



A  Sempra Energy utility®

Business Plan  
Workforce Education & Training Chapter  
Stage 2

DRAFT

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**California Market Characterization**

Please see Statewide Workforce Education & Training Stage 2 Chapter.

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## SDG&E Market Characterization

As a cross-cutting program, workforce education & training spans all of the “customer sectors” of commercial, residential, industrial, public, and agriculture. The workforce is composed of numerous occupations and industries, and requires technical skills that are needed to install, maintain, and properly run energy equipment, designs, and systems. The workforce is also composed of decision makers who need to understand the value of energy efficiency projects and understand why safety, health, and energy efficiency should be prioritized over other areas. This market also includes other training providers who may provide existing training and may need support in integrating energy efficiency into their offerings.

Specific customer sectors and additional data can be found in SDG&E’s Stage 2 chapters.

A wide variety of organizations and training providers exist in San Diego Gas & Electric’s service territory. The following is a high level categorization of educational participants:

- Government
- Educational Institutions
- Community-based and non-profit organizations
- Industry and labor organizations

A Clean Energy: Labor Market Analysis<sup>1</sup> was published on October 2, 2014 that identifies the Renewable Energy and Energy Efficiency sectors, including occupations, projected growth, and training potential.

This Market Analysis does not capture every occupation, sector, and skills that are required to achieve California’s goal of energy efficiency. Additional occupations, such as architects and designers, and emerging occupations, such as carbon managers, will be needed to ensure California meets goals.

One of the initiatives of SDG&E’s WE&T program is to help address gaps and barriers that are present in the service territory. The Market Analysis identified the top 5 occupations with supply gaps.

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<sup>1</sup> Clean Energy: Labor Market Analysis.

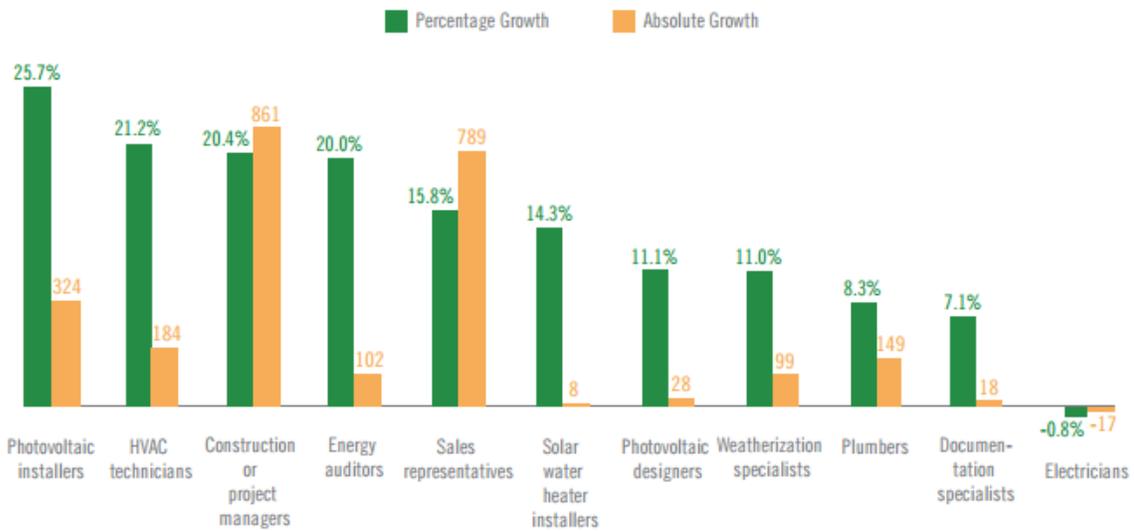
[http://workforce.org/sites/default/files/industry\\_reports/clean\\_energy\\_2014.pdf](http://workforce.org/sites/default/files/industry_reports/clean_energy_2014.pdf). Oct. 2014

### TOP 5 OCCUPATIONS WITH SUPPLY GAPS



Below is a chart of employer expectations for the 2014-2015 growth by occupation. Specific occupations are identified; however a comprehensive and holistic approach is needed to achieve the energy savings that have been identified in economic potential studies. This will require a multitude of training, including cross-training of topics, the value of energy efficiency and how to participate in programs that are available through Program Administrators throughout California.

### EMPLOYER EXPECTATIONS OF 12-MONTH EMPLOYMENT GROWTH

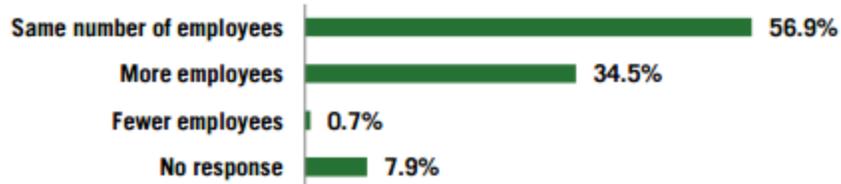


The majority of employers in Clean Energy are expecting to have the same number of employees on staff, with 34.5% of companies expecting to hire additional employees. This demonstrates that educational offerings need to primarily focus on the incumbent workforce.

**Figure 1: Employer-Expected Employment Growth, 2014–2015**



**Figure 2: Percentage of Employers Expecting to Grow in Employment**



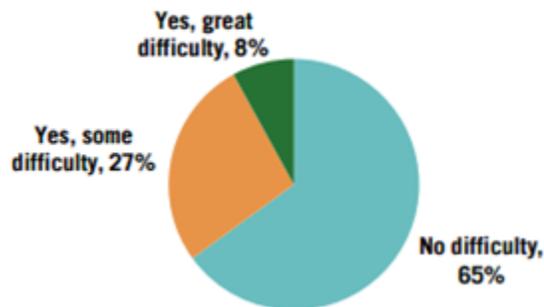
The incumbent workforce will continue to be the majority of the jobs in San Diego. In 2015, 3,285 additional new jobs are expected to be added to the workforce count. The 2,897 replacement jobs are workforce attrition, either retirement or workers relocating outside of San Diego.

**Figure 3: 2014–2015 Projected Job Openings Due to New and Replacement Jobs**



Sixty-five percent of San Diego Clean Energy firms report no difficulty in hiring qualified job candidates. This suggests that presently there is an ample supply of well-trained workers in San Diego County to fulfill growing employer demand.

**Figure 10: Percent of Employers with Difficulty in Finding Qualified Job Applicants**



## **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 Mission**

SDG&E will provide subject matter expertise and support the transfer of energy efficiency knowledge and skills across sectors, balancing the needs of California, our community, and our customers.

## **SDG&E's Workforce Education & Training Role**

- SDG&E is positioned to address state goals, local initiatives, and our customer sectors through workforce education & training.
- SDG&E will be a crucial stakeholder in a strategic network of partners to ensure access for appropriate workforce and customer participation and ensure the transfer of energy efficiency knowledge.
- SDG&E will support workforce education and training so that the labor market is prepared to perform quality work on energy projects, equipment, and systems.
- SDG&E will educate customers and decision makers so they create market demand and participation through their understanding the value of energy efficiency.
- SDG&E will facilitate collaborations among stakeholders.

The value of SDG&E's workforce education & training is important as it provides significant support to California, San Diego, and our customers. No other organization is uniquely situated to coordinate statewide, regional, and local initiatives through coordination with demand-side options, PA programs, and local activities.

In addition to the technical skills and awareness of energy efficiency value, SDG&E's workforce education & training offers additional value by explaining the comprehensiveness that many of our programs and a skilled workforce provide in terms of community (and economic) benefit.

Below you will see a selection of SDG&E problem statements that are further discussed in their respective customer sector presentations. Barriers exist in the sectors that workforce education & training can help overcome by playing a critical role in the success of our programs and California's long term energy goals.

<i>Category/ Problem Statement</i>		<b>Market Building</b>	<b>Skills Building</b>
		<b>Awareness of EE Value</b> <i>(Does the customer know what's in it for them? Do they want it?)</i>	<b>Workforce Sophistication</b> <i>(Can the customer do it technically? Do they have the ability to do it?)</i>
<i>Category/Strategy</i>			
<b>EE Program Knowledge</b>	Understand the Value of EE	<b>X</b>	<b>X</b>
	Know How to Participate in Programs	<b>X</b>	<b>X</b>
	Knowledge of New Measures and Technologies	<b>X</b>	<b>X</b>
<b>Skills and Certification</b>	Technical Skills Development	<b>X</b>	<b>X</b>
	Industry recognized certification	<b>X</b>	<b>X</b>
<b>Access to Participate</b>	Targeted Stakeholder Collaboration	<b>X</b>	<b>X</b>
	Right Audience, Right Classes, Right Way	<b>X</b>	<b>X</b>
	Qualified Trade Professional	<b>X</b>	<b>X</b>

## Commercial Sector:

### Market Characterization

Please see SDG&E's Commercial Stage 2 Chapter for additional data.

### Observations

#### *Commercial customers may not understand the value of energy efficiency and may not be aware of utility's energy efficiency offerings.*

SDG&E recognizes that we not only need to make sure customers know about our program offerings, but they also have to understand what's in it for them. Currently, the commercial portfolio provides various programs to fit various needs. However, this can be unclear and confusing to customers. Historic program participation shows fair commercial sector market penetration, however, low results are seen in certain segments and end uses. Through the pursuit of Integrated Demand Side Management (IDSM) efforts, a lack of cross-promotion and comprehensiveness has been identified. SDG&E needs to transform the market so customers not only understand energy efficiency and its value, they would also want to benefit from it.

#### *Misperception of EE Value*

Energy efficiency is seldom the first priority for commercial customers. One reason is due to misperceptions about the investment in EE. Capital costs and uncertainty about project savings lead to the lack in confidence in pursuing energy efficiency projects. The lack of understanding of the calculation on the return on investment also leads to hesitation. Customers also may be unaware of the business benefits beyond utility bill cost savings.

#### *Customers who recognize the benefits of energy efficiency may not have the technical capacity and/or organizational structure to act.*

Even when customers recognize the value of EE and are willing to initiate an energy project, they may not be able to do it because of their lack of knowledge, connections, technical ability, etc.

#### *Gap in Technical Expertise*

Even with the interest in adopting energy efficiency, customers often lack the required knowledge to act. Technical expertise can be a barrier for customers who are focused on their own business challenges. Anecdotal information suggests commercial customers who understand the benefits of energy efficiency sometimes do not know where to start.

#### *Organizational Structure Technical Skills*

The barrier of technical expertise is especially an issue for small and mid-sized customers, as they often lack in-house support such as facility management, engineers, energy advisors, etc. Questions customers have include, what products to use, how to choose a contractor, are permits required, etc. These are services SDG&E can provide to set customers up for success.

### ***AB 758 – 3.3.4***

Train contractors and other market actors to sell energy efficiency. Integrate customer acquisition, the provision of financing options, and other marketing activities into industry business models.

## **Data**

Please see SDG&E's Commercial Stage 2 Chapter for additional data.

## **Strategies**

### ***Educate Decision Makers and Staff about the Value of Energy Efficiency***

SDG&E will work with commercial customers to educate them regarding the value and multiple benefits of energy efficiency at all levels. Customers need to be educated on the value that energy efficiency, such as reducing future energy costs. The benefit of furthering customer education will also include the value-add of this work, such as improved indoor air quality and environmental benefits.

### ***Educate Decision Makers and the Workforce on Participation in PA Programs***

SDG&E will educate customers about energy programs, including rebates and incentives, that are available to customers in California. Many customers do not understand that these programs exist and therefore will not participate in them.

### ***Educate Workforce and Contractors to “Sell Value of Energy Efficiency”***

SDG&E will educate the workforce about the value in “selling” energy efficiency or the added benefit of advanced skills or certifications to potential customers.

### ***Educate Workforce on Technical Skills Needed to Achieve Energy Efficiency***

SDG&E will continue to provide high level of education to the workforce around technical skills that are needed to implement energy efficiency projects. This will require a wide range of customers to be trained across a spectrum of areas to achieve economic potential.

## Residential Sector:

### Market Characterization

Please see SDG&E's Residential Stage 2 Chapter for additional data.

### Observations

#### *Home buyers, owners, and renovators have not implemented a whole house approach to energy consumption.*

Home owners have competing priorities and do not implement energy efficiency measures. If a homeowner chooses to implement a project, they often do not have the technical skills to personally handle an energy project.

#### *New Construction is not ZNE*

Home designers and home builders in San Diego are not building ZNE homes. To achieve Zero Net Energy homes by 2020, design firms will need to be educated about how to design homes. Construction firms will need to be educated to ensure that ZNE homes are constructed to plans. Installers will need to be educated to ensure that equipment is installed properly.

#### *AB 758 – 3.3*

Cost reductions for energy and water efficiency measures.

### Data

Please see SDG&E's Residential Stage 2 Chapter for additional data.

### Strategies

#### *Work with Designers, Builders, and Workforce to ensure Technical Skills for ZNE new construction*

SDG&E will provide education regarding the benefits of ZNE new construction to designers, builders, real estate professionals, various industry stakeholders, and customers.

#### *Educate Homeowners, Landlords, and Renters about the Value of Resource Efficiency*

SDG&E will educate homeowners about the value of energy efficiency and a whole home approach so that homeowners will adopt resource efficiency management practices and begin to adopt these practices. Homeowners will be educated on resource efficiency so that they begin to implement practices at their residences.

## Public Sector:

### Market Characterization

Please see SDG&E's Public Stage 2 Chapter for additional data.

### Observations

#### *Funding Other Priorities Over Energy Efficiency*

Many public entities fund energy efficiency projects through either limited maintenance or strained capital budgets. Incentives and energy savings from these projects are credited to the general fund, and are rarely earmarked for future energy efficiency improvements. When the time comes to allocate funding, energy efficiency projects often compete for funding that may be used for public safety or to repair roads. While energy efficiency and sustainability may be high on public entities' and their constituents' priority lists, these efforts rarely trump public safety and other high priority projects.

#### *Staff Bandwidth*

Public Sector facility and energy efficiency-related staff stretched so thinly, they are more concerned with keeping equipment operating than operating it efficiently. Those customers who do have staff assigned to EE, it is rarely their full-time position and other responsibilities often come before EE.

#### *Technical Expertise*

Government, education and other public sector customers rely on outside technical expertise and project management assistance. If the public staff doesn't have expertise in an area, they need to trust that the consultant hired has the appropriate knowledge and skills to successfully implement the project.

### Data

Please see SDG&E's Public Stage 2 Chapter for additional data.

### Strategies

#### *Educate Decision Makers and Staff about the Value of Energy Efficiency*

SDG&E will work with government staff to educate them regarding the value and multiple benefits of energy efficiency at all levels. Public customers often can take a "long view" approach that many private customers cannot for business reasons. However, public customers need to be educated on the value that energy efficiency, such as reducing future energy costs. The benefit of furthering customer education will also include the value-add of this work, such as improved indoor air quality and environmental benefit. Public staff will also

gain technical knowledge in areas so that they are better prepared to address issues that arise in their work.

### ***Educate Staff on Upcoming Code Changes***

SDG&E will work with public staff to better understand specific issues revolving around code compliance. Codes are complicated and public staff is often asked how to be in compliance in certain areas. SDG&E will support their knowledge through education about code changes in multiple areas, including commercial and residential.

SDG&E will also support subject matter expertise to public staff in the area of “reach codes.” As public customers seek to offer reach codes, they need to fully understand what current code is and what they should seek to adopt as a reach code that is progressive while achievable.

### ***Educate Consultants on Technical Skills***

SDG&E will continue to provide high level of education to the workforce and firms. This will help facilitate that any consultants that are chosen to support the public customers have the training needed to implement projects properly.

SDG&E can possibly provide a list of contractors that have attended seminars or education through the workforce education & training program as a possibility to help identify additional criteria for selection of use. Consultants are also able to list the education and certification they have acquired when submitting proposals for selection. SDG&E’s workforce education & training can be a key part in supporting no-cost education for all consultants to access.

### ***Access to Assistance***

SDG&E will continue to provide access to education and training for customers and consultants used in areas. As the public wants a highly trained workforce, SDG&E helps facilitate this area by providing education and training to the general public. Public customers understand that we offer education and training and promote our education as well as participate in our education as well.

## Industrial Sector:

### Market Characterization

Please see SDG&E's Industrial Stage 2 Chapter for additional data.

### Observations

***Industrial customers may not understand the value of energy efficiency and may not be aware of utility's energy efficiency offerings.***

SDG&E recognizes that we not only need to make sure customers know about our program offerings, but they also have to understand what's in it for them. Currently, the industrial portfolio provides various programs to fit various needs. However, this can be unclear and confusing to customers. Historic program participation shows fair commercial sector market penetration, however, low results are seen in certain segments and end uses. Through the pursuit of Integrated Demand Side Management (IDSM) efforts, a lack of cross-promotion and comprehensiveness has been identified. SDG&E needs to transform the market so customers not only understand energy efficiency and its value, they would also want to benefit from it. Most industrial customers don't understand the value proposition of energy efficiency. They are nervous about changing their current process due to potential loss of revenue (shut down of business time, learning new system, technology wasn't exactly what they needed).

### Data

Please see SDG&E's Industrial Stage 2 Chapter for additional data.

### Strategies

***Educate Decision Makers and Staff about the Value of Energy Efficiency***

SDG&E will work with customers to educate them on the value and multiple benefits of energy efficiency projects.

***Educate on Design and Process Improvement***

SDG&E will work with to educate design firms that plan and contractors that build space for industrial customers. SDG&E will increase education around industrial processes and provide specific customer process improvement where possible.

## Agricultural Sector:

### Market Characterization

Please see SDG&E's Agricultural Stage 2 Chapter for additional data.

### Observations

*Agricultural customers may not understand the value of energy efficiency and may not be aware of utility's energy efficiency offerings.*

SDG&E recognizes that we not only need to make sure customers know about our program offerings, but they also have to understand what's in it for them. Currently, the industrial portfolio provides various programs to fit various needs. However, this can be unclear and confusing to customers. Through the pursuit of Integrated Demand Side Management (IDSMS) efforts, a lack of cross-promotion and comprehensiveness has been identified. SDG&E needs to transform the market so customers not only understand energy efficiency and its value, they would also want to benefit from it. Most agricultural customers don't understand the value proposition of energy efficiency. They are nervous about changing their current process due to potential loss of revenue (shut down of business time, learning new system, technology wasn't exactly what they needed).

### Data

Please see SDG&E's Agricultural Stage 2 Chapter for additional data.

### Strategies

#### *Educate Decision Makers and Staff about the Value of Energy Efficiency*

SDG&E will work with customers to educate them on the value and multiple benefits of energy efficiency projects. Many customers do not fully understand the benefit of energy efficiency and the additional value that can be added by implementing energy projects and measures.

#### *Educate on Design and Process Improvement*

SDG&E will work with to educate design firms that plan and contractors that build space for agricultural customers. SDG&E will increase education around industrial processes and provide specific customer process improvement where possible.

Strategy Objective	Strategies (Consolidated)
<b>Statewide Initiatives</b>	Collaborations
	Engagement & Feedback Process
	Access & Reach
	Efficient, Adaptable, & Reach
<b>Commercial</b>	Create Single Point of Entry & Contact
	Make Behavioral Programs Gateway to Programs
	Provide Resources to Assist in Selection of Qualified Trade Professionals
	Provide Roadmap & Guide Customers Through Multi-Year Upgrades
	Provide Online Marketplace Solution That Integrates Rebates & Discounts
<b>Residential</b>	Provide ZNE Design Assistance Incentives
	Explore Providing Incentives to Multifamily Owners vs. Tenants
	Ensure Affordability of Premium Efficiency Lighting Products
	Integrate Financing in Whole Home Programs & Plug Load Offerings
<b>Public</b>	Educate on the Value of Energy Efficiency
	Educate on Code Requirements
	Consultants with Technical Skills
	Access to Assistance
<b>Industrial</b>	Educate Customers on Value of EE
	Educate Workforce on Process Improvement
	Educate Workforce on Design and Process Improvement
<b>Agriculture</b>	Educate Customers on Value of EE
	Educate Workforce on Design and Process Improvement