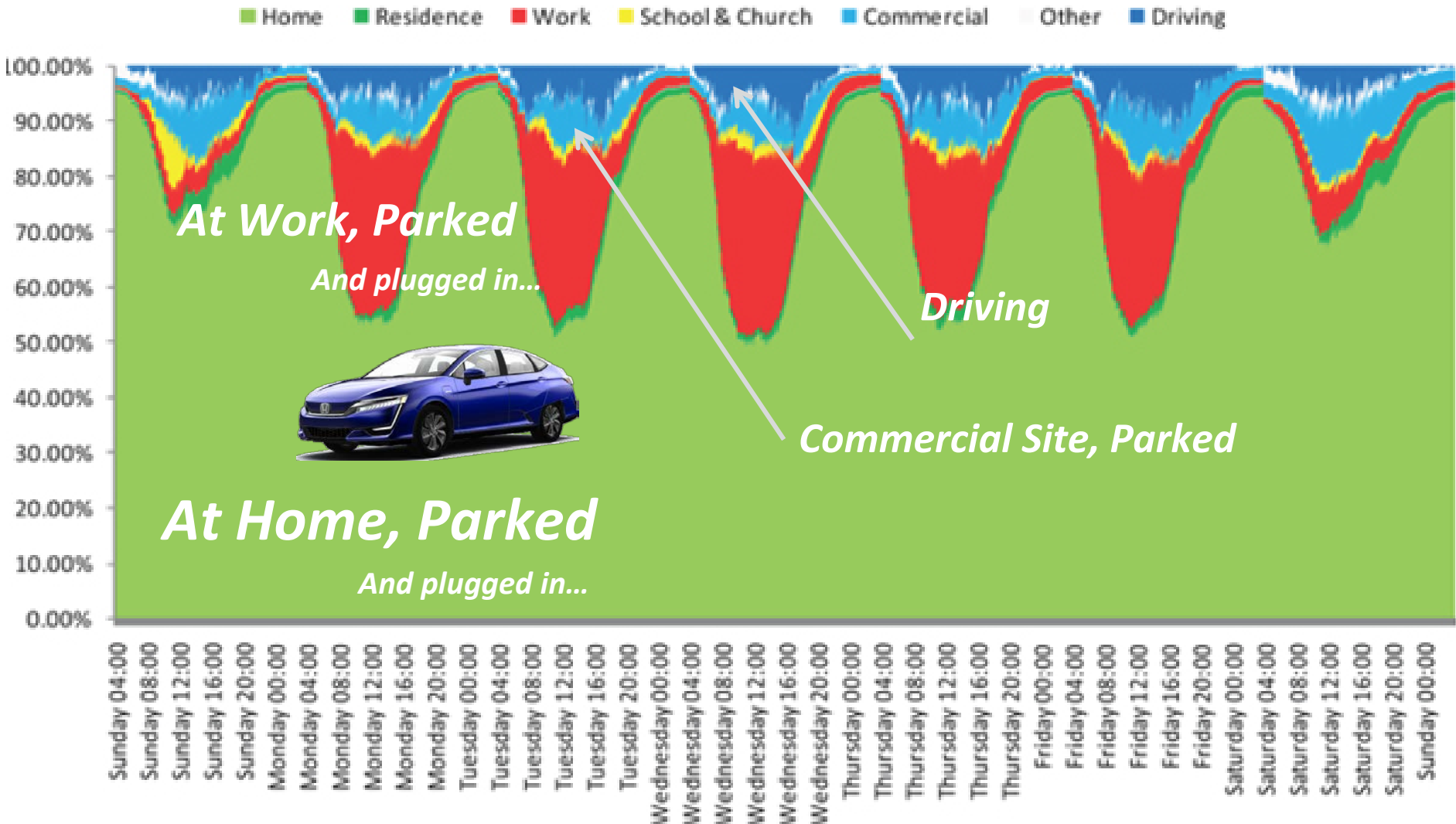
Ryan Harty

American Honda Motor Co., Inc

7/15/2020

Opportunity of Vehicle to Home / Load / Grid (V2X)

Where are the cars at any given time?



V2X Improves Value and Utilization of EVs for Resilience, RE, and Infrastructure

HONDA V2X Enables EVs as Resiliency Resource – Vehicle to Home / Load / Grid

Energy Storage Resource – V2H / V2G – Honda Smart Home US at UC Davis

Hondasmarthome.com



Installed 2014. V2H 2016. V2G 2018.

100% ZNE for Living + Transportation

Power Exporter for V2L, V2H



V2X Provides Energy Resiliency - At Home and At Play

V2X Enables Vehicle-Grid Integration for Renewable Energy

Renewable Electricity Can Supply Electric and Transportation Energy Systems:



Requires Integrated Energy Management



Electricity



V1G = Charge Timing Control
 V2G (future) = Bidirectional Power Transfer

Electricity

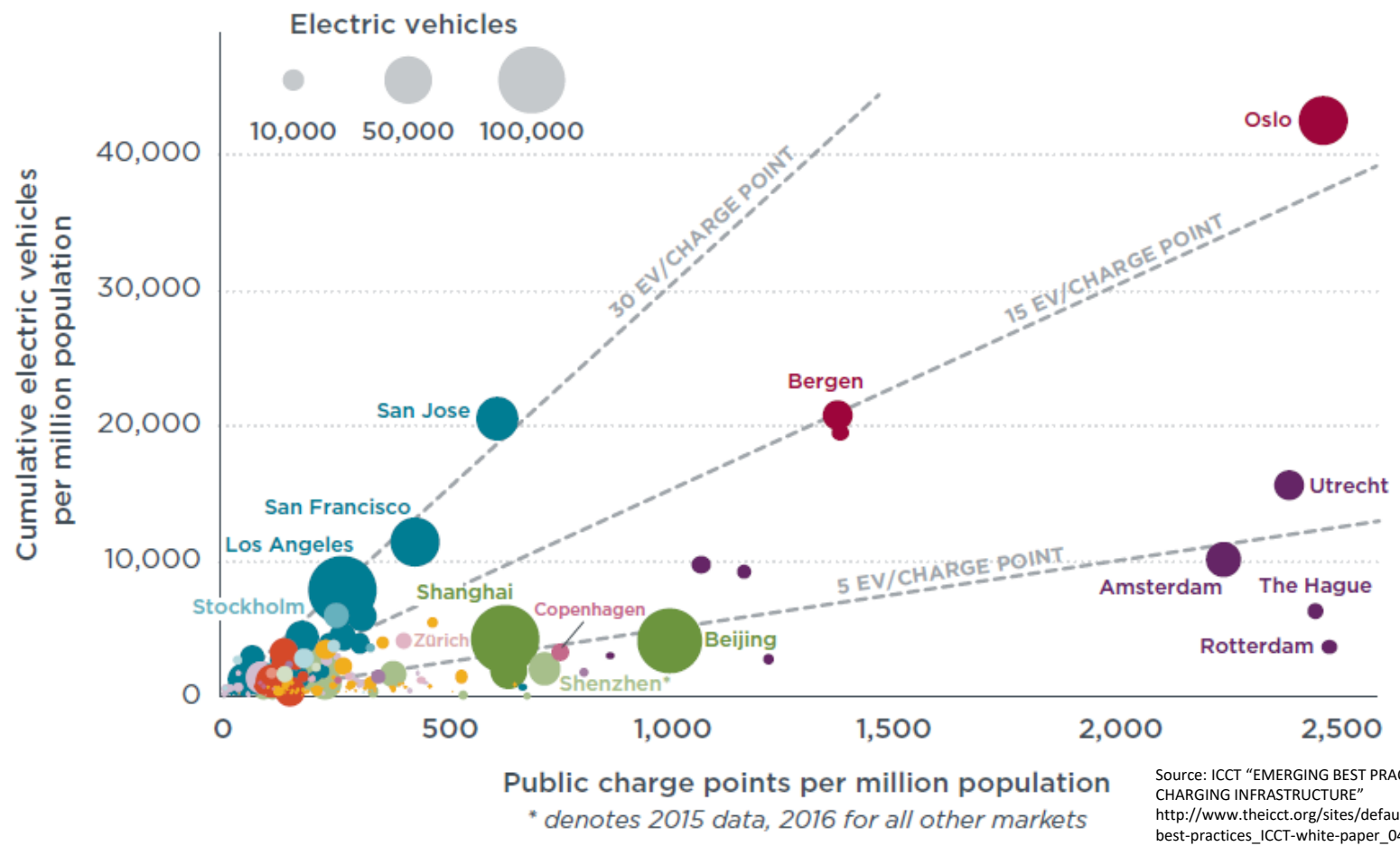


Massive Energy Storage
 Seasonal Energy Storage
 Decouple Generation and Use

Hydrogen

V2X Improves Renewable Energy Integration

Charging Infrastructure is Very Important to Promote EV Adoption



In any market with consistent policy, EV adoption tracks Charging Infrastructure Investments

Figure 2. Public charging infrastructure and electric vehicle registrations per million population by metropolitan area, with size of circles indicating total electric vehicles.

V2X Improves ROI for EV Charging Infrastructure. Positive ROI Promotes Investment.