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SoCalGas A Sempra Energy utility®

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Energy Efficiency

AGRICULTURAL AND INDUSTRIAL ENERGY EFFICIENCY

Erin Brooks, Regulatory Policy & Reporting Manager

SoCalGas Energy Efficiency Vision

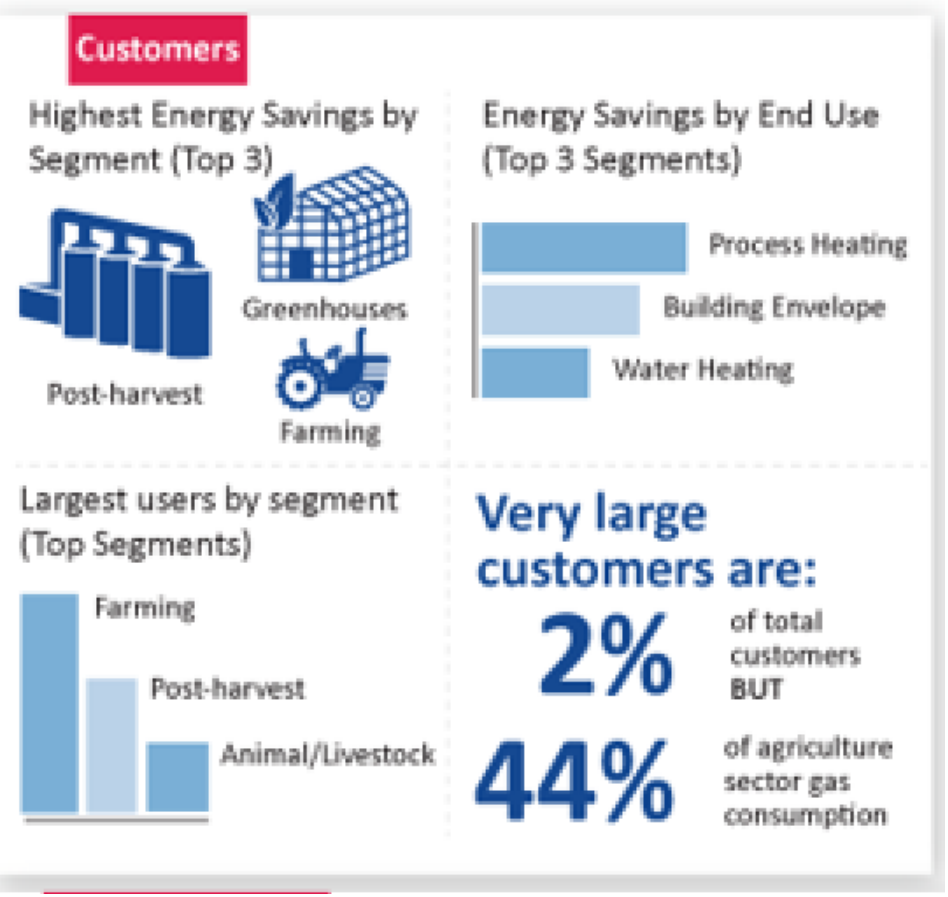
- We are leaders in delivering innovative customer assistance, energy efficiency, and clean energy programs that are valued by customers, sensitive to the environment, stimulate the economy and make a difference in the communities we serve. Our programs are intended to:
  - Facilitate, sustain, and transform the long-term delivery and adoption of energy efficient products and services;
  - Cultivate, promote and sustain lasting energy-efficient operations and practices; and
  - Offer a range of simplified solutions that address the customer's energy efficiency needs.

How to Achieve SB 350

1. New program models to scale cost-effectively and streamline customer experience
2. Increased collaboration with the EE industry to provide innovative programs to customers
3. Customer targeting via interval data analytics

SoCalGas Agricultural Sector

- SoCalGas' agricultural sector represents about 2% of the natural gas consumed by all customers.
- SoCalGas services agricultural customers ranging from very small family farms to large commercial outfits, and include greenhouses, wineries, dairy farms, field crops, and more.
- Moving forward SoCalGas will implement a comprehensive whole farm approach for the customer



Agriculture Sector: Barriers, Trends, Regulatory

Sector Challenges

Considerable number of small agricultural customers lack technical and financial resources

Competing priorities (production, product quality) overshadow energy efficiency opportunities

Difficult to offer standard programs that fit the needs of all customers across diverse segments

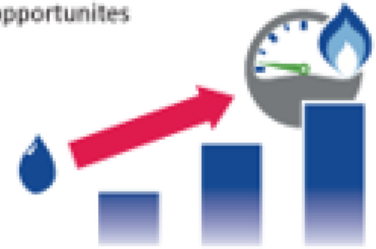
California Policy

Legislative and Regulatory Influences

- Contribute to cumulative doubling of savings by January 1, 2030. (SB 350)
- Support for customer energy management technology and education (AB 758, AB 793)
- Increased support for benchmarking and performance-based incentives (AB 758, EO B-18-12)

Industry Trends

Limited water availability increases energy consumption and efficiency opportunites



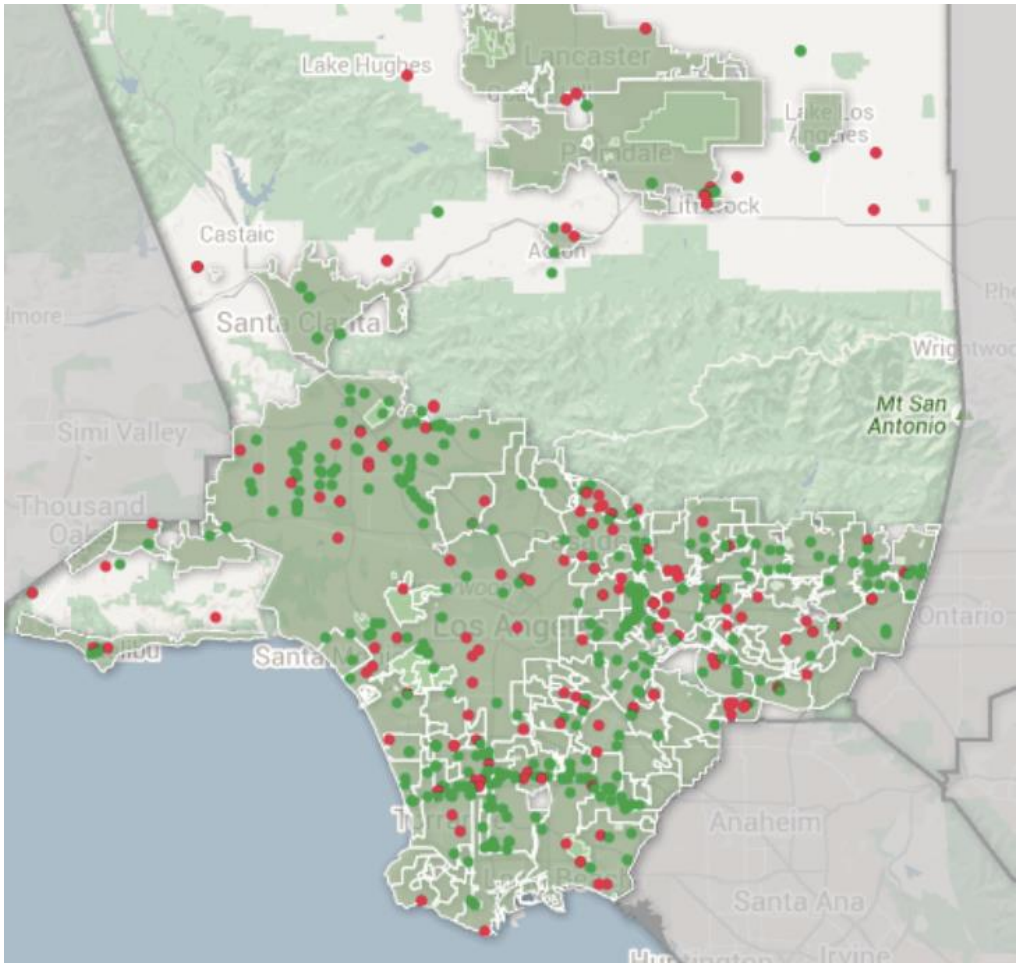
Increased labor costs limit capital available for energy efficiency

Decreased labor availability results in increased mechanization

Marijuana legalization is creating new energy efficiency opportunities

Urban Farms and Nurseries

Red: Urban Farms
Green: Nurseries



Source: Cultivate LA Report, 2013. Website: http://geodata.ucanr.edu/

Ag Sector - Segment Solutions

» Greenhouses:

- Install variable frequency drives on motors
- Install high efficiency motors
- Replace inefficient metal halides and incandescent lights with linear fluorescents and LEDs
- Install high efficiency horizontal air flow fans to maintain a uniform temperature
- Install high efficiency heating systems (boilers, furnaces, etc)
- Install shading to reduce mechanical cooling needs
- Install insulation to increase soil temperature, reduce heating needs, and reduce cooling needs
- Install thermal curtains to reduce heat loss

Ag Sector - Segment Solutions

» Urban Agriculture

- Variable size, focus on high value crops, low crop diversification, high energy use, reliance on infrastructures, high economical value
  - Large energy conservation potential (software implementations, climate system integration with HVAC, improved insulation, VFDs, pumps, fans, etc.)
  - Evidence of significant expansion in LA urban areas
  - Primary crops grown in LA urban gardens include: herbs, tomatoes, carrots, peppers, various lettuce and greens, and citrus

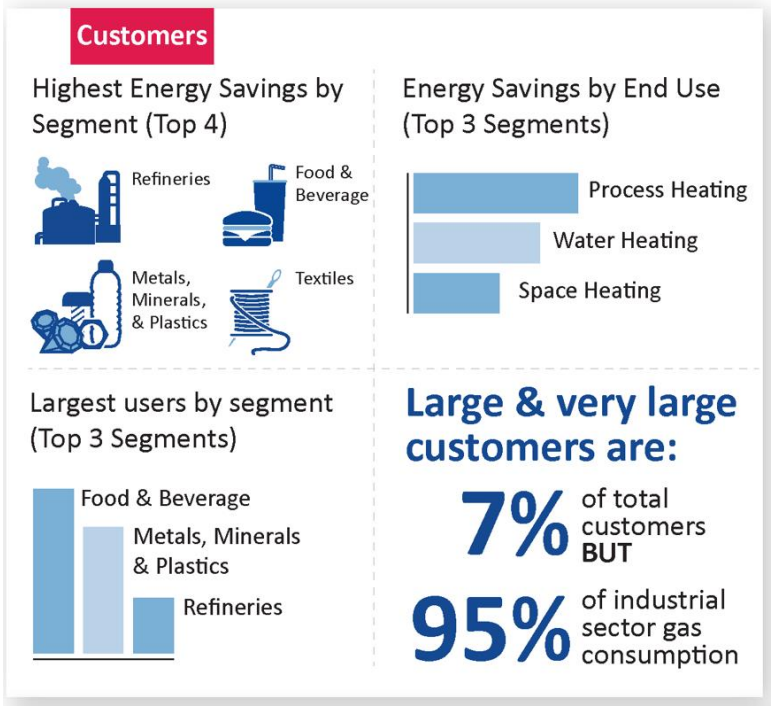
Ag Sector - Segment Solutions

» Mushroom Farming

- Variable in size but typically small, exclusively commercial, monoculture, high energy use, reliance on infrastructures, high economical value
  - Large demonstrated potential for indirect energy savings (software implementations, climate system integration with HVAC, improved insulation, etc.)
  - Potential for integration with new and existing infrastructures for energy conservation
  - Potential for water conservation implementations
  - Significant and growing commercial interest (restaurants, markets, etc.)

SoCalGas Industrial Sector

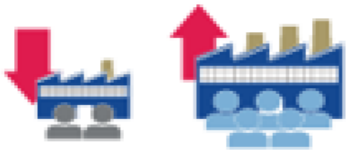
- Industrial sector represents nearly 25% of the natural gas consumed by all program-eligible customers.
- Policy Drivers such as AB 802
- Future development of Strategic Energy Management
- Comprehensive approach to the industrial customer



Industrial Sector: Barriers, Trends, Regulatory

Sector Challenges

Low adoption of energy efficiency solutions by smaller-sized customers



Complex, time-consuming process to pursue retrofits and operational changes

Current industrial organizational practices do not realize benefits of energy efficiency

Difficult and costly to convince diffused customer segments to pursue energy efficiency

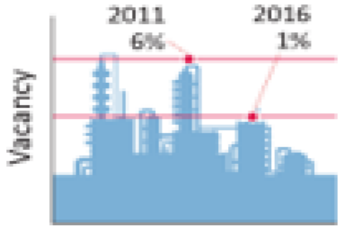
California Policy

Legislative and Regulatory Influences

- Contribute to cumulative doubling of savings by Jan 1, 2030 (SB 350)
- Support for multi-year, sector-specific energy efficiency plans (AB 758, AB 802)
- Increased support for benchmarking and understanding energy efficiency (AB 758, AB 793)
- Attention to resolving tenant/owner split-incentive issue (AB 758)

Industry Trends

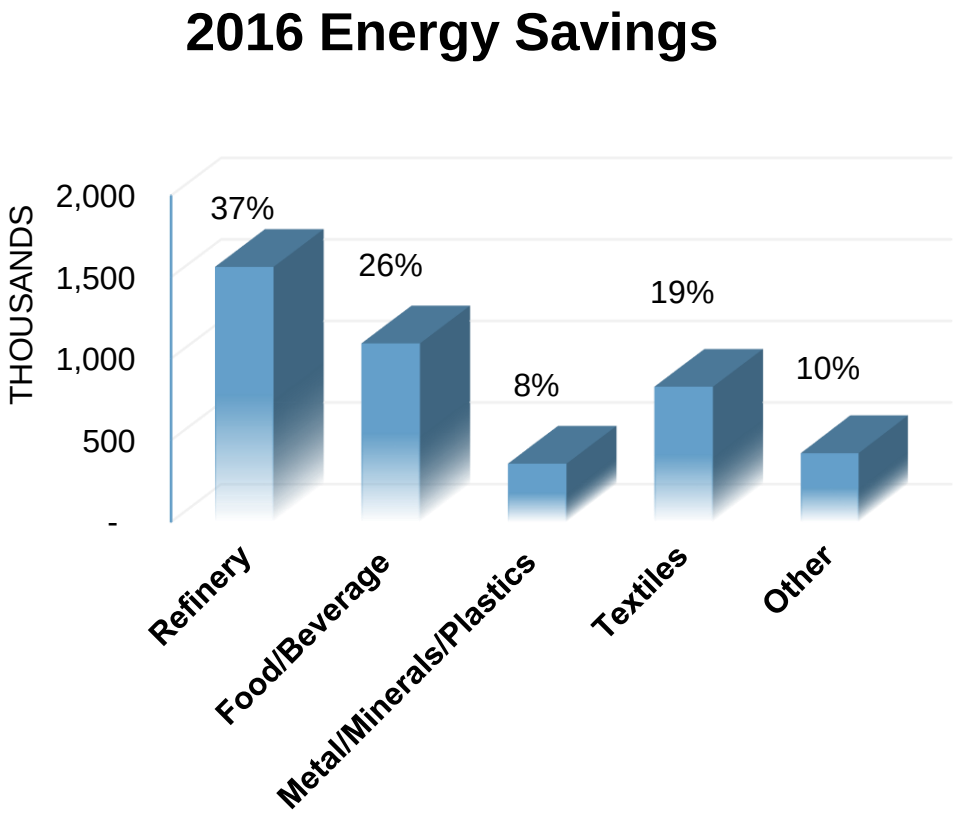
Industrial property vacancy rate declined over the last five years



Inland Empire is among the strongest, most dynamic industrial U.S. markets due to logistics network, available land, and increasing lease rates

New construction is gaining momentum in multiple business types

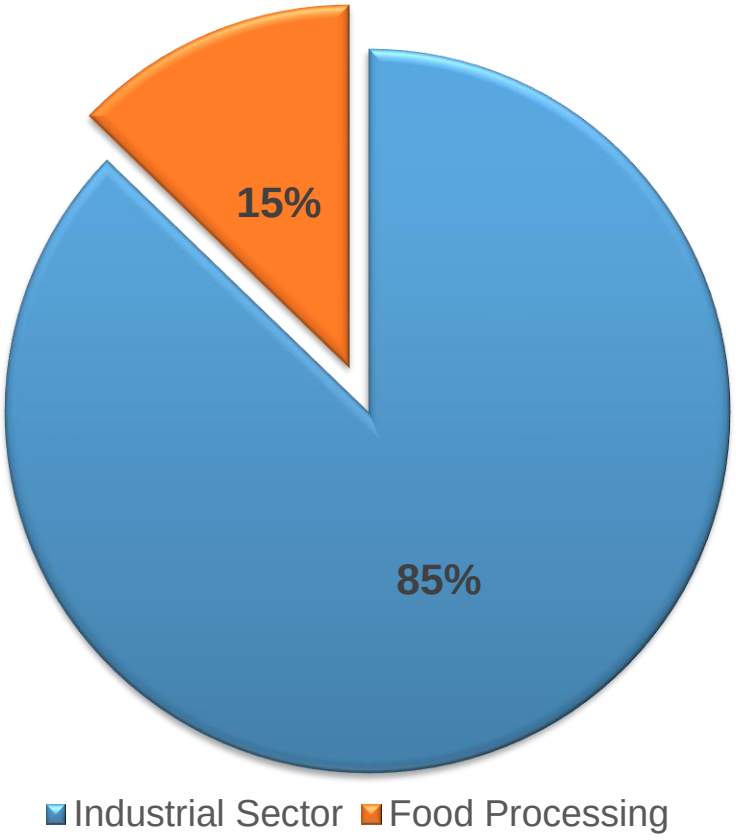
Industrial Sector Savings



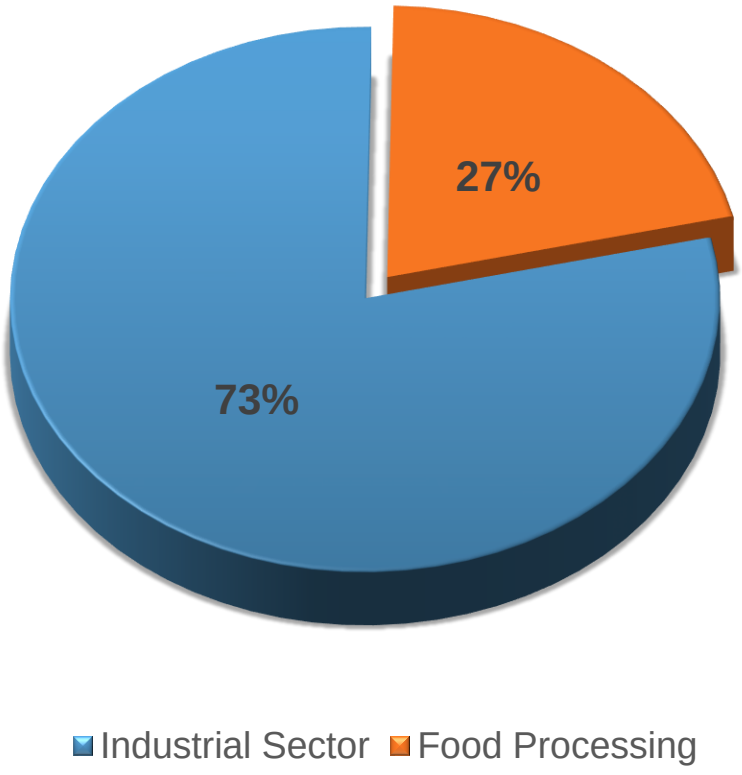
- Industrial sector programs delivered approximately 41% of the SoCalGas portfolio savings.
- Food Processing is the 2nd highest segment for therm savings.
- Food Processing accounts for approximately 26% of all Industrial sector savings.
- Approximately 1.1 million therms saved.

Ind. Sector – Food Processing Segment

Number of Customers

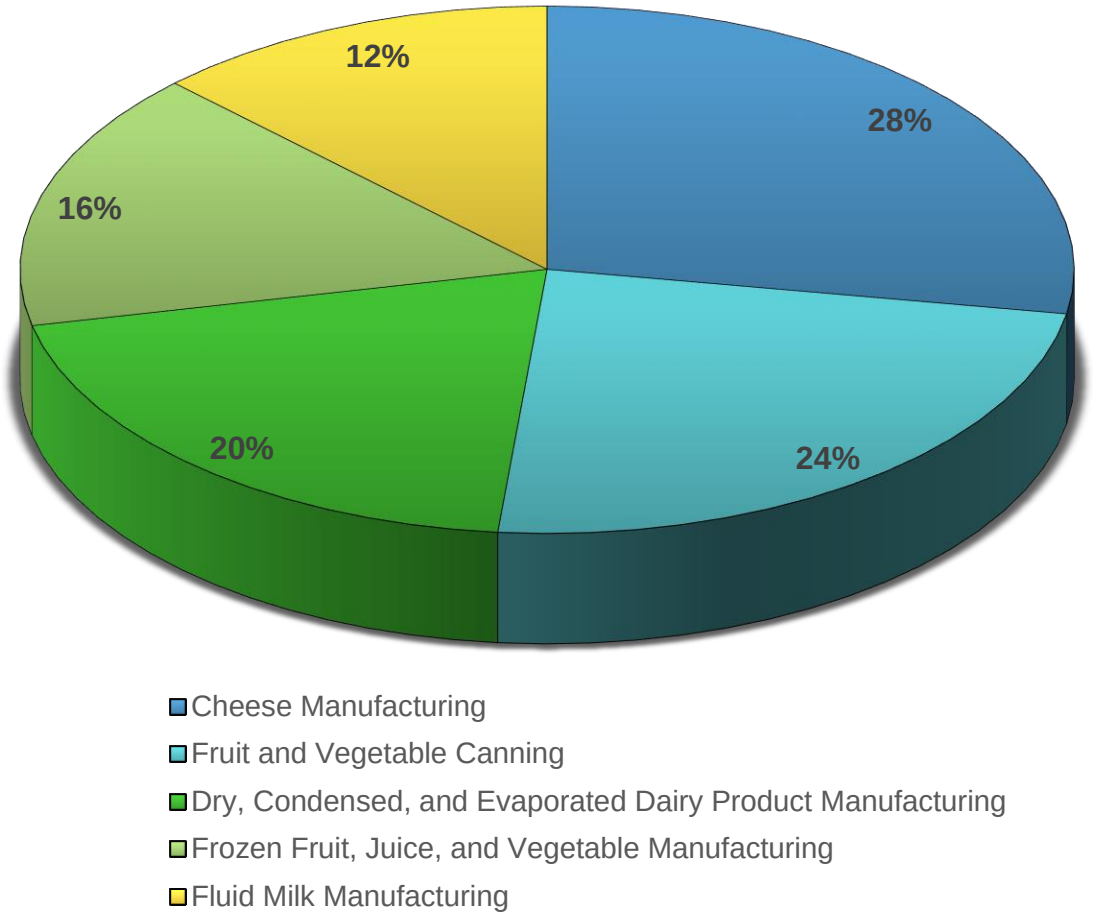


Food Processing Usage



Food Processing Usage

Top 5 Food Processing Usage Segments



Ind. Sector – Food Processing Segment

Food Processing

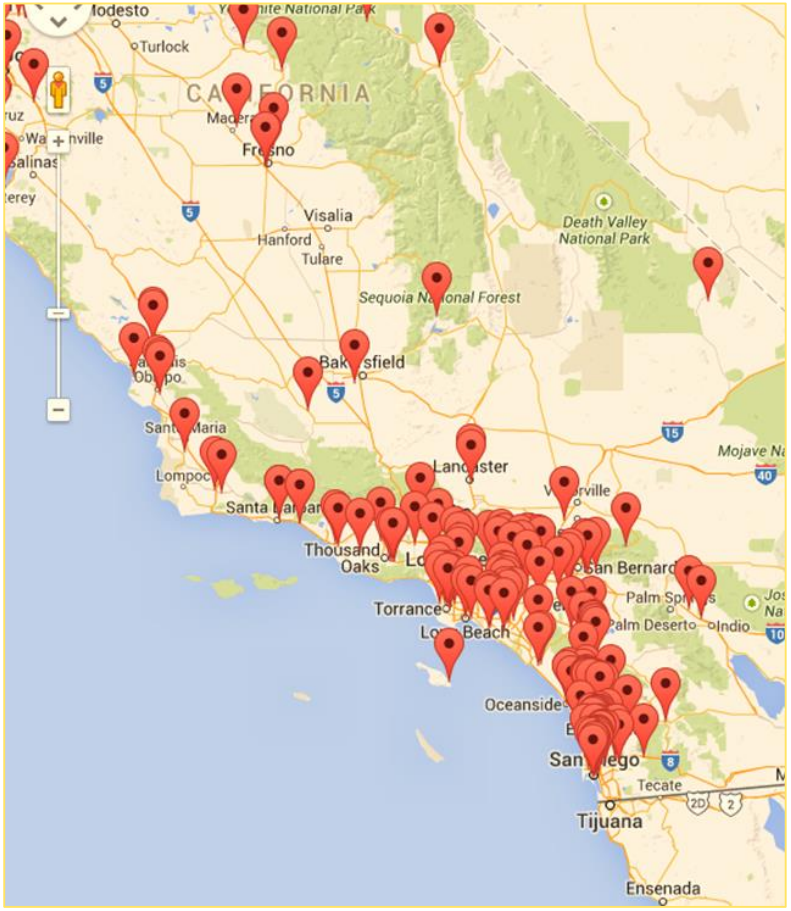
- **Substantial gas-saving potential.** Particularly high potential cheese manufacturing, fruit and vegetable Canning, and fluid milk manufacturing.
- **Assist businesses in achieving ROI requirements.** Incentives can help industries meet ROI cutoffs for energy projects and encourage improvements.
- **Serve a niche industry.** SoCalG can serve as a resource to niche food processing industries by providing technical assistance, knowledge-sharing, and training opportunities.
- **Develop ties with small business customers.** SoCalGas/SDG&E can develop relationships with customers in these growing business segments.

Ind. Sector – Brewery Segment

- **Breweries:**
  - The brewery market is large, and is experiencing rapid growth in SCG territory, in California and nationwide.

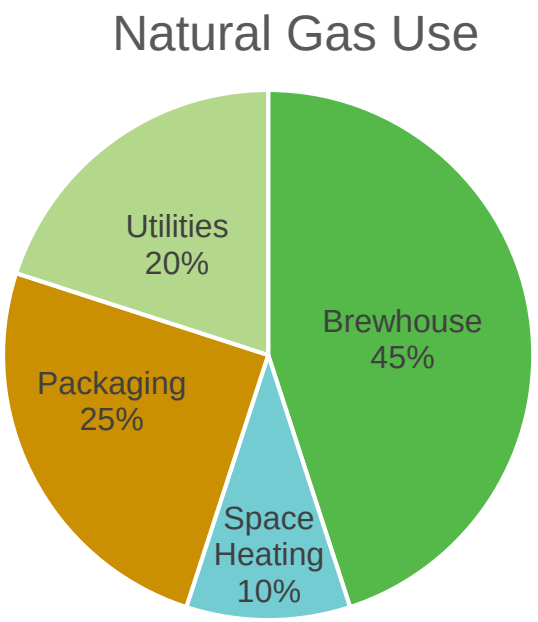
Substantial Market Size: There are over 88 registered members of the California Craft Brewers Association located in SCG territory

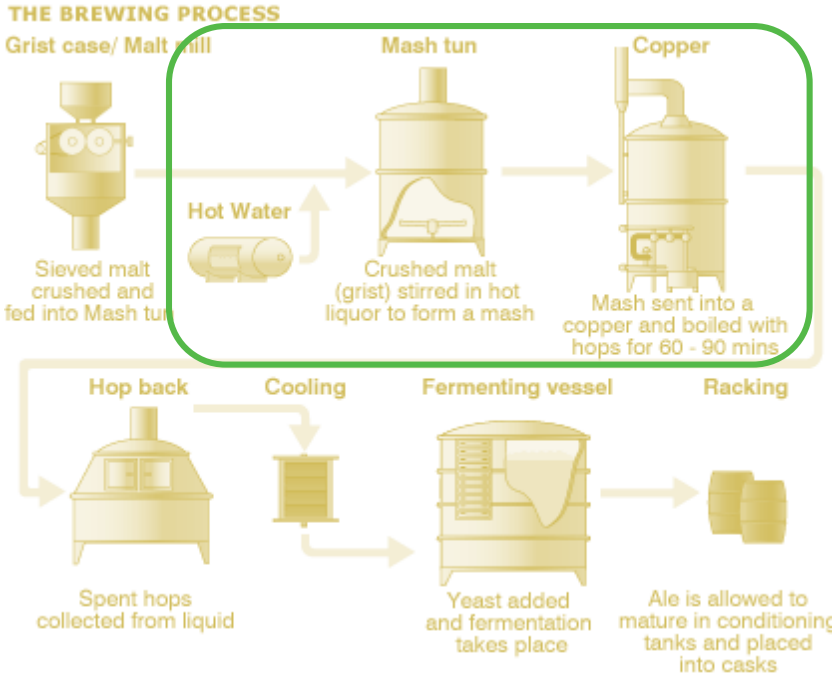
Market Growth: In 2014, the number of breweries in CA grew by 24%



Ind. Sector – Brewery Segment

Average Relative Energy Use	
Electrical Usage	12 to 22 kWh/barrel (bbl)
Thermal (Natural Gas)	1.3 to 1.5 Therms/bbl
Combined	50 to 66 kWh/bbl





Brewers' Association. Energy Usage, GHG Reduction, Efficiency and Load Management Manual.
Utilities (for electricity and natural gas) include compressed air, lighting, and boilers.

Energy Efficiency Rebates & Incentives

Rebates

Equipment Type	Rebate / Unit
Commercial Boiler	$0.50 - $3.00 / MBtuh
Greenhouse Heat Curtain	$0.20 / sq. ft.
Infrared Film for Greenhouses	$0.05 / sq. ft.
Pipe Insulation	$2.00 - $3.00 / linear ft.
Process Heating Boiler	$2.00 / MBtuh
Space Heating Boiler	$0.50 - $3.00 / MBtuh
Storage/Tankless Commercial Water Heaters	$1.00 - $5 / Mbtuh (Through Distributors Only)
Tank Insulation	$2.00 - $3.00 / sq. ft.

Custom Incentive

You may qualify for incentives through any combination of the following types of energy-efficiency projects:

- Equipment replacements
- Improvements of existing processes
- New energy-efficient equipment, processes or construction.
- **Incentive Up to a $1 per therm**

HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)		
Small Packaged Air Conditioner Refrigerant Charge		
Increase charge from typical under-charge to factory specified level	Ton	40.00
Increase charge from high under-charge to factory specified level	Ton	40.00
Decrease charge from typical over-charge to factory specified level	Ton	40.00
Decrease charge from high over-charge to factory specified level	Ton	40.00
DEER Products		
Efficient Water Source Heat Pump	Ton	3500.00
Evaporative Cooling Indirect - Central System	Ton	1000.00
Evaporative Cooling Indirect - Packaged System	Ton	1000.00
Hydronic Heat Pump Variable Flow Valve	Ton	600.00
Packaged Air Conditioner EER = 10.2 (≥ 760 kBtuh)	Ton	Varies
Packaged Heat Pump EER = 10.0 (≥ 760 kBtuh), COP = 3.2	Ton	
Packaged Heat Pump EER = 10.2 (≥ 760 kBtuh), COP = 3.2	Ton	
VSD Cooling Tower Fans (2 Speed tower fan to VFD fan control)	Ton	100.00