

WORKPLACE CHARGING TO SUPPORT 1 MILLION ZERO EMISSIONS VEHICLES IN CALIFORNIA BY 2020



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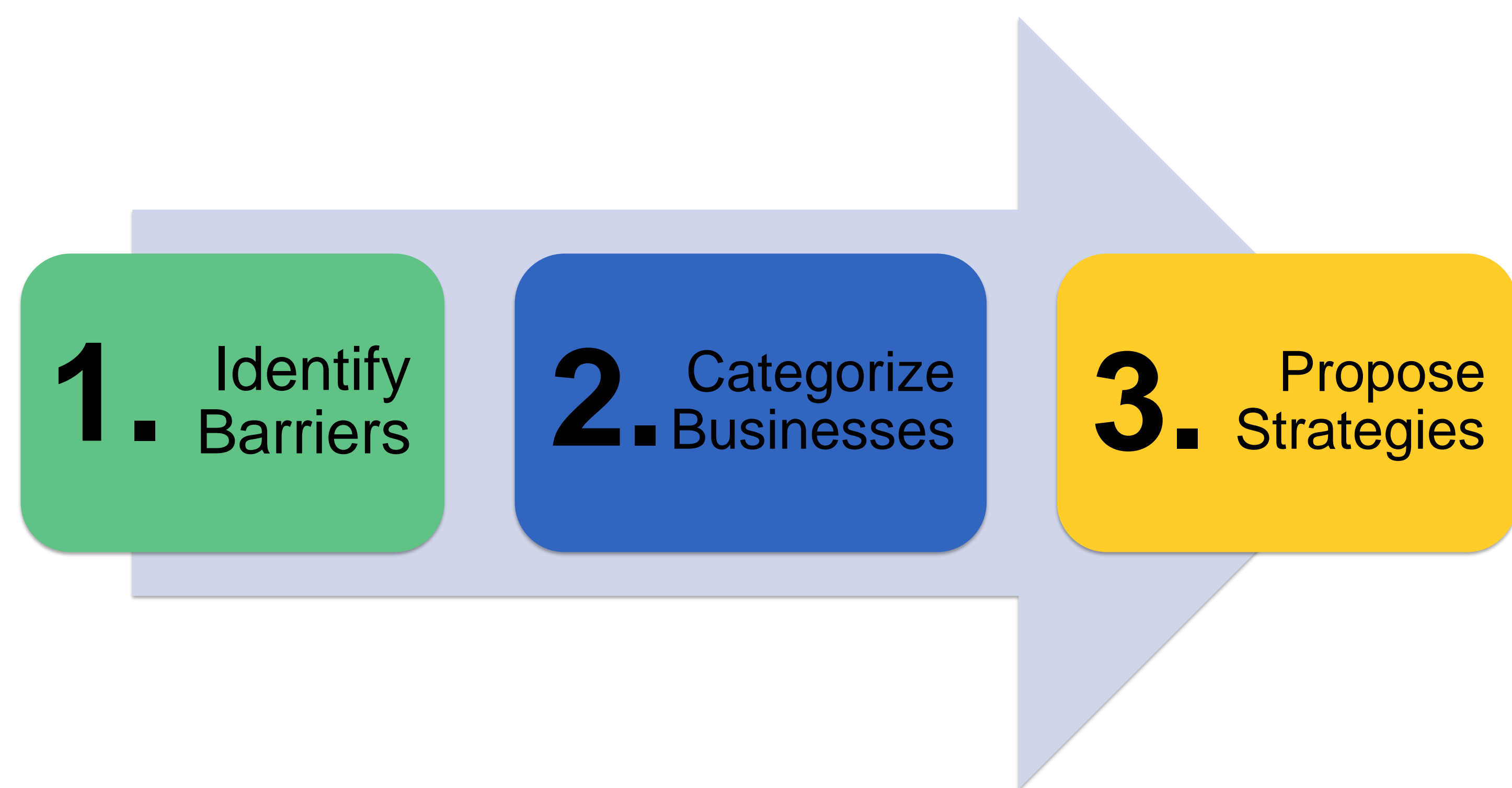
BACKGROUND

The country's leader in climate policy, California has set forth ambitious goals to reduce its greenhouse gas emissions to 40% below 1990 levels by 2025. As transportation is the state's largest single-sector source of emissions, California will not meet its climate goals without de-carbonizing its transportation sector.

California's 2020 ZEV Goals

- 1 million electric vehicles
- 100,000 workplace charging stations

PROJECT OBJECTIVES



METHODOLOGY

- Conducted a comprehensive review of the current literature on electric vehicles, performed a policy gap-analysis, and talked with industry stakeholders such as car manufacturers, utility companies, and non-profits.
- Interviewed over 40 companies both with and without chargers and gathered information on company demographics, perceived barriers to charger installation, and if applicable, charger program information
- Developed a survey, testing different funding and policy strategies, to identify the main challenges of workplace charger installation and which solutions gained the most traction with businesses

PROJECT OVERVIEW

In order to meet Governor Jerry Brown's mandate of 1 million Zero Emission Vehicles (ZEVs) California will need a robust charging network to support the increased number of electric vehicles (EVs) on the road. The California Energy Commission has identified workplace charging stations that allow drivers to charge at work as a critical piece of infrastructure to expanding the use of EVs. This project identifies the main barriers preventing workplace charger installation and determines which businesses should be targeted for installation in order to recommend policy and funding strategies that can be used to increase the amount of workplace charging.

1. BARRIERS

Four main barriers were identified from our business and stakeholder interviews. First, there is a significant lack of data regarding workplace charging making it difficult to analyze the trends and track progress. Second, businesses face three barriers to adoption: cost of installation, lack of control over parking spaces, and lack of demand from employees.

- Lack of Data tracking workplace charging progress in California
- Lack of Parking Control for companies that rely on offsite parking
- Cost of installation can be prohibitive for some businesses
- Lack of Demand exists if not many employees drive EVs to work

2. BUSINESS CATEGORIES

Using the barriers to workplace charging that our interviews uncovered, we categorized businesses based on their susceptibility to these barriers to determine which businesses our final strategies should target. The three business categories we established were:

- Early Adopters** are already installing workplace charging with internal funding
- Early Majority** may be incentivized to install workplace charging
- Late Adopters** will not install workplace charging by 2020

3. RECOMMENDATIONS

These recommendations are targeted towards the **Early Majority** of California business, who will play a crucial role in attaining 100,000 workplace chargers by 2020. We propose three immediate and two long-term recommendations to reduce their barriers to installing workplace charging:

IMMEDIATE RECOMMENDATIONS



Workplace Charging Database

Target Barrier: Lack of Data

Purpose: Create workplace charger database for California to support research, map-building, and goal tracking

Features:

- Number of chargers
- Location of chargers
- Charger owners



First Charger Rebate Program

Target Barrier: Cost and Employee Demand

Purpose: Develop a new structured rebate program to help Early Majority businesses to install their first charger

Features:

- Covers 50% of equipment and labor cost for 1st charger
- Useful to both for-profit and nonprofit businesses
- No location limits



City EV Readiness Plan

Target Barrier: Lack of Parking Control

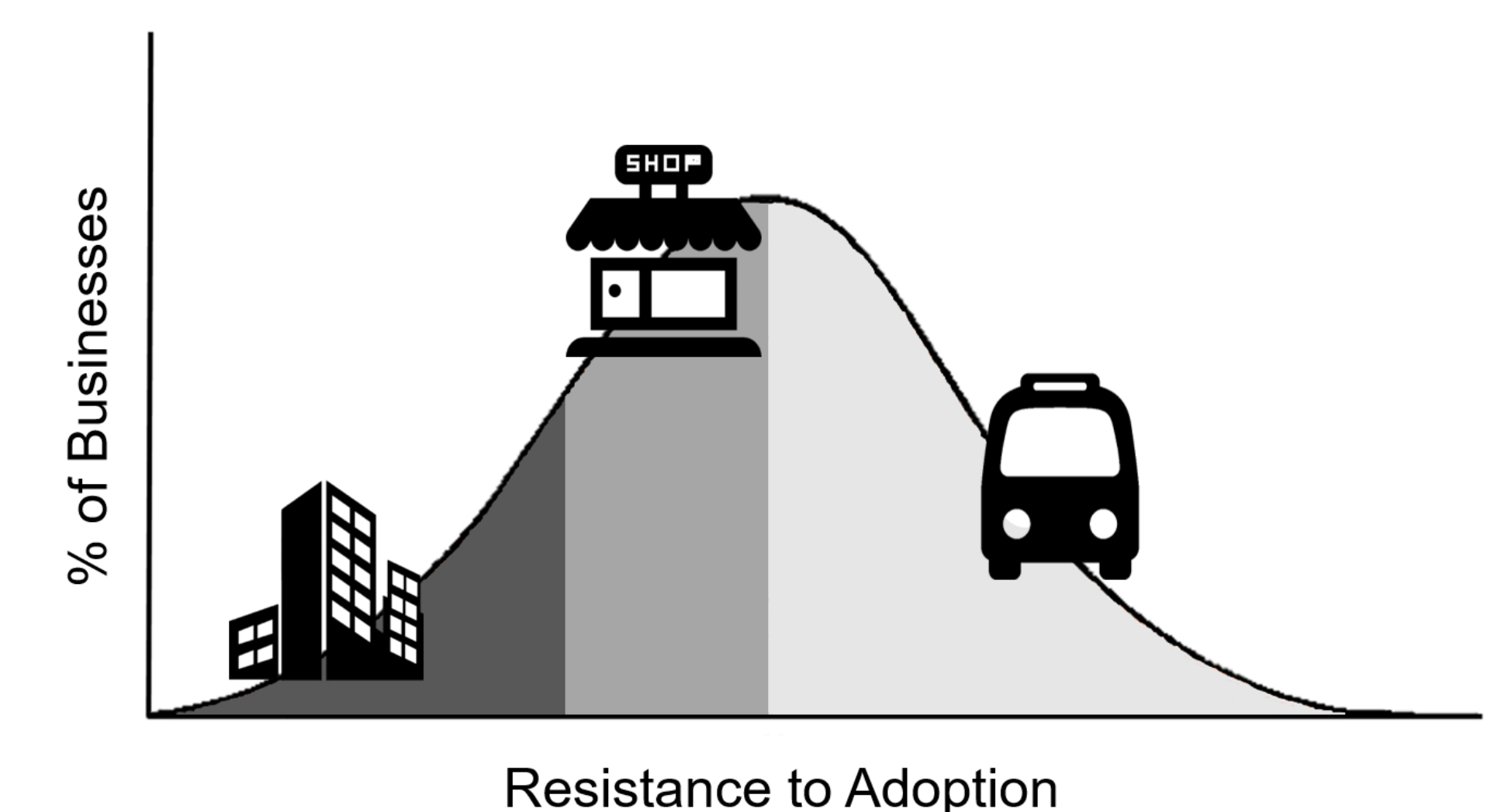
Purpose: Cities develop specific "EV Readiness Plans" to unlock state funding for EV infrastructure projects

Features:

- Include a workplace charging plan in city planning process
- Grants awarded for plan implementation

TECH ADOPTION MODEL

This categorization method was inspired by the Technology Adoption Model which describes the adoption or acceptance of a new product or innovation, according to resistance to adoption of defined adopter groups.



Resistance to Adoption

LONG-TERM

Promote Alternative Technologies

Purpose: Promote alternative technologies such as mobile or solar powered charging stations.

- Fund pilot programs for solar or mobile charging
- Host events and webinars about alternative charging technology
- Create research grants to drive innovation in alternative charging technology

Update Utility Programs

Purpose: Revise program requirements to target more Early Majority businesses.

- Reduce the required minimum number of chargers
- Encouraging utilities to target their charger installations at business parks

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