Electric Vehicles in Delaware

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Outline

- Background
  - Greenhouse Gas Emissions in Delaware
  - Transportation Sector Emissions
  - Electric Vehicles
- Division of Energy and Climate Initiatives
  - Clean Vehicle Rebate Program
  - Alternative Fuel Infrastructure Grant
  - Alternative Fuel Corridors
  - VW Mitigation Fund
  - Regional Partnerships

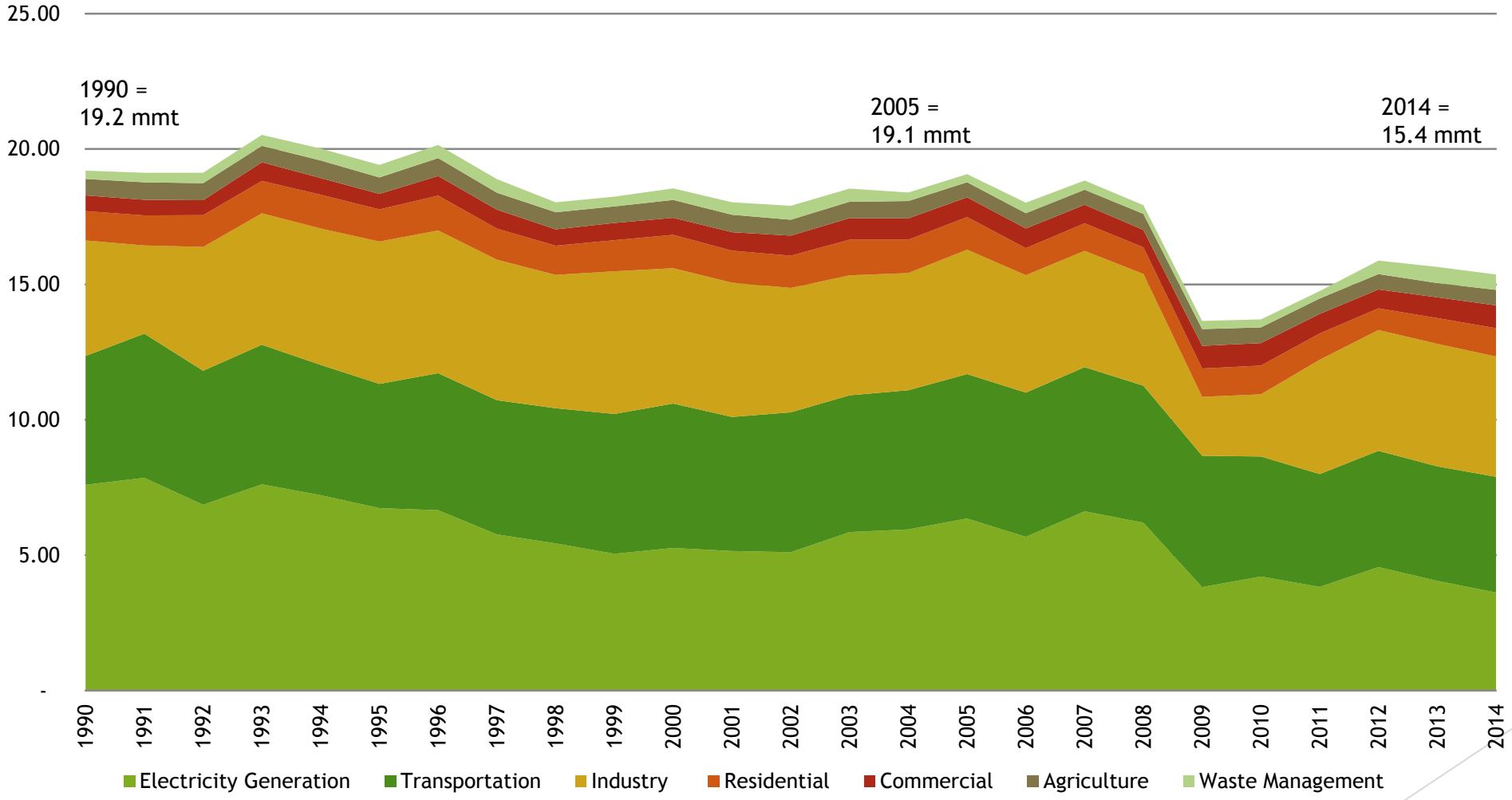
Background

- In 2009, Delaware joined the Regional Greenhouse Gas Initiative (RGGI)
  - 11 states participate
  - Regional cap and trade program
  - Provides funds to Delaware for programs that reduce greenhouse gases in Delaware

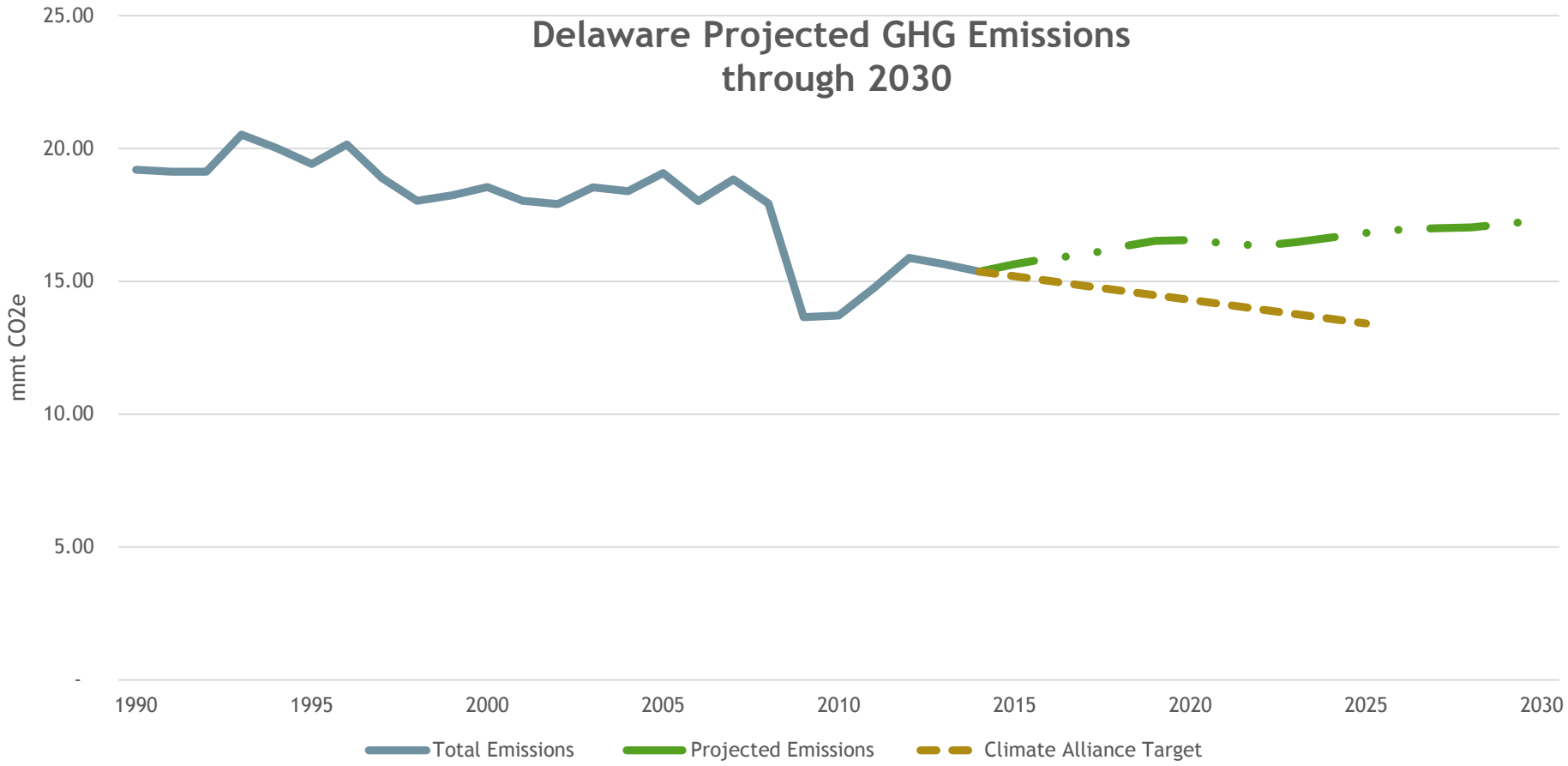
- In 2013, Governor Markel signed Executive Order 41:
  - Directed state agencies develop recommendations to reduce greenhouse gas emissions in Delaware
  - Working group recommended a: 30% greenhouse gas reduction from a 2008 baseline by 2030

- In 2017, Delaware joined the US Climate Alliance
  - A group of 15 states (including Puerto Rico) that agreed to meet the greenhouse gas reduction targets set in the Paris Accord
    - The United States is the only country in the world that has not signed on to the agreement

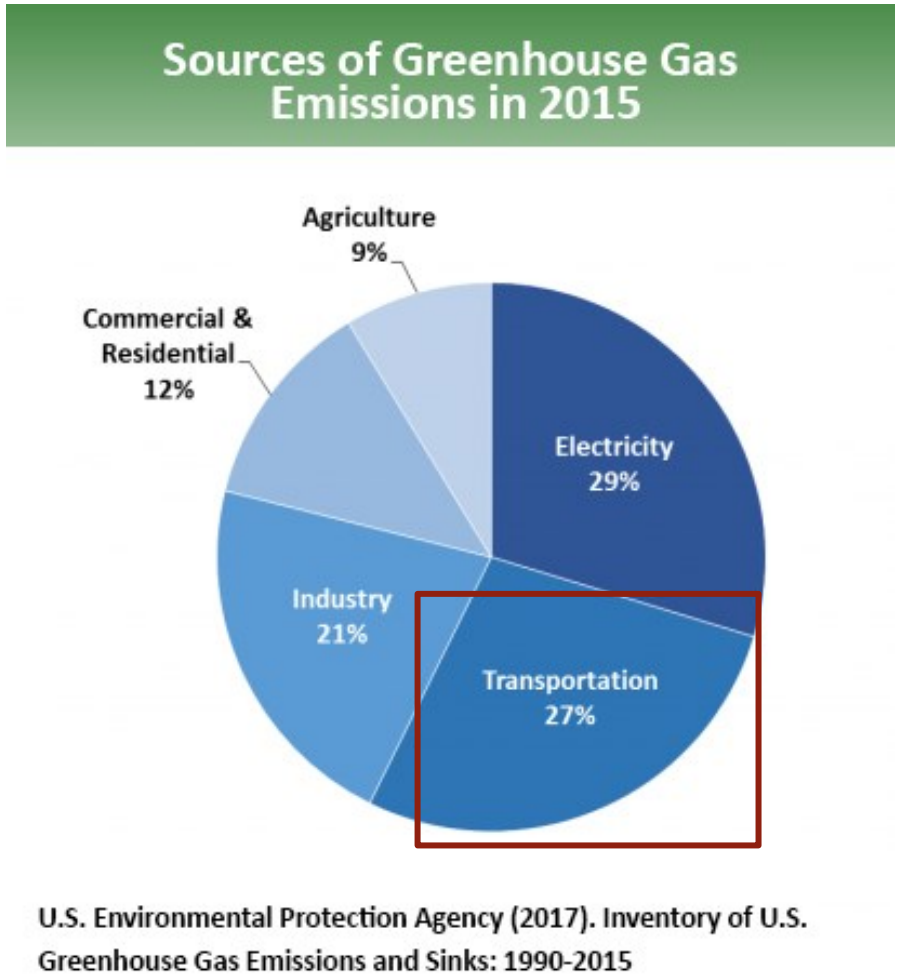
Delaware's GHG Emissions (1990-2014) by Economic Sector (DRAFT)



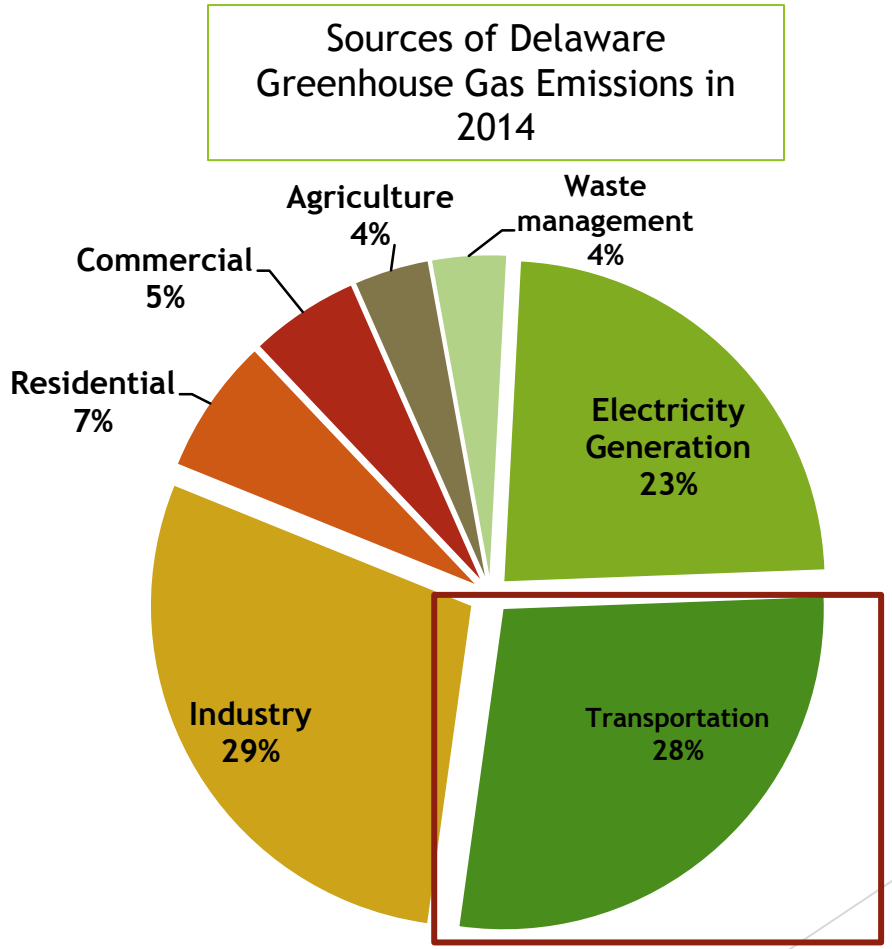
Delaware Still Has Work to do



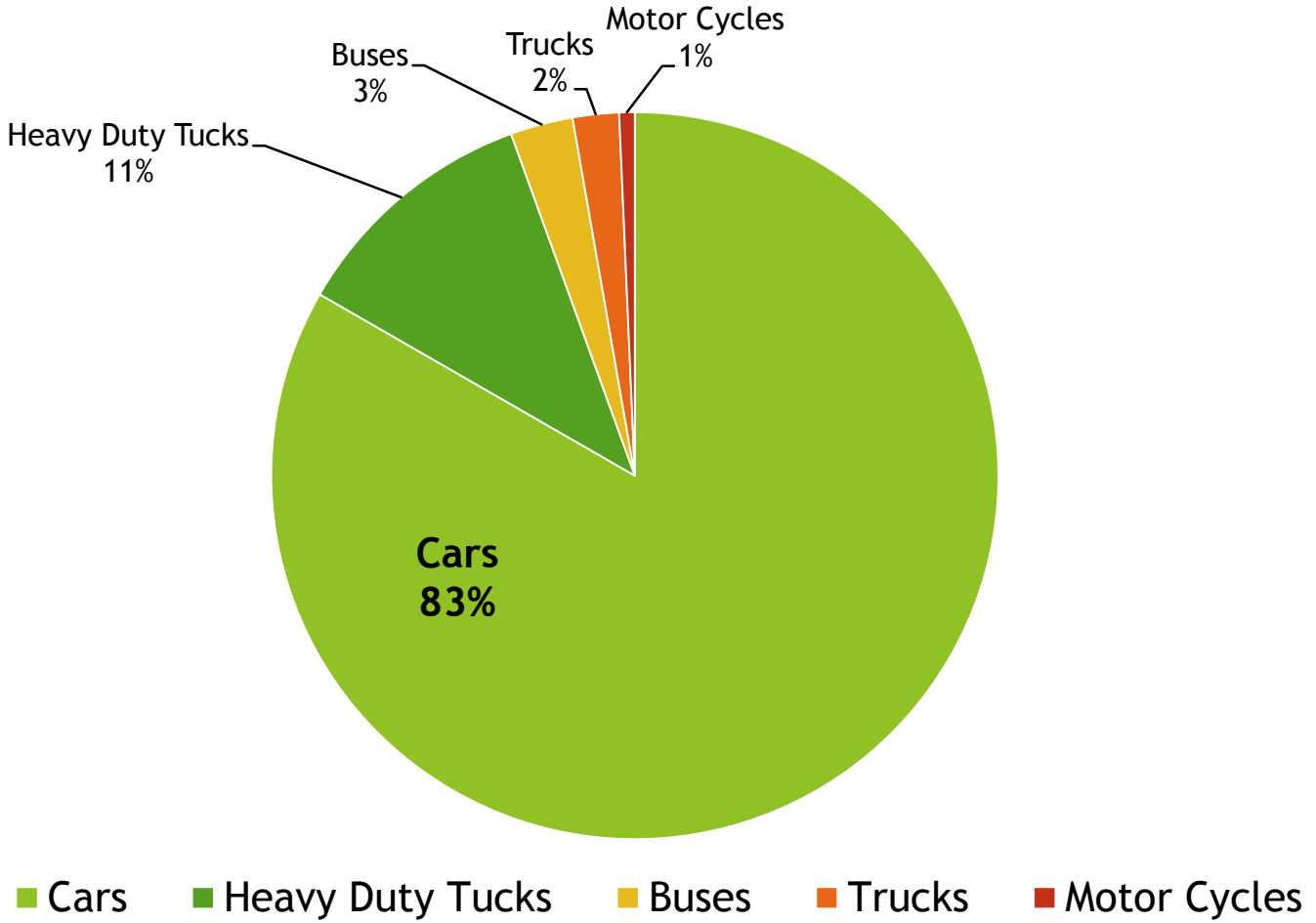
Why Focus on Transportation?



U.S. Environmental Protection Agency (2017). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015



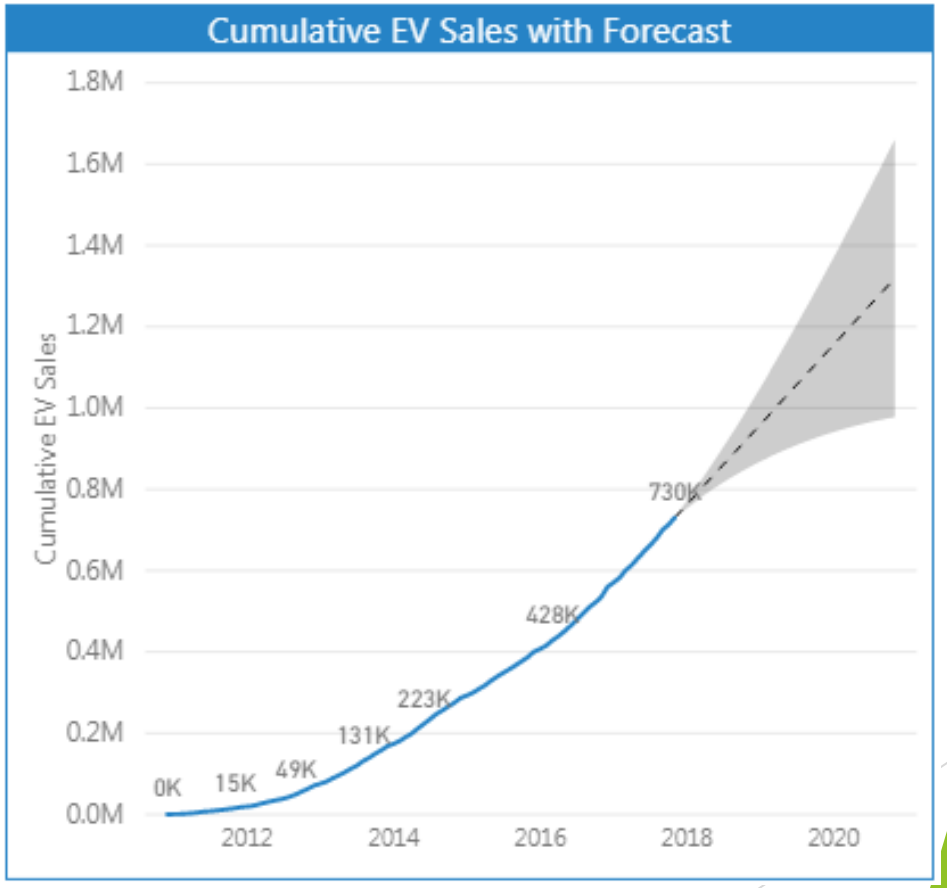
Delaware 2014 Vehicles - Sources of CO_2



Source: DNREC : NEI_2014_2017_09_27_CHG Summary.xlsx

Electric Vehicles

- Considered an alternative fuel under the US Energy Policy Act of 1992
- Three types:
  - Battery electric
  - Plug-in Hybrid
  - Hybrid
- 38 models available
  - 18 Automakers



Source: EV Hub

Electric Vehicles

- While electricity production still emits greenhouse gasses, electric vehicles reduce greenhouse gases by up to 5,790 lbs. annually.
  - As more renewable energy sources are integrated into the grid, emissions from the electricity used to “fuel” an EV will decrease
- More efficient to reduce greenhouse gasses from a power plant than individual cars
- Electric vehicles:
  - Convert about 59%–62% of the electrical energy from the grid to power at the wheels
- Conventional gasoline vehicles:
  - Convert about 17%–21% of the energy stored in gasoline to power at the wheels

Source: FuelEconomy.gov

Initiatives at the Division of Energy and Climate

- Clean Transportation Incentive Program
- Alternative Fuel Infrastructure Grant
- FHWA Alternative Fuel Corridor
- Volkswagen Mitigation Trust Fund
- Regional Partnerships
  - Delaware Clean Cities Coalition
  - Transportation Climate Initiative

Clean Transportation Incentive Program

- Started in July, 2015; revised in November 2016

- Three components:
  - Clean Vehicle Rebate Program;
  - Electric Vehicle Charging Infrastructure Rebate Program;
  - Heavy-Duty Vehicle Rebate Program

- Funding provided through RGGI

Clean Vehicle Rebate Program

- Rebates for:
  - Delawareans
  - Delaware Businesses and non-profits
  - Delaware counties and municipalities
- Individuals are eligible for one rebate
- Businesses and fleets are eligible for six rebates
- Developed a strong relationship with vehicle dealerships in Delaware

Type of Vehicle/Vehicle Technology	Rebate Amount per Vehicle
Battery Electric Vehicles	$3,500
Plug-in Hybrid Electric Vehicles (including gasoline range extenders)	$1,500
Retrofitted Battery Electric and Plug-in Hybrid Electric Vehicles	$1,500
Battery Electric or Plug-in Hybrid Vehicles with MSRP >$60,000	$1,000
Dedicated Propane or Natural GasVehicles	$1,500
Bi-Fuel Propane or Natural Gas Vehicles	$1,350
Heavy-Duty dedicated Natural Gas Trucks (class 7 and 8)	$20,000

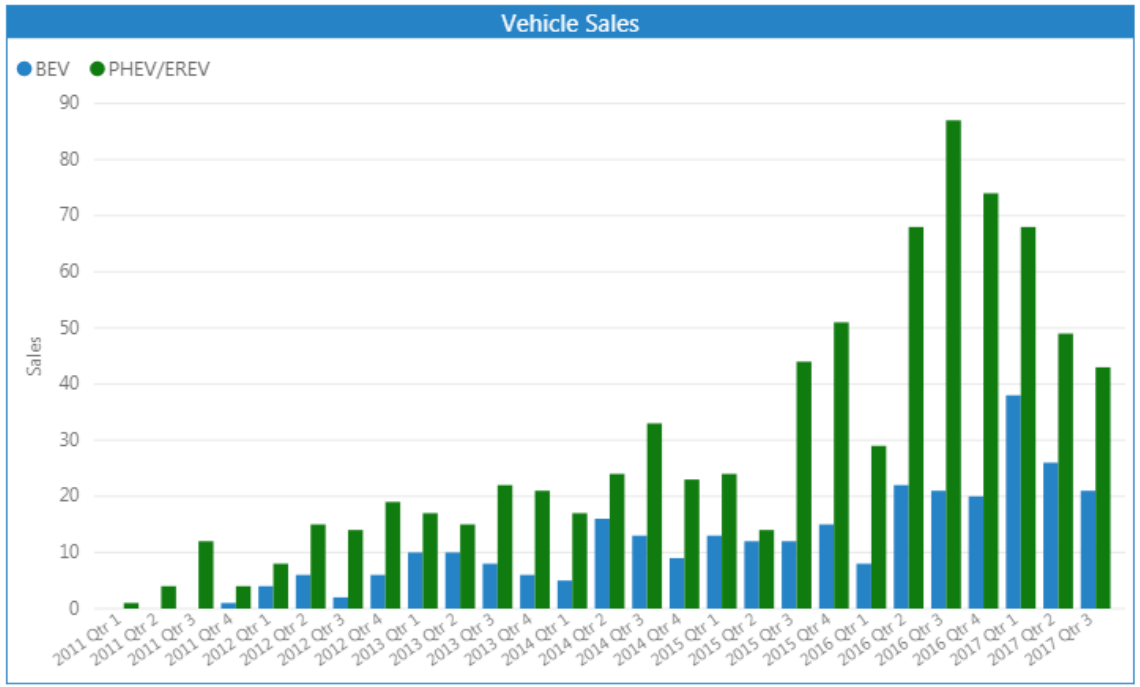
Electric Vehicle Charging Infrastructure Rebate Program

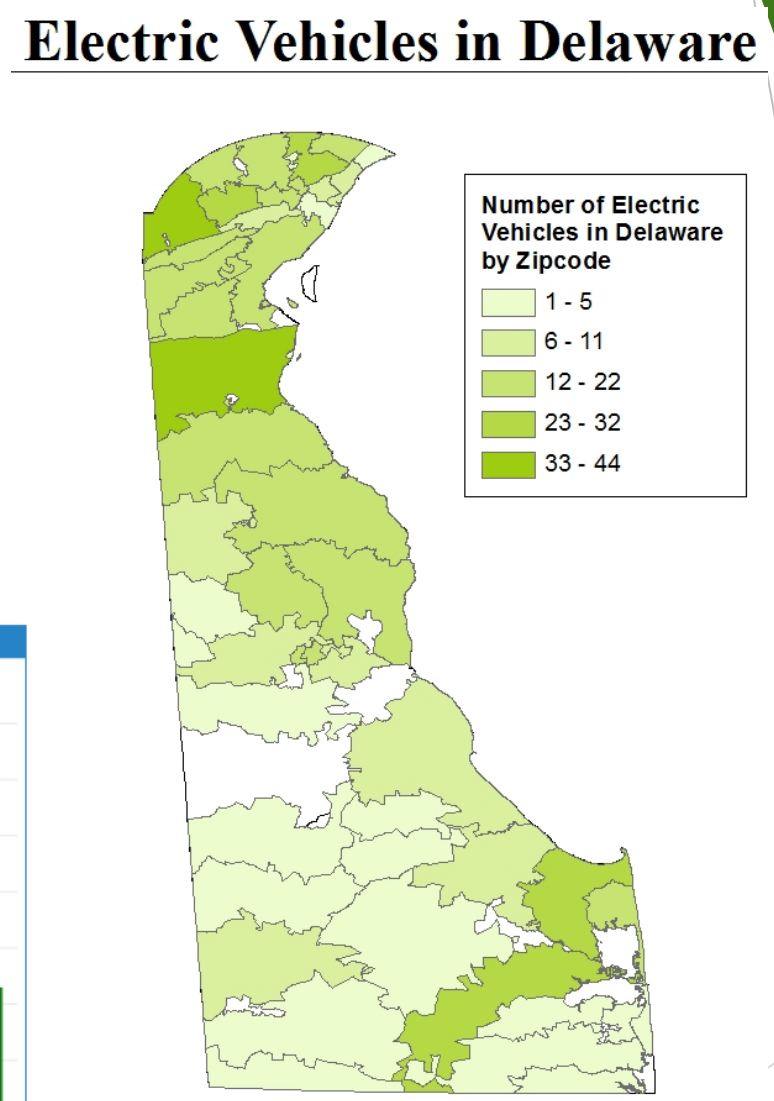
- Level 2 charging stations (220/240 V)
- Rebates for charging station only
  - Labor, electrical upgrades, conduit, etc. are ineligible
- Individuals are eligible for 1 rebate
- Commercial properties and workplaces are eligible for 6 rebates

Electric Vehicle Charging Station Rebates	
Property Type	Rebate amount
Residential	50% of the cost of the EVSE up to $500
Commercial	75% of the cost of the EVSE up to $2,500
Workplace*	75% of the cost of the EVSE up to $5,000

Program Success

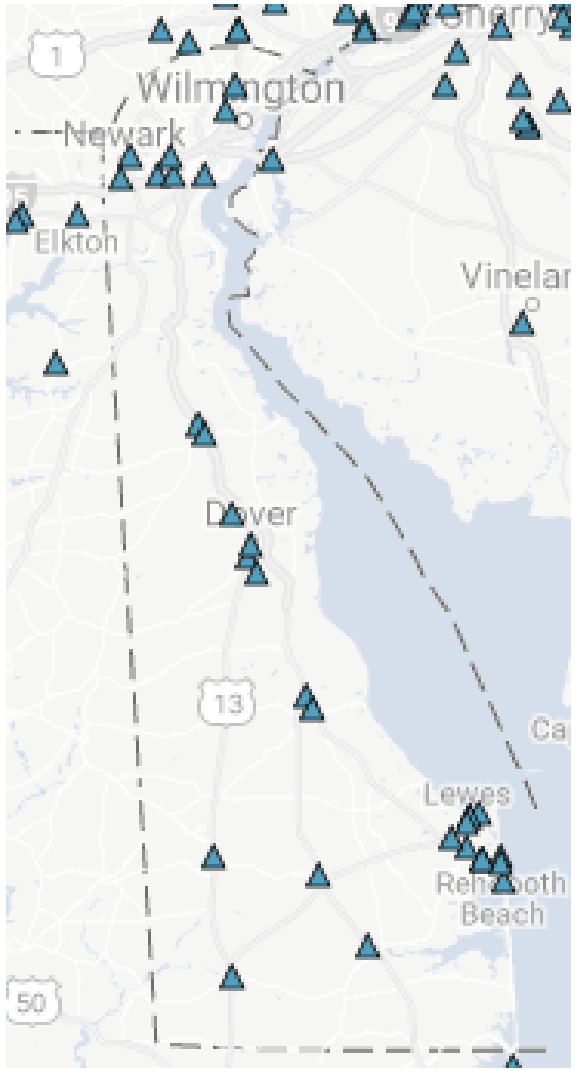
- 562 rebates for electric vehicles
  - All three counties
- 168 rebates for charging stations
  - Mostly residential





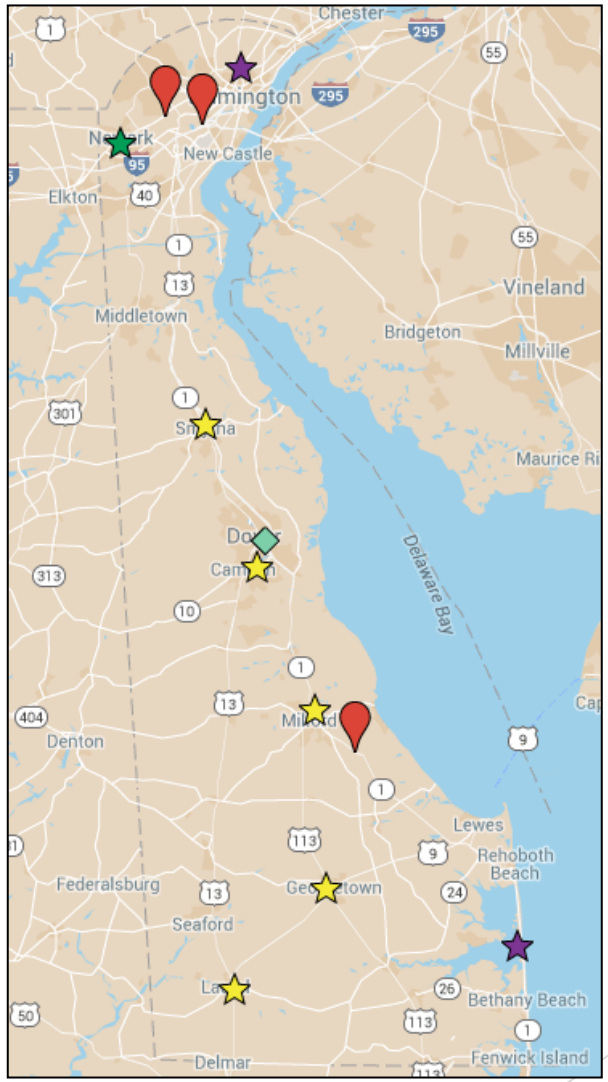
Electric Vehicle Charging Stations in Delaware

- 31 Charging Locations
- 94 Charging Stations
  - 37 DC Fast Chargers (mostly Tesla)
- Gaps:
  - Middletown
  - Wilmington
  - Municipalities
  - Downtowns



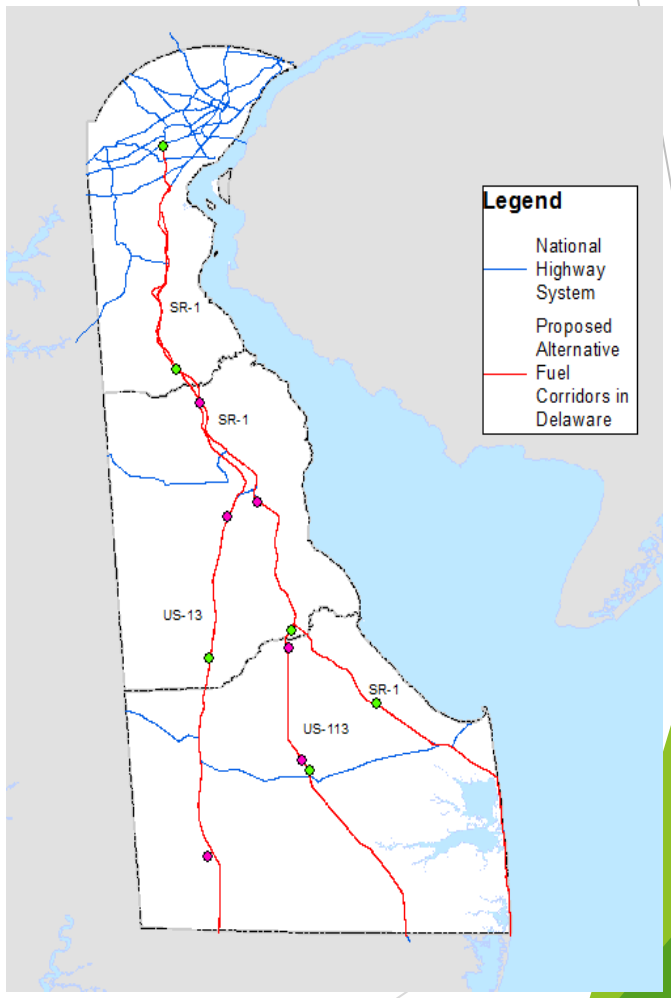
Alternative Fuel Infrastructure Grant

- Competitive Grant
- Grants up to $500,000/project
- Open to:
  - Compressed Natural Gas
  - Propane
  - DC Fast Charging Stations
  - Hydrogen



Alternative Fuel Corridor Nominations

- 2016 a regional nomination was submitted
  - Delaware's component of I-95 was selected as a corridor for electric vehicle charging
- 2017
  - In coordination with DelDOT
  - Required that highways were "signage ready"
  - Submitted a nomination for DC Fast Charging stations along three corridors:
    - DE-SR 1
    - US-113
    - US-13



Volkswagen Mitigation Trust Fund

- In 2016, a Partial Consent Decree was finalized between US Department of Justice and the Volkswagen (VW) Corporation
  - Delaware was awarded ~$9 million (based on number of affected vehicles sold in the state).
  - Delaware must use this money to fund projects that mitigate air quality impacts from high-emitting diesel vehicles and engines.
  - 15% of these funds can go towards EV Charging Infrastructure
  - Funds must be used within 10 years
  - Can only access 1/3 of the funds at a time
- Division of Energy and Climate will be managing EVSE component (~$1.5 million)
  - Division of Air Quality will manage the rest of the funds
- First round of EVSE funding will go to DC Fast Charging Infrastructure

Regional Partnerships

- Transportation Climate Initiative
  - 11 states
  - Focused on increasing alternative fuels in region
  - Looking at market-based policies for Transportation

- Clean Cities
  - US Department of Energy sponsored program
  - Over 100 Coalitions throughout the country
    - Tasked with reducing petroleum use in the United States
  - Delaware Coalition:
    - 40 Stakeholders
    - Promote alternative fuels in Delaware

Conclusion

- The Division of Energy and Climate is looking to mitigate greenhouse gas emissions from the transportation sector
  - Help Delaware meet the goals of the Climate Alliance
- Successful Program
  - Over 550 Delawareans have purchased EVs within the past 2.5 years
  - Available for both businesses and Delawareans
- Regional partnerships:
  - TCI
  - Clean Cities
- Alternative Fuel Infrastructure in Delaware increasing
  - 94 charging stations
  - Volkswagen Settlement Funds for additional infrastructure

Questions?

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