

2021 IRP Stakeholder Update

February 23, 2021



APS Transportation Strategy

Kathy Knoop



APS Electric Vehicle Strategy -

IRP Stakeholder Meeting
February 23, 2021
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Transportation Electrification – long term goals



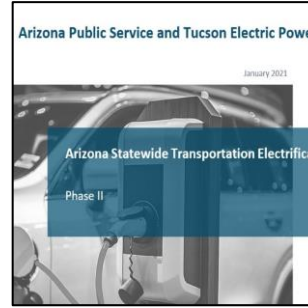
The APS fleet from Bolts to Bucket trucks – **enhancing fleet stewardship**



EVs and the customer experience – **deeper connections and economic growth**



Transportation electrification for emissions reductions – support **ozone attainment status** and **decarbonization**



Strengthening our relationships with vendors, stakeholders, utility partners and regulators to find win/win solutions and collaboration opportunities



Manage EV growth increased load at the right time can lead to downward pressure on rates – **accelerate EV adoption now and educate buyers on charging**

Transportation Electrification (TE) Strategy guiding principles



**Design around
customer needs**



**Provide value for
customers**



Manage EV charging



**Establish stakeholder
support**

Bolts to Bucket trucks – leading by example

Sustainable Fleet

In July 2020, we set a goal of transitioning 30% of our light-duty vehicles and equipment (comprised of forklifts, all-terrain vehicles, golf carts and light-duty passenger vehicles) to electric by 2025 with an aspirational goal of achieving a 100% clean, carbon-free fleet by 2050.



Working with stakeholders and regulators to advance TE across all agencies – a comprehensive approach

Arizona Statewide Transportation Electrification Plan

Electric vehicle (EV) technology has progressed dramatically in recent years and is beginning to create changes to our conventional transportation system. Transportation electrification (TE) can provide significant benefits to EV purchasers and utility customers generally, improves air quality, and aids in the growth of the Arizona economy. To unlock this value, Arizona's electric utilities along with regulatory agencies, policymakers, automakers, third-party charging service providers, and other stakeholders must work together to support EV adoption while also integrating this new load into the existing electricity system.

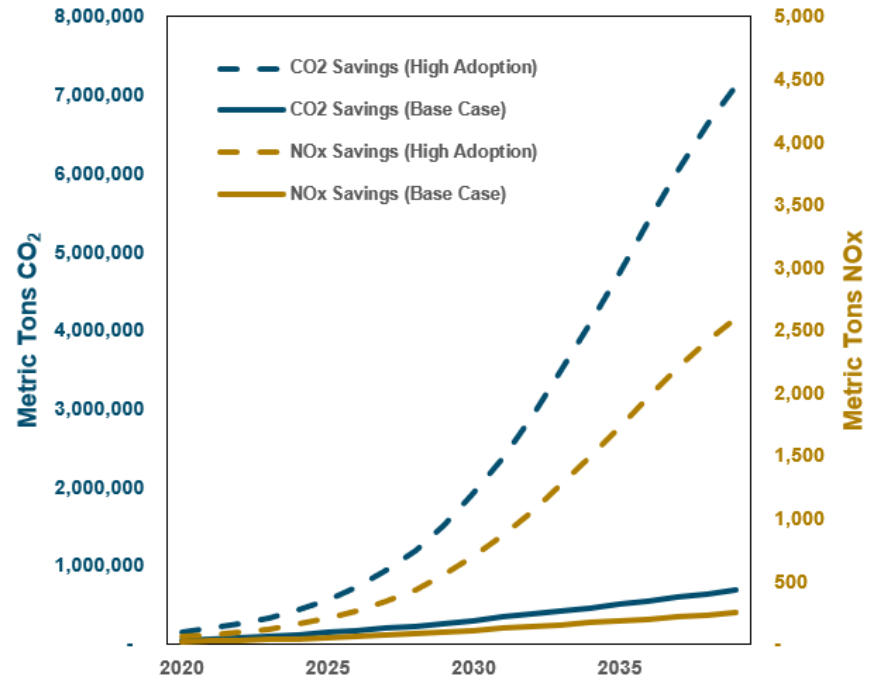
Arizona's Statewide Transportation Electrification Plan is intended to provide a roadmap for TE in our state, focused on realizing the associated air quality and economic development benefits for all residents along with understanding the impact of EV charging on the grid. In 2020, Arizona utilities – Arizona Public Service (APS), Tucson Electric Power (TEP), Salt River Project (SRP) – and other stakeholders will discuss proposed TE programs and initiatives with the ultimate goal of drafting a plan to implement TE in Arizona.



More TE = More emission reduction from transportation



Annual savings



2020 EV market highlights

EV sales increase against a flat or declined overall automotive market

- 1 **Tesla made 500,000 EVs (globally)**

- 2 **Big push for fleet charging business**

- 3 **DC charging power nearing 250 kW**

- 4 **Plug and Charge is here**

- 5 **Autonomous vehicles are hard /Rise of SPACs (and what is one?)**

Plug-in crossovers and SUVs finally started arriving in 2020

Tesla Model Y BEV



BMW X3 PHEV



Audi Q5 PHEV



Toyota RAV4 Prime PHEV



BMW X5 PHEV



Lincoln Aviator PHEV



EV trends: Increasing DC charging power

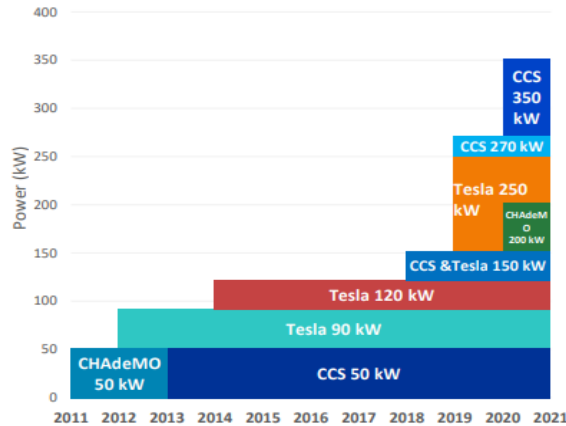
Key market drivers:

DC charging power levels increase

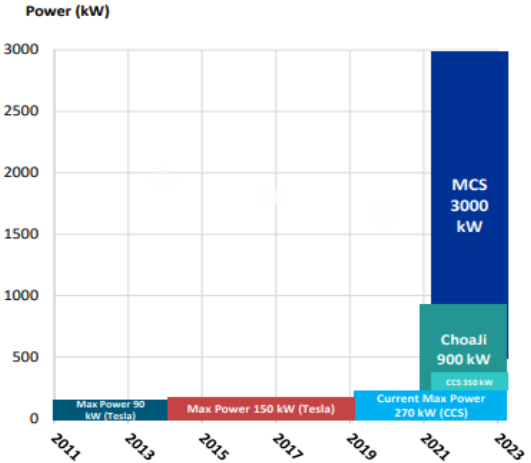
Battery prices decrease

This enables larger EVs as well as lower volume market segments

DC Charging Power Level

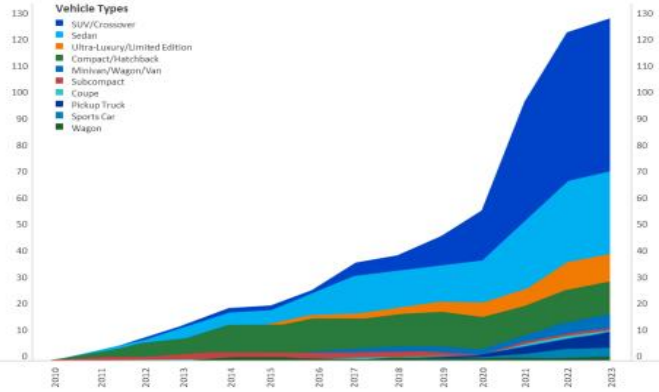
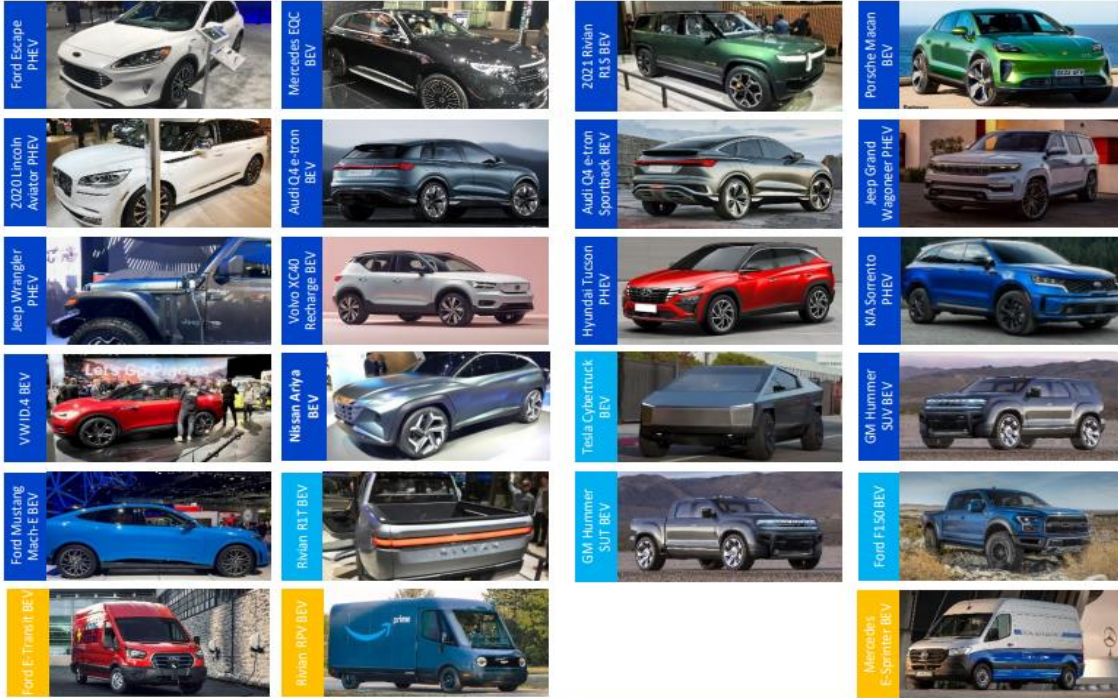


Future DC charging power level



Electric trucks, crossovers, and SUVs arriving in 2021-2022

Key questions focus on announcements versus reality and local availability



2021

2022

Photo credit: Dan Bowermaster, EPRI; Mark Kosowski EPRI; bmwusa.com (media); ford.com (media); www.motortrend.com; www.caranddriver.com (accessed 9/13/2020)