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ELECTRIC VEHICLES AND THEIR ENERGY IMPACT

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Morgan Lewis Automotive Hour Webinar Series

Series of automotive industry focused webinars led by members of the Morgan Lewis global automotive team. The 10-part 2020 program is designed to provide a comprehensive overview on a variety of topics related to clients in the automotive industry. Upcoming sessions:

SEPTEMBER 23 | Autonomous Vehicles Regulation and State Developments

NOVEMBER 11 | Environmental Developments and Challenges in the Automotive Space

DECEMBER 9 | Capitalizing on Emerging Technology in the Automotive and Mobility Space

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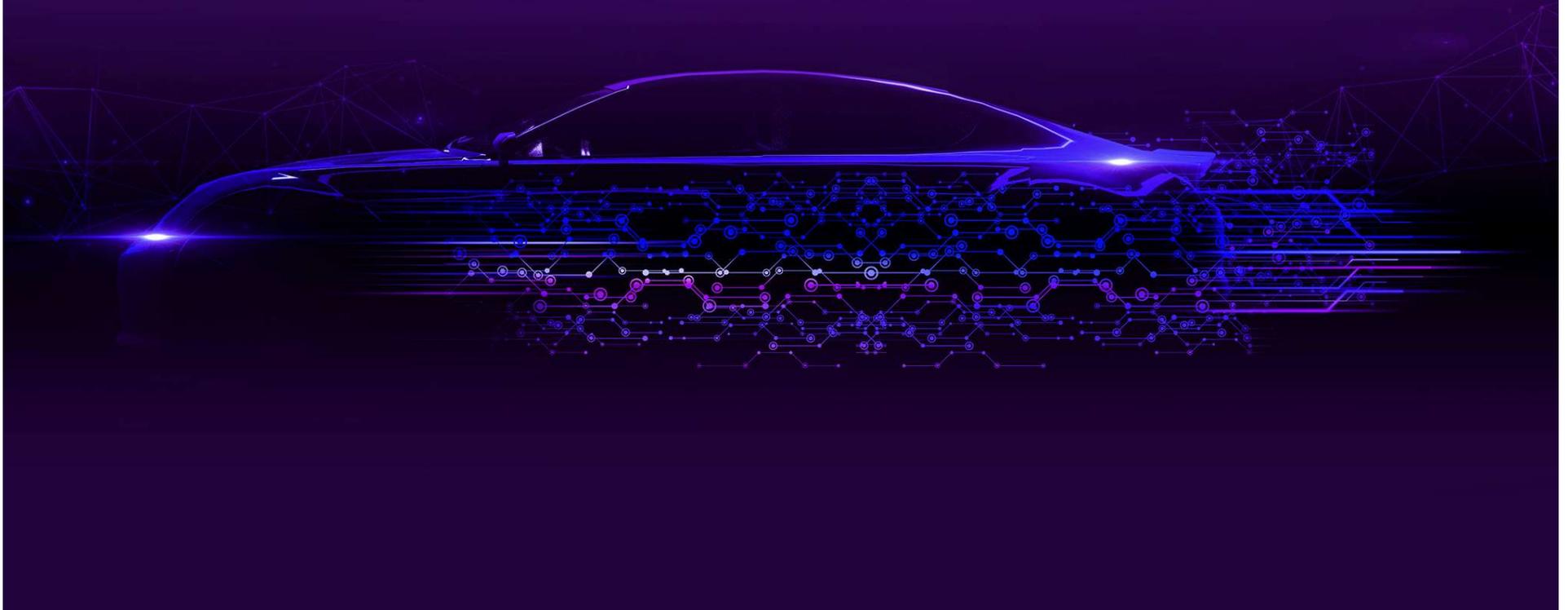
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SECTION 01

INTRODUCTIONS



Today's Presenters



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SECTION 02

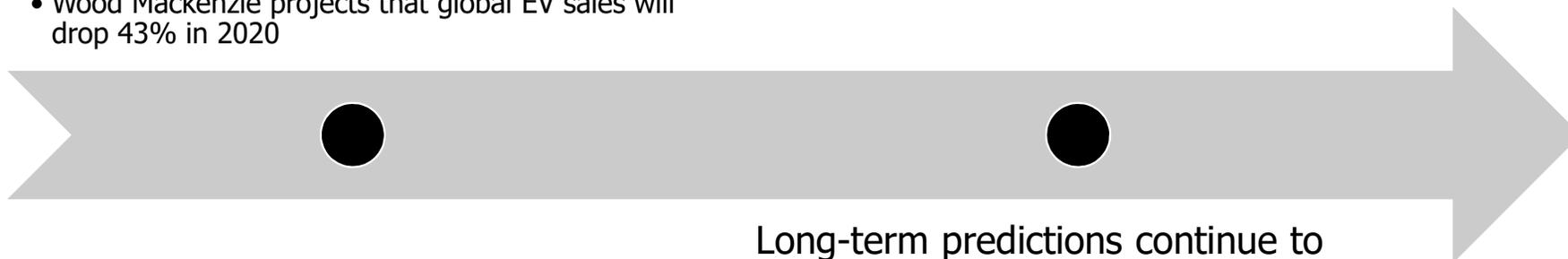
OVERVIEW



Current Outlook – Sales Forecasts

Significant short-term impacts due to the COVID-19 crisis

- Wood Mackenzie projects that global EV sales will drop 43% in 2020



Long-term predictions continue to show accelerating adoption

- By 2025, EVs hit 10% of global passenger vehicle sales, rising to 28% in 2030 and 58% in 2040 (Electric Vehicle Outlook 2020, BloombergNEF)

Current Outlook – Activity By States

- States are continuing to advance decarbonization and transportation electrification goals, of which EVs are an integral part
 - Recent legislation (NJ, CO)
 - New initiatives (NY)
- According to Atlas EV Hub, which tracks U.S. transportation electrification regulatory filings by investor-owned utilities, as of April 2020, almost \$3 billion in transportation electrification investments have been approved or are pending approval by state utility commissions

EV Charging Equipment

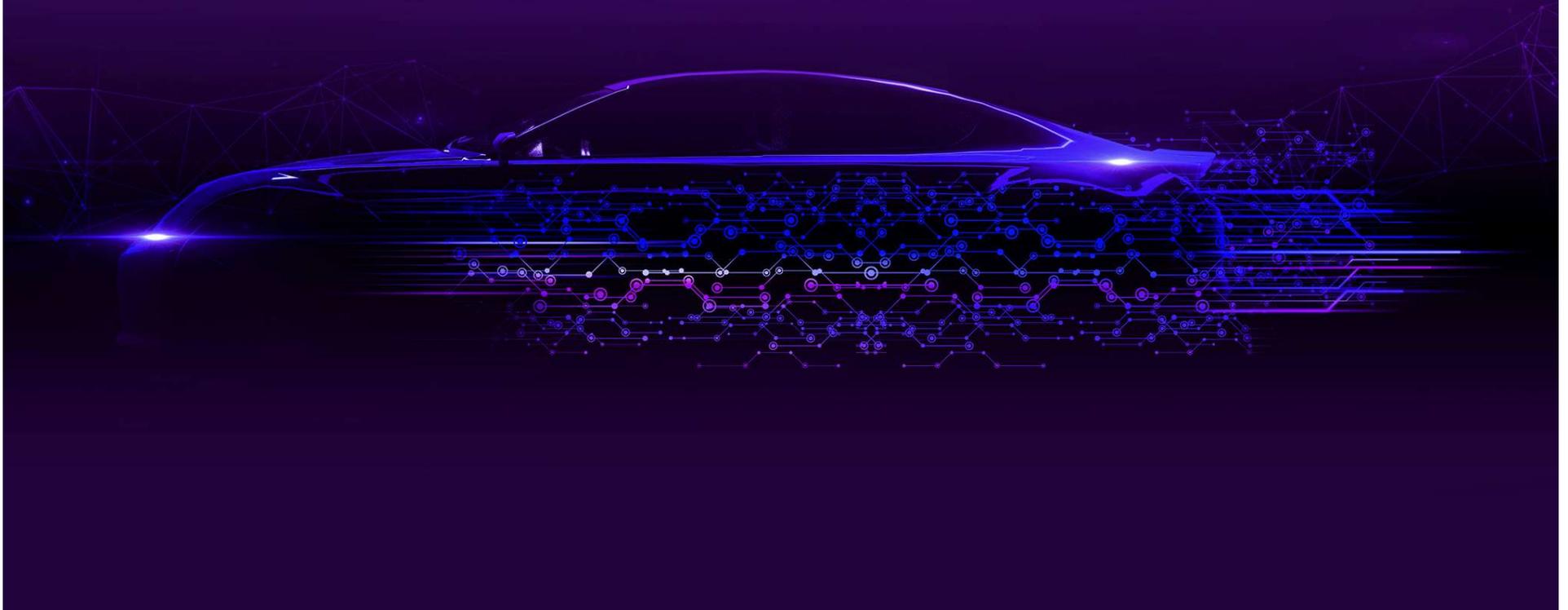
AC Level 1 Charging	AC Level 2 Charging	DC Fast Charging	Inductive Charging
<ul style="list-style-type: none">• 2 to 5 miles of range per 1 hour of charging• Charging through a 120 volt (V) AC plug• Typically at home or at work locations	<ul style="list-style-type: none">• 10 to 20 miles of range per 1 hour of charging• Charging through 240V (typical in residential applications) or 208V (typical in commercial applications) electrical service• Installed at EV owners' homes for home charging or used for public and workplace charging	<ul style="list-style-type: none">• 60 to 80 miles of range per 20 minutes of charging• Typically 208/480V AC three-phase input• Three types of DC fast charging systems, depending on the type of charge port on the vehicle: SAE Combined Charging System (CCS), CHAdeMO, or Tesla• Enables rapid charging along heavy traffic corridors	<ul style="list-style-type: none">• Uses an electromagnetic field to transfer electricity without a cord• Most currently available wireless charging stations operate at power levels comparable to Level 2, with higher power levels available for mass transit operations

Current & Future Public EV Charging Capacity

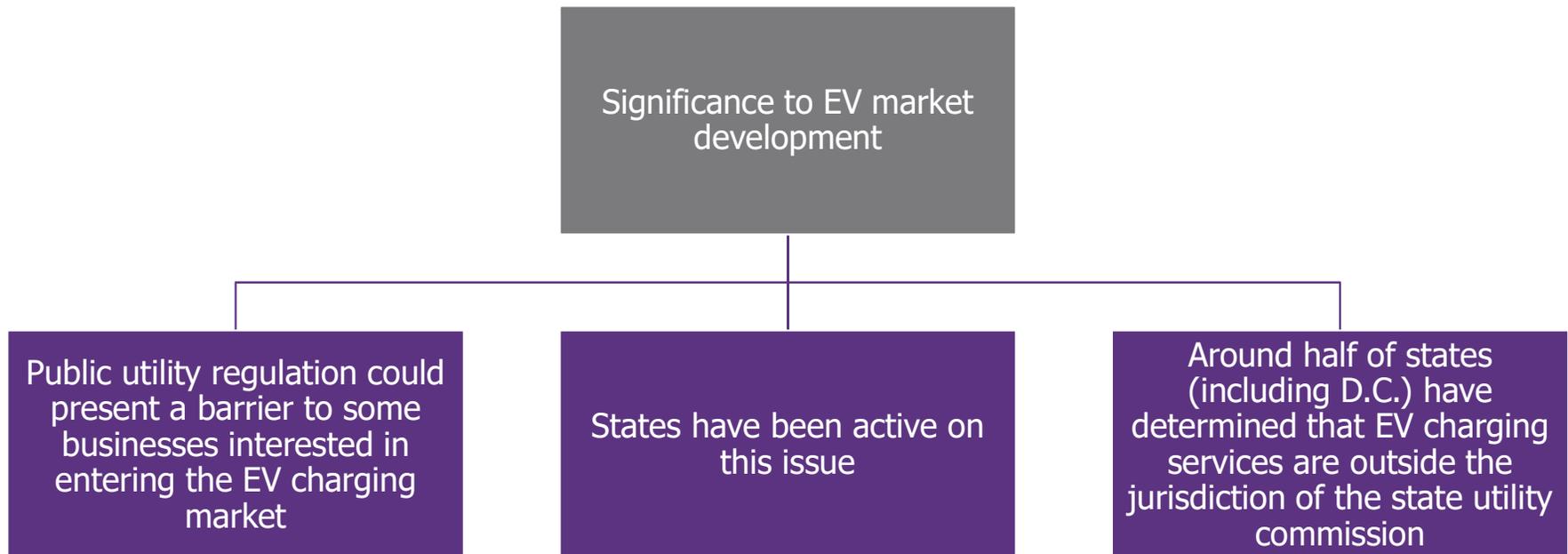
- As of August 3, 2020, the United States had 26,417 public charging stations with 84,929 ports (see <https://afdc.energy.gov/stations/states>)
 - 1,492 Level 1
 - 68,495 Level 2
 - 14,891 DC Fast
- International Council on Clean Transportation estimates that only 1/4 of the public and workplace charging infrastructure that will be needed by 2025 has been built as of 2017

SECTION 03

STATE REGULATION OF EV CHARGING ACTIVITIES



Who Can Sell EV Charging Services?



Who Can Sell EV Charging Services? (continued)



California

- Statute addresses EV charging activities (Cal. Pub. Util. Code § 216)
- An entity that is not already a public utility in California will not become one simply by owning or operating EV charging facilities



Washington

- Statute addresses EV charging activities (Rev. Code of WA 80.28.320)
- Utility may offer EV charging as a regulated or unregulated service

Who Can Sell EV Charging Services? (continued)



Massachusetts

- Addressed by Order of the Department of Public Utilities (Case 13-182-A)
- EV charging is a service - the use of specialized equipment for the purpose of charging an EV battery



New York

- Addressed by Order of the Public Service Commission (Case 13-E-0199)
- The primary purpose is use of the specialized charging equipment and electricity is “incidental” to the transaction



Kentucky

- Addressed by Order of the Public Service Commission (Case 2018-00372)
- Noted almost 50% of states have already determined that EV charging is not a utility service
- EV charging stations do not provide electric service to or for the public because they provide a limited service of charging EV batteries to a select group of people, namely EV owners

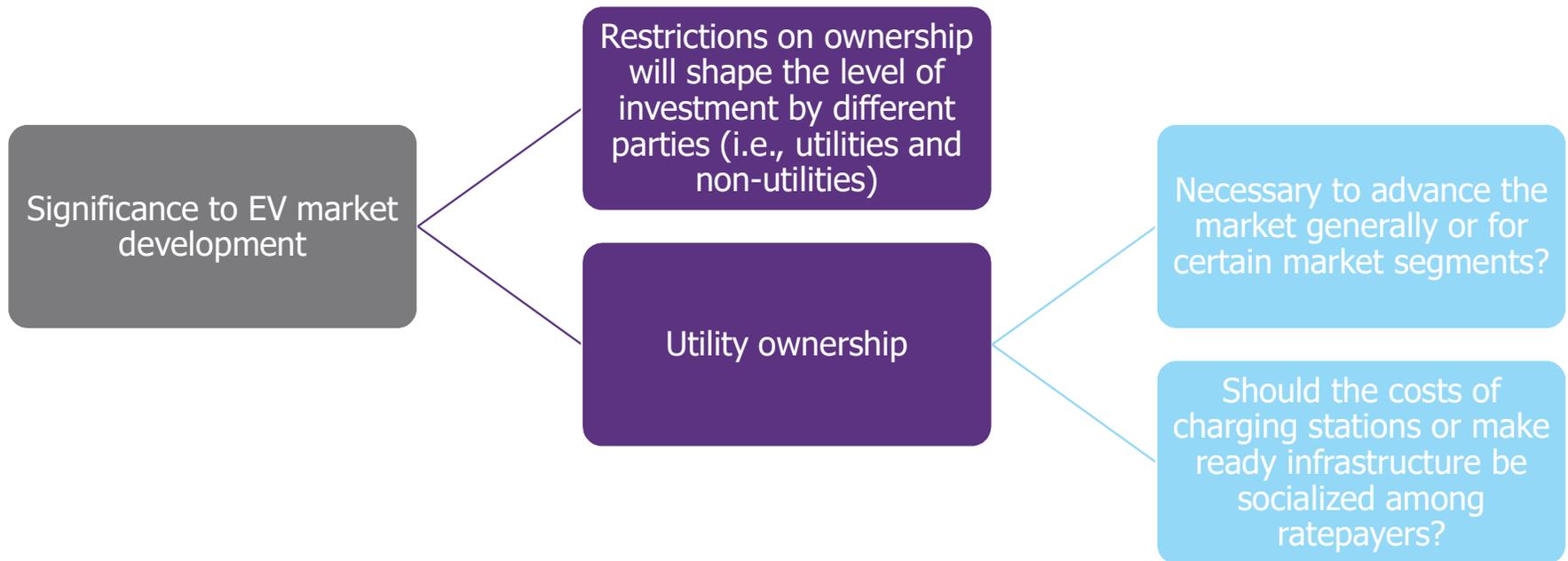
Who Can Sell EV Charging Services? (continued)



Missouri

- Addressed initially by the PSC
- Findings rejected by the Missouri Court of Appeals
- Approved utility investment in EV charging stations

Who Should Own Public EV Chargers?



Who Should Own Public EV Chargers? (continued)

California Evolution of position on utility investment

PUC evaluation of PG&E plan

Unrestricted utility ownership would likely have anticompetitive effects

Private sector has difficulty penetrating multi-unit dwellings and low-income communities

Set limits on utility ownership

30-months of data collection, including issues encountered and lessons learned

Who Should Own Public EV Chargers? (continued)

Maryland (Order No. 88997)

Multiple state policies supporting EVs

Multi-party stakeholder proposal for statewide EV portfolio

In the public interest to allow utilities to own and operate a limited number of public charging stations to jumpstart the deployment of a public EV charging network, reduce EV owner range anxiety in the near term, and lay the foundation for a competitive market to develop

Nevada (Docket No. 17-08021)

2017 legislation creating, among other things, an Electric Vehicle Demonstration Program

PUC-issued regulations provide that utility may own and operate charging stations along the Nevada Electric Highway Corridor

Investment in other charging stations will be reviewed for prudence in a future rate filing

Who Should Own Public EV Chargers? (continued)

District of Columbia

(Order No. 19898)

Not convinced of public necessity for utility ownership of EV charging stations

Directed utility to invest in “make ready” infrastructure to facilitate charging stations

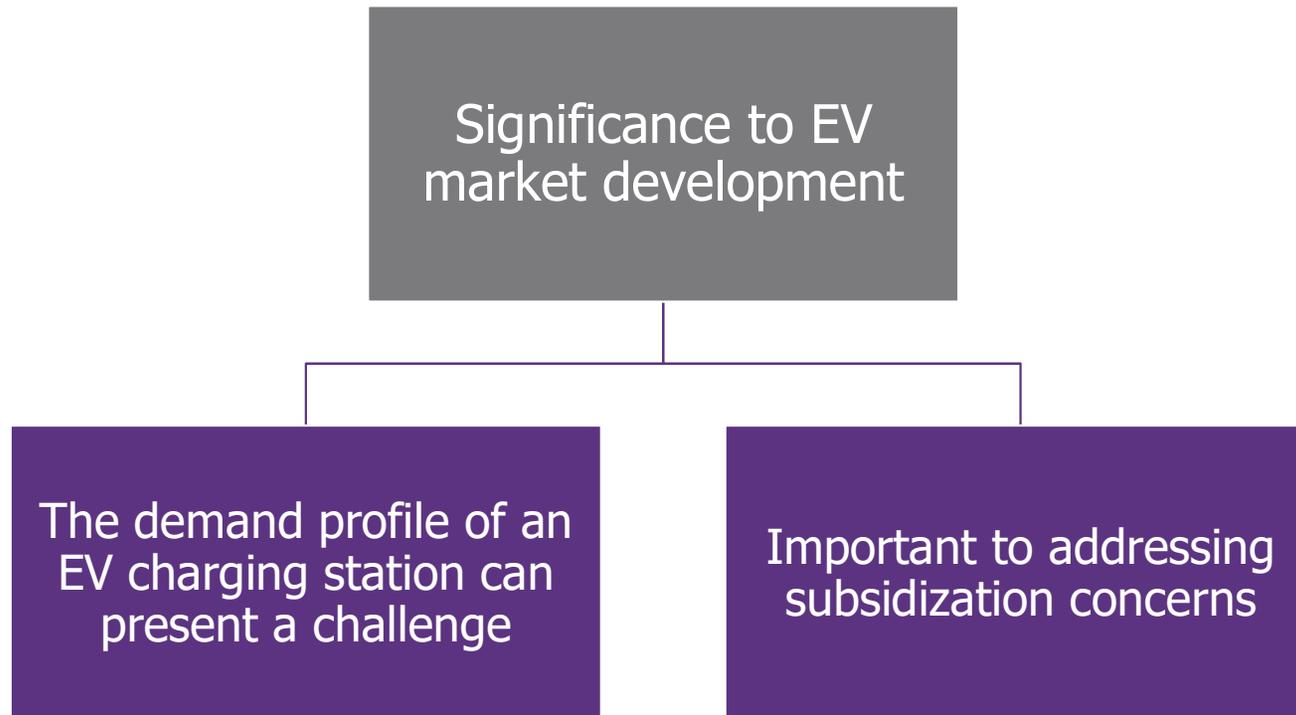
Ohio

(Case 16-1852-EL-SSO and 16-1853-EL-AAM)

Approved a program without utility ownership, but where utility may reimburse up to \$10 million in EV charging station installation cost

Utility eligible to collect a five percent administration fee for administering the rebate program

What Rate Design Should Apply to EV Charging?



What Rate Design Should Apply to EV Charging? (continued)

- Oregon (Pacific Power)
 - DC fast charger rate starts with a demand charge discount of 90% and discount decreases at 10% per year
 - Charging site must be broadly available to the general public
- California (PG&E)
 - The Business Electric Vehicle (BEV) rate replaces the customer charge and traditional maximum kW demand charge with a subscription-based model for monthly kW allocation
 - Peak, off peak and super off peak energy rates
 - Residential TOU rates with winter and summer peak, off peak and super off peak components

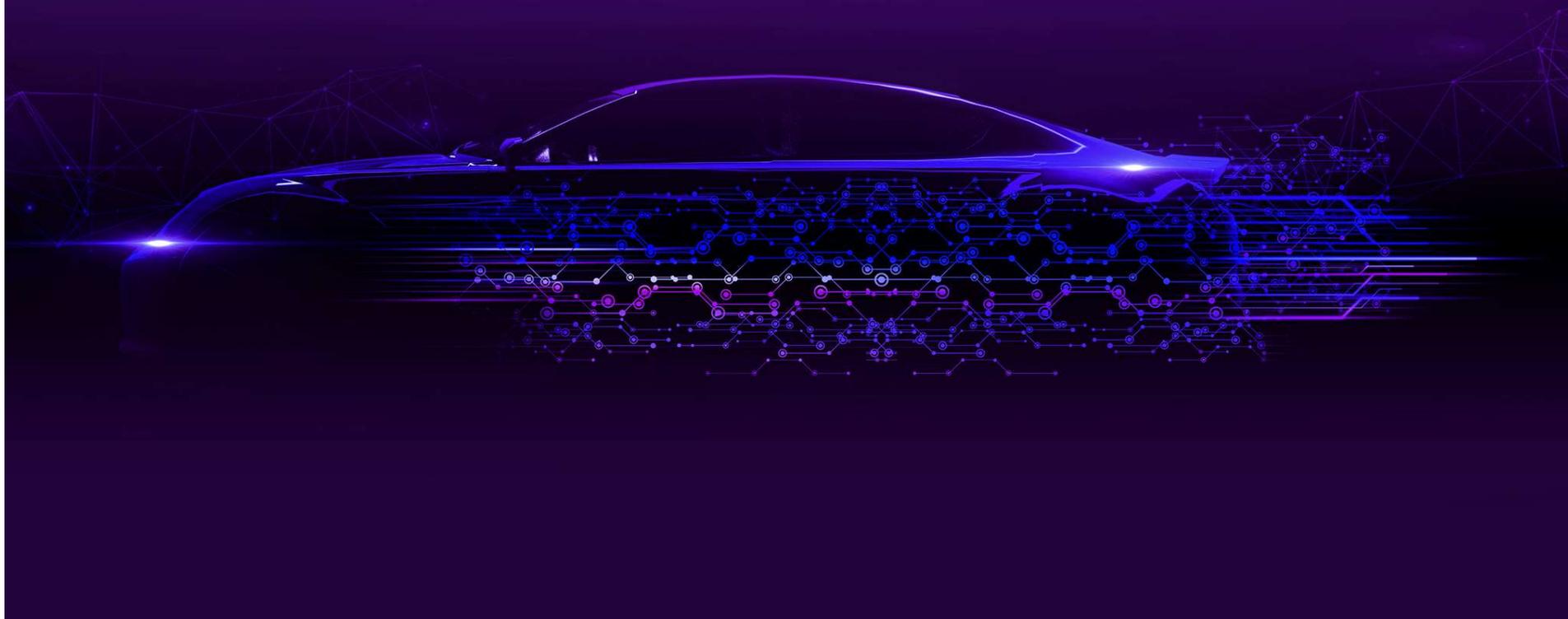
What Rate Design Should Apply to EV Charging? (continued)

RECENT LEGISLATION IN MONTANA (HB456)

- Any rate for providing electric service to an electric vehicle charging station must be designed by the commission to fully recover from the electric charging station customer the full cost of providing the service without subsidization from other customers or customer classes.

SECTION 04

RECENT DEVELOPMENTS IN STATE EV PROGRAMS



New Jersey

January 2020 – New Jersey enacted S. 2252, intended to advance EV growth in the state by offering incentives for EV purchases and setting goals for the development of EV chargers.

May 2020 – The New Jersey Board of Public Utilities (BPU) released a straw proposal for EV infrastructure build-out to advance the statutory targets set by S. 2252.

Utilities must file EV plans pursuant to the BPU's straw proposal by **December 31, 2020**, with proposed implementation commencing no later than April 1, 2021.

New Jersey - Key Issues Posited for Consideration in the BPU Straw Proposal

Who will own and operate the “backbone” infrastructure?

Who will own and operate the charging equipment?

How can the state ensure equitable access to EV charging?

How can utility rate reform encourage EV adoption in the state?

New York

April 2018

New York Public Service Commission (PSC) commenced a proceeding to identify cost-effective approaches for electric utilities to support the build-out of EV infrastructure in the state.

January 2020

PSC Staff issued a Whitepaper estimating that, to accommodate desired growth in EVs, New York State will need up to 50,000 Level 2 chargers, up to 80,000 workplace-sited Level 2 chargers, and up to 4,000 fast chargers, and recommended the adoption of a "Make-Ready Program."

July 2020

The New York PSC issued an Order adopting Staff's proposed "Make-Ready Program" (with modifications) to support the build-out of EV infrastructure.

New York (continued)

- Under the PSC’s program, NY’s utilities are authorized to collect up to \$701 million from customers to incentivize EV infrastructure development.
- Under the Make-Ready Program, incentives will be available to cover up to 50% (for proprietary plug types) or 90% (for standardized plug types) of the cost to make a site “ready” to accommodate EV infrastructure (or up to 100% in disadvantage communities) in utilities’ respective service territories as follows:

	Make-Ready Program	Consolidated Edison	Central Hudson	New York State Electric & Gas	Niagara Mohawk	Orange & Rockland	Rochester Gas and Electric
Workplace Level 2	35,217	12,776	2,091	5,821	10,105	1,765	2,659
Public Level 2	18,556	5,763	1,113	3,458	5,623	1,080	1,519
Total Level 2	53,773	18,539	3,204	9,279	15,728	2,845	4,178
DC Fast Chargers	1,500	457	69	250	504	71	149

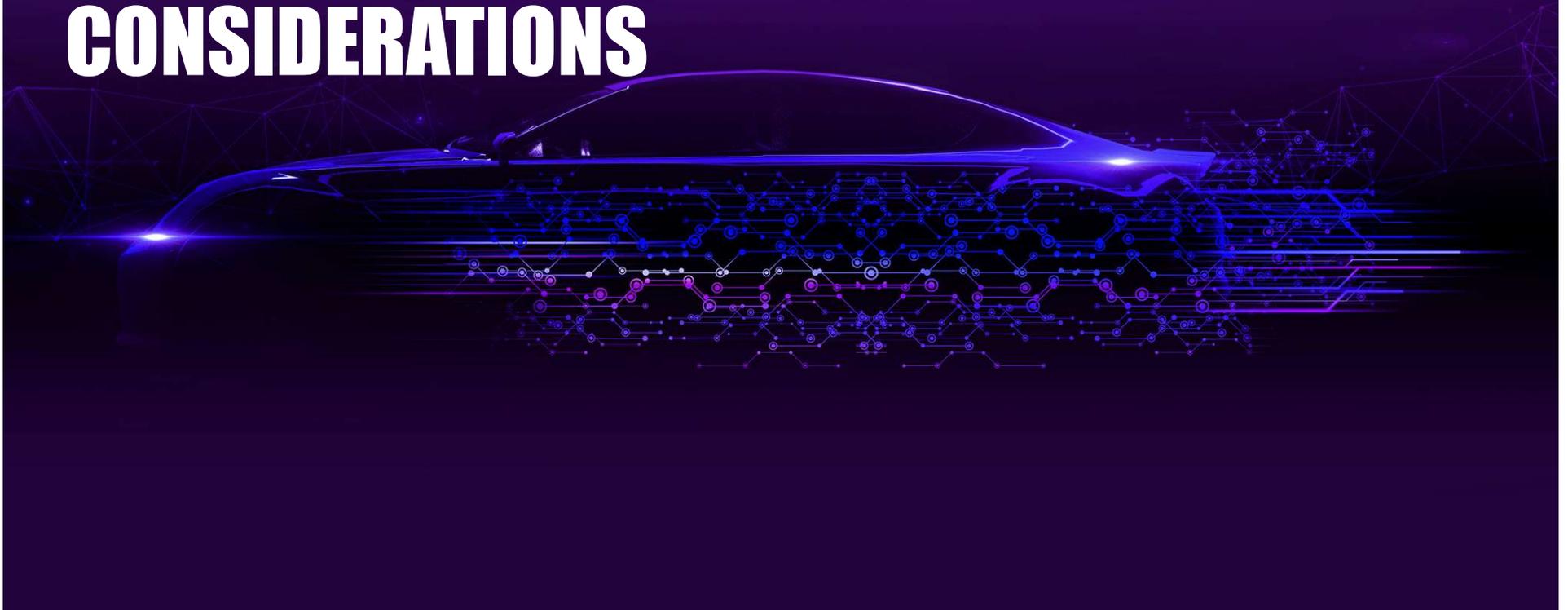
New York (continued)

Utility	Total Make-Ready Incentive Budget
Consolidated Edison	\$233,659,418
Central Hudson	\$21,140,800
NY State Electric & Gas	\$63,754,000
Niagara Mohawk	\$112,118,100
Orange and Rockland	\$19,261,600
Rochester Gas and Electric	\$30,549,700

- Additional programs specified in the PSC Order bring the total authorized spend up to \$701 million, \$206 million of which is to be directed to environmental justice and low- or moderate-income communities.

SECTION 05

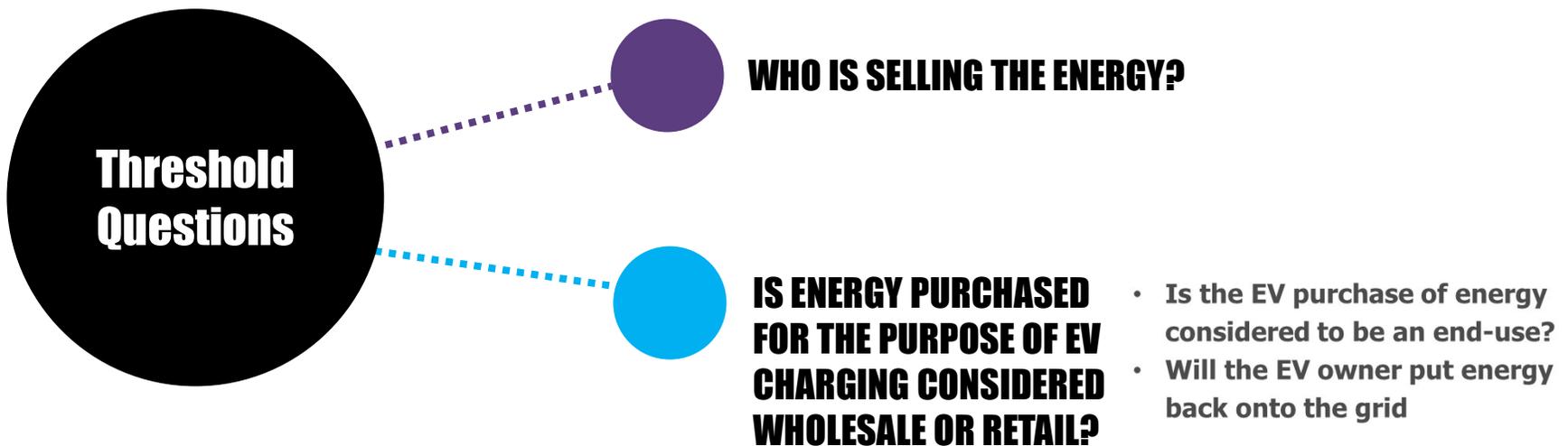
FEDERAL AND STATE JURISDICTIONAL CONSIDERATIONS



Jurisdiction Overview

- Basic Rules:
 - States typically regulate retail electricity transactions
 - FERC has jurisdiction over the transmission and wholesale sales of electricity in interstate commerce
- Retail transactions are generally defined by FERC as “sales made directly to the customer that consumes the energy product,”
- Wholesale sales for resale are defined as “a type of wholesale sales covering energy supplied to other electric utilities, cooperatives, municipalities, and Federal and state electric agencies for resale to ultimate consumers.”

Jurisdiction Overview (continued)



- To date, FERC has not intervened in state decisions regarding the classification and regulation of EV infrastructure. In the absence of clear or comprehensive state policies, some cities and counties have become the de facto regulators of EV charging stations within their regions.

Seller of the Energy

- Jurisdictional oversight *could* vary depending on the nature of the seller of the energy:
 - Because the regulation of wholesale sales of electricity is within the authority of the FERC, charging stations purchasing electricity for resale could be considered a wholesale transaction.
 - Implications: The owner of a charging station could be regulated as a public utility and subject to FERC's regulations over public utilities.
 - Charging stations may be characterized as distribution-level infrastructure that service local loads which fluctuate based on EVs present and that may be required to serve load that is native to another service territory.
 - State regulatory authority is likely to attach if the seller of the energy is making a sale to the individual that is injecting the energy into an EV (i.e. a homeowner plugged into their garage).

Purpose of the Energy Purchase

- Who exercises oversight for energy that is purchased and injected into an EV for use by the owner/operator of the EV?
- Does jurisdictional oversight change if the owner/operator of the EV later injects energy back to the grid?
 - Effectively, an EV is being used as a storage device in this circumstance.
 - Consider applicable netting rules.

QUESTIONS?



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THANK YOU

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