Valley Clean Energy Board of Directors Special Meeting – October 14, 2025

Item 11 – Smart Home Energy and Load Flexibility (SHELF) Pilot

VALLEY CLEAN ENERGY

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Item 11 – Smart Home Energy and Load Flexibility (SHELF) Pilot

Road Map

- Introductions
- Background
  - UC Davis CA Lighting Technology Center (CLTC): Mission, Activities and Focus Areas
  - CLTC, SMUD & Panasonic Pilot: Virtual Home Energy Management Systems
- VCE, CLTC & Panasonic: SHELF Pilot

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CALIFORNIA LIGHTING TECHNOLOGY CENTER - PARTNERSHIP WITH VCE AND PANASONIC

Jae Yong Suk, Ph.D., IALD, IES, LEED AP

Director, California Lighting Technology Center

Associate Professor, UC Davis Department of Design

UCDAVIS California Lighting Technology Center

RESEARCH INNOVATION PARTNERSHIP

633 Pena Drive, Davis, CA, 95618 | cltc.ucdavis.edu | PH: 530-747-3838, FAX:530-747-3812

California Lighting Technology Center

CLTC's Mission: To stimulate, facilitate and accelerate the development, application and commercialization of electric building systems & controls technology in pursuit of decarbonization, grid resiliency, and community wellbeing.

Mission-driven Activities:

Research & Development
Demonstration & Outreach
Education & Training




Focus Areas

- Building Controls
- Indoor/outdoor Lighting
- Smart Home
- EV charging
- Distributed Energy Resources
- Human Factors
- Market Assessment
- Policy, Codes & Standards
- Lighting Education







Virtual Home Energy Management Systems

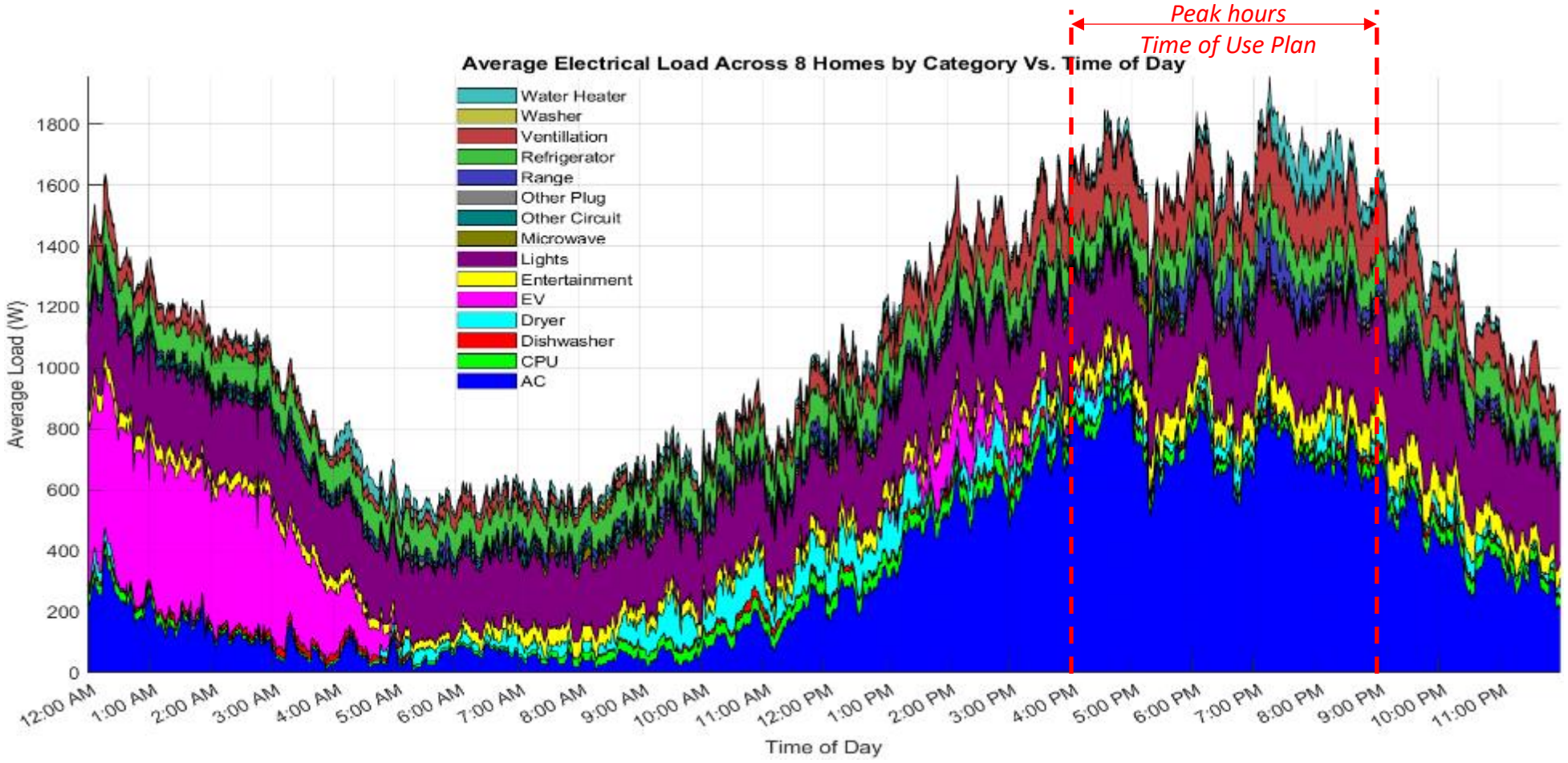
SMUD Panasonic

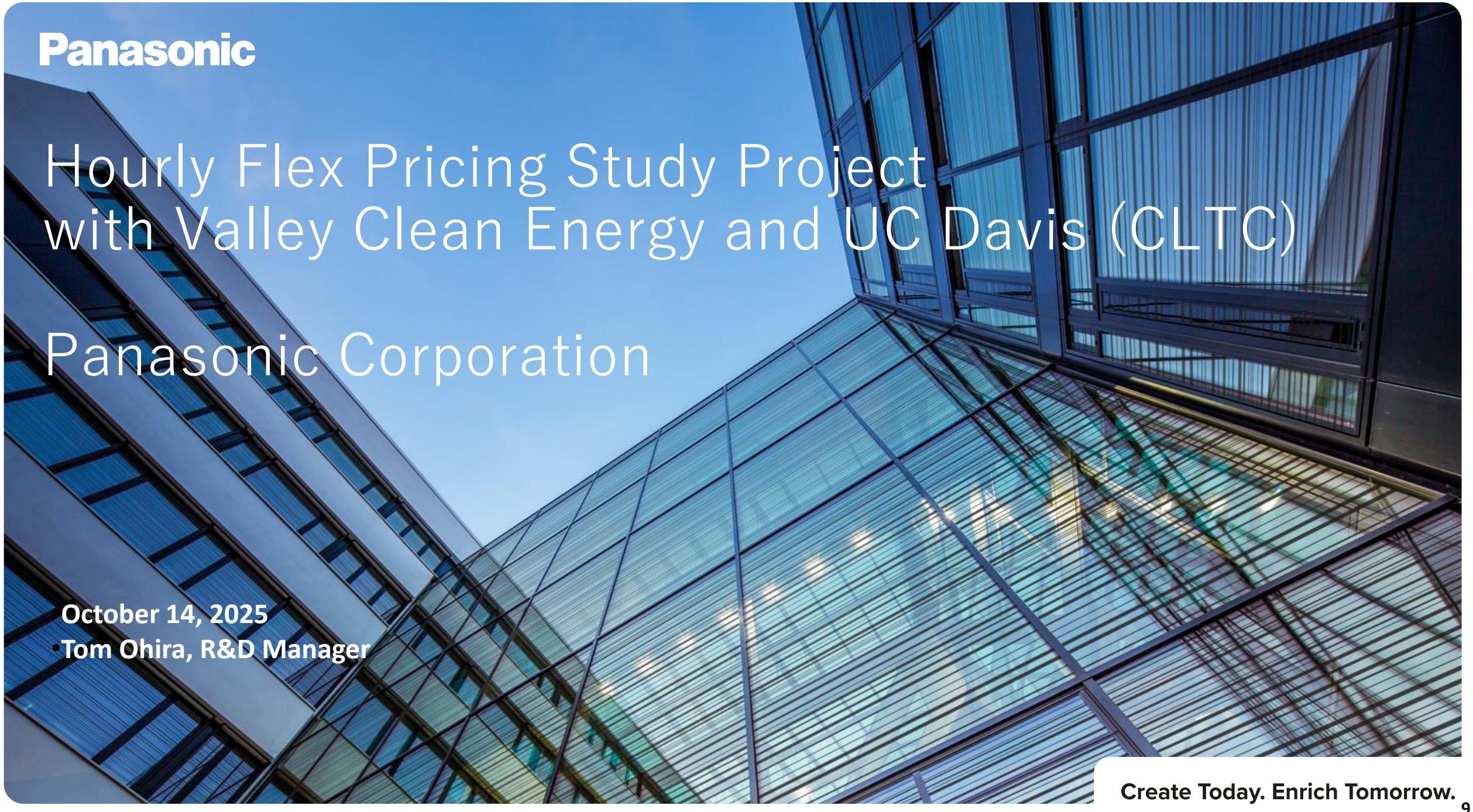
CLTC RESEARCHES

Virtual Home Energy Management Systems

The project is to enhance load flexibility solutions for buildings, which are major contributors to the state's energy use and emissions. In particular, CLTC researchers are focused on advancing the development of affordable products and strategies that can effectively control and reduce building energy use, emissions, and operating costs for residential solutions.

Summer (June 1st to September 30th) Average Controllable Load Across 8 Field Study Homes for Load Types





Panasonic

Hourly Flex Pricing Study Project with Valley Clean Energy and UC Davis (CLTC)

Panasonic Corporation

October 14, 2025

- Tom Ohira, R&D Manager

Panasonic Holdings Overview

Number of Employees

207,548

Number of Consolidated Companies

501

(including parent company)

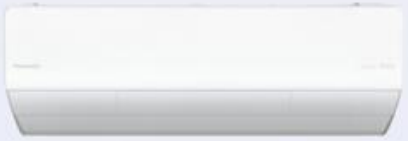
* As of March 31, 2025

Business Portfolio

Lifestyle

Efforts are made to improve the quality of living tailored to each individual, provide safe and secure lifestyle infrastructures that support and enhance social activities, and contribute toward decarbonization and the circular economy through energy and resource-saving products, along with the generation and effective use of clean energy.

Major products



Room air-conditioners

Refrigerators, washing machines

Wiring devices

Connect

It provides new customer-centric solutions that contribute to its customers' *gemba* (operational frontlines), based on its purpose, "Change Work, Advance Society, Connect Tomorrow."

Major products

Supply chain management software

In-flight entertainment systems

Facial Recognition solutions

Industry

Its variety of device technologies contribute to resolving difficult social issues such as the explosion of data volumes with the rise of the information-based society, the increasing environmental and safety requirements in the mobility society, and labor shortages in manufacturing.

Major products

Capacitors

Multi-layer circuit board materials

Relays

Industrial motors

Energy

Its business areas include dry cell batteries for everyday use, and batteries that support social infrastructure, such as data centers, and mobility such as electric vehicles (EVs). Through these business areas, "we aim to realize a society which the pursuit of happiness and a sustainable environment are harmonized free of conflict."

Major products

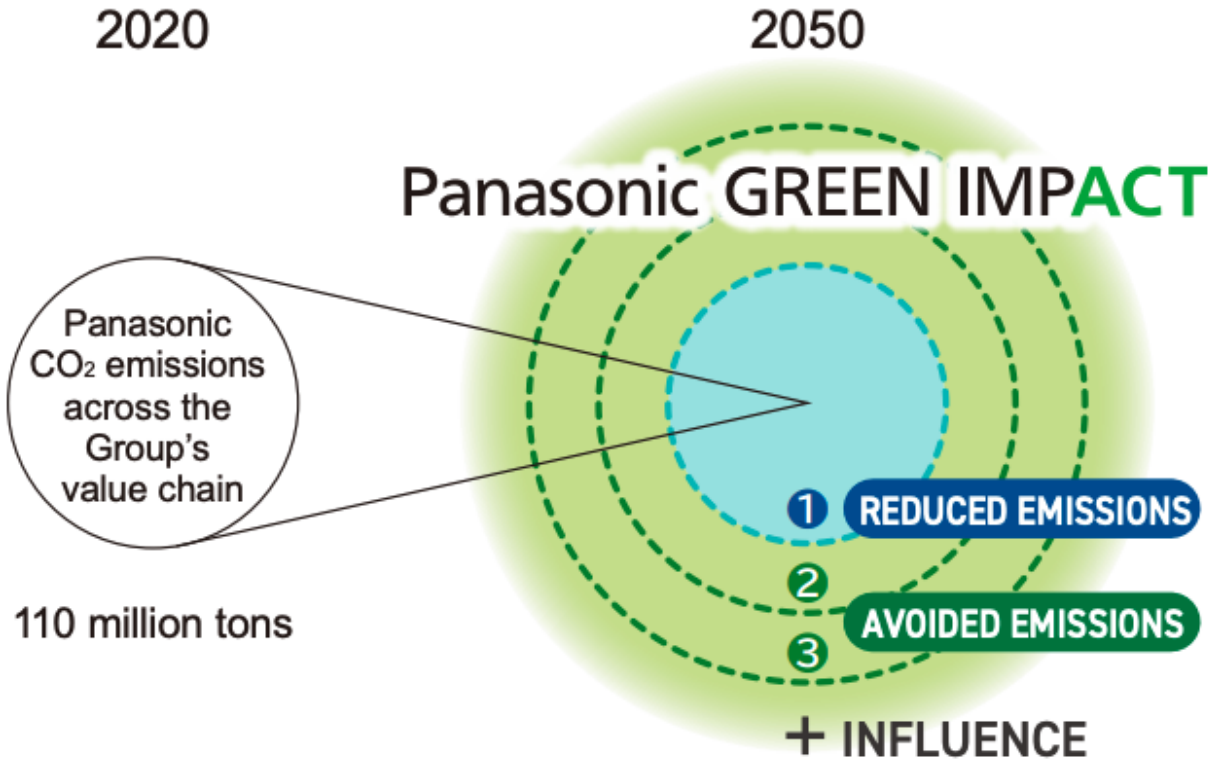
Energy storage systems for Data Centers

Automotive cylindrical lithium-ion batteries

Primary batteries (dry batteries / lithium primary batteries)

Panasonic GREEN IMPACT

The Panasonic Group Aims to Create Impact that Reduces CO_2 Emissions by at Least 300 Million Tons by 2050.



Achieving net zero emissions throughout our value chain

1 OWN IMPACT — **110 million tons*1**

*1 Reduction target calculated by fiscal 2021 results

Expanding avoided CO_2 emissions for customers and society

2 CONTRIBUTION IMPACT

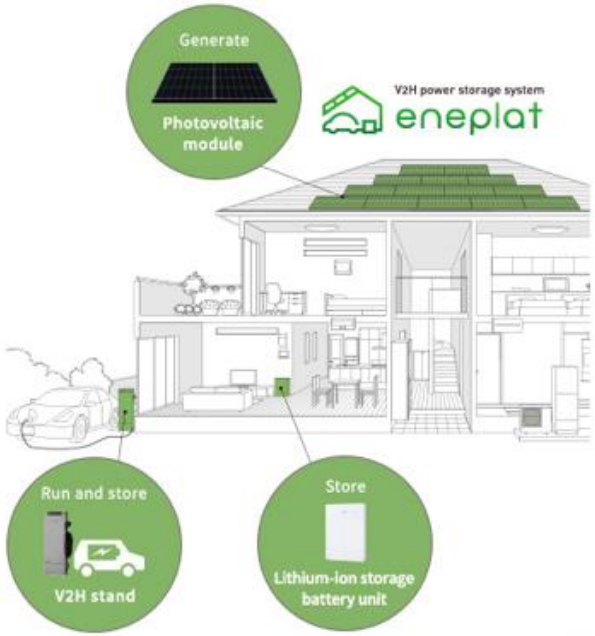
3 FUTURE IMPACT — **200 million tons**

Panasonic

Our Activity toward Energy Management

Sustainable Energy Business

With the best mix of energy products related to gas, hydrogen, and electricity and effective utilization of them, we will achieve both the realization of a decarbonized society and a comfortable life and contribute to a sustainable society.




Residential Fuel Cell CHP ENE-FARM


Pure hydrogen fuel cell systems


Ultrasonic measurement unit


Wireless Device


Ultrasonic Flow & Concentration Sensor for Hydrogen


Power conditioner

Electrical Construction Materials Business

Since our foundation, we have been a close partner in people's lives and supported safe and secure lives. In the future, we will continue to contribute to comfortable and sustainable life using IoT and equipment control, in addition to safety and security, through a wide range of power distribution and information infrastructure, including wiring devices, power distribution boards, conduit pipes, apartment intercom systems, and home systems.


Home IoT - AiSEG3


Residential power distribution board - FLEXIID


Apartment intercom system - AirEZ


Wiring duct for DC power supply - DC Line


Power tools - EXENA + crimping attachment

Panasonic

Hourly Flex Pricing Pilot Study Overview

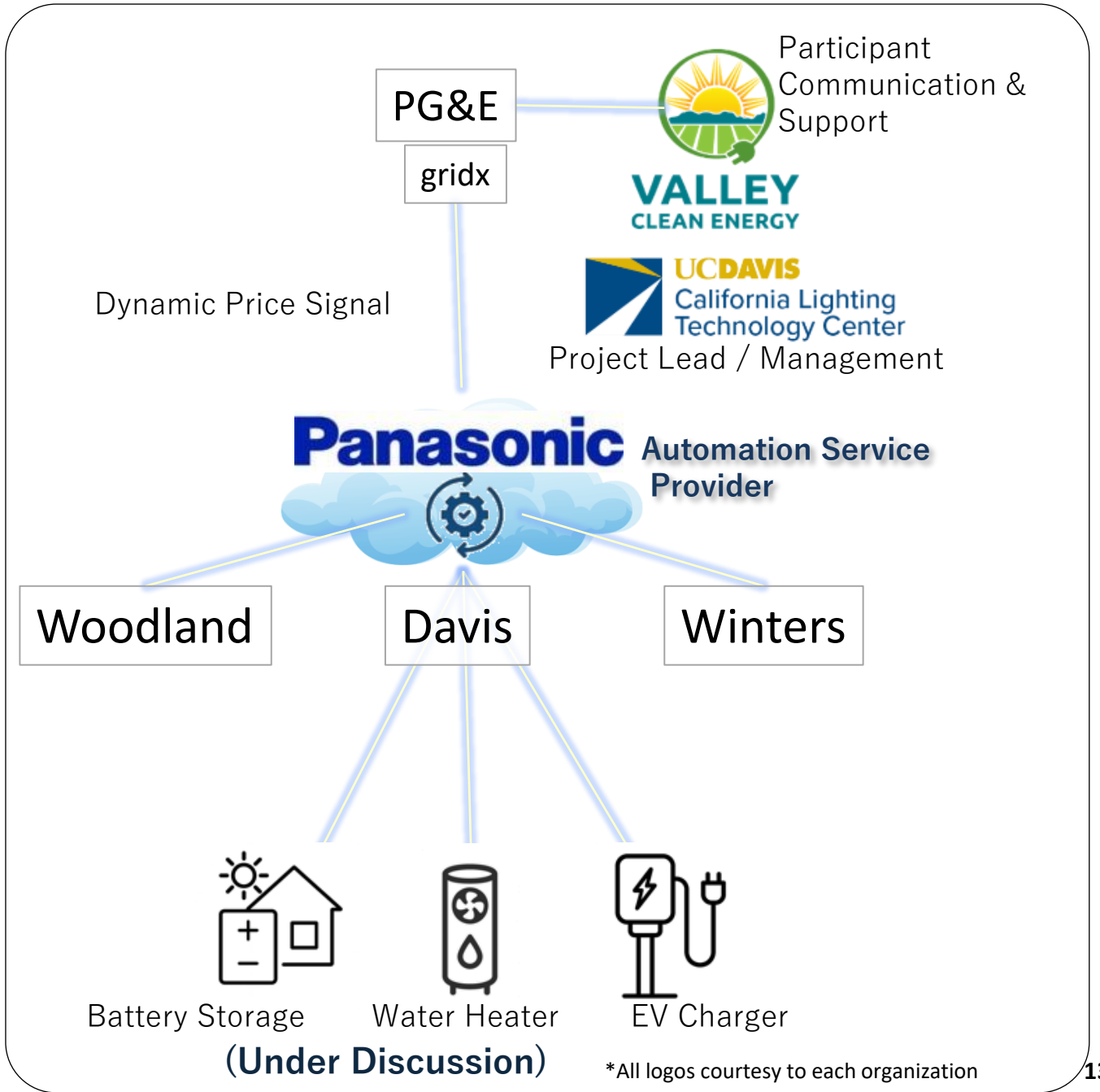
1. Background & Objectives :
   - Evaluate how residential sector would respond to Dynamic Price Signal
   - How residential load shift would impact Valley Clean Energy and CCA business

2. Timeline : September 2025 - September 2027

3. Study Scale & Location
   - Region : VCE Service Territory
   - Participants : 25 households
   - Equipment (TBD)
     - Battery Storage, EV charger, Heatpump Water Heater

4. Study Target : Stable 25kW Peak Shift

5. Funding : Approx. $1.5M



*All logos courtesy to each organization

Panasonic


Panasonic
Thank You
Create Today. Enrich Tomorrow.

Item 11 – Smart Home Energy and Load Flexibility (SHELF) Pilot

SHELF Pilot Goal: Testing Load Flexibility in Residential Sector

- Concept: Test bed of 25 homes in Yolo County; 25kW peak shift; 2 years
  - Load flexibility hardware/software installations
  - “Menu of options” for installation, Hourly Flex Pricing (HFP)
  - Customer incentives at beginning, annually (for HFP)
- Roles:
  - VCE: customer outreach & recruitment; assisting w/ dynamic rates (HFP) process
  - CLTC: ops management; installation, tech support, conducting the study with customers, reports & analysis
  - Panasonic: providing load flexibility hardware (e.g. battery storage) and software, funding

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THE BOARD HAS TAKEN A BRIEF RECESS.

THE BOARD MEETING WILL RESUME SHORTLY.

THANK YOU.

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Valley Clean Energy Board of Directors Special Meeting – October 14, 2025

Item 12 – Large Load Rate Setting Policy

VALLEY CLEAN ENERGY

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Item 12 – Large Load Service – Introduction

Overview

Large new tech related electric loads are being added throughout the country. Most new loads are proximate to existing tech center "clusters," but developers are increasingly looking for other hospitable locations. Tech and other electricity intensive loads can vary widely from below 10MW to facilities consuming 100s of MW, or more.

The purpose of this Board item and staff report is to discuss and seek Board approval of a Large Electric Load Customer Service Policy to establish a framework for how VCE would engage with and serve new large load customers.

This presentation will provide:

- Background & Introduction of proposed Large Electric Load Customer Service Policy
- Summary and recommendation from CAC
- Consider Board approval

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Item 12 – Large Load Service – Introduction

Relative Size

Existing VCE Loads:

- About 700,000 MWh / year Retail Sales (80 aMW)
- Industrial and Agricultural Customers ~ 20% of Load
- July ~ 125 aMW, September Peak ~210 MW

Large Load Additions:

- 10 MW Expansion, about 12% Load Increase.
- 100 MW Expansion, about 125% Load Increase.
- 1000 MW Expansion, about 1,250% Load Increase.

Should VCE Evaluate Potential New Large Load Impacts and Provide Contract Service?

VALLEY CLEAN ENERGY

Item 12 – Large Load Service – Introduction

Background

VCE Mission

- VCE's mission is *to provide clean electricity, product choice, and greenhouse gas emission reductions --- all with local control at competitive prices*.

Large New Load Considerations

- Renewable Resource Mix / Power Content Label
- Cost to Integrate/Serve New Load
- Impact on Existing Customers / Average Cost
- Is New Generation Included (Control, ISO Interface, Renewable, Fossil, etc.)
- Operational and Financial Risks
- How to Serve? (Existing Tariff, Negotiated Sales Contract, Customer Control, Other)

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Item 12 – Large Load Service - CAC Discussions 8/28/25 and 9/25/25

Topics Included:

- Impacts f(load size, characteristics)
  - 2MW is > largest current customer
- Cost of Serving New Load
  - May or may not be > Average Cost
- PSC Specific to each new large load
  - PSC negotiation timeline based on complexity, size, risk, customer needs, and completion of interconnection facilities
- New loads may impact state/local power supply resources availability and price.
- May help dilute Administrative & General Costs (fixed staff, operations and overhead expenses)
- Affect on financial reserves
- Impact on RA/RPS compliance and power portfolio composition
- Are large loads “good” or “bad”?
- Spinoff Impacts (traffic, jobs, water usage, etc). VCE to focus on electricity particulars
- Risk of non performance
- Staff perspective on proposed Policy
  - Allows flexibility
  - Address Risk
  - Set Credit support parameters
  - Integrate customer gen resources
  - May allow customer market access
  - Provides roadmap

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A “new” customer may receive service from either VCEA or PG&E

Item 12 – Large Load Service - CAC Suggestions

CAC Suggestions

- Assure proposed Policy language includes/clarifies:
  - New large loads are subject to all applicable VCEA policies
  - New large customers to provide periodic updates on interconnection facilities/timing, projected load size trajectory, and service commencement date.

The proposed Policy includes language addressing CAC suggestions.

CAC Recommendation

Move proposed LEL Policy to October 2025 Board meeting for consideration and approval.

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Item 12 – Large Load Service – Draft Policy Summary

Why Establish Policy

- No Current Policy
- Evaluate/Address Operational/Financial Risk Impacts
- Evaluate/Address Cost/Rate Impacts
- Evaluate/Address Resource Portfolio Impacts
- Reduce Uncertainty / Provide Flexibility / Be Prepared

Draft Policy – Principles

- Load Threshold: 2MW/20,000MWh
- Advance Notice to VCE
- Conduct Impact Study
  - Projected Costs
  - Existing Rates
  - Renewables/Generation
  - Financial Risk
  - Credit Implications
- Periodic Schedule Updates
- Recover Service Cost
- Contribute to A&G
- Policy Compliance
- Credit Assurance
- Tariff or Power Sales Contract
- EROC Review
- Board Approval

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Item 12 – Large Load Service – Draft Policy

Schedule

- Draft Policy Development May – Oct 2025
- August 2025 – 1st CAC Introduction
- September 2025 - 2nd CAC Discussion
  - CAC Recommends Board Approval
- October 2025 – Board Consideration

RECOMMENDATION

Staff recommends Board approval of the proposed Large Electric Load Customer Service Policy.

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Valley Clean Energy Board of Directors Special Meeting – October 14, 2025

Item 13 – VCE 2026-2029 Strategic Plan Major Update

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Item 13 - VCE 2026-29 Strategic Plan Workshop: Overview

Overview

This staff recommendation provides the Board with the opportunity to provide additional feedback and approve VCE's 2026-2029 Strategic Plan Major Update.

This presentation provides:

1. Background
2. Review of additional 2026-2029 Strategic Plan Major Updates
3. Summary and Discussion

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Strategic Plan 2026-2029

MAJOR UPDATE TIMELINE

Brief Survey Issued May 1st – Points allocation for customer priorities

April 24

CAC

Introduction of Strategic Plan Rough Draft & Timeline

APRIL 24TH
CITY OF DAVIS
CONFERENCE ROOM

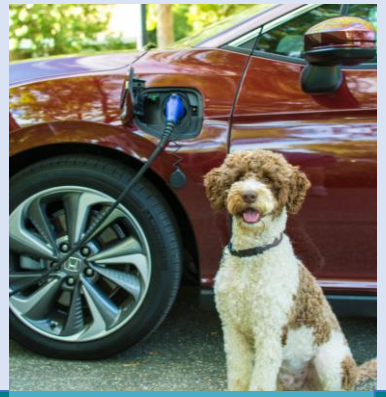
MAY 22ND
ESPARTO
COMMUNITY
CENTER - RISE

May 22

CAC

Goals Outreach

1) Financial Strength / Rates
2) Procurement & Power Supply



June 26

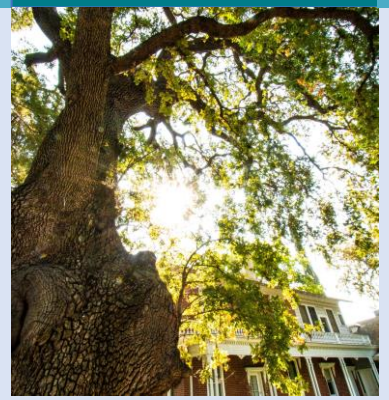
CAC

Goals Outreach

1) Customers and Community
2) Decarbonization and Grid innovation

JUNE 26TH
UCANR - DAVIS

JULY 24TH
CITY OF
WOODLAND
CHAMBERS



July 24

CAC

Review of Preliminary Draft Strategic Plan recommendation & Initial (#1) Survey Results

August 28

CAC

2026-2029 Strategic Plan Major Update Recommendation

AUGUST 28TH
CITY OF DAVIS
CONFERENCE
ROOM

SEPTEMBER 11TH
CITY OF
WOODLAND
CHAMBERS

September 11

Board

Workshop Review of CAC Strategic Plan Recommendations, Survey #1 Results and Next Steps

October 14

Board

Recommended Strategic Plan Adoption

OCTOBER 9TH
CITY OF DAVIS
COUNCIL
CHAMBERS

Item 13 –Strategic Plan Update (2026-29): Background

Plan Update Development Feedback/Input

Plan update development feedback/input included:

- 2 public CAC workshops & 1 Board workshop
- Comments and feedback from
  - Customer Survey (200+ responses)
  - CAC Task Group
  - Community Advisory Committee (Recommendation without modification)
  - VCE Board of Directors

Based on gathered feedback, general themes and several specific points outlined below were incorporated into the draft Plan Update.

- Affordability
- Incorporating additional local distributed energy resources into VCE's resource mix
- Specific reference to energy resilience and energy efficiency/weatherization
- Affirming commitment and focus on low-income and other vulnerable customers

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Item 13 –Strategic Plan Update (2026-29): Goal/Objective Updates

Board Workshop feedback updates:

- Goal 2 was updated with additional resiliency language
- Goal 6 updated for VCE growth, development, and effectiveness
- Objective 6.3 updated to prioritize possible load growth and expansion
- Addition of Appendix I for definitions of renewable and carbon fee electricity

Updated Goal 2 (Recommended):

Manage power supply resources to consistently exceed California's Renewable Portfolio Standard (RPS) while working toward a resilient resource portfolio that is 100% Carbon Free and a minimum of 90% Renewable by 2030.

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Item 13 – Strategic Plan Update (2026-29): Summary & Recommendation

Summary

Staff believe the recommended 2026-2029 Strategic Plan Major Update represents a balanced approach to moving the organization forward with setting reasonable goals for the near-term based on input from VCE's stakeholders. Staff and the strategic plan task group will keep the CAC updated based on any proposed changes that result from the Board workshop and adoption process.

Recommendation

Staff is seeking Board approval of VCE's 2026-2029 Strategic Plan Major Update.

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Valley Clean Energy Board of Directors Special Meeting – October 14, 2025

Item 14 – End of Session Legislative Update – Pacific Policy Group

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CALMATTERS

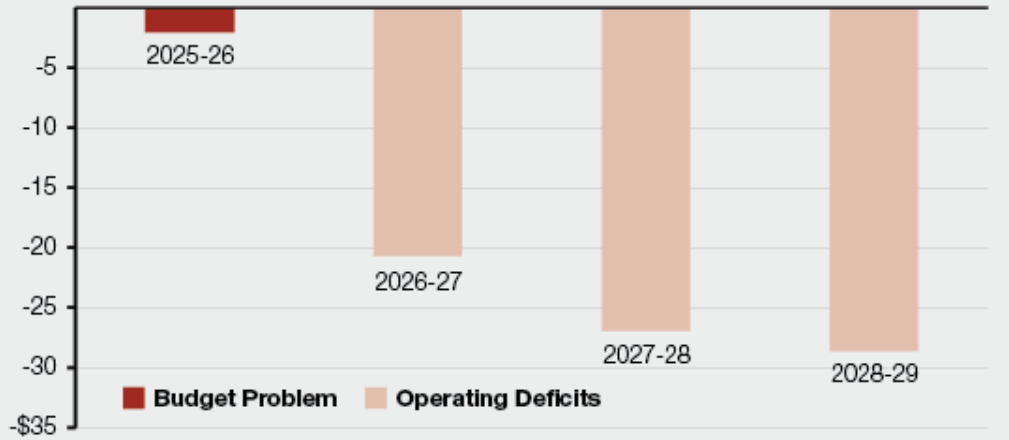
January 10, 2025

No deficits. A “modest” surplus of $363 million. Almost $17 billion more in revenue than planned. Gov. Gavin Newsom’s office laid out its vision today for how California should spend its considerable bounty, a total budget of $322 billion — projected to be the second largest state spending plan ever.

Figure 5

State Faces Growing Multiyear Deficits

(In Billions)



Los Angeles Times

May 14, 2025

California faces an additional $12-billion budget deficit, Newsom says

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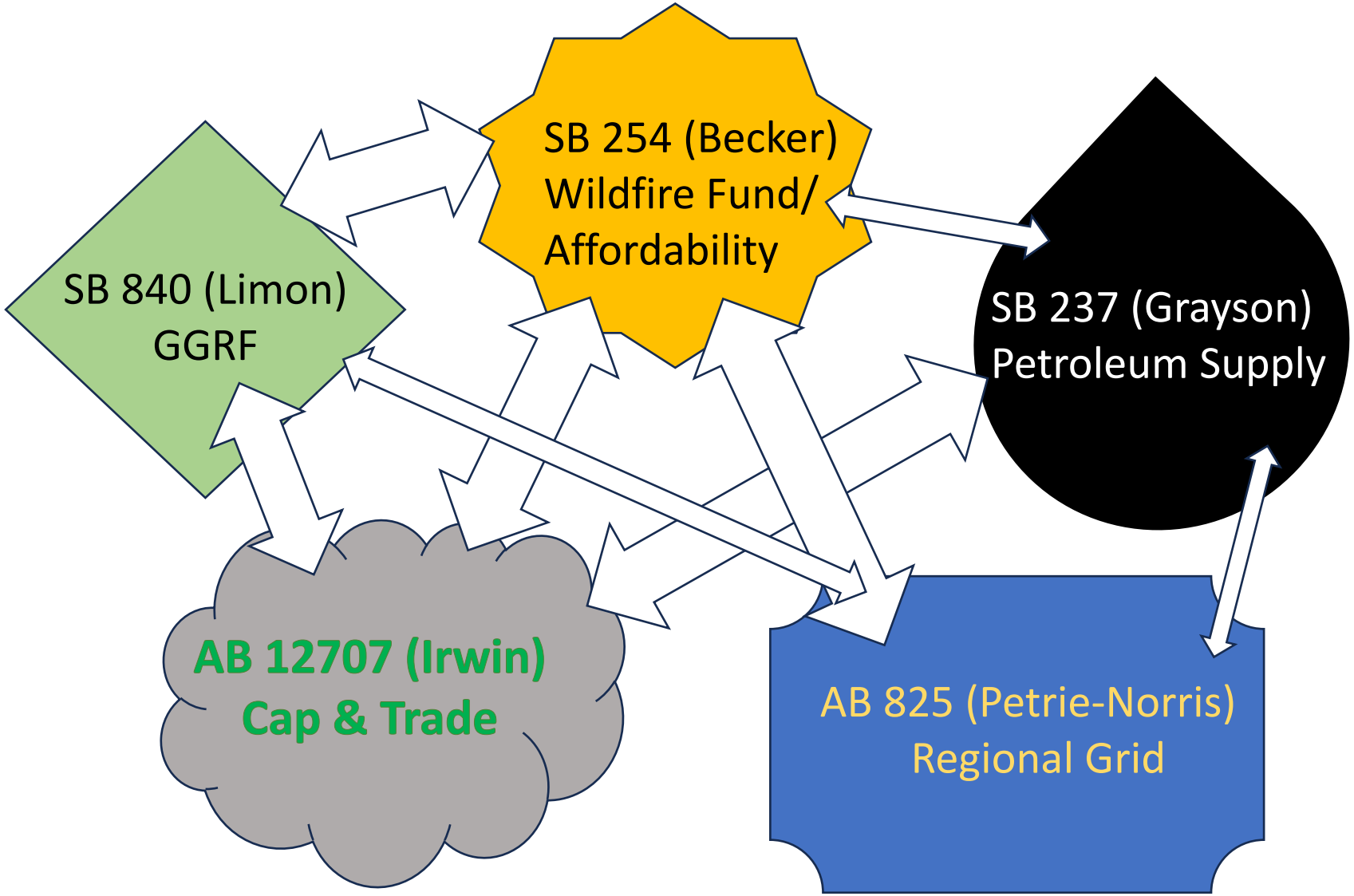

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Item 14 – End of Session Legislative Update – Pacific Policy Group

SELF-GENERATION INCENTIVE PROGRAM

PENINSULA CLEAN ENERGY

CPA CLEAN POWER ALLIANCE

VALLEY CLEAN ENERGY

MCE

SAN DIEGO COMMUNITY POWER

Ava Community Energy

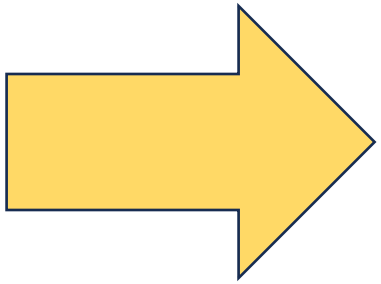
Sonoma Clean Power

Item 14 – End of Session Legislative Update – Pacific Policy Group

AB 825:
DEMAND SIDE
MANAGEMENT
COUNCIL

VALLEY
CLEAN ENERGY

Item 14 – End of Session Legislative Update – Pacific Policy Group



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