PG&E's Stage 2
Agricultural Sector

Presentation by Colleen Breitenstein
Agricultural EE Programs
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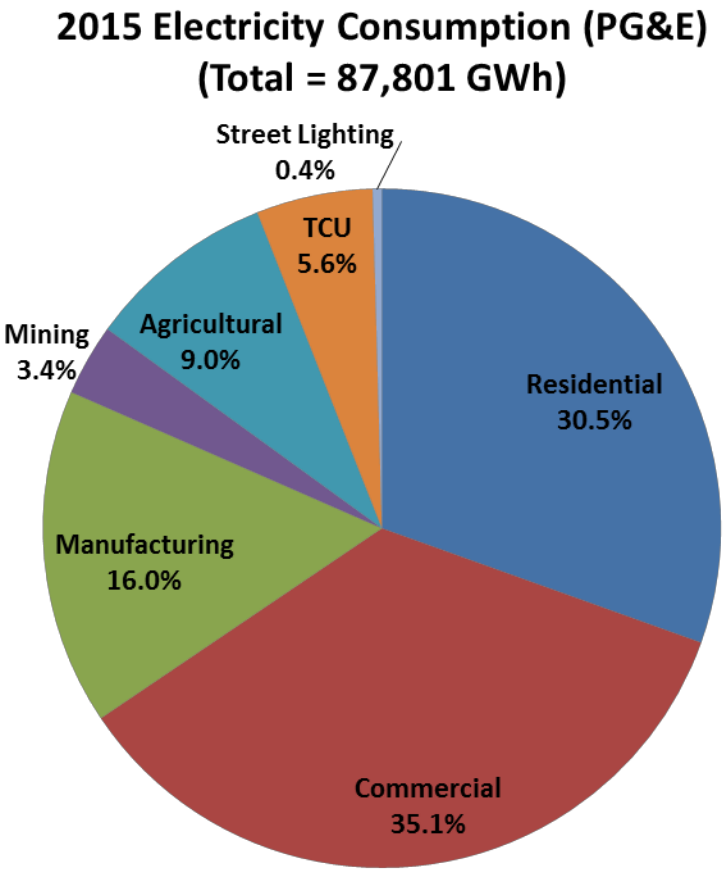
Contact:
colleen.breitenstein@pge.com

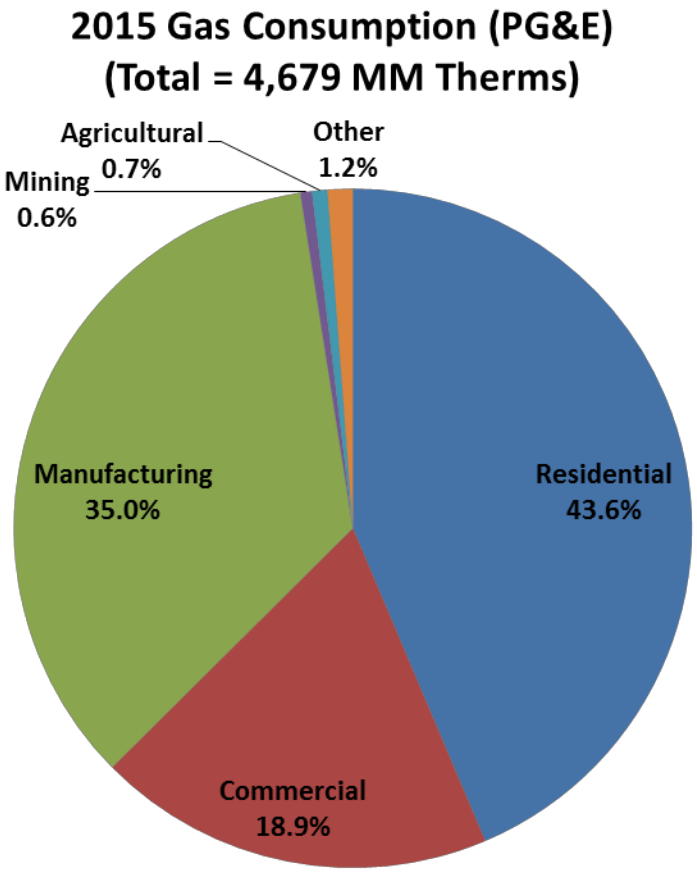
Market Overview: Phase 1 Recap

PG&E and Agricultural Sector Overview

96,000 electric customers



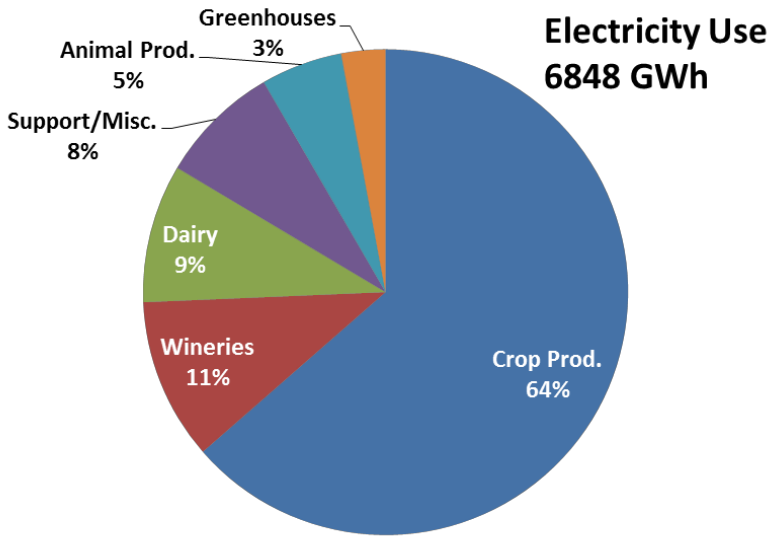
2,500 gas customers

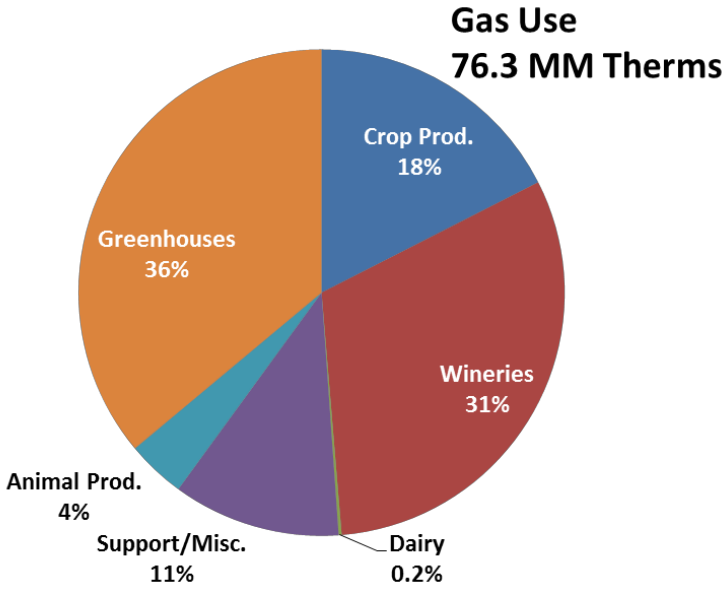


Source: 2015 Integrated Energy Policy Report (IEPR)

Agricultural Sector by End Use

Agricultural Consumption by Segment





Top Customer Types for Gas and Electric Usage

Crop Production

Dairies

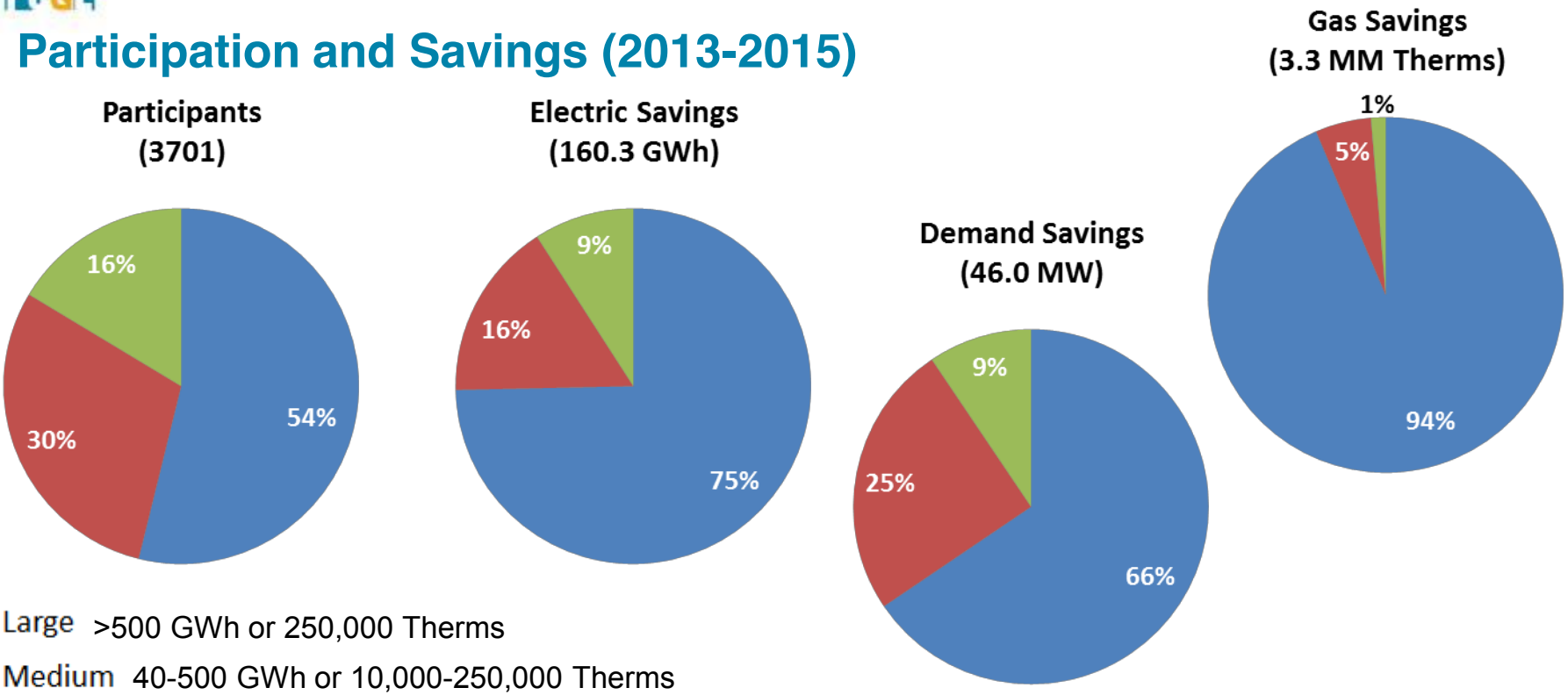
Wineries

Greenhouses

Source: PG&E Internal data (2015 Sales)

Agricultural Sector Savings

Participation and Savings (2013-2015)



Large Businesses:

- Roughly half of current Ag customers account for over 3/4 of total historic GWh savings and almost all gas savings.

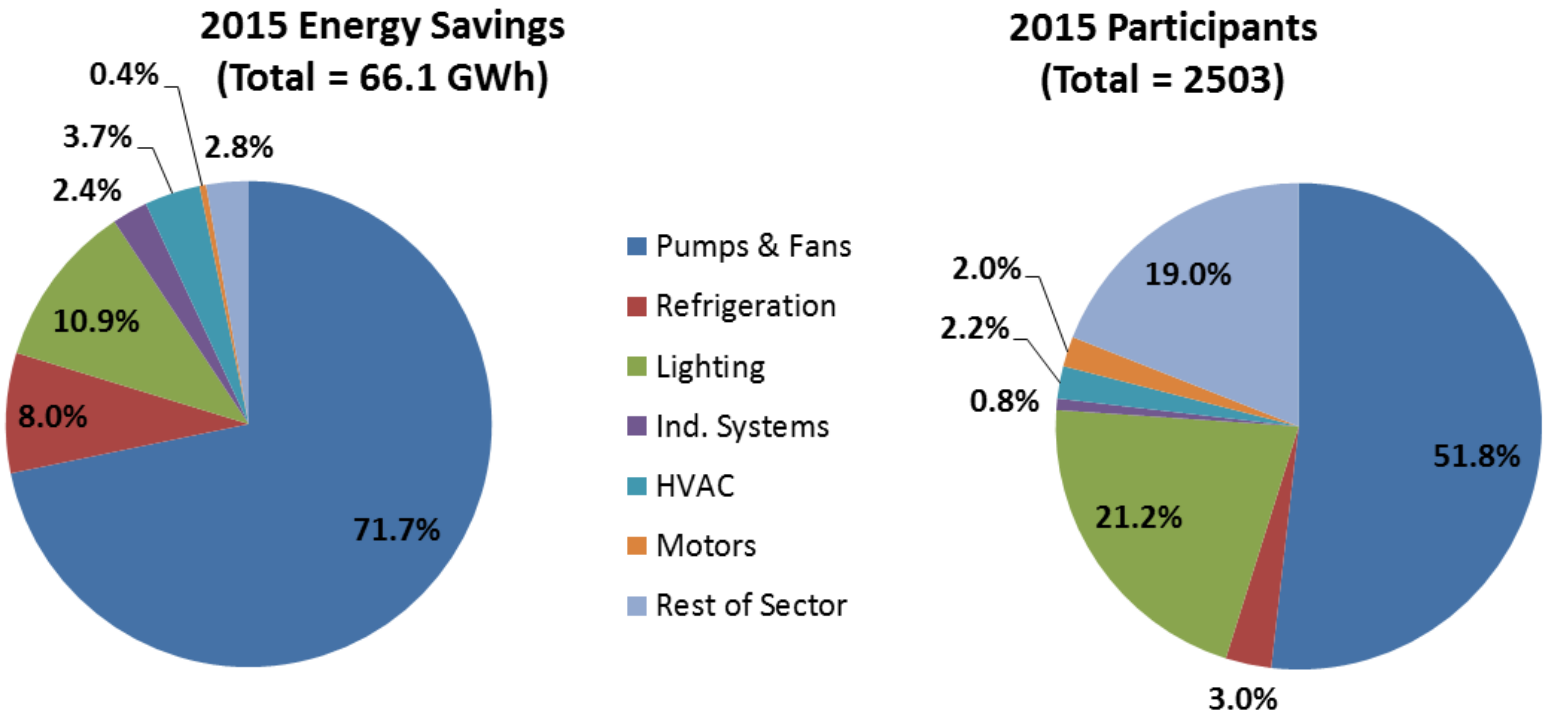
Key Point:

- Customers of various sizes participate in our programs and participation aligns with savings

Source: PG&E internal data

2015 Measure Mix and Participation

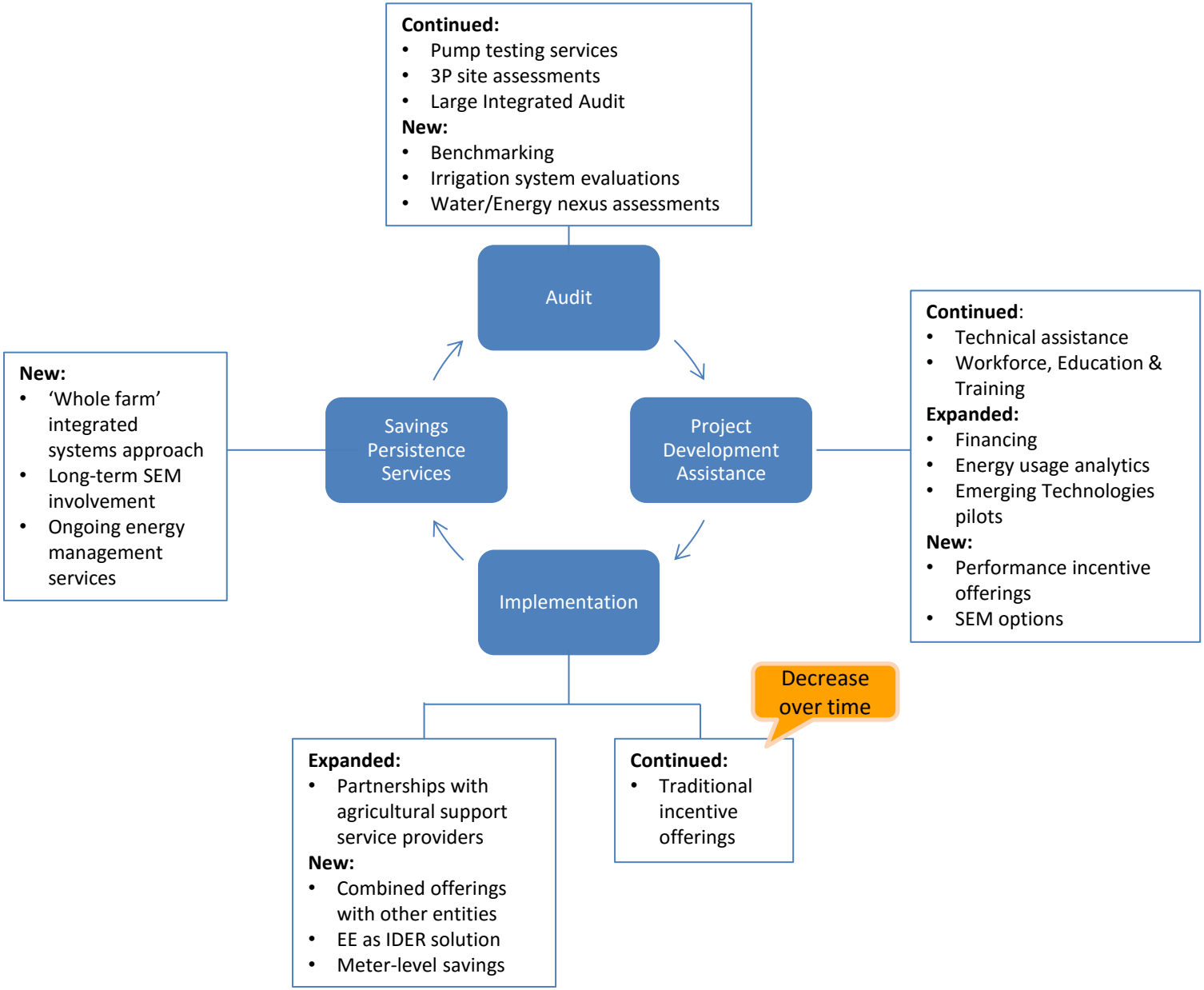
Measure savings by technology is roughly aligned with number of participants (for 2015 at least)



Source: PG&E Internal data

Approach to Agricultural Sector

PG&E Agricultural Process Flow



Problem Statements and Proposed Solutions

Problem Statement Summary

Problem Statements
1: Water continues to be a major concern for agricultural customers.
2: The rate of market saturation with current measures has outpaced the rate of new measure introduction leaving a substantial gap in the portfolio of offerings for Agricultural customers.
3: The Agricultural customer lacks the financial resources to purchase more efficient equipment or leverage tools to support their optimization needs.
4: The Agricultural sector lacks current market characterization information which is essential to the design of future energy efficiency support services.

PS 1: Water continues to be a major concern for agricultural customers.

Proposed Solutions	Possible Metrics
Near Term: • Continue successful EE program offerings, while seeking innovative means to incentivize efficiency-driven market transformation • Improve and prioritize EE agricultural offerings relevant to water conservation and the water-energy nexus	• Water savings • Energy savings • Increase in customer participation • Creation of/ participation in a 'whole farm' program
Mid Term • Incentivize irrigation system optimization, while exploring ways to create a performance management model • Target adoption of technologically-advanced irrigation systems	
Long Term • Developing a behavioral program/benchmarking leveraging data sources such as CIMIS • Develop a 'whole farm' program • Explore partnerships with irrigation districts/DWR to offer financial incentives for growers	

PS 2: The rate of market saturation with current measures has outpaced the rate of new measure introduction leaving a substantial gap in the portfolio of offerings for Agricultural customers.

Proposed Solutions	Possible Metrics
Near Term: • Continue offering current successful programs • Increase outreach and education to contractors and agricultural support service providers	• Increase in customer participation • Energy savings • Development of effective tools to evaluate irrigation system efficiency for incentives
Mid Term: • Develop calculators that can account for site specifics and can be adjusted as the market/policy changes • Continue to target segments with high growth potential • Develop targeted and specialized SEM offerings	
Long Term: • Develop platform to enable customers to view advanced data analytics of their energy usage • Explore opportunity for integrated/IDER offerings • Integrate offerings into 'whole farm' approach • Partner with USDA, NRCS, and Cooperative Extension Service	

PS 3: The Agricultural customer lacks the financial resources to purchase more efficient equipment or leverage tools to support their optimization needs.

Proposed Solutions	Possible Metrics
Near Term: • Coordinate with other IOUs to resolve greenhouse ISP issue and begin re-engaging customers in this segment • Develop targeted offerings for SMB greenhouse customers • Plan for potential load growth in the greenhouse segment with lighting and HVAC measures available in the portfolio • Promote OBF/OBR financing to customers in this segment	• Increase in financial offerings targeted to Ag customers • Increase in customer participation • Improved TRC and PAC
Mid Term: • Develop and offer pre-approval of OBF loans with higher caps and extended lifetimes • Expand technical assistance offerings	
Long Term: • Develop partnerships with entities, such as the REAP to offer incentives and loans to farmers making EE upgrades • Explore NRCS financial offerings and programs	

PS 4: The Agricultural sector lacks current market characterization information which is essential to the design of future energy efficiency support services.

Proposed Solutions	Possible Metrics
Near Term: • Develop stronger ties with key trade and agricultural support organizations to deepen understanding of challenges and opportunities facing specific customer types • Conduct segment-specific ISP studies to determine specific baselines; ex: PVC pipe (PG&E), greenhouses	• Increased relationships with agricultural support services • Increased customer participation • Increased targeted program offerings • More relevant market studies
Mid Term: • Research/ benchmarking/ EM&V studies • Partner with CA ag universities to do ongoing studies/ market research to drive innovation in the sector • Partner with the USDA, NRCS, and Cooperative Extension Service, leveraging their research and solutions for EE/water	
Long Term: • Explore emerging new service providers like the Farmers Business Network (FBN) offering	

Partners

- Customers
- Other PAs
- Third party implementers
- Trade organizations
- Labs and research institutions, including Ag universities
- Government agencies (e.g., Department of Water Resources, USDA, CFBA)
- Water agencies, irrigation districts

Thank you