

Roadmap for Electric Transportation



Realize benefits of electrified transportation for state residents



**Improved public
health**



**Savings for EV
drivers**



More jobs



**Stronger energy
security**



**Climate change
mitigation**



**Improved
electricity system
efficiency**

Action plan for electrification of transportation



Plan your
destination



Drive investment
with incentives



Remove
roadblocks



Empower
regulators



PLAN YOUR DESTINATION



Plan your destination



Establish goals and timelines



Create state EV policy plans



Lead by example with state fleet vehicles



Enable regular statewide assessment updates



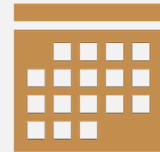
Plan for future transportation funding sources

Establish EV goals and timelines



Set state goals for EVs

- Number and type of EVs
- Number and type of charging stations
- Goals for communities served



Set timelines for reaching the goal

Create state EV policy plans



Create a vision for electrified transportation in a state, and connect state goals, priorities and actions



Promote alignment with the public interest (reflecting cost, risk and environmental management) and consider the application of some consumer protection guardrails

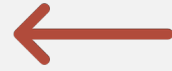


Enable coordination between state agencies of transportation, air quality and environment, commerce, tourism and energy, and the public utilities commission



Ensure mechanisms exist to coordinate between various offices of state government and local jurisdictions

Electrify state fleets



States can lead
by example



Help create infrastructure



Save money on maintenance

Track and evaluate progress



Require periodic
assessments



Track progress
toward state goals

Plan for transportation funding sources



Federal gas tax has not changed
in 25 years



Dwindling fund is almost entirely
due to cost of construction and
inflation, not EVs



Need new, equitable way to fund
roads



DRIVE INVESTMENT WITH INCENTIVES

Four types of financial incentives



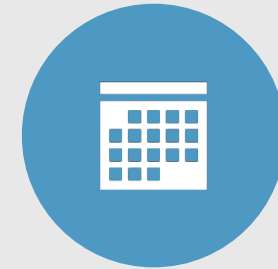
Income tax
credits



Vehicle purchase
rebates



One-time vehicle
tax reductions

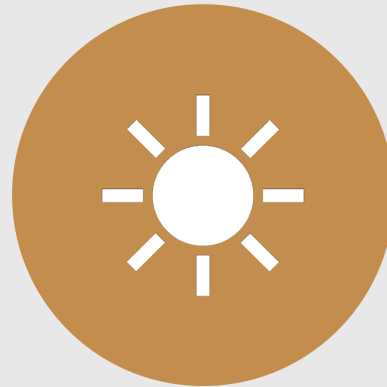


Annual vehicle
tax reductions

Best practices for structuring financial incentives



Apply incentives at the point of purchase



Be transparent



Make incentive programs durable

Apply incentives at the point of purchase



Individual, business, municipal and state government customers pay attention to cost



Incentives that directly reduce the cost at the time of purchase or through tax exemptions are most successful

Be transparent



Simple incentives work

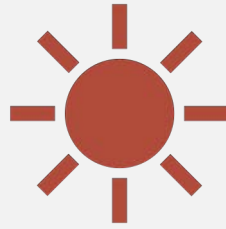


Make the public aware of the incentives and vehicles eligible for incentives



Clearly link incentives to public policy goals

Make incentive programs durable



Predictable incentives are successful



Provide certainty for manufacturers, dealers, consumers and public outreach campaigns

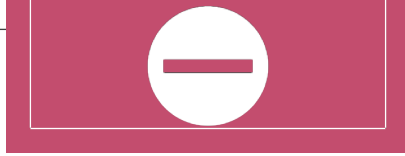
Nonfinancial incentives



States need to provide and enforce parking and charging for EVs



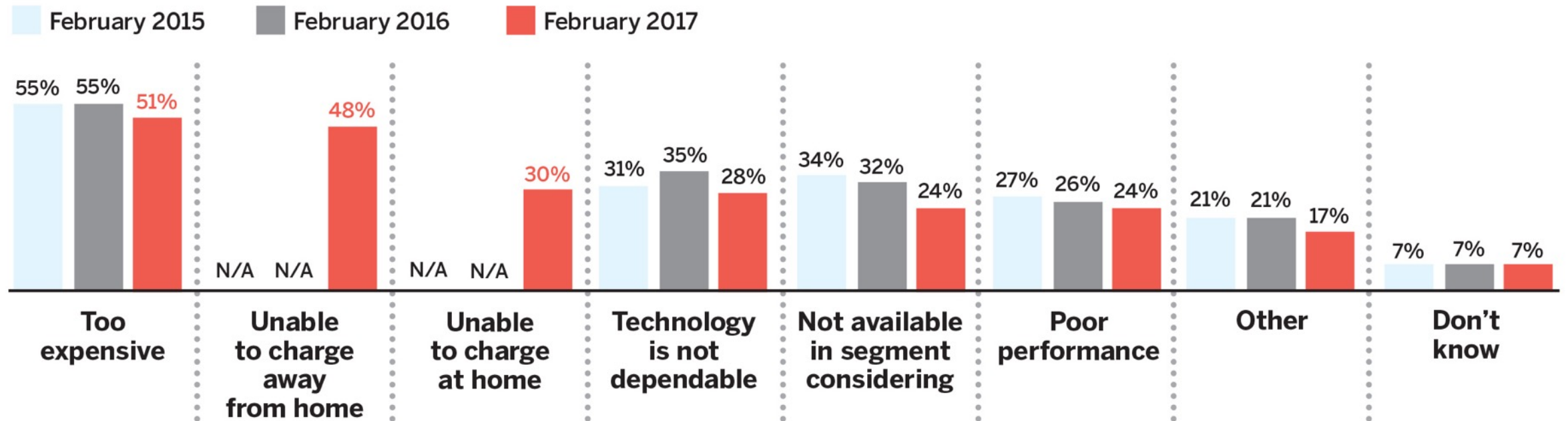
Access to high-occupancy vehicle lanes for EVs



REMOVE ROADBLOCKS

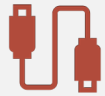
Consumer roadblock concerns

Reasons given for not considering buying or leasing a plug-in EV



Source: Based on Singer, M. (2017). *The Barriers to Acceptance of Plug-In Electric Vehicles: 2017 Update*

How to remove roadblocks



Ensure consumer-friendly charging infrastructure is widely available



Ensure building codes provide for an electrified future



Ensure electrification benefits all of society, including rural and low-income communities





We need infrastructure for people to buy cars, but need lots of electric vehicles for infrastructure to be built



Ensure building codes provide for an electrified future

- Single-family homes
- Multiunit dwellings
- Rentals

Benefit all of society with electrification

Legislative actions can include:

- Engage diverse stakeholders in planning
- Require studies to fill information gaps
- Identify barriers and develop solutions that deliver on inclusivity goals
- Ensure electrified transport is accessible to all regardless of economic or geographic circumstances





EMPOWER REGULATORS

Steps to empower regulators



Clarify roles and regulation in developing charging infrastructure



Ensure integrated planning that includes EVs



Develop smart rate design for EVs

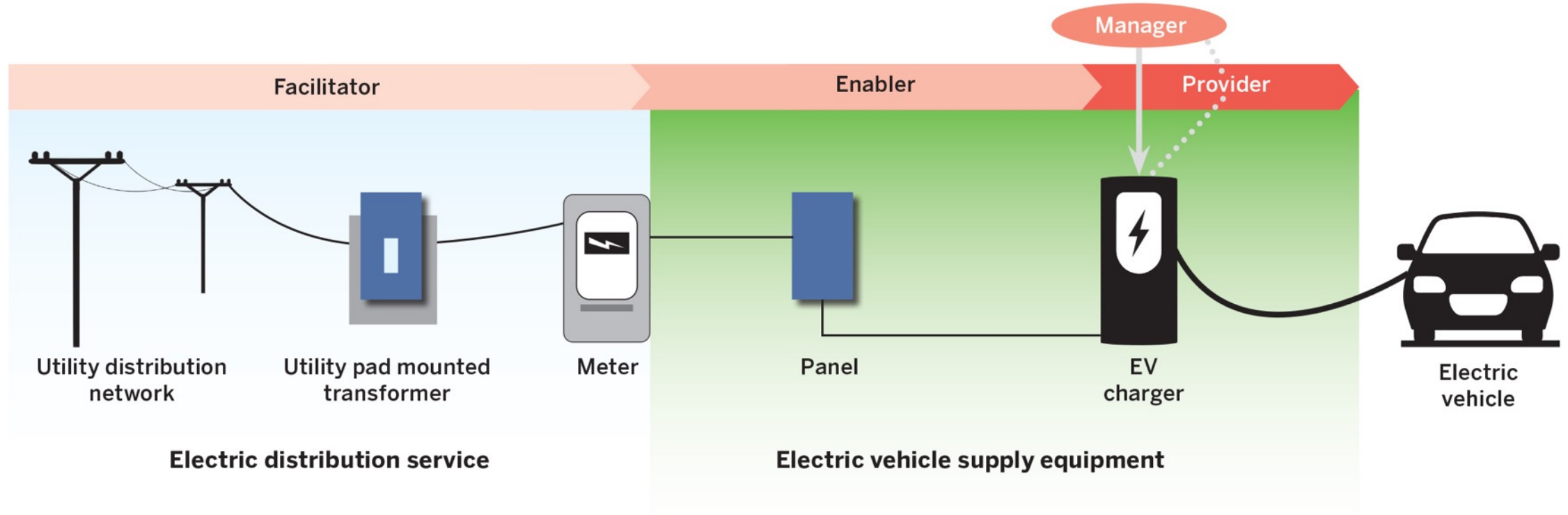


Consider enabling performance-based regulation for utility EV programs

Clarify role of utility

- **Utility as facilitator:** The utility treats EV charging like any other potential load
- **Utility as enabler:** The utility deploys additional infrastructure to build out capacity in key areas — also called the make-ready option
- **Utility as manager:** The utility manages the charging operation to better integrate charging with grid capabilities and grid needs
- **Utility as provider** (may include manager role): The utility delivers electric service to the charging equipment, which the utility owns and is able to earn a return on, and the utility provides charging services

Potential roles for utilities in EV charging infrastructure

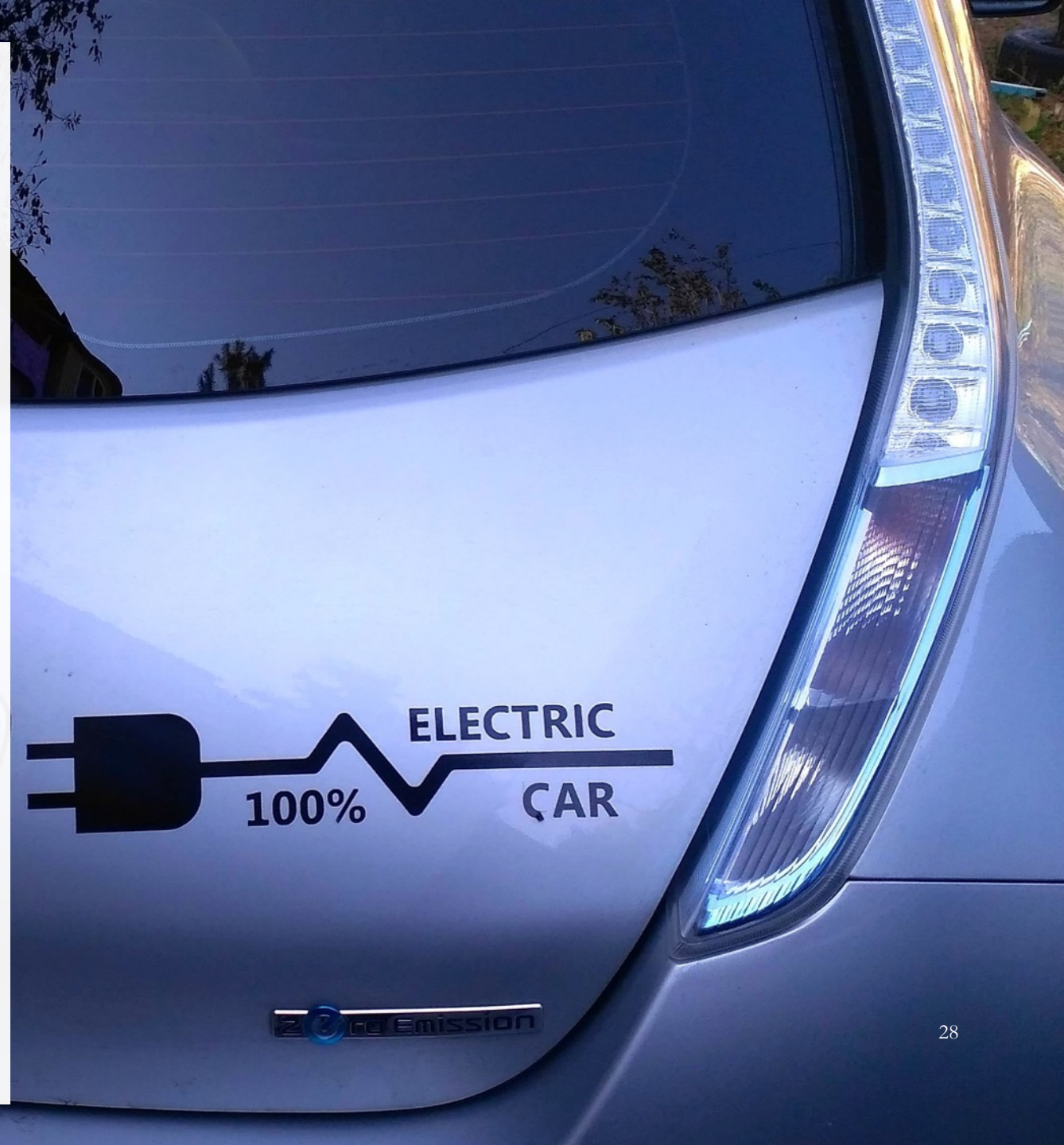


Sources: Base illustration based on California Public Utilities Commission, Application 15-02-009, Proposed Decision of ALJ Farrar, Mailed November 14, 2016. Roles drawn from Nelder, C., Newcomb, J., and Fitzgerald, G. (2016). *Electric Vehicles as Distributed Energy Resources*; and Advanced Energy Economy. (2018). *EVs 101: A Regulatory Plan for America's Electric Transportation Future*

Integrated planning process considerations

State legislators may want to consider:

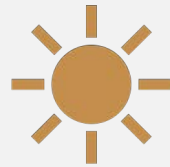
- Whether an existing planning process, such as an integrated resource plan, considers all existing resources
- Whether the requirement should be solely on electric utilities or electric distribution companies
- Whether other state agencies should be involved in the planning process
- The length of the planning horizon required (typically 10 to 20 years)



Further integrated planning considerations



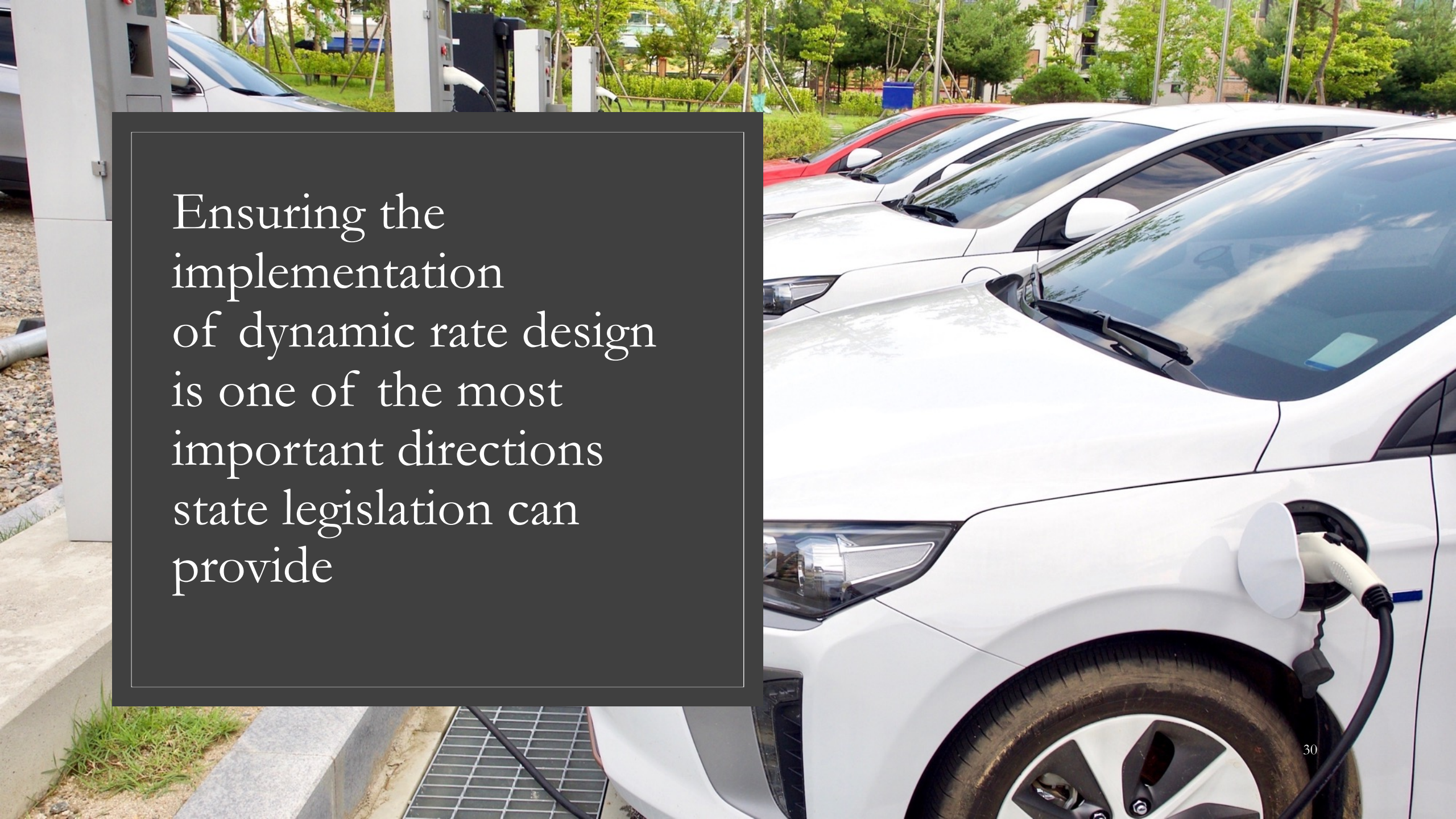
Whether the planning process (new or existing) requires utilities to utilize all cost-effective energy efficiency, demand response and renewable energy to meet EV charging needs



Whether the plan requires utilities to make use of charging to meet flexible demand

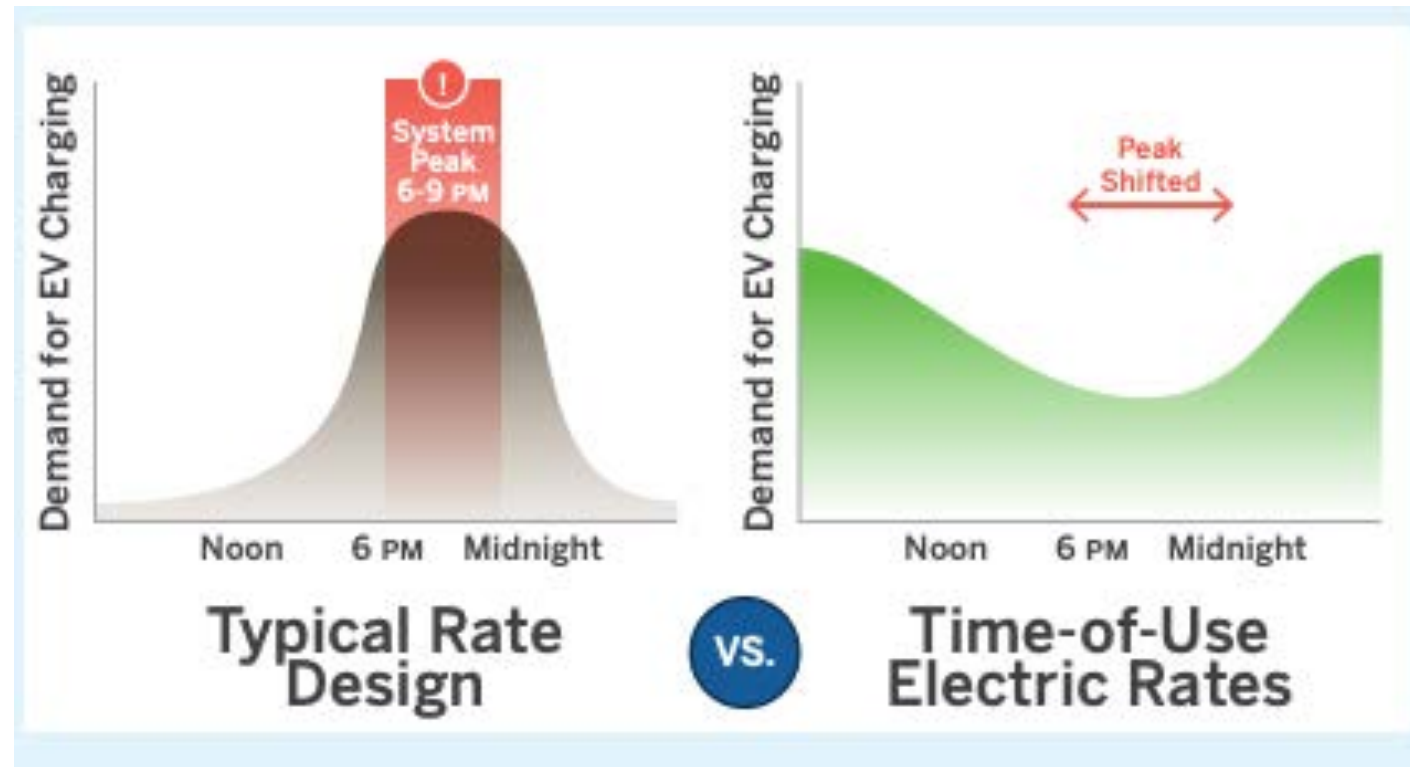


Whether utilities should be required to consider utilizing the storage capability of EVs

A row of white electric cars parked at a charging station. The cars are lined up, and charging cables are plugged into their charging ports. The background shows a green, landscaped area with trees and a building.

Ensuring the implementation of dynamic rate design is one of the most important directions state legislation can provide

Ensure smart rate design for EVs



Critical rate design points

-1-



EV charging can be shifted to avoid the few critical hours when the grid is stressed



EV charging can be shifted to take advantage of hours when the grid is loaded lightly



EV charging can be managed to avoid the cost of expensive new resources, like new generation plants and storage, and save consumers money

Critical rate design points

-2-



EVs can help integrate renewable energy by charging when this energy is abundant



Future technology may enable EVs to be a resource to the grid by providing storage and discharge

Consider performance-based regulatory tools for EV programs

Check if the public utility commission has the authority to apply performance-based rewards and penalties to utilities

Consider a performance-based regulation program to incentivize state goals, which can include:

- Customer engagement and empowerment
- Environmental outcomes
- Cost-effectiveness

1

Improved
public health

2

Savings for EV
drivers

3

More jobs

4

Stronger energy
security

5

Climate change
mitigation

6

Improved
electric system
efficiency

Legislative action is necessary
to realize these benefits

Reference

This PowerPoint file was prepared by the Regulatory Assistance Project (RAP)®, which is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable and efficient energy future.

This presentation is part of the *Roadmap for Electric Transportation* legislative kit:
www.raponline.org/EV-roadmap