TRANSPORTATION:
LIGHT-DUTY VEHICLES

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LEGAL PATHWAYS TO DEEP DECARBONIZATION IN THE UNITED STATES

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THE TRANSPORTATION SECTOR IS THE LARGEST CONTRIBUTOR OF GHG EMISSIONS

LIGHT-DUTY VEHICLES ARE THE LARGEST SOURCE OF TRANSPORTATION GHG EMISSIONS

- Aircraft: 10%
- Light-duty Vehicles: 59%
- Medium and Heavy-duty Vehicles: 24%
- Pipelines: 2%
- Ships: 2%
- Rail: 3%

DDPP GOALS

Goal #1:
- Increase fuel economy standards in excess of 100 mpg

Goal #2:
- Deploy 300 million alternative fuel vehicles

Reduce greenhouse gases by at least 80% from 1990 levels by 2050
GOAL #1
INCREASE FUEL ECONOMY STANDARDS IN EXCESS OF 100 MPG
GOAL #1: INCREASE FUEL ECONOMY STANDARDS
BIFURCATED LEGAL AUTHORITY

- **Clean Air Act**
  - Emissions
  - EPA

- **Energy Policy and Conservation Act**
  - Fuel Economy Standards
  - NHTSA
GOAL #1: INCREASE FUEL ECONOMY STANDARDS
HISTORIC FUEL ECONOMY STANDARDS

Fuel Economy Standards

GOAL #1: INCREASE FUEL ECONOMY STANDARDS

HISTORIC FUEL ECONOMY STANDARDS

https://one.nhtsa.gov/cafe_pic/CAFE_PIC_fleet_LIVE.html (using all MY years, Total Fleet, Fleet Standards)
Estimated CO₂ Emission Standards under CAFE and SAFE Rules

GOAL #1: INCREASE FUEL ECONOMY STANDARDS

[Graph showing CO₂ emissions from 2016 to 2026 under CAFE and SAFE rules]

- CAFE - Projected CO₂ Emissions Targets
- SAFE - Projected CO₂ Emissions Requirements

Links:
GOAL #1: INCREASE FUEL ECONOMY STANDARDS

FEDERALISM 101

ZEV State Shares of U.S. New LDV Sales

States that have Adopted California’s Vehicle Emissions Standards under Section 177 of the Federal Clean Air Act, CALIFORNIA AIR RESOURCES BOARD (last updated Sept. 27, 2019) [https://www2.arb.ca.gov/resources/documents/states-have-adopted-californias-vehicle-standards-under-section-177-federal](https://www2.arb.ca.gov/resources/documents/states-have-adopted-californias-vehicle-standards-under-section-177-federal)
GOAL #2
DEPLOY 300 MILLION ALTERNATIVE FUEL VEHICLES
GOAL #2: DEPLOY 300 MILLION ALTERNATIVE FUEL VEHICLES

https://nepis.epa.gov/Exe/ZyPDF.cgi/P100W5C2.PDF?Dockey=P100W5C2.PDF

Emissions from Hybrid and Plug-In Electric Vehicles: National Average, U.S. DEPT. OF ENERGY (last visited Nov. 21, 2019)
https://afdc.energy.gov/vehicles/electric_emissions.html
GOAL #2: DEPLOY 300 MILLION ALTERNATIVE FUEL VEHICLES
PATHWAY #1: REDUCE COSTS

2020 Ford Fusion: $23,170

2020 Ford Fusion Energi: $34,595
GOAL #2: DEPLOY 300 MILLION ALTERNATIVE FUEL VEHICLES

PATHWAY #2: FACILITATE INFRASTRUCTURE DEVELOPMENT

- Workplace Charging
- Home Charging
- Charging Corridors

ChargePoint Electric Vehicle
GOAL #2: DEPLOY 300 MILLION ALTERNATIVE FUEL VEHICLES
PATHWAY #3: INTEGRATE ELECTRICITY AND TRANSPORTATION SECTORS

- Very little oil is used for electricity
- Very little electricity is used for transportation
GOAL #2: DEPLOY 300 MILLION ALTERNATIVE FUEL VEHICLES
PATHWAY #4: EDUCATE DRIVERS
ACTION ITEMS

- Maintain 54.5 mpg fuel economy standard for 2025 and ramp up by 2050
- View EVs as grid assets (rise in EVs = rise in electricity demand, V2G programs)
- Work with electric utilities to capitalize on charging patterns and rates
- Maximize EV climate impacts through cleaner electricity resources
- Investments (e.g. infrastructure, education, and battery technologies)
- Harness government purchasing power for EVs
- Plan ahead (provide funding for pilot studies on distribution grid pressures from EVs, secure lithium supply, prepare for lithium battery disposal)
- Think creatively (battery recycling, resale markets, Cash for Clunkers-type program, smart city design, autonomous vehicles, EV-Ready building codes, decouple highway revenues from gas taxes)
THANK YOU

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Light-Duty Vehicle Chapter available at