

# Dynamic Pricing – AgFIT Pilot



**VALLEY**  
**CLEAN ENERGY**

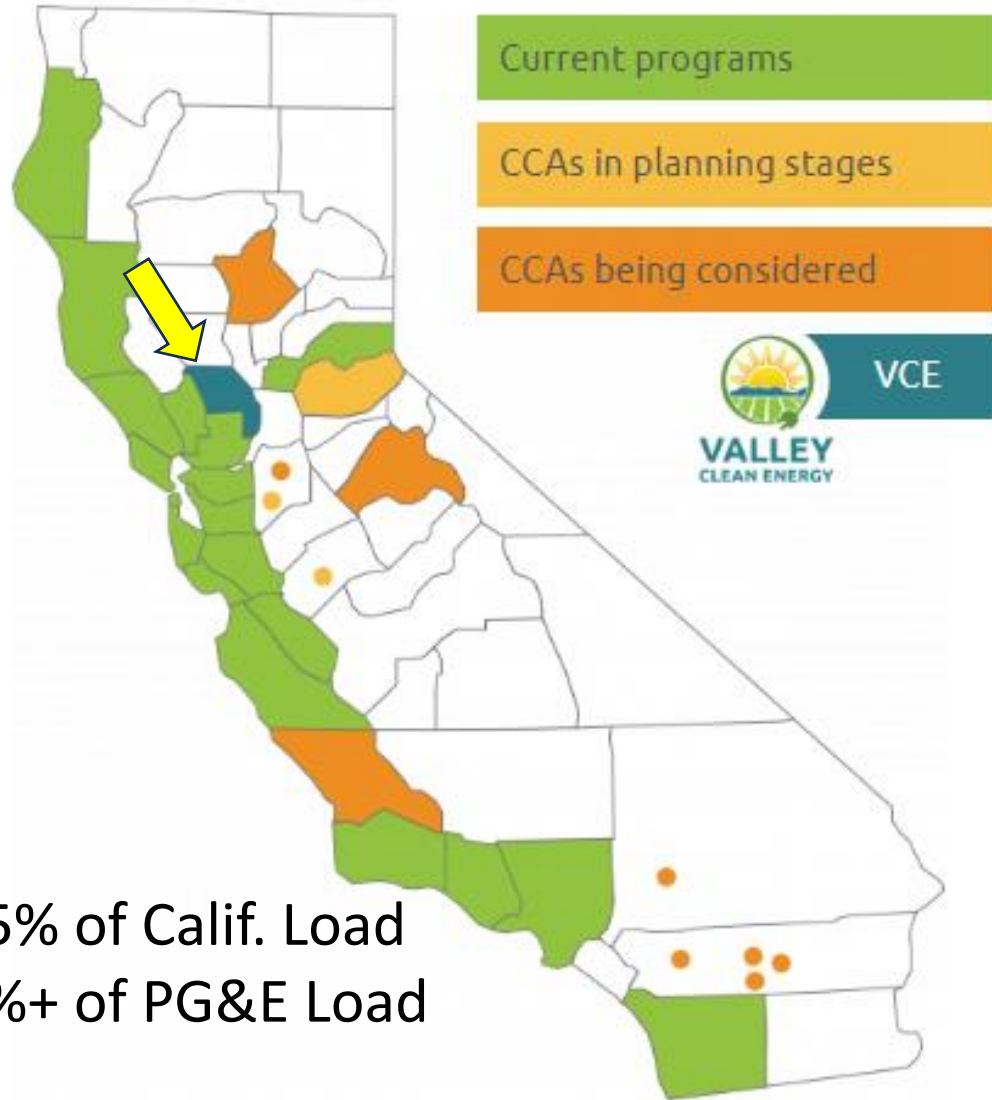
**ESIG Spring Technical Workshop**

**Mitch Sears, Valley Clean Energy**

**March 27, 2024**

Photography: Yvonne Hunter

# Ag Sector Dynamic Pricing – CCA/VCE Overview



## CCA's:

- ~35% of Calif. Load
- 50%+ of PG&E Load



## VCE Overview

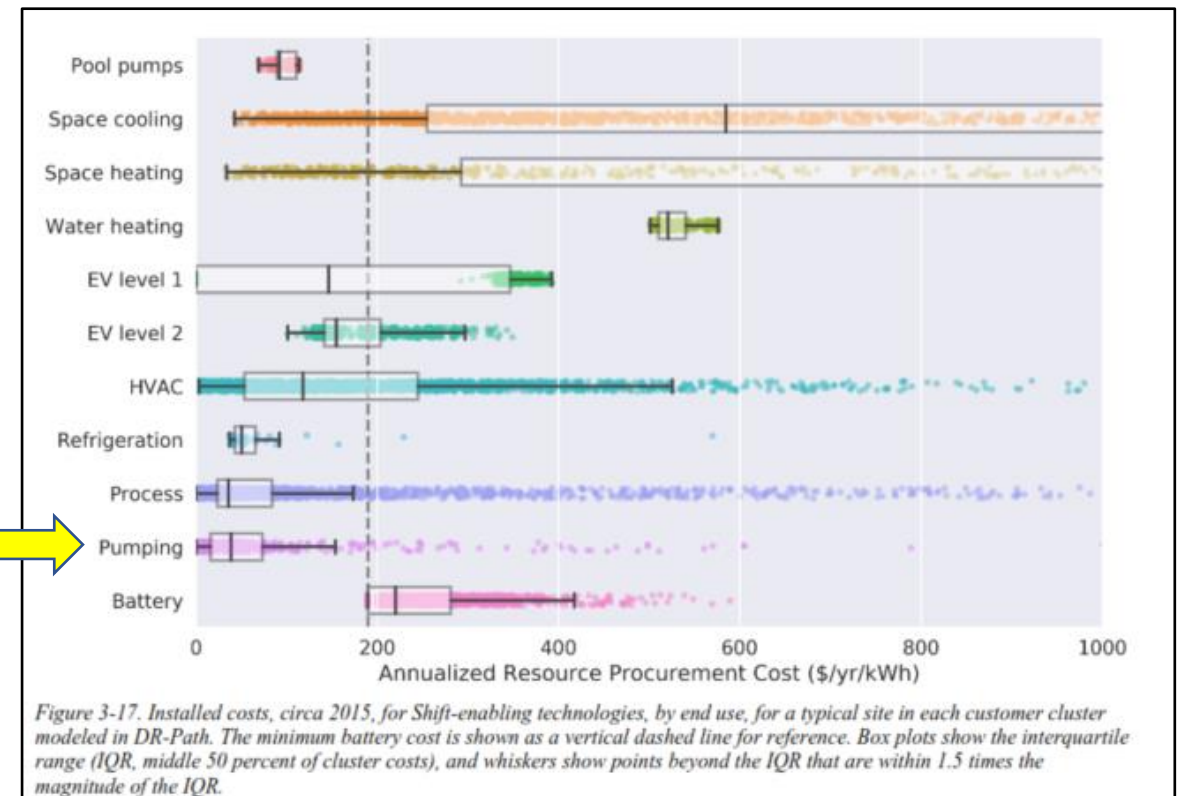
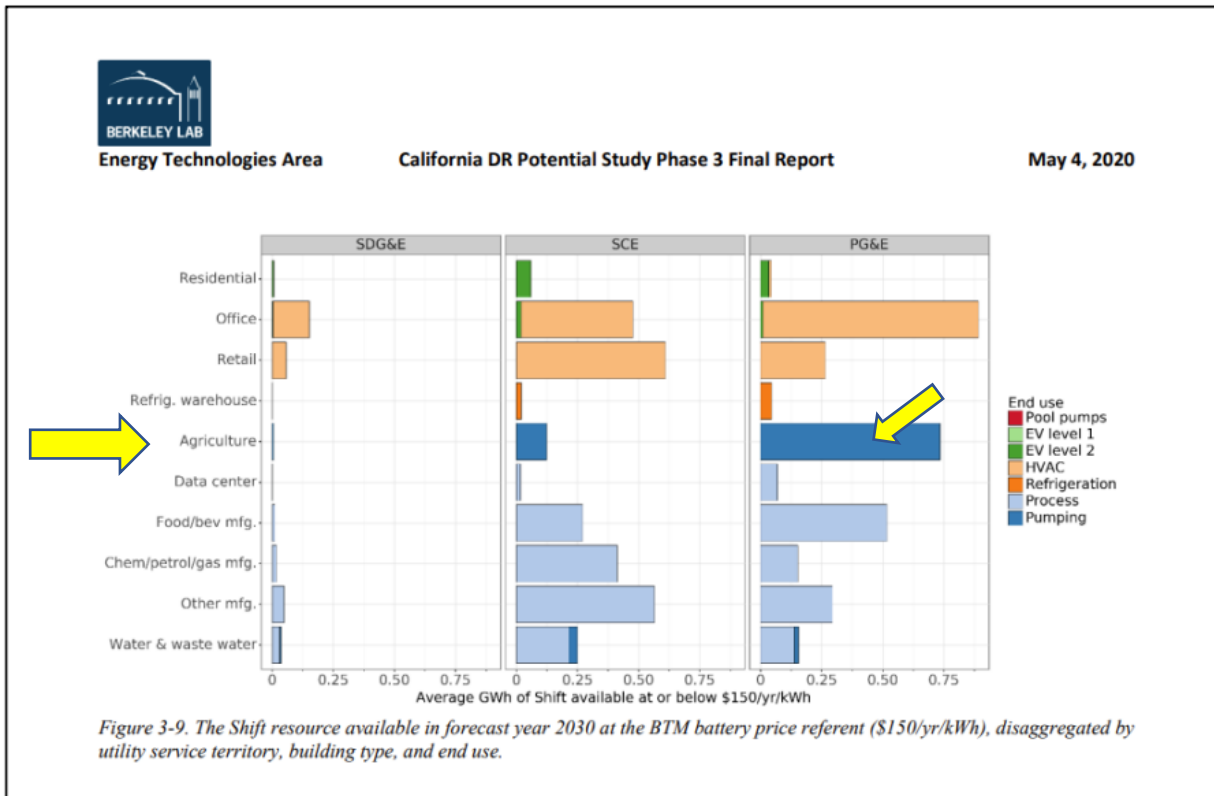
- **61,000 Customer Accounts/ 125K Customers / 700 GWh annual load / 225MW Peak**
  - 2021 median household income: \$78k; CA \$84k (2021)
  - Poverty rate: 14.8%; 25% Customers Low Income Qualified (CARE/FERA)
  - 15% Agricultural (load)
  - 20% NEM (solar)
  - 90% Customer Participation
  - Yolo, Woodland, Davis each have roughly 1/3<sup>rd</sup> of load, Winters 5%



# Ag Sector Dynamic Pricing – Ca Shiftable Load

Ag Pumping is the largest available resource, second only to Office HVAC\*

Pumping is the least expensive shift resource



\*Heating, Ventilation, and Air-Conditioning

Source: <https://emp.lbl.gov/publications/california-demand-response-potential>

# Ag Sector Dynamic Pricing – Context/Opportunity

## Ag Sector Dynamic Pricing Context/Background

- California faces grid reliability issues in the transition to low/no carbon future; water supply
- California farmers face a convergence of threats to their viability: water scarcity, rapidly rising electricity costs, and labor availability
- Irrigation automation can help with all three, but adoption is slow because of capital cost and the difficulty of realizing energy cost savings

## Opportunity

- Irrigation pumping load is “flat” even though more than half could be shifted from critical ramp hrs
- The cost to enable that shift with automation and dynamic price signals is significantly less than that to deploy comparable battery storage

## Scaling Proposal Overview

- Voluntary, incentives based program – meet farmers “where they’re at”; based on research/pilot results; CPUC R.24-01-017 (Demand Flex)
- Ratepayer and Non-ratepayer (e.g. IRA) funding would be used to:
  - Implement irrigation pump automation
  - Install water-saving, precision irrigation systems (e.g. drip)
  - Provide customer support so that farmers can automate irrigation systems to shift load out of peak hours and into non-peak hours

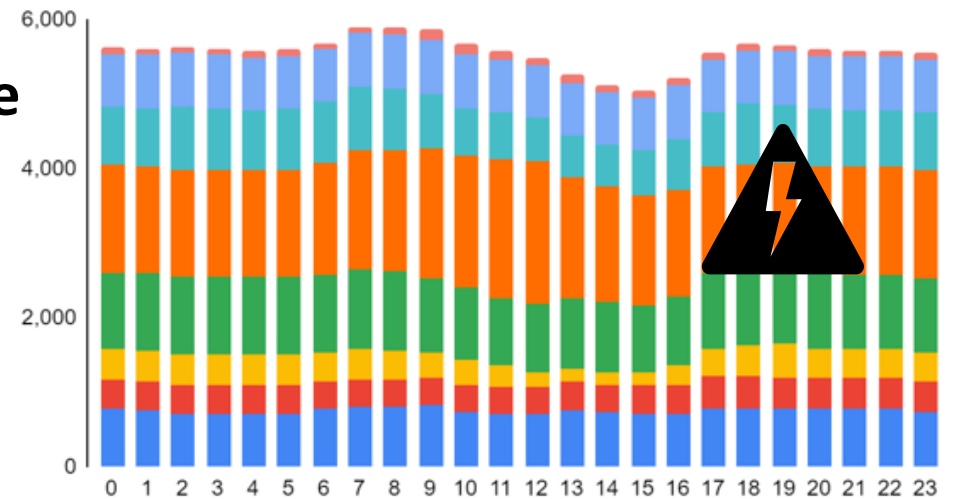
# Ag Sector Dynamic Pricing – Three Legs of the Stool

An Approach with Demonstrable Results (EPIC + AgFIT)

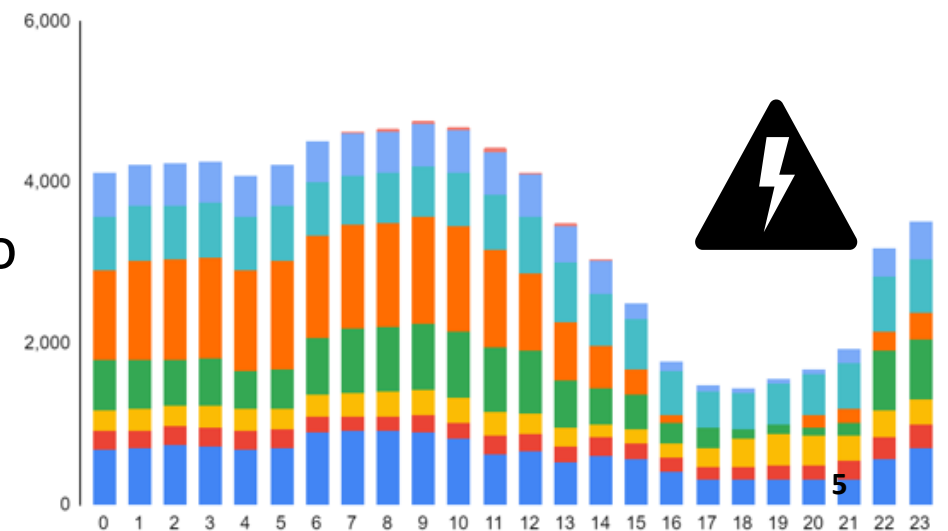
- **Strong price signals that meet farmers where they are**
  - Weekly scheduling
  - Eliminate win/lose demand charges
  - Offer significant savings
- **Automation**
  - Enables flexible irrigation scheduling
  - Provides additional operational value
  - Provides decision support and visibility
- **Marketing, Education and Outreach**
  - If you build it, they will not come without ME&O
  - Clear demonstration of the opportunity and how to achieve it
  - Close-in support and coaching, especially at the beginning



2021 Usage x Hr

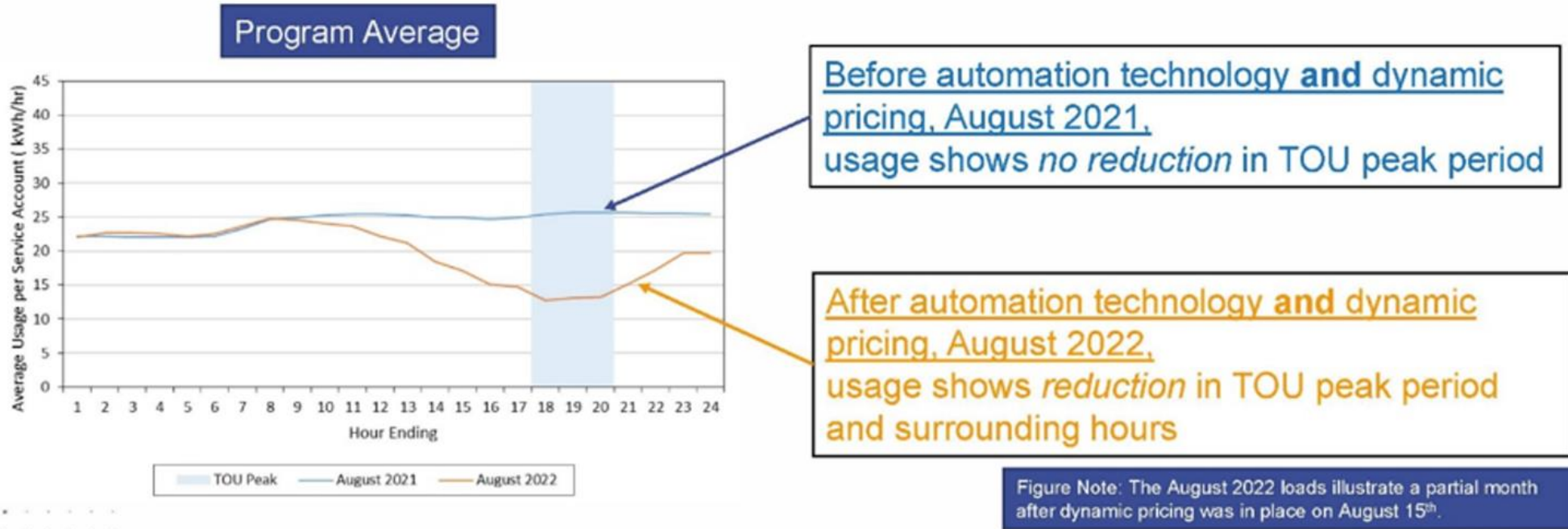


2022 Usage x Hr



# Ag Sector Dynamic Pricing – Mid-term Report

## Dynamic pricing facilitates a load response outside of TOU peak period.



Christensen Associates, “Preliminary Assessment of Valley Clean Energy’s (VCE) Agricultural Pumping Dynamic Rate Pilot” Attachment B to August 15, 2023 Ruling, Slide 7



# Ag Sector Dynamic Pricing – Customer View – Week Ahead Hourly View



David Meyers

Scheduled Pump HP (15kW)  
20

Schedule Operation Notes  
Pump Panel Switch in AUTO

Select TOU or AgFIT rates  
TOU  AgFIT

Week of  
Sunday Aug 28

→ PRE-FILL RECOMMEND NEXT

	← 8/28 Sunday	8/29 Monday	8/30 Tuesday	8/31 Wednesday	9/1 Thursday	9/2 Friday	9/3 Saturday →
12:00am	0.22	0.21	0.23	0.24	0.32	0.29	0.27
01:00am	0.20	0.20	0.21	0.23	0.27	0.26	0.24
02:00am	0.21	0.21	0.22	0.25	0.28	0.28	0.26
03:00am	0.20	0.21	0.21	0.24	0.28	0.26	0.25
04:00am	0.21	0.21	0.23	0.24	0.27	0.25	0.24
05:00am	0.21	0.21	0.23	0.24	0.28	0.27	0.25
06:00am	0.20	0.25	0.27	0.30	0.34	0.31	0.25
07:00am	0.19	0.21	0.23	0.25	0.27	0.27	0.22
08:00am	0.17	0.21	0.21	0.23	0.24	0.24	0.21
09:00am	0.16	0.19	0.20	0.22	0.24	0.24	0.21
10:00am	0.16	0.20	0.20	0.22	0.26	0.25	0.21
11:00am	0.16	0.21	0.21	0.24	0.31	0.29	0.24
12:00pm	0.18	0.20	0.22	0.25	0.31	0.29	0.26
01:00pm	0.19	0.22	0.25	0.29	0.36	0.34	0.30
02:00pm	0.21	0.25	0.29	0.34	0.43	0.38	0.36
03:00pm	0.23	0.27	0.31	0.38	0.50	0.42	0.41
04:00pm	0.26	0.31	0.35	0.41	0.55	0.46	0.45
05:00pm	0.34	0.36	0.43	0.51	0.67	0.53	0.55
06:00pm	0.56	0.55	0.70	0.87	1.26	0.95	0.93
07:00pm	0.72	0.66	0.77	0.91	1.35	0.97	0.98
08:00pm	0.53	0.46	0.53	0.59	0.77	0.59	0.54
09:00pm	0.27	0.26	0.30	0.34	0.39	0.36	0.36
10:00pm	0.23	0.23	0.26	0.28	0.35	0.33	0.33
11:00pm	0.22	0.24	0.25	0.27	0.33	0.32	0.31

estimated bills: 08/01 - 08/31 VCE LSE - 09/01 - 09/30 VCE LSE

**Bill Period: Aug 1 - Aug 31**

Transactive Energy \$0.18 (AVG)	existing: 12,058kWh new: 1,050kWh	\$2,224.03
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**Charges with Subscription**

**Bill Period: Sep 1 - Sep 30**

Transactive Energy \$0.24 (AVG)	existing: 1,246kWh new: 750kWh	\$293.48 + \$15.03
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**Charges with Subscription**

**CALCULATE** Calculate final Schedule cost

Estimated Schedule Charges (120hr)	\$15.03
Existing Bill Charges	\$2,517.51
<b>Total</b>	<b>\$2,532.54</b>

Real-Time Data Connected

MyPolaris BETA

**SIGN OUT**



# Questions?

Photography: Yvonne Hunter

## Contact:

1 (855) 699-8232 M-F 9am-5pm

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