

# **SCE's PEV Non-Residential Customer Education and Outreach Needs Assessment (Study) Summary and Implications for Southern California PEV Readiness & Infrastructure Plan**

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## **BACKGROUND**

To date most of SCE's PEV related education and outreach efforts have been targeted to the residential customer. However, as PEV adoption increases over the next several years, there will be a greater demand for non-residential charging locations in SCE's service territory. Early SCE forecasts show close to 14K non-residential charging stations across 5.5K locations.

Furthermore, this area is broad in that it includes commercial, industry, government, and various institutions (i.e. hospitals, military and universities/colleges). Additionally, charging scenarios across these segments would include workplace, visitor/public and fleet, presenting unique challenges across the board. Finally, although "residential" in nature, the project's scope also included developers and building/property management companies of multi-family unit dwellings.

This research sought to proactively understand what successful education and outreach tactics look like and understand which customer segments we should be targeting. It also serves to inform the SCAG led DOE/CEC grant funded Regional PEV Readiness Infrastructure Plan, given it is SCE's non-residential customers that will play the integral role in providing the "away-from-home"/public charging infrastructure. Specifically:

- Assessed which key customer segments are planning to install charging stations (and how many?)
  - a. What are the motivations for installing charging infrastructure
  - b. What barriers exist?
- Assessed which customers already have charging stations (and how many?)
- Understanding general awareness and knowledge of PEV's (i.e. the technology, do they even know that PEV's are coming to market?)

While the insights from this research will primarily support Southern California Edison's education and outreach efforts, this early market read will provide help to frame up the landscape and environment in which the Regional PEV Readiness Infrastructure Plan will need to address.

## **METHODOLOGY – TWO PHASE PROJECT**

### **Phase One Objective & Approach (Q4 2011):**

- Qualitative exploration of PEV education/outreach across non-residential customers in key industries. Informed design/development of Phase Two.
- 13 focus groups (supplemented w/five one on one telephone interviews for MFD).
- Stratified across charging scenarios
  - Workplace
  - Customer/Visitor/Public (Retail, Cities, Hospitality, etc.)
  - Fleet
  - Multi-Family (Large – Residential Property Management)

### **Phase Two Objective & Approach (Q1 2012):**

- Validate Phase One insights and provide recommendations for EO efforts and inform Regional PEV Readiness Infrastructure Plan.
- 22-minute telephone survey administered to 304 contacts across five business customer segments (Commercial, Industrial, Government & Institutions, Mid-Market and assigned Business Solutions)
- Customer segment results were weighted by segment size and kWh consumption.

### **PHASE ONE HIGHLIGHTS**

The qualitative exploration revealed a steep learning curve potentially exists across customer segments. While some industries seem to be ahead of the curve in their consideration of installing infrastructure, many participants lacked a solid understanding of the basic “nuts and bolts” concerning PEV charging infrastructure installation. As such they have many questions around the cost of installation, ROI, and charging infrastructure requirements to guide and inform their decision-making process.

Additionally, there are also many misperceptions about the technology, and that PEVs may not be as environmentally friendly as people are led to believe. While PEVs may be more “clean” to operate, there are questions around the cleanliness of the energy used to charge the batteries, as well as the impact the batteries may have on the environment themselves.

All of these unknowns manifest themselves as potential barriers that are hindering the decision to install charging infrastructure.

Despite these general findings across the customer segments, local cities and counties are the most knowledgeable and are leading the charge in this area given state mandates and “green” objectives they are pursuing. All of those we spoke to have already started down the path of implementation charging infrastructure (either for public charging or fleet).

A summary of the qualitative exploration across key areas follows:

#### **Motivations/Reasons to install**

- Supports organization’s environmental and sustainability initiatives
  - Earn LEED Certification Points
- Marketing Tool/Competitive Advantage
  - Provide Economic benefits
- Comply w/governmental mandates and requirements
- Promote positive company image
- Tax Breaks and Incentives
- Help lower Fleet fuel costs
- Provide employee benefit
- Belief PEV growth is the future and inevitable

#### **Barriers to Installation**

- Overall costs
- Unknown or unacceptable ROI

- Limited space/loss of premium parking spaces
- Hassles of permitting and inspection
- Liability (safety) concerns
- Vandalism/Theft concerns
- PEV's do not meet the needs of fleet spec requirements (i.e. size/load requirements)
- Unknown future of PEV's

### **Charging Scenarios**

- Fleet
  - Much more to consider than just installation of charging infrastructure
  - Evaluating other alternative fuel vehicles (CNG)
- Multi-Family Unit
  - Ideal situation is where unit owner installs station in dedicated space
  - Common area installation poses challenges with HOA and who is going to pay for the electricity
- Workplace
  - HR issue as well (Not just Finance/Facilities)
- Customer/Guest/Visitor
  - Marketing Tool
  - Higher propensity to charge users

### **Charging to Use Charging Stations**

- Most indicated they would not charge users.
  - See it as a "cost" of doing business that would yield other economic/intangible benefits
    - Customer / Employee/Renter satisfaction
- For those that would charge (mostly "Commercial" segments) indicated they would charge customers for various reasons:
  - Recoup cost of equipment/installation
  - Recoup cost of electricity
  - Recoup cost of installation & electricity
  - Profit/Revenue opportunity

### **SCE's Role/Information Expectations**

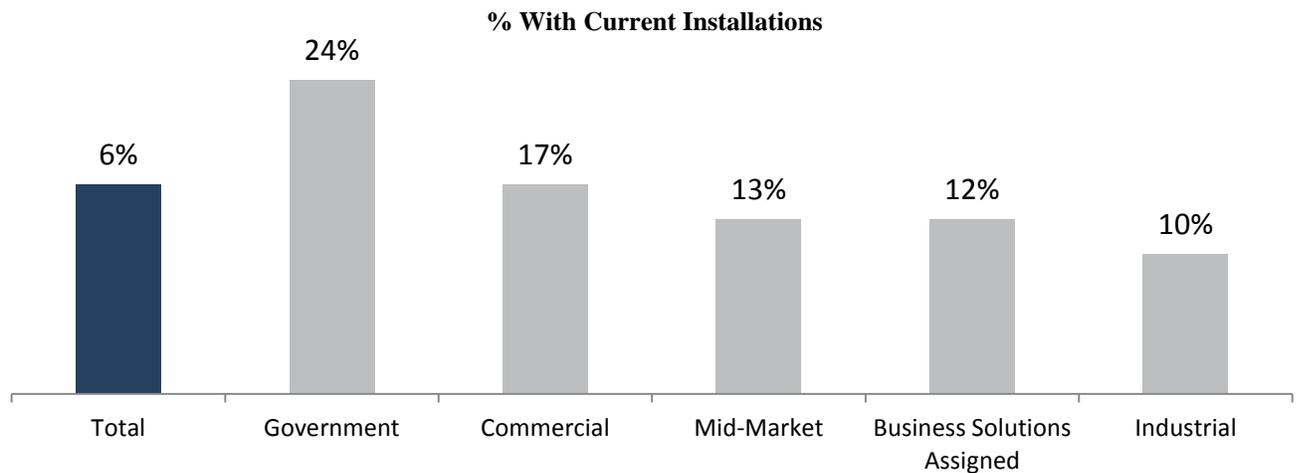
- Provide comprehensive information on infrastructure requirements (power requirements, electrical upgrades, etc.)
- Rate information
- PEV adoption forecasts (i.e. demand)
- Information on contractors and equipment suppliers
- Permitting/Inspection Info
- Fleet conversion
- Installation process best practices
- Charging station location (i.e. maps)
- Incentives/Rebates
- Actual installation services and maintenance

**PHASE TWO HIGHLIGHTS**

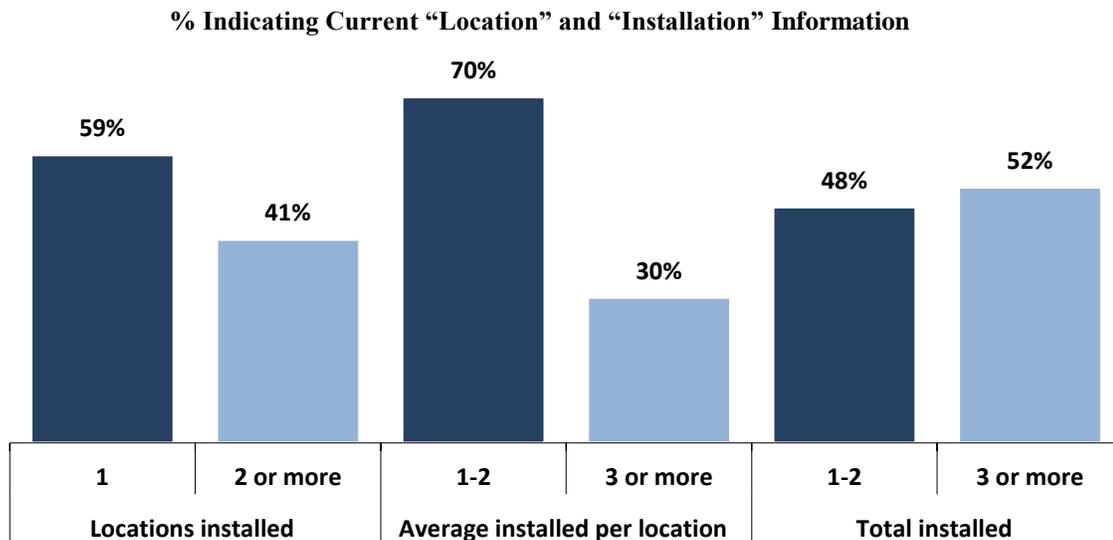
As mentioned previously, the second phase provides a quantitative validation of customer education and outreach needs as well as their motivations to provide charging infrastructure. However, we also attempt to frame up the landscape in terms of both current and planned installations.

**Current Installations**

The study estimates six percent of our customers currently have charging stations installed. This is being driven by “Government and Institutions” followed by “Commercial”. It should be noted however, that these estimates do not discriminate between the new generation of charging stations and those that were previously installed.



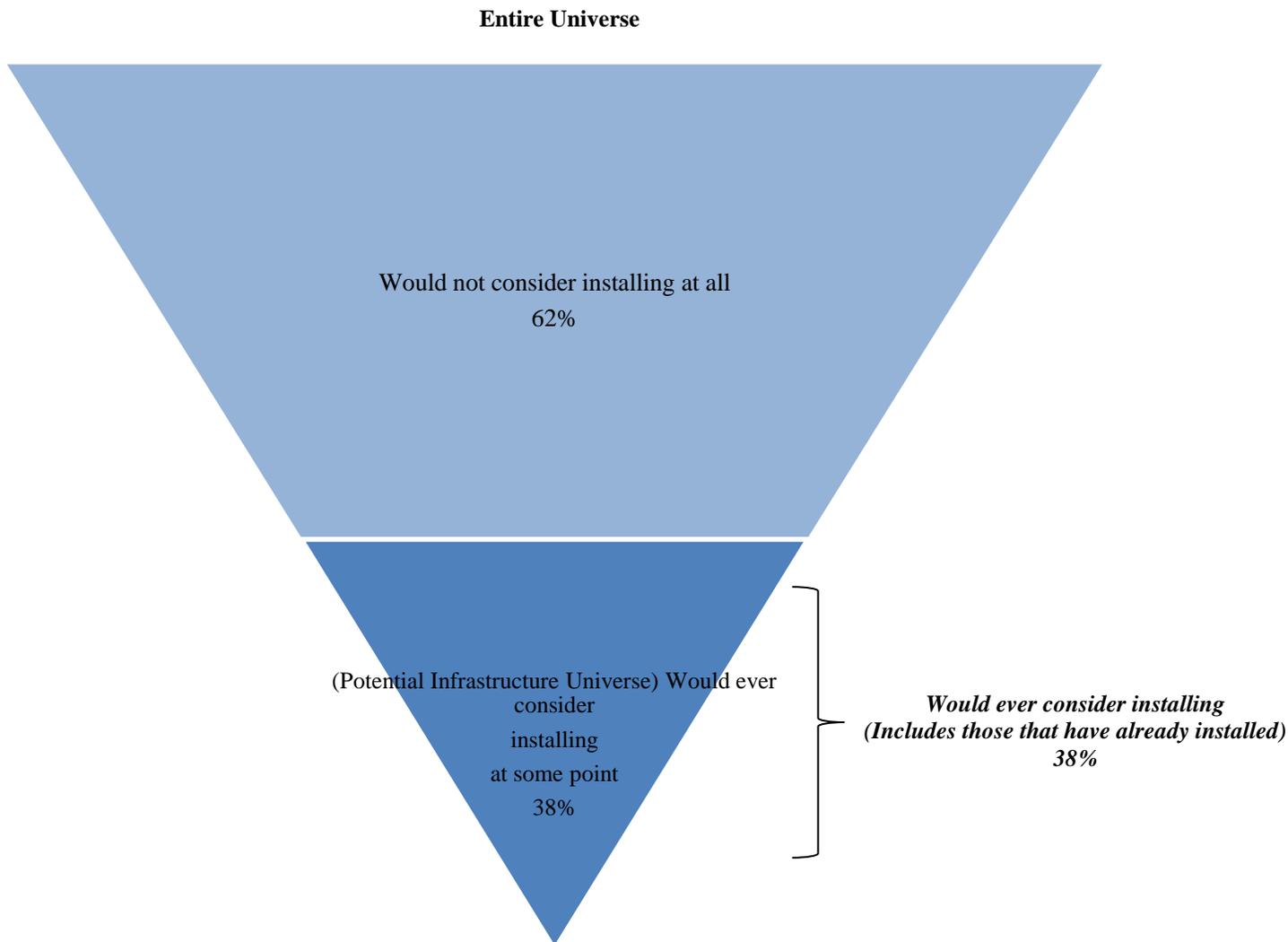
Current installations also skew towards fewer installation locations per organization and fewer charging stations per locations. However, there is a 50-50 split between organizations that have a total of one to two charging stations and those that have three or more.



## Potential Infrastructure Universe

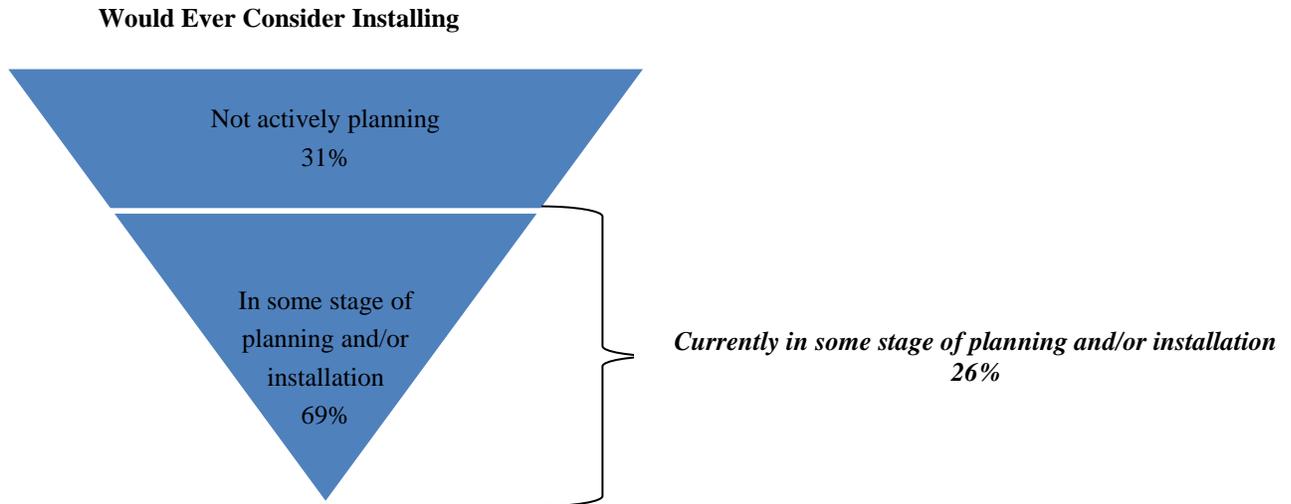
The overall study incidence of customers that would ever consider installing charging stations is 38%. This number represents approximately 4,500 SCE customers across the five business segments that at this point in time, would agree that at the *very least* they would consider installing charging infrastructure at *some* point in the future. This also includes the aforementioned 6% that have already installed charging stations.

From a planning perspective, it could be considered the “Potential Infrastructure” universe.



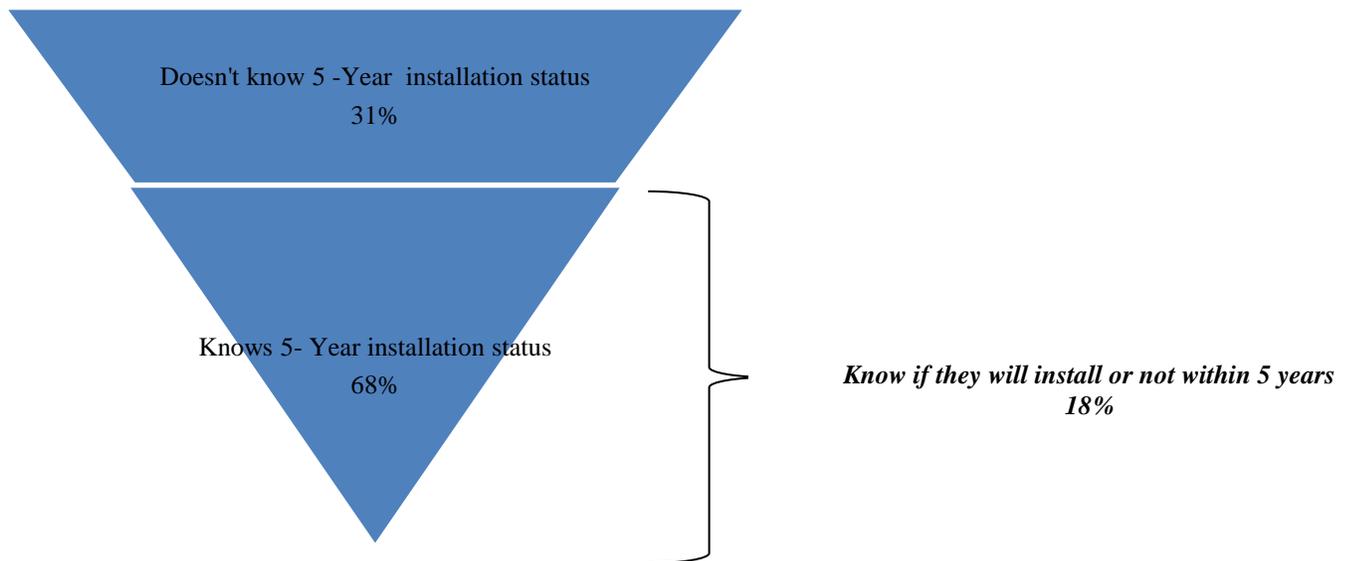
However, the incidence drops accordingly as we begin to apply the following filters:

The research would estimate that of the 4,500 that would ever consider installing in the future, 69% of them or about 3,100 are currently be in some stage of planning and/or installation. However, the vast majority of those are in the preliminary stages of planning. **This represents 26% of the entire universe.**



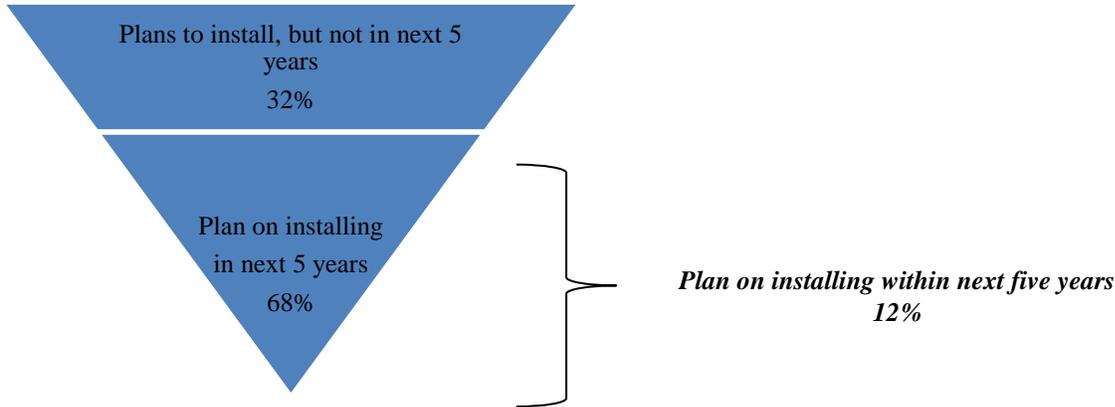
68% of those that are currently in some stage of planning and/or installation could say whether or **not** they plan to install in the next five years. **This represents approximately 2,100, customers or 18% of the entire universe.**

**Currently In Some Stage of Planning and/or Installation**



Finally, of those that know their installation status within the next five years, another 68% say they plan on installing within the next five years. **This represents approximately 1,400 customers or 12% of the universe.**

**Know If They Will Install or Not in 5 Years**

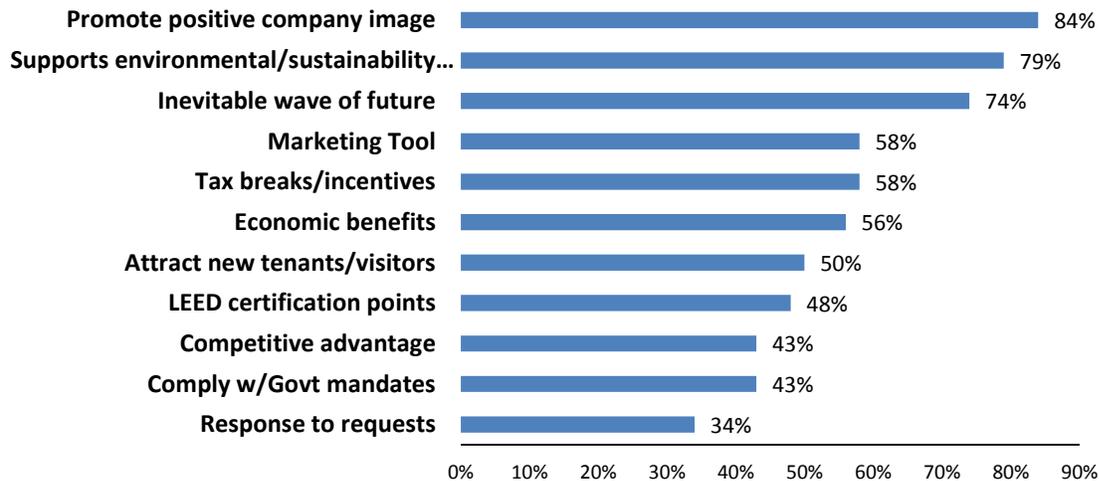


**Reasons to Install**

Regardless of where organizations are in the planning process, the top motivators for them to install charging stations, falls into three areas:

- Desire to promote company’s image and supporting organizations’ environmental/sustainability initiatives.
- Belief the technology is inevitable (it’s here to stay)
- Economic benefits (marketing, tax breaks/incentives, attracting tenants and visitors)

**% Indicating Reason to Install**



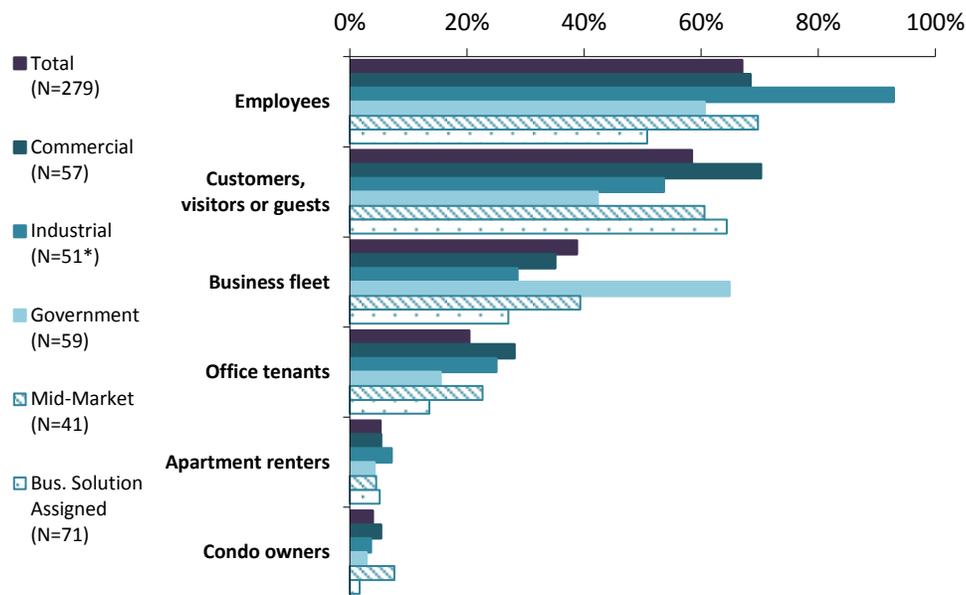
## Installation Planning

In terms of what type of charging is being planned, “workplace” followed by “customer/visitor/guest” lead installation plans. “Fleet” charging ranks 3<sup>rd</sup>. Additionally, there are clear customer segments which are driving these planned installation trends:

- Industrial is driving “Workplace”
- Commercial is driving “Customer/Guest”
- Government and Institutions are driving “Fleet”

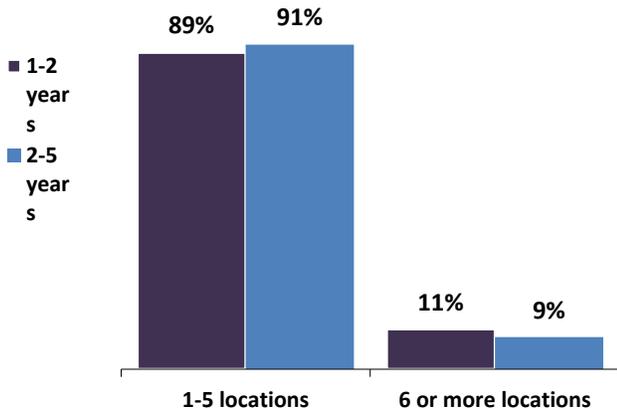
There is both good news and watch-outs coming from this data. On the positive side, the planning that is occurring now for “workplace” and “customer/guest/visitor” parking bodes well for the “charging occasion” pyramid. In particular, it indicates a level of activity that will support the notion and the need for “workplace” charging in the future. However, the near zero incidence of multi-family dwelling planning could be an indication of the overall market’s hesitancy to provide parking for this very important yet complex segment. In turn this underscores the need for the Regional PEV Readiness Infrastructure Plan to provide innovative approaches or solutions to this issue where possible.

**% Indicating Planned Charging Scenario**

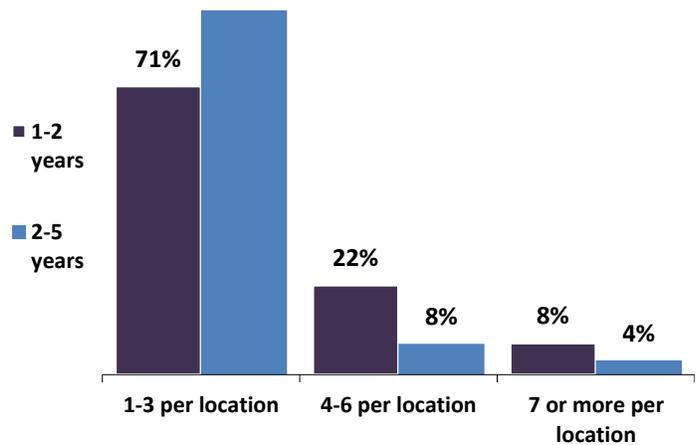


In addition, those planning installations skew towards fewer locations and fewer charging stations per location. However, it is interesting to note that those further along in the planning process (i.e. those planning to install in 1 to 2 years vs. further out), skew towards *more* charging stations per location. Perhaps this is an indication that higher number of planned stations is a function of organizations that have had more time to estimate overall needs.

**% Indicating # of Locations**



**% Indicating # of Stations/Location**

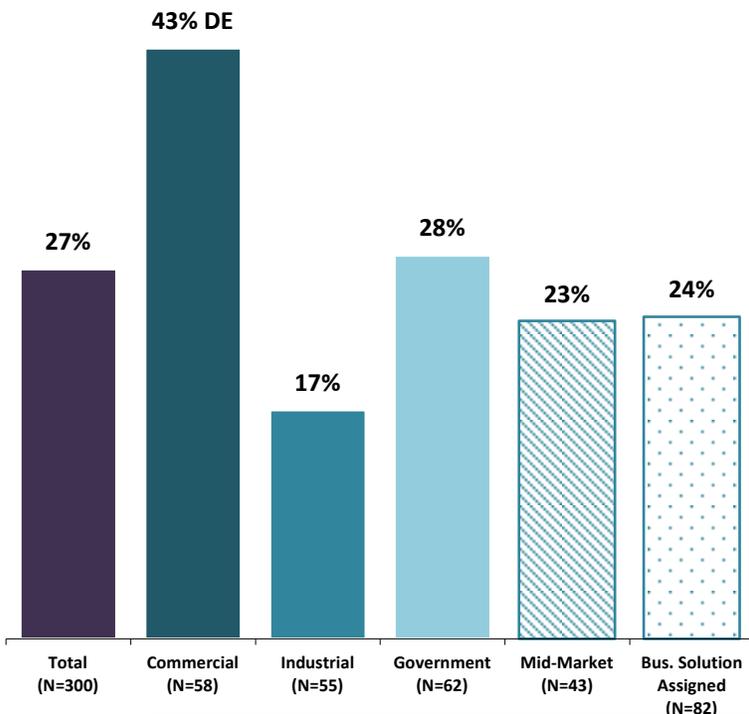


**Knowledge**

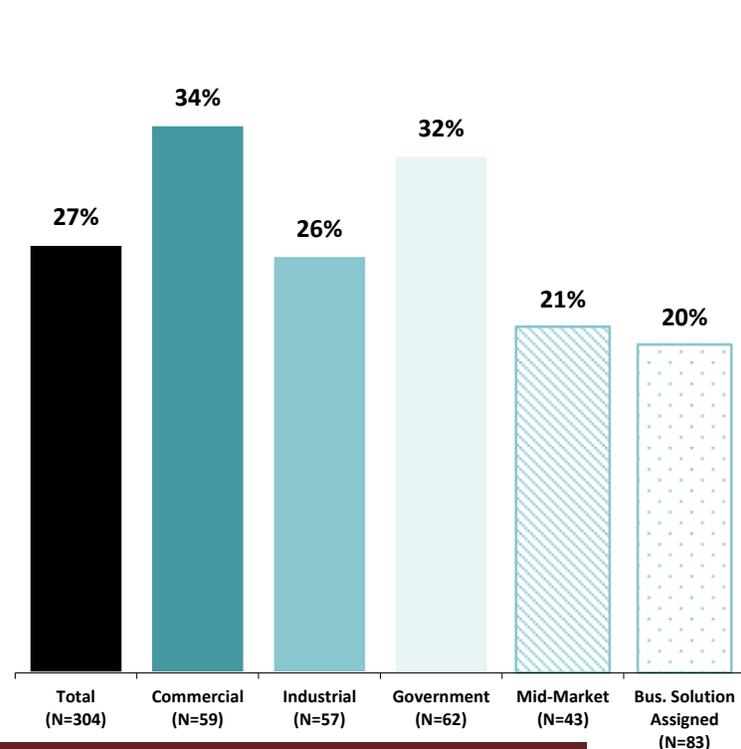
Despite a sizable segment of potential infrastructure installers, only a quarter of these stakeholders have a solid understanding of installation requirements (i.e. the process/the steps to take) or have knowledge of charging level differences. This indicates a steep learning curve in this early market phase to be certain. Which in turn presents a significant education and outreach opportunity.

Knowledge and understanding skews towards the “Commercial” and “Government and Institutions” segments. Perhaps this is not so surprising given these two segments have the most current installations to date. On the other hand, special note should be given to the “Industrial” segment given its low knowledge of infrastructure installation steps which could be a potential impediment to that segment’s intention to install “workplace” charging.

**Knowledge of Installation Steps - Agree**



**Understanding of Charging Levels - Yes**

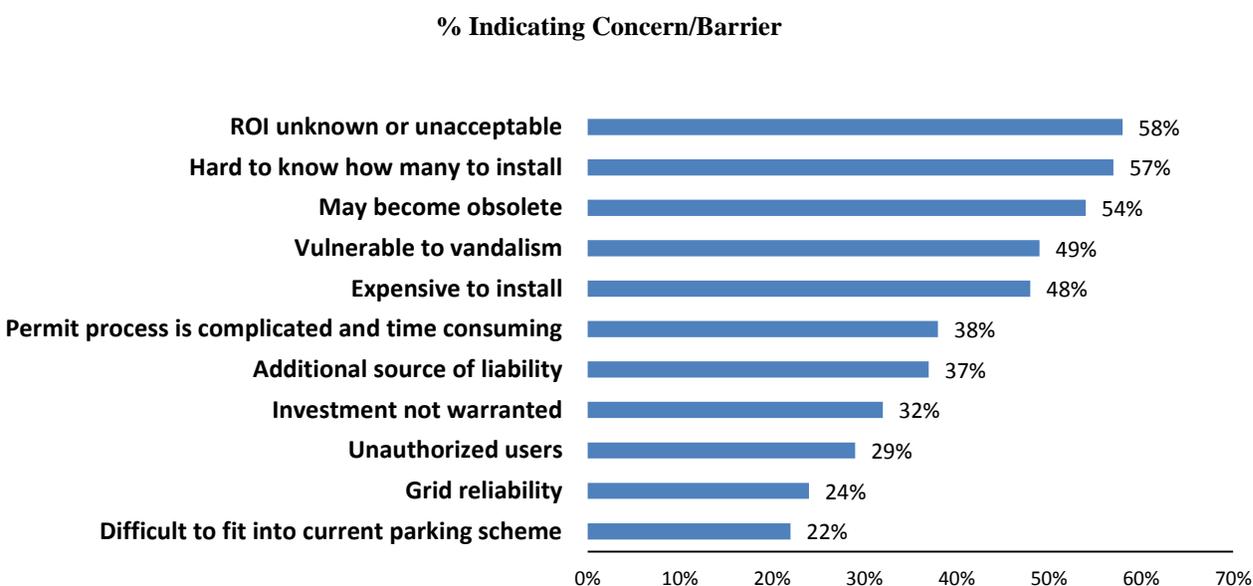


## Concerns – Barriers to Installation

Many of the barriers identified in the qualitative discovery were validated in phase two. Not surprising, there were multiple concerns that inhibit an organization to determine overall associated costs and resulting ROI. Some of these concerns like “Not knowing how many to install” have implications on the need for solid forecasting of vehicles and where they will be charging when not at home.

Furthermore, these results also reinforce the importance of successful education and outreach that would address the knowledge gaps that currently exist. To the extent those gaps could be closed, would serve to inform concerns organization have around the installation process and related costs.

Finally, some indicated concerns around “unauthorized usage”, “grid reliability” and “parking space constraints” also exist.



Additionally, for those organizations considering “Fleet”, almost half (44%) cited concerns that it would be too expensive to convert fleet. This was particularly true for the “Government” sector in which 54% indicated that reason.

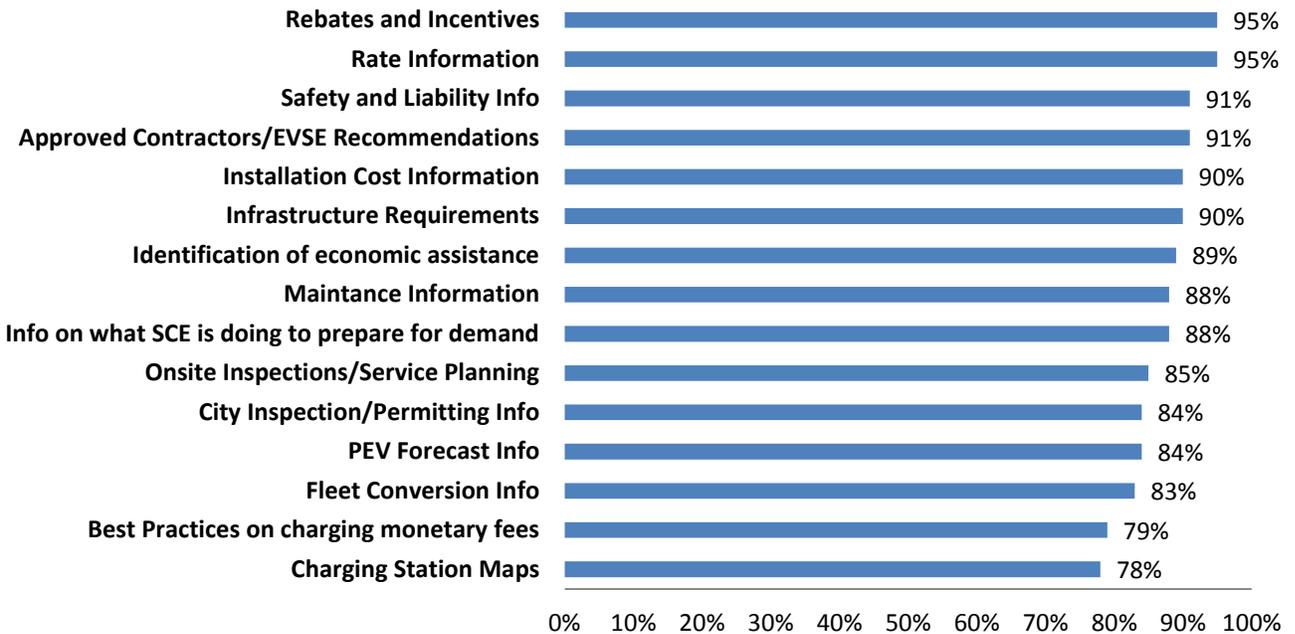
### The Role of SCE/Utility (Perceived)

Given the existing knowledge gaps, organizations need and expect Southern California Edison to provide information and services in many areas. This is perhaps an indication of two things:

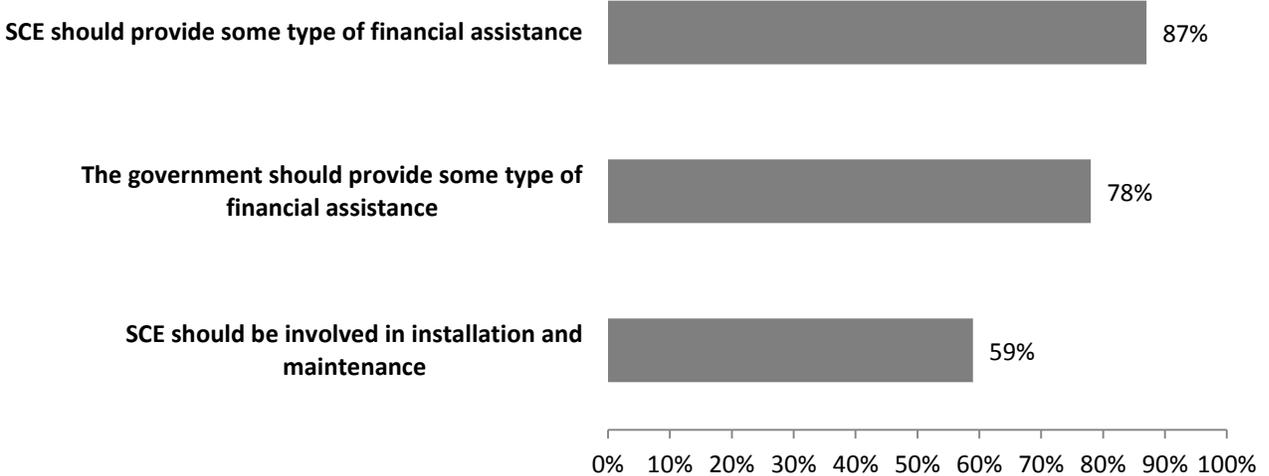
- Existing and productive relationships these organizations have with SCE.
- The newness and early market phase of PEV’s that we are currently in.

Nonetheless, across the board there are high expectations of the utility as organizations think through the decisions needed to move forward with installing charging infrastructure.

**% Indicating Desire for SCE to Provide**



Additional expectations include:



Many of the items identified above (but not all) can be addressed or provided by SCE. And at the very least SCE’s education and outreach efforts can direct organizations in the right direction. However, the data indicates that regardless of whether or not SCE can provide these types of information and services, there is a greater holistic need for the coordination of all stakeholders in these efforts and with their subsequent roles clearly defined and made known to those going through the installation process. Clearly the utility is an essential component of the stakeholder group. But the needs identified here will require the combined efforts of OEM’s, Government (Federal/State/Local), and EVSE’s as well.

## **Overall Implications**

The study results clearly unveil knowledge gaps and educational needs of those that will ultimately play a key role in providing charging infrastructure in the region. While it is imperative to identify where charging stations should be located (as indicated by the Regional PEV Readiness Infrastructure Plan), the knowledge gaps underscore the importance of an education and outreach component to the plan.

Elements already scoped out to inform the plan (i.e. multiple “demand” oriented analyses); will also address the concerns that have been identified in this study. Of special note are the concerns that organizations and businesses have around “if” they should install at all, and if so, how many?

Finally, we should look to see if the estimated 1,400 customers identified as those very likely to install infrastructure in the next five years could potentially be a barometer as to whether or not we’re “on track” to fulfilling the needed installations coming out of the multiple demand analyses. This would be based on the research data indicating planned locations and planned installations per location.