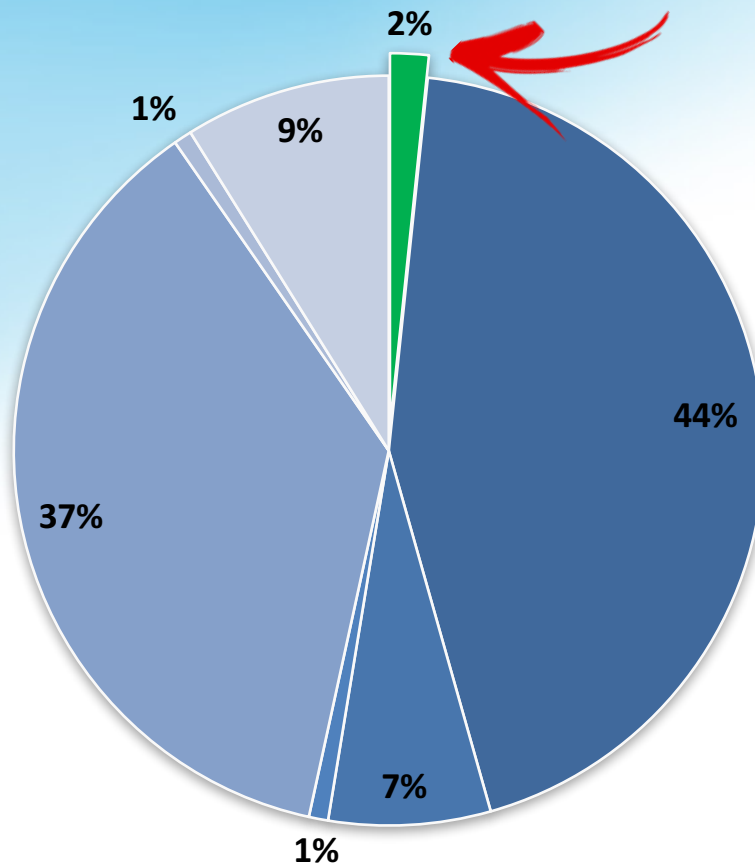


# *Agricultural Sector Business Plan for 2016 and Beyond Stage 2 Deliverables*



# SDG&E Electric Consumption California Energy Commission Sectors

## 2013 – 2015 SDG&E Consumption by Sector



*Ag Sector  
Consumption:*

- *2% locally*
- *7% Statewide*

■ Agriculture & Water Pumping

■ Commercial

■ Industry

■ Mining & Construction

■ Residential

■ Streetlighting

■ Transportation, Communication & Utilities

Source: CEC - Kavalec et al., 2013. California Energy Demand 2014-2024

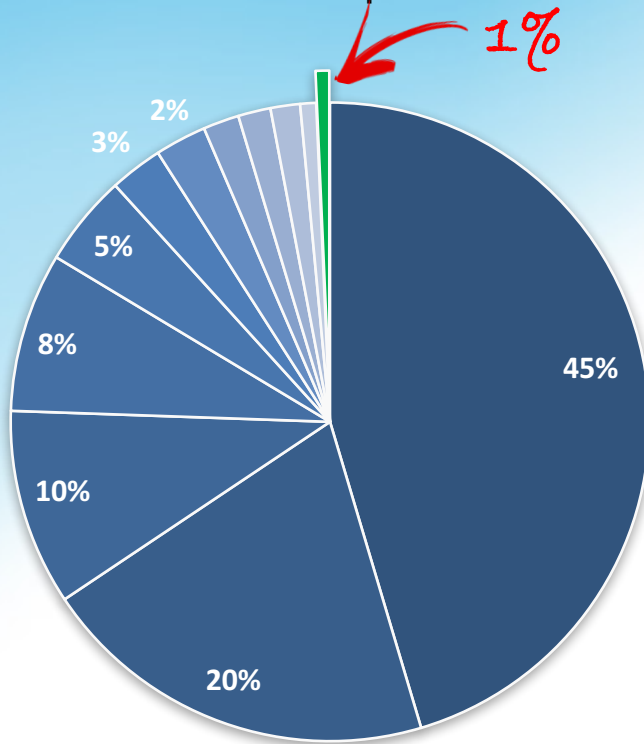
### Key Observation:

- 2013-2015 Program Cycle → 2% SDG&E Electric Consumption in the Agricultural Sector: ~1,060 GWh compared to the total electric consumption of 63,755 GWh  
Agricultural

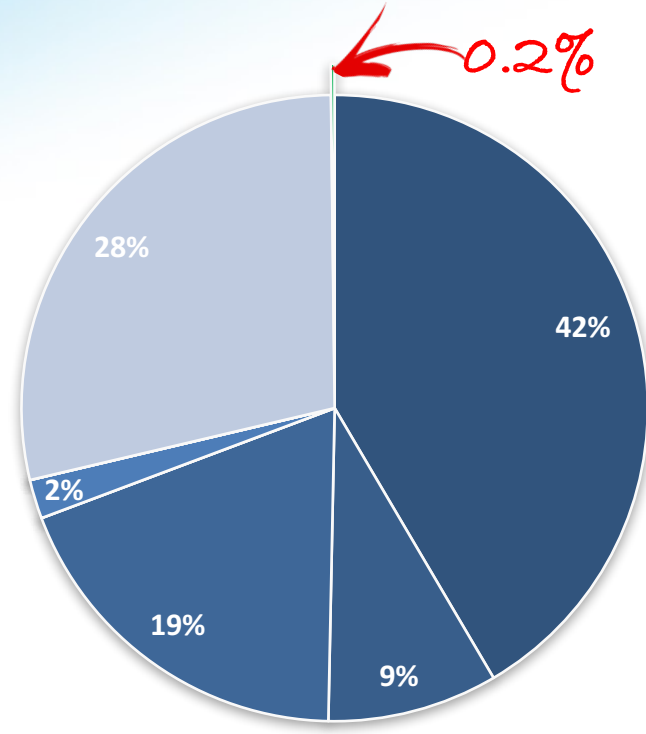
# Our Portfolio

## Agricultural Sector Spending & Savings

### Portfolio Expenditure



### Portfolio EE Savings (GWh)



- |              |               |                     |               |
|--------------|---------------|---------------------|---------------|
| ■ Commercial | ■ Residential | ■ Cross-cutting     | ■ LGP         |
| ■ WE&T       | ■ Industrial  | ■ IDSM              | ■ ME&O        |
| ■ EM&V       | ■ Financing   | ■ Codes & Standards | ■ Agriculture |

### Key Observation:

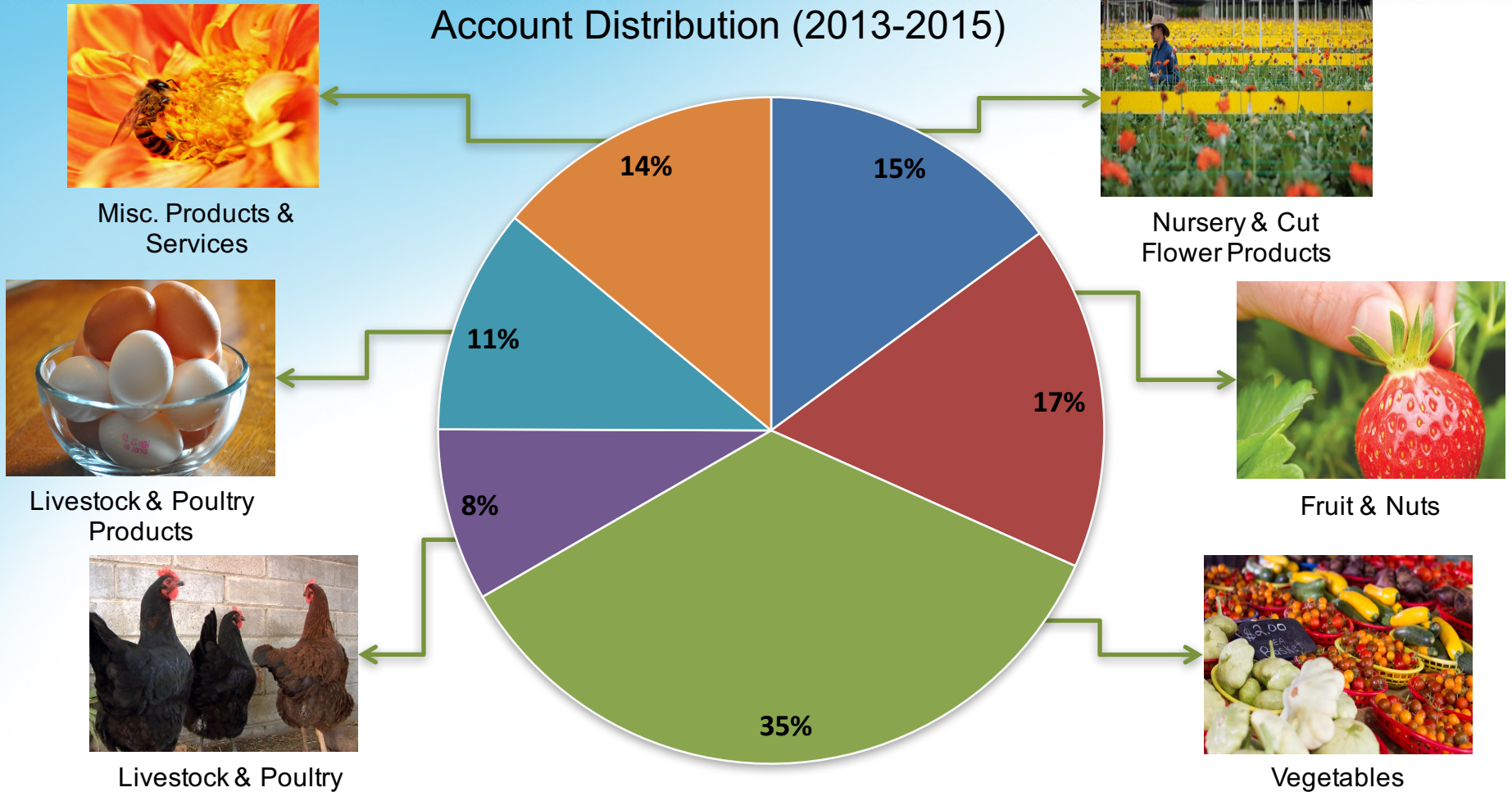
- In the 2013-2015 Program Cycle, of all EE Portfolio spending (\$117.8M), 1% spent on Industrial programs.
- Of total EE Portfolio Savings, 0.2% (~1.2 GWh) of electric savings came from the Industrial sector.

Agricultural

# Our Agricultural Portfolio

## Agricultural Customer Segments

Account Distribution (2013-2015)



**Key Observations:**

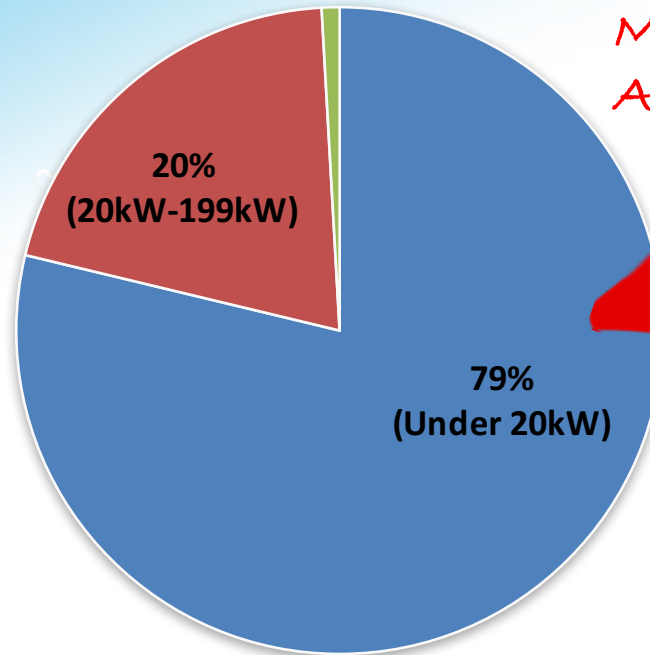
- Largest Agricultural Segments → Vegetables ~800 Accounts, & Fruit & Nuts ~400 Accounts and make up more than half of the sector's electric usage (~56%).
- Remaining Agricultural Segments are quite small (~1100 accounts in all) & represent remaining electric usage (~44%).

# Our Agricultural Market

## Customer Size (Demand)

### Agriculture Accounts by Demand Size

■ Small (Under 20kW) ■ Mid-Sized (20-199kW) ■ Large (+200kW)



*Most Agricultural Sector Accounts have lower demand*



Livestock & Poultry



Livestock & P. Products



Misc. Prod/Services



Nursery & Cut Flowers



Vegetables



Fruit & Nuts

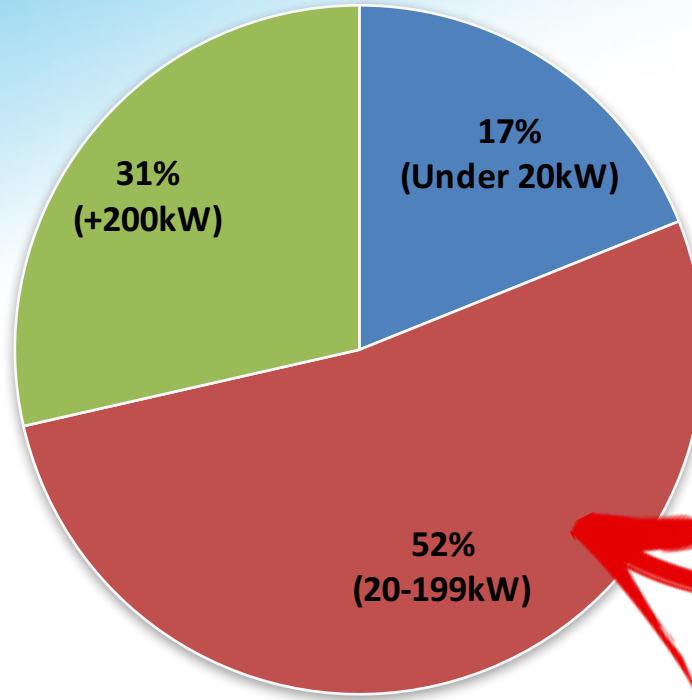
Agricultural

# Our Agricultural Market

## Customer Consumption by Demand Size

### Agriculture Consumption by Demand Size

■ Small (Under 20kW) ■ Mid-Sized (20-199kW) ■ Large (+200kW)



★ 21% of Accounts  
=  
83% of Electric Consumption  
↓  
~450 Accounts  
(mid-sized customers)

Significant Sector  
Electric usage from  
mid-sized customers



Livestock & Poultry



Livestock & P. Products



Misc. Prod/Services



Nursery & Cut Flowers



Vegetables



Fruit & Nuts

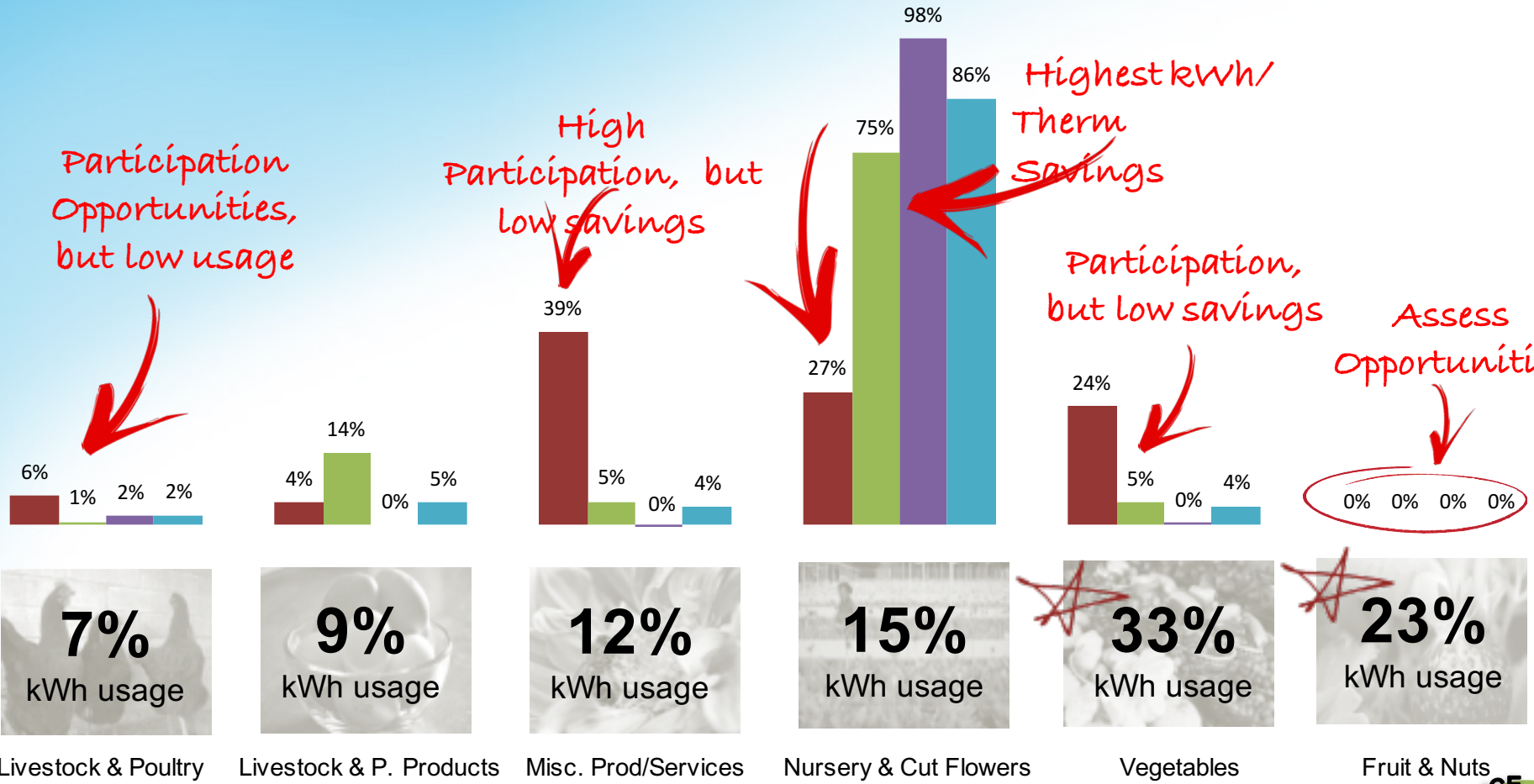
Agricultural

# Our Agricultural Market

## Historical EE Projects

■ Projects ■ kWh Savings ■ Therm Savings ■ Incentive

0.2% of Portfolio



Participation Opportunities, but low usage

High Participation, but low savings

Highest kWh/Therm Savings

Participation, but low savings

Assess Opportunities

7% kWh usage

9% kWh usage

12% kWh usage

15% kWh usage

33% kWh usage

23% kWh usage

Livestock & Poultry   Livestock & P. Products   Misc. Prod/Services   Nursery & Cut Flowers   Vegetables   Fruit & Nuts

Key Observation:

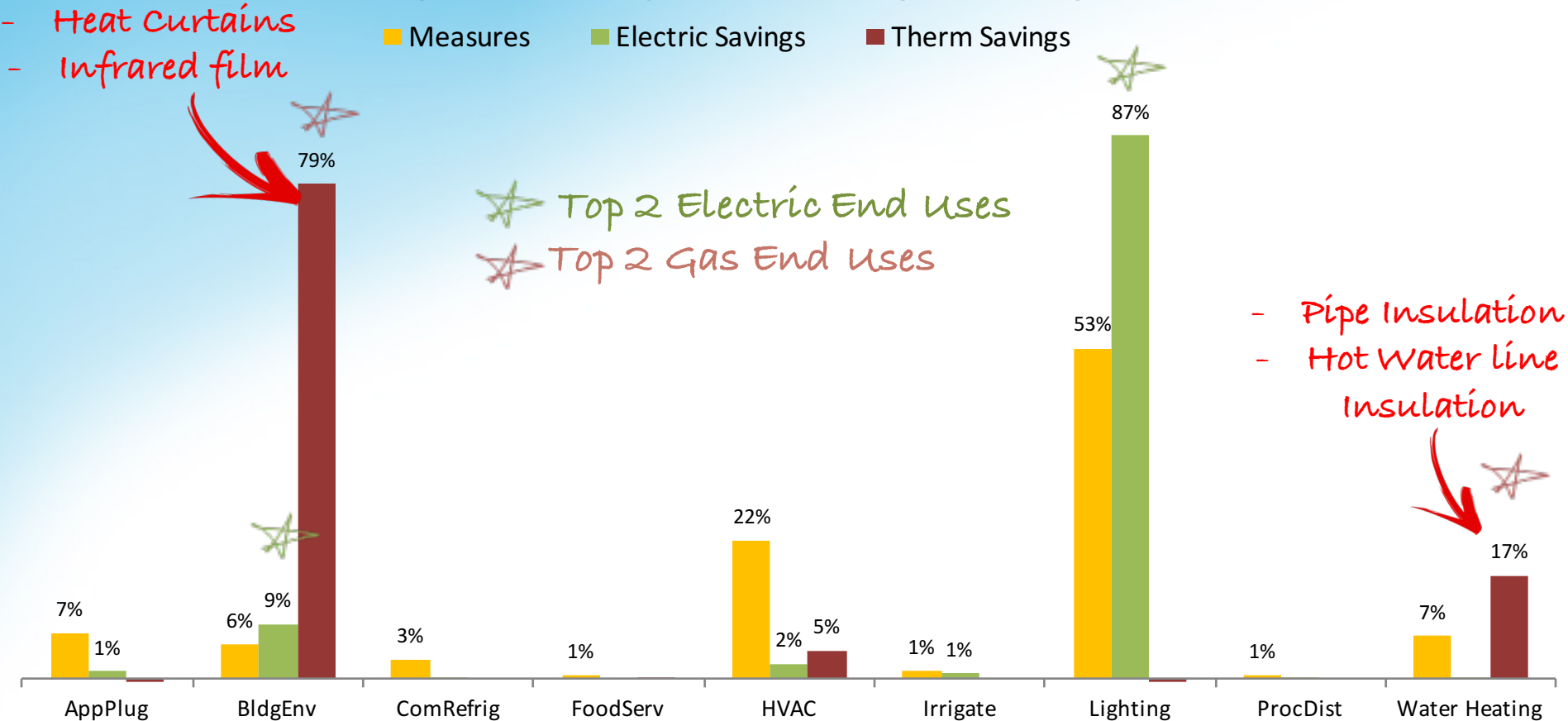
- Majority of the sector's historical EE projects took place in the Nursery & Cut Flowers segment

Agricultural

# Our Agricultural Market

## Historical End Uses

### Agriculture Project End Uses (2013-2015)



#### Key observations:

- The top 2 electric end uses are Lighting and Building Envelope
- Top 2 gas end uses are Building Envelope and Water Heating

Agricultural



# Guiding Principles

## SDG&E Vision and Mission

### SDG&E Vision

- San Diego Gas & Electric, in collaboration with key stakeholders, will create the foundation for an *innovative, connected and sustainable energy future*.

### SDG&E Agricultural EE Mission

- SDG&E's mission for the agricultural sector is to *cultivate the relationship* with the agricultural community and *support the economic and environmental success* of the sector in achieving California's Long Term Strategic goals.

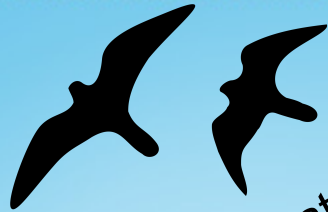
### California Long Term Strategic Plan Vision

- Energy efficiency will *support the long-term economic and environmental success* of California agriculture.

- SGD&E seeks to *Drive Market Transformation* by *Generating Customer Demand* for Energy Efficiency. The resulting energy savings will be more integrated and comprehensive.
- Extend our trusted energy advisor role to agricultural customers; SDG&E has *Extensive Local Knowledge* of our grid, our customers' needs, and their energy consumption patterns.
- SDG&E will utilize *Decades Of Administration Experience* to change the way customers look at energy improvement and connect customers to local resources.
- SDG&E is *Uniquely Positioned To Work With Various Stakeholders* to continue to achieve California's significant energy reduction goals.
- SDG&E will *Explore New Services And Innovative Approaches* to motivate and enable customers to achieve economic benefits through Energy Efficiency, resulting in the achievement *California's Long Term Energy Efficiency Strategic Plan Goals*.

# SDG&E Agricultural Sector

## Problem Statements & Strategies Matrix



Each strategy tackles multiple problem statements



		Sector Nuances	Competing Priorities	Financial Considerations
Energy Tools	Financing Offers		X	X
	Emerging Technology	X	X	
	Workforce Education & Training		X	X
Simple Offerings	Integrated Offerings		X	X
	Third-party/Upstream/Mid-stream model	X		X
Access to Assistance	Targeted Stakeholder Engagement		X	
	Targeted Marketing	X		

Agricultural

# Sector Characterization

## Problem Statement 1: Sector Nuances

### Agricultural Sector nuances have not historically aligned with program offerings

The Agricultural sector within the SDG&E territory has historically been characterized as one segment, growers. Further analysis of agricultural accounts show a wide variety of segments such as: livestock and poultry, livestock and poultry products, and miscellaneous products and services that include industries like apiculture, cattle feedlots, and aquaculture. In addition to the historical lack of granularity when characterizing this sector, some accounts that should be classified as agricultural are actually classified as residential. Because of all of these factors, program offerings have not accurately addressed the needs of the sector.

*Data Sources:*

- *Market Characterization Report, Navigant*



# Sector Characterization

## Sector Nuances - Observations

### ➤ Observation 1: NAICS code classifications

Processing of projects and reporting of project locations have historically been based on NAICS codes. NAICS codes provide a high-level indication of the agricultural business type, but it does not accurately capture the operations and production.

### ➤ Observation 2: Residential vs. Agricultural accounts

Smaller agricultural operations could take place at locations with multiple functions. Any agricultural activities that occur at accounts listed as residential are not categorized and reported as agricultural. The residential accounts are missed Energy Efficiency opportunities.



*Data Sources:*

- *Market Characterization Report, Navigant*



# Customer Attitude

## Problem Statement 2: Competing Priorities

Most Agricultural customers within the SDG&E territory prioritize business decisions based on their day-to-day operations. These decisions are often to support their most significant resources for production, water and labor. Along with these resources come barriers related to regulations and scarcity of resources.



*Data Sources:*

- *SDG&E Agricultural Sector Market Study, Evergreen Economics*

### ➤ Observation 1: Water Usage

Most of agricultural production is heavily reliant on water. Irrigation systems and water pumping are the most intensely used equipment in day-to-day operations, primarily in segments such as nursery and cut flower products, and fruit, nut, and vegetable growers. With recent regulations surrounding the drought, the shortage of water compounded with the increasing rates of water is a growing concern for most agricultural customers; where money is already a persistent concern.

### ➤ Observation 2: Labor cost & availability

A growing development within the agricultural sector is the increasing cost or even the availability of employees. Much of the daily tasks are dependent on manual processes that require a large staff. The increasing costs of supporting a staff in an industry where money is already a concern has provided an opportunity for potentially automating systems.

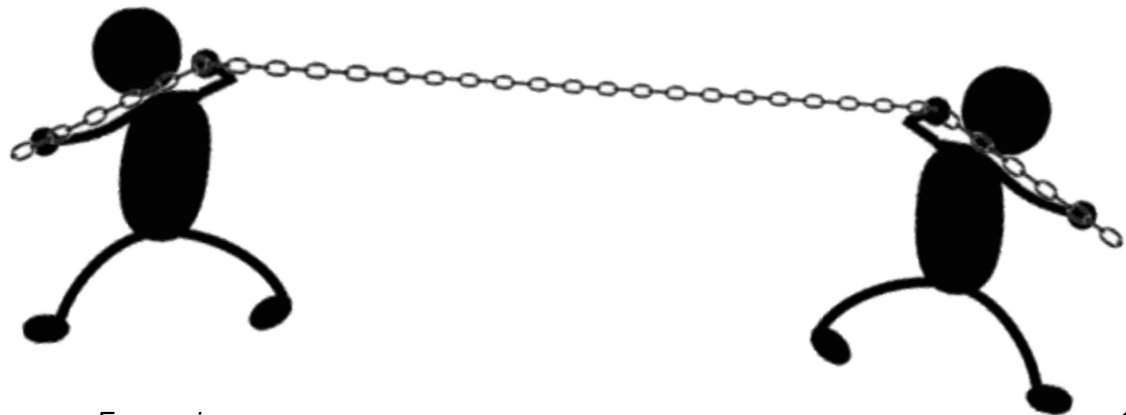


### ➤ Observation 3: Lack of information & awareness

Most agricultural customers are unaware of SDG&E's Energy Efficiency offerings. A portion of agricultural customers show some interest in Energy Efficiency but because of their limited knowledge of the topic, they have done very little to pursue Energy Efficiency projects.

### ➤ Observation 4: Property Ownership

For those agricultural businesses who lease the property where production takes place, any type of upgrade is of very little concern; their main concern is remaining in business.



*Data Sources:*

- *SDG&E Agricultural Sector Market Study, Evergreen Economics*
- *Market Characterization Report, Navigant*



# Customer Aptitude

## Problem Statement 3: Financial Considerations

Most agricultural customers are reluctant to pursue any projects outside of their usual operations because of the financial costs. Even customers who recognize the value of Energy Efficiency, and are willing to initiate an Energy Efficiency project, may still not be able to do it because of their lack of capital resources.



# Customer Aptitude

## Financial Considerations Observation

Financial stability is a constant concern for many growers in the agriculture sector. The primary focus for these customers is the day-to-day operations. Decisions that could benefit in the long term, like Energy Efficiency projects, are not top-of-mind for them because it is not tangible to the current state of their business.



*Data Sources:*

- *Measure, Application, Segment, Industry (MASI): Agriculture, Navigant*

# SDG&E Agricultural Sector Strategies

Category	Strategy
Energy Tools	Financing Offers
	Emerging Technology
	Workforce Education & Training
Simple Offerings	EE Value Proposition
	Integrated Offerings
Access to Assistance	Targeted Stakeholder Engagement
	Target Marketing

# SDG&E Agricultural Sector

## Strategy 1: Energy Tools

### ➤ Finance Offerings

Lack of capital for energy efficiency investment is a known challenge for most small and mid-sized agricultural businesses. This problem is especially prominent in SDG&E's service territory, where about 80% of SDG&E's agricultural customers are small in size (i.e. less than 20kW). SDG&E's On-Bill Financing Program has been able to assist a large number of customers to overcome their financial challenges by providing a zero-percent interest loan.

### ➤ Emerging Technologies

Emerging Technology Department should utilize pilot programs to test new technologies to tackle high potential segments and end uses. Once proven to be cost-effective, such new technologies can be offered through various energy efficiency programs to increase savings from the segments and end uses with high energy consumption. The introduction of new technologies to the targeted industries and the ability for them to try them first hand will be keys to increasing adoption rate of such technologies.

*Data Sources:*

- *NRDC Issue Brief*
- *Market Characterization Report, Navigant*

# SDG&E Agricultural Sector

## Strategy 2: Simple Offerings

Given the multifunctional nature of agricultural premises, most growers would be more willing to implement Energy Efficiency projects if offerings were more comprehensive and integrated. This includes offerings that incorporate one of their top priorities, water. SDG&E will seek to prioritize Energy Efficiency and water savings by partnering with local agencies and identifying water-energy nexus offerings and developing education and training.

Growers frequently work closely with suppliers when purchasing equipment; because of this relationship, growers turn to suppliers to find out about the latest and greatest in the industry. To leverage this current relationship, SDG&E will explore third party, and mid and upstream approaches utilizing industry experts.

#### Data Sources:

- *Market Characterization Report, Navigant*
- *SDG&E Agricultural Sector Market Study, Evergreen Economics*

# SDG&E Agricultural Sector

## Strategy 3: Access to Assistance

SDG&E will continue to foster existing relationships while also identifying current thought leaders and influencers in the Agricultural sector. This collaboration will have a mutual benefit – we will further understand the complexity of each segment within this sector, and we will work with these leaders and develop education around the value proposition of Energy Efficiency projects. The goal of this partnership is to create momentum and case studies to promote Energy Efficiency adoption.

*Data Sources:*

- *SDG&E Agricultural Sector Market Study, Evergreen Economics*

# SDG&E Agricultural Sector

## Metrics

Category	Baseline (2016)	Near-term (Decision-2021)	Mid-term* (2022-2024)	Long-term* (2025-2027)
<b>Energy Tools</b>	<p>Establish current customer utilization of existing energy tools such as OBF, WE&amp;T, etc. (e.g. X% utilization)</p> <p>Identify requirements for new energy tools</p>	<p>Comprehensiveness of projects utilizing energy tools vs. those that did not (e.g. X% of energy tool projects are comprehensive and Y% of non-energy tool projects are comprehensive)</p> <p>New energy tools (technology/system) implemented</p>	<p>A % increase in comprehensive projects utilizing energy tools</p> <p>New energy tools (technology/system) optimized</p>	<p>A % increase in comprehensive projects utilizing energy tools</p> <p>Track activities in new energy tools</p>
<b>Integrated Offerings</b>	<p>Establish participation baseline</p>	<p>Incremental increase in participation by X%</p>	<p>Incremental increase in participation in targeted high usage areas by X%</p>	<p>Incremental increase in participation in targeted high usage areas by X%</p>
<b>Access to Assistance</b>	<p>Establish baseline on “ease of participation score” (e.g. X% of customers think programs are easy to understand, easy to enroll, etc.)</p>	<p>A % increase in “ease of participation score”. This metric should positively correlate with the one above.</p>	<p>A % increase in “ease of participation score”. This metric should positively correlate with the one above.</p>	<p>A % increase in “ease of participation score”. This metric should positively correlate with the one above.</p>

\*Mid-term and long-term metrics contingent upon near-term results

- Utilities (IOU's) & Other Program Administrators
- Water Agencies
- Industry Organizations (e.g. Farm Bureau, San Diego Flower & Plant Association)
- Landlords (Property Owners)
- Suppliers, Distributors, Trade Professionals