

DOCKETED

Docket Number:	20-MISC-01
Project Title:	2020 Miscellaneous Proceedings.
TN #:	236490
Document Title:	Staff Presentation V2ehicle-to-Building for Resilient Backup Power
Description:	N/A
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	1/27/2021 2:08:08 PM
Docketed Date:	1/27/2021



Vehicle-to-Building for Resilient Backup Power

Fuels and Transportation Division and Research & Development Division
January 25, 2021



Workshop Agenda

- Welcome and Workshop Overview: ~9:00 – 9:05am
- Panel 1: Customer Demand and Market Opportunity: ~9:05 – 9:45am
- Panel 2: Technology Status and Development Needs: ~9:45 – 11:00am
- Panel 3: Policy Context and Opportunities to Accelerate Deployment: ~11:00 am – 12:15 pm
- Public Questions & Discussion ~12:15 pm - 12:45 pm



We Want Your Input

Goal for today is to

- Solicit your input—as market actors, technology developers and users, utilities, and from the public—on how CEC can advance and increase access to V2B technologies, markets, and programs
 - Research & development needs
 - Demonstration activities
 - Technical or financial incentives
 - Policy changes
 - Convening activities
 - Others



Customer Demand and Market Opportunity

- Edward Burgess, **Vehicle Grid Integration Council**
- Lance Noel, **Center for Sustainable Energy**
- Kevin Matthews, **National Strategies**
- Maria Sanz, **Pacific Gas and Electric**
- Ben Wender (moderator), **CEC Research and Development Division**



Panel 1 discussion questions

- Are you seeing customer demand for vehicle-to-building solutions?
- Are automakers seeing customer interest in these capabilities and are there plans to incorporate into vehicle model roll outs?
- What is the market status today and potential in the future? Are there estimates of market size or potential in the CA, the US, or globally?
- Are there lessons CA can learn from international experience?
- How can CEC advance the market readiness and customer access to V2B technologies? What are your recommendations?



Technology Status and Development Needs

- Marc-André Forget and Laurent Schmitt, **Ossiaco**
- Joseph Gottlieb, **Rhombus Energy Solutions**
- Kevin Myers and Janek Metzner, **Lucid Motors**
- Josh Gerber and Lee Krevat, **Connect California**
- Jacob Mathews, **Ford**
- Oleg Logvinov, **IoTecha**
- Jeffrey Lu (moderator), **CEC Fuels and Transportation Division**



Panel 2 discussion questions

- What are your perspectives on AC (onboard charger) vs DC (offboard charger) implementations?
- What is the marginal cost for implementing bidirectionality? Are there significant cost or component barriers?
- What complementary hardware is needed to connect vehicle power to building wiring? What are the hardware needs in the near term (non-grid-interactive, during outage conditions) versus the longer term (grid-interactive, interconnected)?
- How can interoperability of V2H/B products be maximized? What are the preferred connector and communication interfaces?
- Where should the CEC target greater support or policy clarity?



Policy Context and Opportunities to Accelerate Deployment

- Ryan Harty, **American Honda Motor Co.**
- Jackie Piero, **Nuvve Corp.**
- Pat Saxton, **California Public Utilities Commission**
- Roger Salas, **Southern California Edison**
- Deidre Yiu and Corey Ershow, **Rivian**
- Noel Crisostomo (moderator), **CEC Fuels and Transportation Division**



Panel 3 discussion questions

- What are practical interconnection challenges for DC V2G projects in contrast to V2H/B?
- What is the progress on identifying and scoping of AC V2G projects?
- Are automotive and electrical safety certification requirements converging as needed for V2B and V2G? What other forums warrant action?
- Given the year-round threat of wildfire to reliable electric service, what should guide CEC policy priorities?
- Should the state set quantifiable and timely targets for V2H/B on the path to V2G? What types of support (technical assistance, capital buydowns, driver education and outreach) are needed to improve project economics?
- How should CEC and CPUC coordinate action on resiliency ([see Draft 2020 IEPR Ch. 6](#)) and charging infrastructure technology ([see AB 2127 Ch. 5](#))? How can California's experience offer replicable insight for the U.S. DOE's forthcoming *V2G Integration Assessment*?

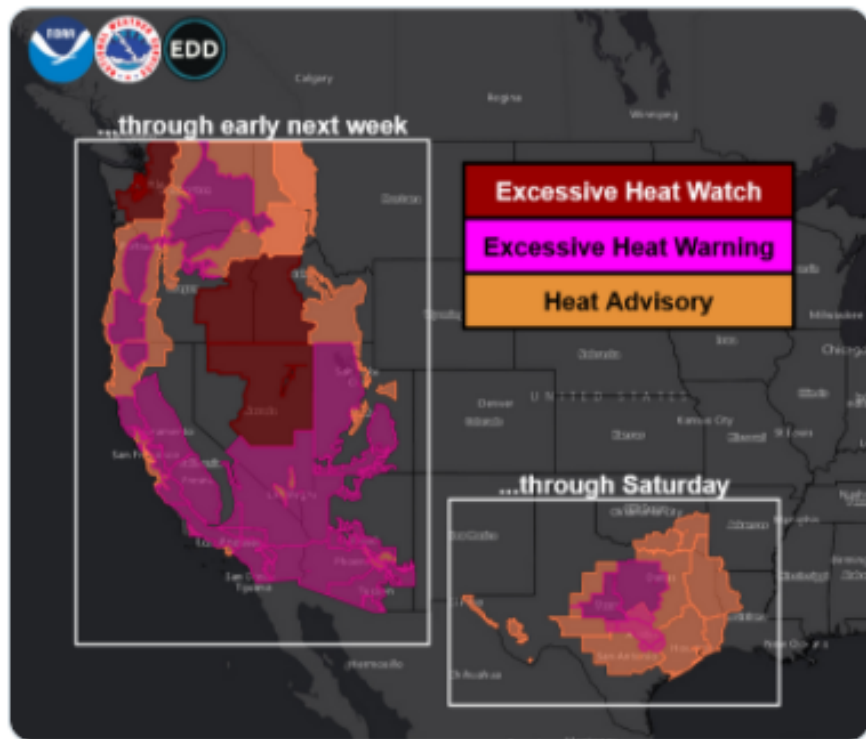


Customer demand for power amidst heat- and storm-induced outages

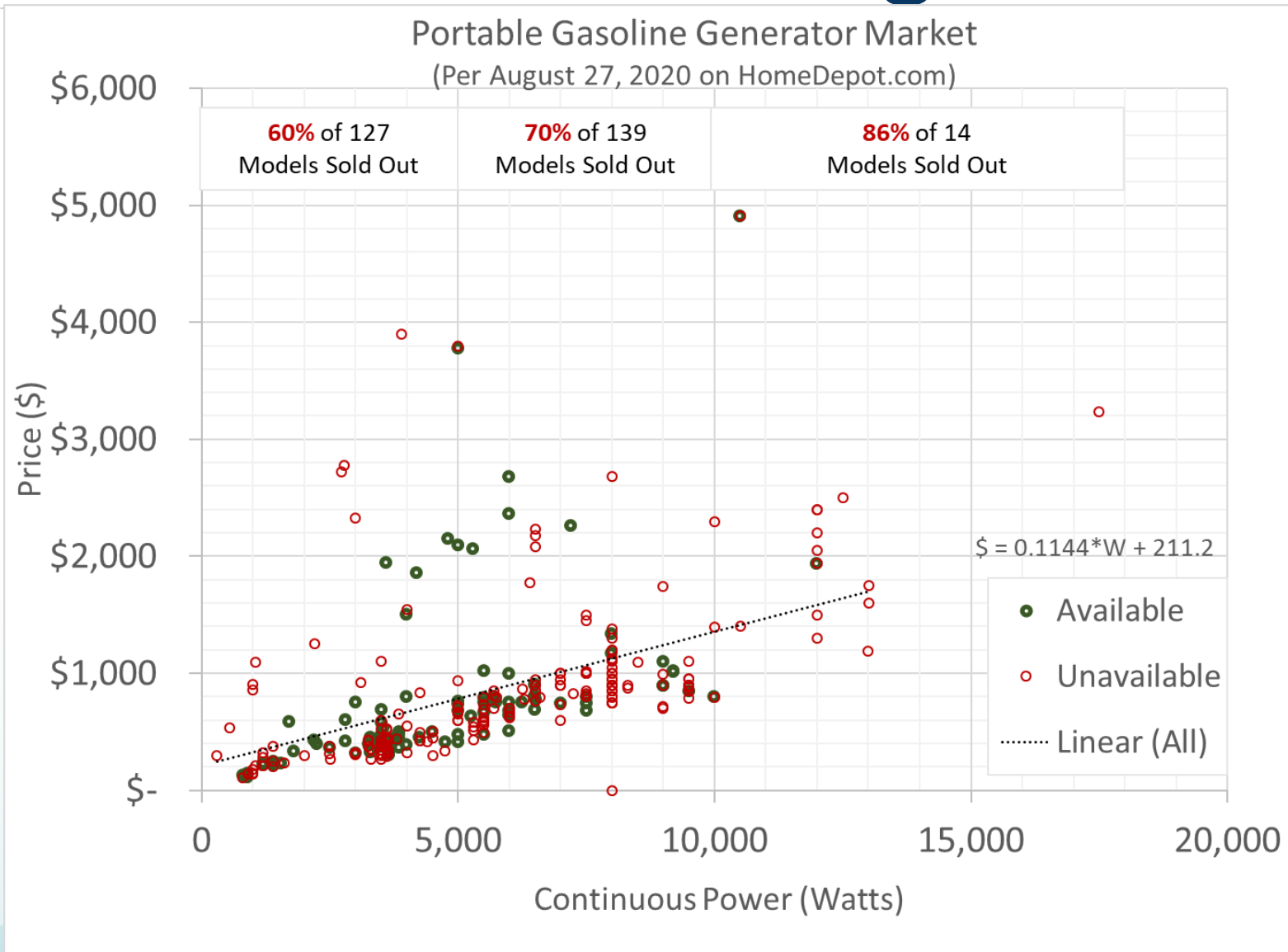


NWS Weather Prediction Center
@NWSWPC

Over 80 million people are within an Excessive Heat Watch/Warning or Heat Advisory today. Extreme heat will significantly increase the potential for heat related illnesses, particularly for those working or participating in outdoor activities. Remember to stay hydrated!



4:00 AM · Aug 15, 2020 · Hootsuite Inc.





Housekeeping

- Workshop is being recorded
- Workshop Event Webpage:
<https://www.energy.ca.gov/event/workshop/2021-01/staff-workshop-vehicle-building-v2b-resilient-backup-power>
- Virtual Participation through Zoom
 - Q&A period after main presentation
 - Raise Hand or Q&A feature
- Written Comments to Docket # 20-MISC-01:
<https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=20-MISC-01>
Deadline: Tuesday, February 16, 2021 by 5:00 p.m.



Open Discussion





Q&A / Public Comments

Zoom Participants

- Use the “raise hand” feature to make verbal comments
- Use the Q&A feature to type in your question

Telephone Participants:

- Dial *9 to raise your hand
- Dial *6 to mute/unmute your phone line.

Written Comments

<https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=20-MISC-01>

Deadline for comment: Tuesday, February 16, 2021 by 5:00 p.m.



Submit Comments to Docket 20-MISC-01

Electronic Commenting System

Visit the comment page for this docket at:

<https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=20-MISC-01>

Comment by E-mail

E-mail: docket@energy.ca.gov

Subject Line: "Public Workshop on Vehicle-to-Building for Resilient Backup Power"

All comments due by 5:00 pm on February 16, 2021

* If answering or providing comments to the specific questions included in this presentation, please reference the slide number or question.



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Thank you for participating remotely!

