BUILDING A BETTER ENERGY EFFICIENT FUTURE

SDG&E's Energy Efficiency Business Plan

2018-2025 | January 2017

SDGE

A Sempra Energy utility®

Overview

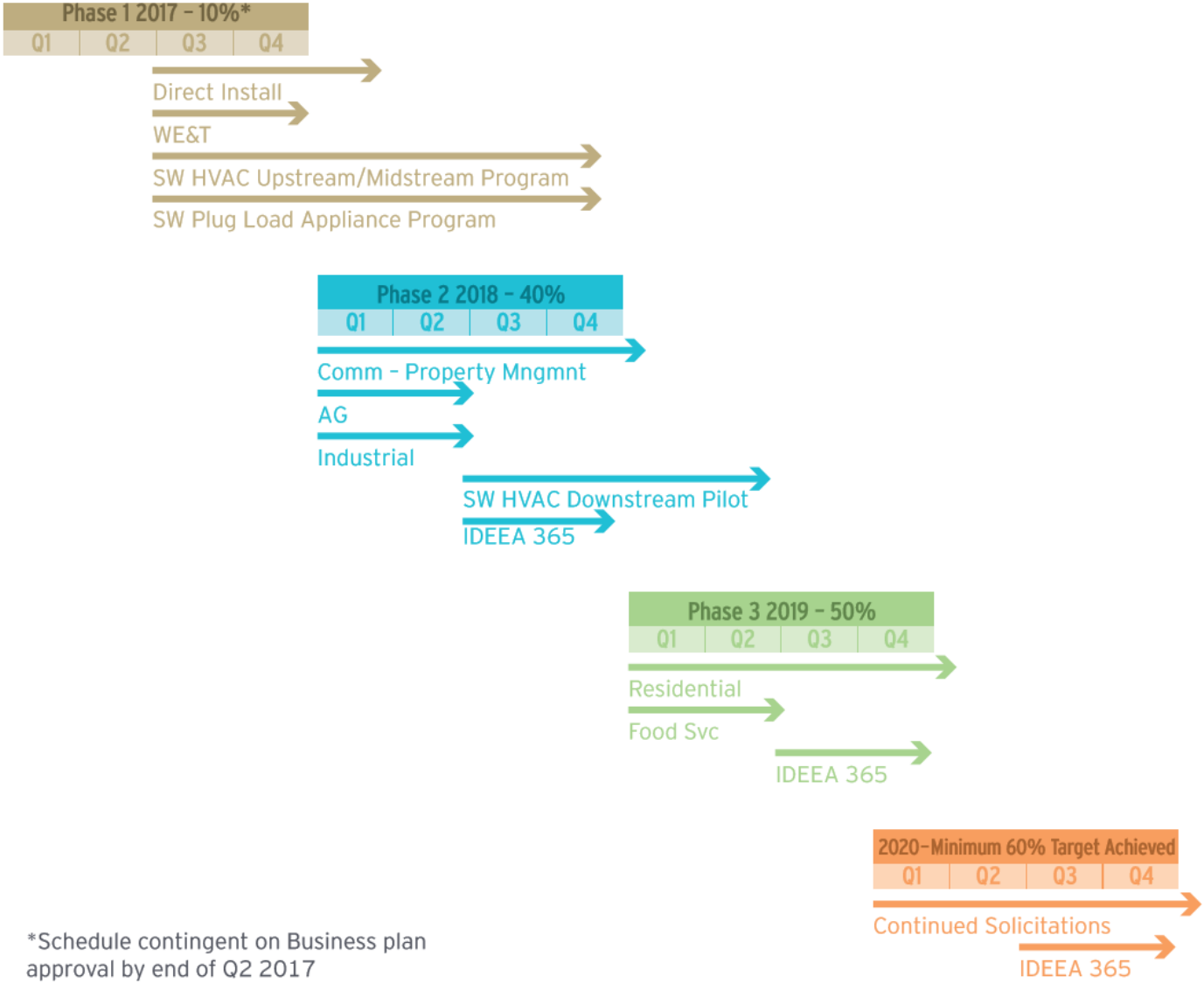
- SDG&E's business plan provides a high-level discussion of how SDG&E will achieve CPUC statewide EE goals and strategies and charts a course towards achieving zero net energy and doubling energy efficiency savings
- The plan articulates goals and budgets through 2025:

	Short-Term 2018-2020	Mid-Term 2021-2023	Long-Term 2024-2025
Annual Budget	$116,456,309	$116,456,309	$116,456,309

EE Goals	Short-Term 2018-2020	Mid-Term 2021-2023	Long-Term 2024-2025
GWh	236-238	223-214	214
MW	44-45	43	44
MMTherms	3.9-4.0	3.7-3.8	3.8

- New CPUC requirements for statewide program management and outsourcing
  - At least 25% of the total budget devoted to statewide programs that will be administered by one lead IOU
  - At least 60% of the total budget allocated to programs designed and delivered by third parties by 2020

Solicitation Strategy



*Schedule contingent on Business plan approval by end of Q2 2017

SDG&E ENERGY EFFICIENCY **MISSIONS**

RESIDENTIAL MISSION

Empowering customers by providing the tools, program offerings and access to assistance on their path to zero net energy.

COMMERCIAL MISSION

Help customers achieve zero net energy by providing enhanced self-help tools, program options, and targeted, expert assistance.

PUBLIC MISSION

Empower the public sector by equipping leaders with knowledge and tools, tailoring solutions for their needs and helping to influence the communities they serve.

INDUSTRIAL MISSION

Educate and enable customers by providing targeted energy tools, and strategic energy management offerings.

AGRICULTURE MISSION

Identify strategic experts to grow the savings in the sector while also addressing water/energy nexus.

CROSS-CUTTING MISSION

Support portfolio objectives and advance the cause of energy efficiency in the State.

SDG&E ENERGY EFFICIENCY GOALS

RESIDENTIAL GOALS

GOAL 1: SAVINGS – Increase Energy Efficiency Savings in the Residential Sector Through an Improved Customer Experience.

GOAL 2: PENETRATION – Increase Energy Efficiency Participation in the Multifamily Sector.

GOAL 3: INNOVATION – Continue to Innovate by Executing New Approaches to the Market.

COMMERCIAL GOALS

GOAL 1: PENETRATION – Improve the Energy Efficiency Penetration in the Property Management Market.

GOAL 2: SAVINGS – Increase Savings Through an Improved Customer Experience.

GOAL 3: INNOVATION – Maximize Savings and Efficiency by Executing New Approaches.

PUBLIC GOALS

GOAL 1: EDUCATION – Empower Leaders by Equipping Them with Knowledge and Tools to Make Informed EE Decisions.

GOAL 2: PENETRATION – Eliminate Barriers to Public Sector Participation by Developing Tailored Solutions and Financing Options.

GOAL 3: SAVINGS – Influence Private Sector EE Activities Through Reach Codes and Engagement.

INDUSTRIAL GOALS

GOAL 1: SAVINGS – Double the Energy Efficiency Participation by the Industrial Sector.

AGRICULTURE GOALS

GOAL 1: SAVINGS – Double the Energy Efficiency Participation by the Agricultural Sector.

GOAL 2: INNOVATION – Provide the Agricultural Sector an Offering to Address the Water/Energy Nexus.

SDG&E STRATEGIES TO ACCOMPLISH ENERGY EFFICIENCY GOALS

RESIDENTIAL STRATEGIES

- Make energy efficiency products and services **more accessible.**
- **Empower customers** to better manage their energy usage.
- **Promote increased value of asset**, generated by energy efficiency and ZNE, to property owners.
- **Promote the benefits of renting in an energy efficient building** to tenants.
- **Identify influential stakeholders** that will allow the expansion of market opportunities / efficiencies.

COMMERCIAL STRATEGIES

- **Transform tenant energy savings into an asset value** for property owners.
- Provide a simple, yet comprehensive, **customized energy management solution** for this hard-to-reach segment.
- Create an online platform to **facilitate cross-promotion and encourage engagement**.
- Expand the platform's scope and capabilities to encourage customers to **advance along the energy adoption curve**.
- Transition SW HVAC Program to **work with manufacturers on more efficient design.**
- Expand various procurement vehicles and intervention strategies to **find targeted, deeper, or incremental savings**.

PUBLIC STRATEGIES

- **Equip leaders** with knowledge and tools to make informed decisions.
- **Collaborate and share best practices** with key players.
- Tailor offerings to **meet the unique needs** of public customers.
- Develop a **public sector customer action plan** to facilitate participation.
- Equip public customers with the tools they need to succeed in **Climate Action Planning**.
- Enable EE projects through **financial solutions**.
- Demonstrate EE value through **enhanced Marketing, Education & Outreach**.
- Encourage progress beyond existing code levels.

INDUSTRIAL STRATEGIES

- Add value by **bringing external industry expertise** that will drive customer participation in programs and encourage customers on continued path towards deeper savings.
- Unlock deeper savings through **Strategic Energy Management** offering.
- Target **customers at the Port of San Diego** per AB 628.

AGRICULTURE STRATEGIES

- **Expand the use of third parties** to develop and deliver intervention strategies.
- **Leverage Strategic Energy Management.**
- Work with third parties to **incorporate embedded energy savings in offerings.**

The Past, Present, and Future of
RESIDENTIAL ENERGY EFFICIENCY

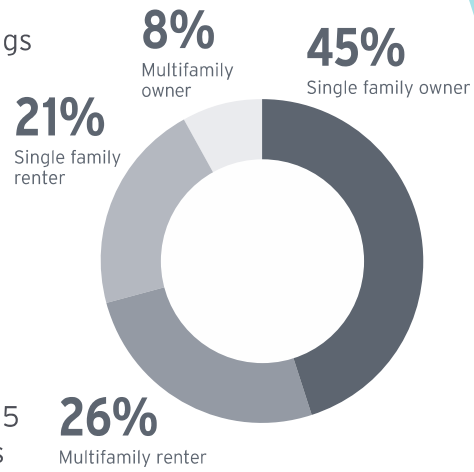
MARKET CHARACTERIZATION

PAST & PRESENT » » » » » » » » » **FUTURE**

One of SDG&E's largest sectors

- 36% of total electric consumption
- 32% of EE spending
- 24% of electric EE savings

1.3 million accounts
1.2 million customers



7% of customers
participated in 2013-2015 downstream EE programs

66% of electric consumption
is comprised of plug loads

Demand convenience
Desire for solar and electric vehicle continues to grow

Potential savings for most end-uses will decline from 57 GWh in 2017 to 36 GWh in 2018 due to code changes

Plug loads in California are forecasted to grow to 77% of residential consumption by 2024

Home management systems will become a logical technology to make customers' lives simpler and improve customer satisfaction

Self-generation is expected to reduce peak demand by 380 MW by 2024

Number of customers with **solar generation and electric vehicles** will continue to grow

Electric vehicles are expected to increase electricity consumption by ~1,200 GWh by 2024

The Past, Present, and Future of
RESIDENTIAL ENERGY EFFICIENCY

DELIVERY APPROACH

PAST & PRESENT »»»»»»»»» **FUTURE**

Program offerings were **primarily driven by rebates** for dozens of individual measures and multiple rebate tiers

Individual rebates have been reduced to five measures

Recent focus has been on the behavioral program and the direct install program

There has been a continued **expansion of behavioral programs** due to consistent proven results and potential

Leverage data from behavioral programs to provide customized solutions and assistance

Single pathway and integration of programs

Empower customers to use energy intelligently by providing data

Self-serve options to increase program participation

Personalized recommendations

Expansion of behavioral programs

Leverage a platform to drive customers through the adoption curve to achieve zero net energy

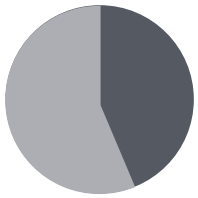
Citations for data presented on this figure are included throughout the chapter.

The Past Present, and Future of
COMMERCIAL ENERGY EFFICIENCY

MARKET CHARACTERIZATION

PAST & PRESENT »»»»»»»»» **FUTURE**

Consistent and reliable results for years



SDG&E's largest sector is electric-centric

- 43% of total consumption
- 45% of EE spending
- 42% of EE savings

Two segments make up the majority of customers.
Most customers occupy leased space.

55% Wholesale, Retail & Office

30% Hospitality & Services

Small customers, small businesses
85% customers under 20 kW

4x

Lighting makes up over half
of the electric savings and brings in 4x as much savings as whole building

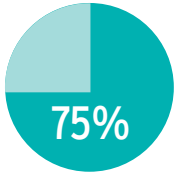
Move from simple lighting retrofits to comprehensive
whole building approach

Automation will become more prevalent

Increased focus on energy efficiency
in legislation

Interval data
will inform decisions

Whole building will bring in as much savings as lighting



Whole building and lighting will make up close to
75% of the total savings potential

The Past Present, and Future of
COMMERCIAL ENERGY EFFICIENCY

DELIVERY APPROACH

PAST & PRESENT

- Deemed Rebates
- Calculated Incentives
- Direct Install
- Audits
- On-Bill Financing
- Partner with Demand Response
- Coordinate with Time-of-Use Rate

Brought in savings

Did not foster comprehensiveness

Highly leveraged trade **professional network** to sell and deliver savings

Resulted in **single end-use,** non-comprehensive projects

Offered bonus to encourage comprehensive projects

13 projects qualified in 2013-2015

On-Bill Financing has helped to move costs from a capital expense to an operating expense

FUTURE

Concierge approach to simplify participation for property management customers

Online platform to provide seamless services

Target marketing to educate energy decision makers

Target whole building, automation, and high opportunity end-uses

Growth in financing options

Promote building benchmarking

Citations for data presented on this figure are included throughout the chapter.

The Past, Present, and Future of
PUBLIC ENERGY EFFICIENCY

MARKET CHARACTERIZATION

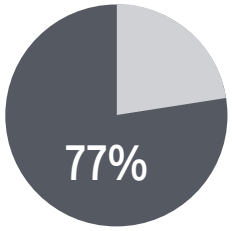
PAST & PRESENT » **FUTURE**

Relatively small sector

- 12% of total kWh consumption
- 18% of EE spending
- 8% of EE kWh savings

Majority of customers are small

77% accounts under 20 kW



Unique sector attributes

- Taxpayer funded
- Public decision-making and budgeting process
- Political mandates

Climate Action Plans

create focus on energy efficiency

ZNE goals

suggest flat, or possibly lower, future consumption

Responsible for complying

with increased political mandates, often unfunded

Non-EE benefits

like comfort and productivity will drive deeper EE penetration

The Past, Present, and Future of
PUBLIC ENERGY EFFICIENCY

DELIVERY APPROACH

PAST & PRESENT

No focus on the public sector as a unique customer segment

Part of commercial sector
Participated in bundled non-residential programs

Lacked customization to unique needs and challenges—minimal focus on leveraging influence over private sector

Savings from traditional non-residential, single end-uses such as lighting and HVAC

Limited number of comprehensive projects

Misaligned program deadlines and public project implementation timelines restrict participation

Missed opportunities for engaging public leaders as EE champions

Missed opportunities to drive additional private sector savings

FUTURE

New public sector represents an opportunity to modify existing and develop new innovative offerings. Address the sector's unique needs and challenges

Facilitate best practice sharing and equip leaders with knowledge and tools to make informed energy efficiency decisions

Garner public leader support of energy efficiency

- Eliminate barriers to participate
- Tailor offerings to address unique needs
- Develop public sector action plan
- Drive success in climate action planning
- Enable projects through financial solutions
- Modify finance products

Enhanced marketing, education and outreach and reach code development will encourage participation and progress beyond existing codes and standards in private sector

Citations for data presented on this figure are included throughout the chapter.

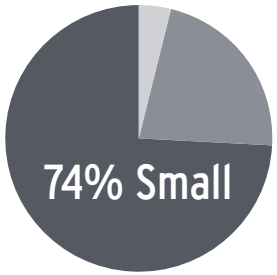
The Past, Present, and Future of
INDUSTRIAL ENERGY EFFICIENCY

MARKET CHARACTERIZATION

PAST & PRESENT » » » » » » » » **FUTURE**

Relatively small sector:

- 8% of electric consumption
- 5% of gas consumption
- 3% of EE spending
- 2% of electric savings
- 4% of gas savings



Primarily small customers

No one-size fits all solution

- Diverse end-uses
- Complex Systems
- Proprietary Processes

Profitability directs decision-making

Safety, environmental and waste compliance are priorities

CEC estimates indicate **little to no growth** in this sector through 2024

Environmental regulations for this sector continue to increase

Motors & Drives represent the largest potential for this sector.
Twice as much savings from O&M compared to new equipment.

Wastewater treatment facilities could be a prominent segment in the future

The Past, Present, and Future of
INDUSTRIAL ENERGY EFFICIENCY

DELIVERY APPROACH

PAST & PRESENT

No specific offering for industrial sector, bundled non-residential offering

- Deemed Rebates
- Calculated Incentives
- Direct Install
- Audits
- On-Bill Financing

Lacked customization to unique needs and challenges—minimal focus on process end-uses

Savings from traditional non-residential, single end-uses such as lighting and HVAC

Limited number of comprehensive projects

FUTURE

Supplement traditional approach
with a more specialized intervention to allow for more robust savings

Outsourcing and leveraging
external expertise will help:

- Maximize resources
- Keep costs down

A Strategic Energy Management
approach that can accommodate small industrial needs will be an important element

Citations for data presented on this figure are included throughout the chapter.

The Past, Present, and Future of
AGRICULTURAL ENERGY EFFICIENCY

MARKET CHARACTERIZATION

PAST & PRESENT »»»»»»»»» **FUTURE**

A very challenging market

- Expensive land
- Poor soil
- Expensive and limited water

Many small farms
65% under 10 acres

2% of total electric consumption

0.2% of total EE savings

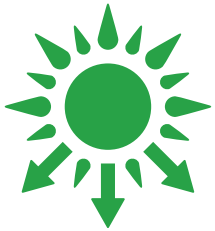
San Diego County has more farms
than any other county in the U.S.

Indoor agricultural load could grow
Indoor agriculture may grow with cannabis legalization

Water costs in San Diego are highest in the State

Water will continue to be **a driving factor** in decision-making for agricultural customers

Water scarcity will create competition within rural areas



Potential for **gas savings is very small**

The Past, Present, and Future of
AGRICULTURAL ENERGY EFFICIENCY

DELIVERY APPROACH

PAST & PRESENT → **FUTURE**

No specific agricultural offering,
only general non-residential offering

- Deemed Rebates
- Calculated Incentives
- Direct Install
- Audits
- On-Bill Financing

Lack of customization to unique sector needs, barriers and challenges

Lack of collaboration with stakeholders and industry partners

Separate and focused approach
that allows for specialization to the market

Plan to outsource
to attract expertise in area

Strategic Energy Management for agriculture can accommodate SDG&E's agricultural sector

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