DOCKETED	
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Project Title:	Low-Power Mode
TN #:	270944
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Description:	Presentation slides for the June 2026 VPF-LPM Workshop
Filer:	Ho Hwang
Organization:	California Energy Commission
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Voluntary Performance Framework for Low-Power Modes (VPF-LPM)

Staff Workshop on the VPF-LPM Report Version 1.0

June 24, 2026
10:00 AM to 12:00 PM PDT

Agenda

Time	Topic	Presenter
10:00 am	Welcome	David Johnson, Supervisor
10:05 am	Opening Remarks	Andrew McAllister, Commissioner
10:15 am	Logistics	David Johnson, Supervisor
10:20 am	Overview of the Draft Staff Report	Ho Hwang, Project Lead
11:00 am	Discussion and Comments	Ho Hwang, Project Lead
12:00 pm	Adjourn	

Opening Remarks

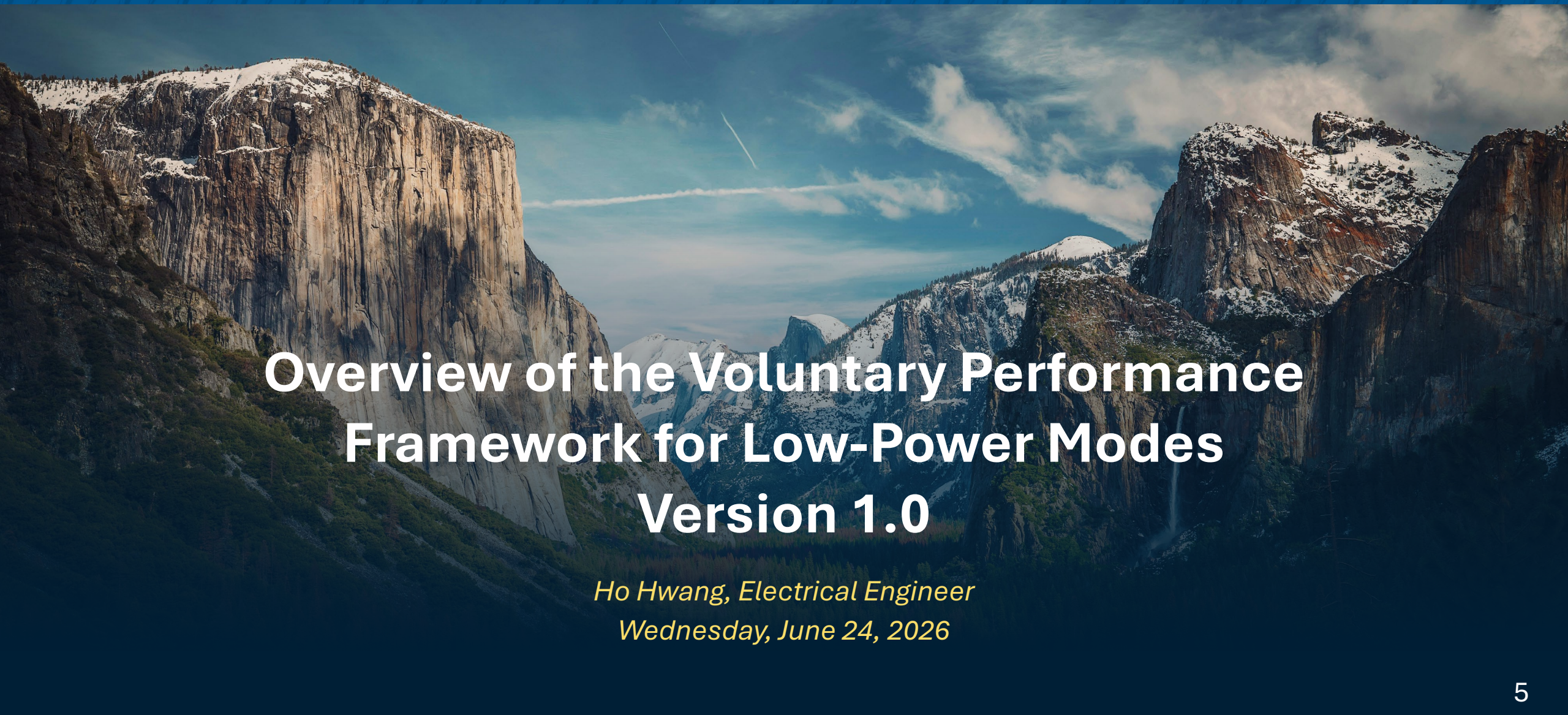
J. Andrew McAllister, Ph.D.

Commissioner

California Energy Commission

Workshop Guidelines

- All lines are muted
- Comments will be taken at the end of the presentation
- General or clarifying questions can be typed into the Q&A section
- To comment – raise hand to speak
  - Online: Raise your hand, host will give you the ability to speak, then caller must push unmute
  - Phone: Raise your hand by pushing *9, host will give you the ability to speak, then caller must push *6 to mute and unmute
- This workshop will be recorded
- State your name and affiliation when speaking



Overview of the Voluntary Performance Framework for Low-Power Modes Version 1.0

Ho Hwang, Electrical Engineer

Wednesday, June 24, 2026

Presentation Outline

- Abbreviations
- Background for VPF-LPM Proceeding
- VPF-LPM Staff Report Outline
- Scope of VPF-LPM
- VPF Flow Diagram
- Data Collection Procedure for Low-Power Modes (DCP-LPM)
- Participation Targets for In-Focus Product Categories
- DCP-LPM Data Submission Process
- Next Steps

Abbreviations

VPF: Voluntary Performance Framework

LPM: Low-Power Modes

DCP: Data Collection Procedure

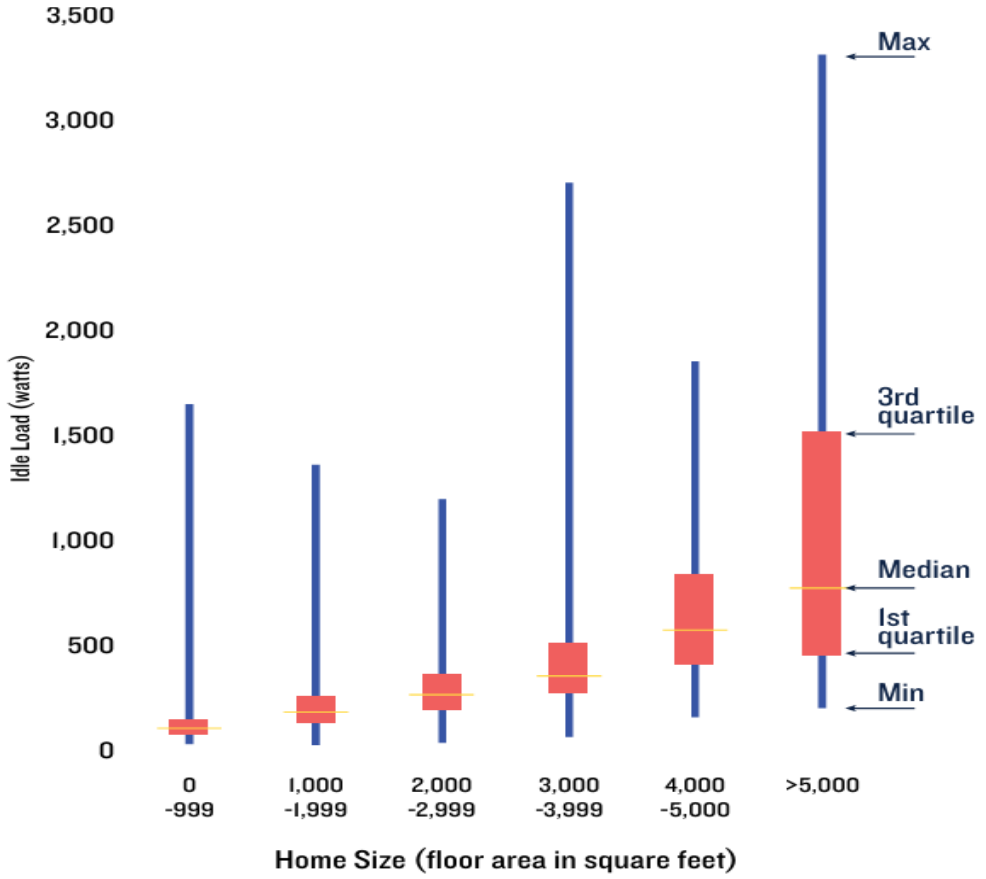
VPF-LPM: Voluntary Performance Framework for Low-Power Modes

DCP-LPM: Data Collection Procedure for Low-Power Modes

VPF-LPM Background

The Need for Voluntary Data Collection

- Inactive power consumption costs about $165 per year for a US home (NRDC, 2015)
- Root cause solutions needed to minimize inactive power consumption
- A voluntary approach maximizes flexibility and adaptability
- Mandatory regulation acts as a backstop



Source: NRDC, 2015

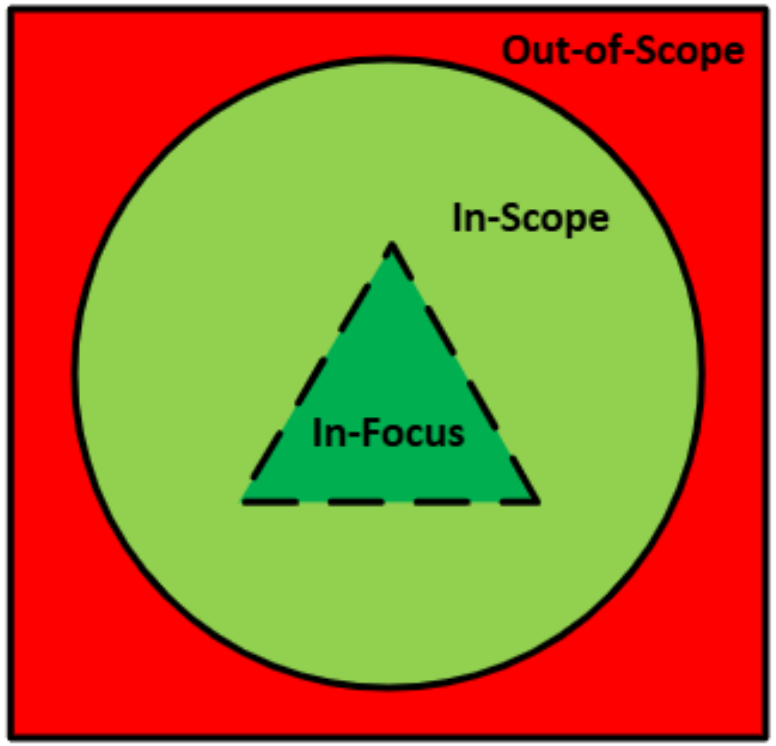
VPF-LPM Timeline

- Major milestones:
  - 2017: Proceeding initiated
  - 2018: Data collection procedure (DCP) work started
  - 2021: First draft of DCP proposed
  - 2023: DCP V3 and round robin results submitted
  - Oct 2024: DCP V3 utilization RFI published
  - August 2025: DCP V3.1 docketed
  - May 2026: VPF-LPM staff report published

VPF-LPM Staff Report Outline

- Content of the VPF-LPM staff report:
  - Ch. 1: Goals and process for the VPF
  - Ch. 2: Scope
    - Product-specific discussion of VPF-LPM scope
  - Ch. 3: Participation targets (for "in-focus" appliances)
  - Ch. 4: Data collection process
  - Appendix: DCP-LPM

VPF-LPM Scope



- Out of Scope:
  - Federally regulated (preempted)
  - State regulated for standby power (already mandated)
- In-Scope, Out-of-Focus:
  - Everything else – no limit on appliance types, provided DCP can be applied
- In-Focus:
  - In-scope appliances with high likelihood of DCP compatibility and substantial market-impact potential
  - Participation and performance targets apply

VPF-LPM Scope

In-Focus Product Categories

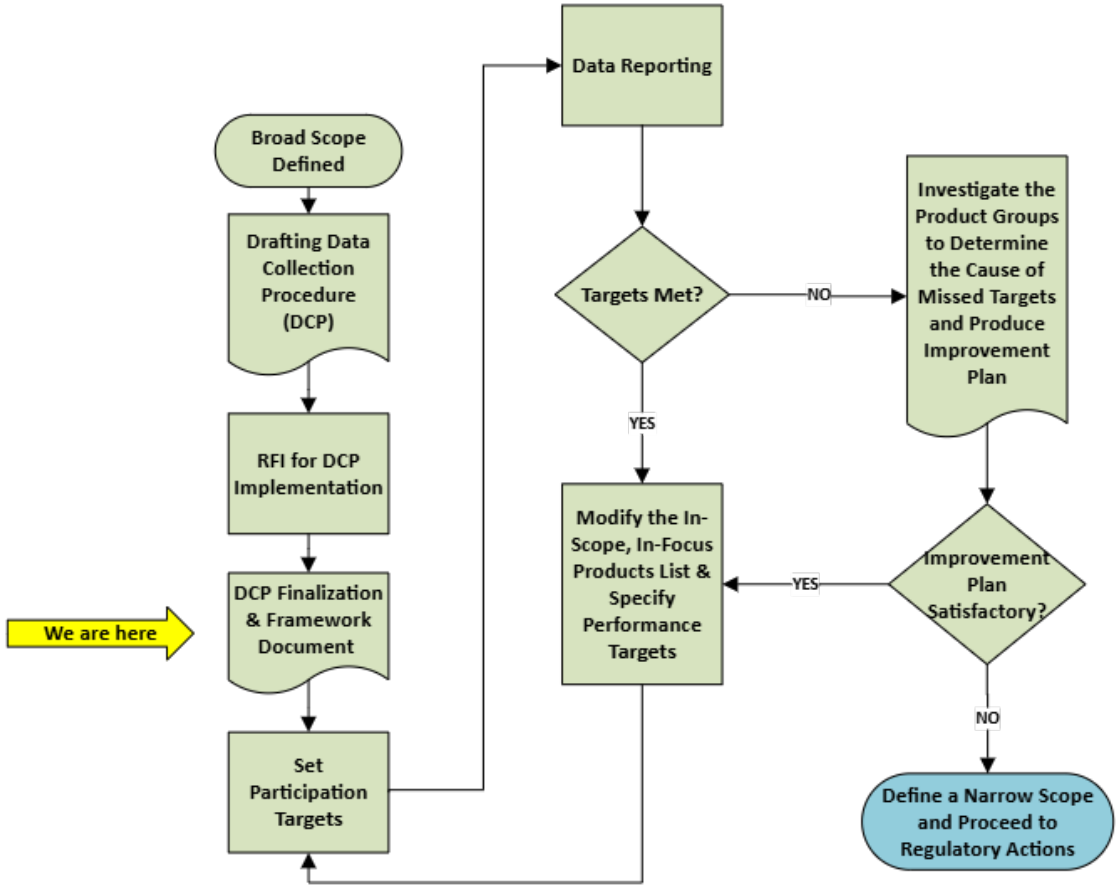
- Residential standalone fans
- Game consoles
- Speakers (including smart speakers)
- Streaming media players
- Receivers and audio amplifiers
- Home-theater-in-a-box systems
- Soundbars
- Video projectors
- Computer speakers
- Printers
- Multi-function printing devices (imaging)
- Coffee makers
- Toaster ovens, air fryers, and toasters
- Robot vacuums
- Irrigation controllers
- Exercise equipment
- Powered furniture
- Musical instruments and production equipment

VPF-LPM Scope

In-Scope, Out-of-Focus: Cases of Interests

- Small Network Equipment (SNE)
  - Existing Voluntary Agreements (VA)
  - Industry keeps CEC up-to-date on VA progress; CEC provides feedback
- Lighting Controls
  - Existing industry-specific test procedures for inactive power consumption
  - Industry engages with CEC to test applicability of DCP and gather preliminary data
- Electronic Bidets
  - Emerging products
  - Industry provides inactive power consumption in the early stage of market adaptation

VPF Flow Diagram



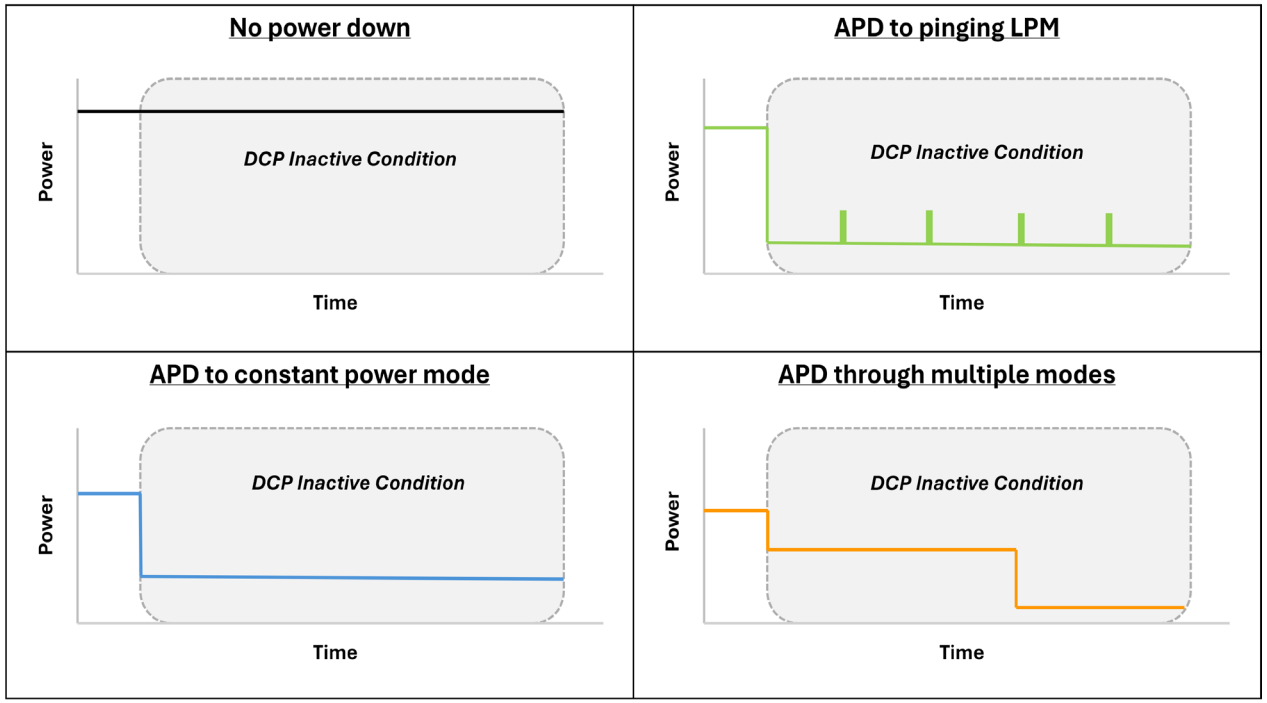
- Current Step – Finalization
- Next Step: "In-Focus" Loops
  - **Primary Feedback Loop:**
    - Set List & Targets →
    - Gather Data →
    - Check Targets →
    - Modify List & Targets, Repeat
  - **If Targets Not Met:**
    - Create Improvement Plan →
    - Assess Improvement →
    - Decide to Regulate or Keep Voluntary

DCP-LPM

Incorporating the Data Collection Procedure

- IOU's DCP proposal incorporated into the VPF-LPM
  - Now a CEC document
- Key elements of the DCP
  - Measures inactive power consumption
  - Covers many appliances
  - Produces reproducible and repeatable results for applicable appliances
  - Documents technical product features

Examples of Power Behavior That Might Be Encountered During Testing



DCP-LPM

Special Case – Imaging Equipment

- The printers and multi-function imaging equipment have existing Energy Star test procedures
- The CEC collects the ENERGY STAR power consumption data instead of applying the DCP to these product categories

Participation Targets

Overview

- For each in-focus product group, CEC sets both a market coverage target and numerical minimum targets for minimum number of manufacturers and models
- Verification: CEC checks numerical minimum targets; Manufacturers or trade organization can provide data to substantiate market coverage
  - Meeting either target would be acceptable

Target	Description
Market coverage target	• CEC's expectations for the market coverage of the data collected for each product group • Proposed target: 50%
Numerical minimum targets	• Lower minimum for how many manufacturers and models should be present in the database • Targets set through staff research of online retailers; CEC encourages feedback

Participation Targets

Numerical Minimum Targets (1/3)

In-Focus Product Categories	General Product Category	Typical Primary Function	Minimum Target of Manufacturers	Minimum Target of Models
Residential standalone fans	Ventilation	Providing fresh air and air circulation	3	15
Game consoles	Multimedia	Playing video games	2	5
Speakers (including smart speakers)	Multimedia	Playing audio or video content	6	30
Streaming media players	Multimedia	Playing audio or video content	3	10
Receivers and Audio amplifiers	Multimedia	Transmitting and transforming audio signals from media players and radio to speakers	5	25

Participation Targets

Numerical Minimum Targets (2/3)

In-Focus Product Categories	General Product Category	Typical Primary Function	Minimum Target of Manufacturers	Minimum Target of Models
Home-theater-in-a-box systems	Multimedia	Playing audio or video content	5	25
Soundbars	Multimedia	Playing audio or video content	5	25
Video projectors	Multimedia	Transforming video input to light projection and/or playing audio content	4	20
Computer speakers	Computer accessories & peripherals	Playing audio content	5	25
Printers*	Imaging equipment	Printing an image or document	10	75% of ENERGY STAR certified models 25 models not certified to ENERGY STAR
Multi-function printing devices*	Imaging equipment	Copying, scanning, printing, or faxing an image or document	10	75% of ENERGY STAR certified models 25 models not certified to ENERGY STAR

Participation Targets

Numerical Minimum Targets (3/3)

In-Focus Product Categories	General Product Category	Typical Primary Function	Minimum Target of Manufacturers	Minimum Target of Models
Coffee makers	Small kitchen appliances	Making or heating coffee or water	4	20
Toaster ovens, Air fryers, and toasters	Small kitchen appliances	Cooking or warming food	7	35
Robot vacuum	Electric housewares	Cleaning surfaces	3	15
Irrigation controllers	Outdoor equipment	Moving water for use by plants	3	15
Exercise equipment	Hobby, entertainment, leisure	Allowing fitness activity	2	10
Powered furniture	Hobby, entertainment, leisure	Supporting activities such as seating, eating, storage, or sleeping that have powered function(s) to provide enhanced user comfort and/or convenience	3	15
Musical instruments and production equipment	Hobby, entertainment, leisure	Creating and transforming sound and audio signals	3	15

DCP-LPM Data Submission Process

- Streamlined data submission through CEC's certification database (MAEDbS) and similar to the process for regulated appliances.
- Table A-3 in the staff report specifies the data format on the MAEDbS for each model. The table below presents selected data field types to convey the general structure:

Major data field type	Description
General Information	The model number, the product category
Communication	Communication technologies used by the model
User Interface	Screens, I/O interfaces
Sensing	Environmental sensors used by the model
Measurement	DCP inactive power consumption data
Energy Star Measurement	Energy Star data for imaging equipment

Next Steps

- 60-day comment period ends (July 14)
- Updating the Staff Report & DCP as necessary (Q3,2026)
- Publish Final Staff Report, Notice of Initial Data Reporting (Q4, 2026)
- Initial data reporting begins (Q4, 2026 or Q1, 2027)
    - Currently planning for six months of data collection

Public Comments

VPF-LPM

Ho Hwang, Electrical Engineer

Wednesday, June 24, 2026

VPF-LPM

Written comments

- Comments are due by 5:00 pm on July 14, 2026
- Oral comments will be accepted at the end of the workshop today
- To submit electronically go to:
  https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=17-AAER-12
- Written comments may be submitted by email. Include docket number 17-AAER-12 and “Low-Power Modes” in the subject line and email to docket@energy.ca.gov
- To send a hard copy, mail to:
  California Energy Commission
  Docket Unit, MS-4
  Docket No. 17-AAER-12
  715 P Street
  Sacramento, California 95814

VFP-LPM

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Thank you

Ho Hwang (Ho.Hwang@energy.ca.gov)
Appliance Office (appliances@energy.ca.gov)

Ho Hwang, Electrical Engineer
Wednesday, June 24, 2026