



Energy+Environmental Economics

Arizona Transportation Electrification Plan, Phase II

Modeling Q&A

December 15, 2020 (revised Dec. 18, 2020)



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Adoption Trajectories: 2030 Snapshot



Base Case Adoption, 2030 (vehicles on the road)

Base Case			
Vehicle Segment	APS	TEP	Statewide (scaled)
Personal LDV	94,070	24,094	231,599
Rideshare LDV	6,720	2,584	18,235
MD Parcel Delivery Van	727	279*	1,971
Transit Bus	17	6	45
School Bus	40	16	111

*Note typo in memo distributed last week (correct value is 279, not 229)



Two approaches to the High Adoption trajectory for LDVs

1. 1.076 Million Electric LDVs by 2030

- Directly use Rocky Mountain Institute (RMI) **estimate** of 1.076 million electric LDVs (eLDVs) on the road in Arizona
 - 1.076 million figure generated by scaling down a 2030 nationwide goal of 50 million eLDVs, using 2017 vehicle registration data
 - I.e., ~2.15% of the total nationwide LDV registrations in 2017 were in Arizona
 - $2.15\% * 50 \text{ million eLDVs} = \mathbf{1.076 \text{ million eLDVs}}$
- RMI assumed vehicle population grows ~3% between 2019 and 2030

2. 20% of LDVs Electrified by 2030

- Use RMI **assumption** of 20% of LDVs being electrified by 2030, applied to **Arizona-specific LDV population forecast**
- Arizona vehicle forecast (used in Base case) assumes ~33% vehicle population growth between 2019 and 2030
 - ~7.5 million total LDVs in Arizona in 2030
- Total resulting statewide eLDVs equals **1.479 million**
 - $\sim 7.5 \text{ million LDVs} * 20\% = 1.48 \text{ million eLDVs}$



High Adoption, 2030 (vehicles on the road)

Approach #1: 1.076 Million Electric LDVs by 2030

Vehicle Segment	APS	TEP	Statewide (scaled)
Personal LDV	433,128	87,941	1,021,295
Rideshare LDV	20,160	7,750	54,705
MD Parcel Delivery Van	2,096	806	5,688
Transit Bus	562	216	1,525
School Bus	1,007	387	2,733

1.076 million

No Change

Approach #2: 20% of LDVs Electrified by 2030

Vehicle Segment	APS	TEP	Statewide (scaled)
Personal LDV	595,520	120,912	1,404,207
Rideshare LDV	27,719	10,656	75,215
MD Parcel Delivery Van	2,096	806	5,688
Transit Bus	562	216	1,525
School Bus	1,007	387	2,733

1.479 million

No Change