

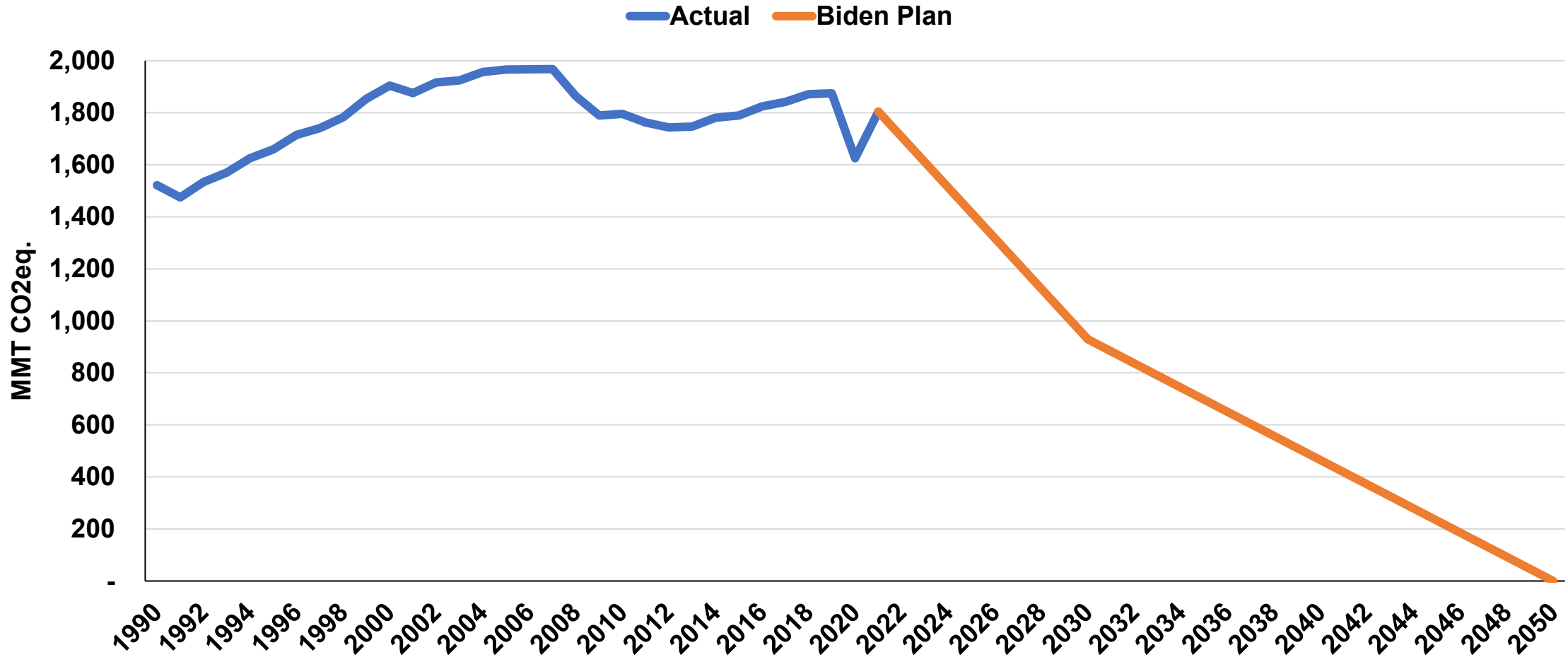
# **Ethanol and the “Energy Transition”**

**Geoff Cooper**  
**Renewable Fuels Association**

# The “Energy Transition”

The global energy sector’s shift away from **high-carbon fossil-based energy systems** to **sustainable low- and zero-carbon renewable energy sources**

# U.S. Transportation Sector GHG Emissions



# **Massive Market Transitions**

- **Take lots of time**
- **Take lots of money**
- **Have unforeseen and unintended consequences**
- **Require some degree of market readiness**
- **Should improve quality of life**

# EPA's 2027-2032 Tailpipe Emissions Proposal



“The proposed standards are projected to **accelerate the transition to electric vehicles.**”

“EPA projects that **EVs could account for 67% of new light-duty vehicle sales** and 46% of new medium-duty vehicle sales in 2032.”

# 278,063,737

Registered Cars, Vans, SUVs, Pickups, Motorcycles in U.S.

# 3,422,343

are Battery or Plug-in Hybrid Electric Vehicles

# 1.2%

Of Current Fleet is Battery or Plug-in Hybrid Electric Vehicles

Sources: Federal Highway Administration; Argonne National Laboratory

**1900**

**Fifth Avenue, New York City  
Easter Morning**



**1913**

**Fifth Avenue, New York City  
Easter Morning**



# Top concerns cited by EV owners and potential EV buyers:

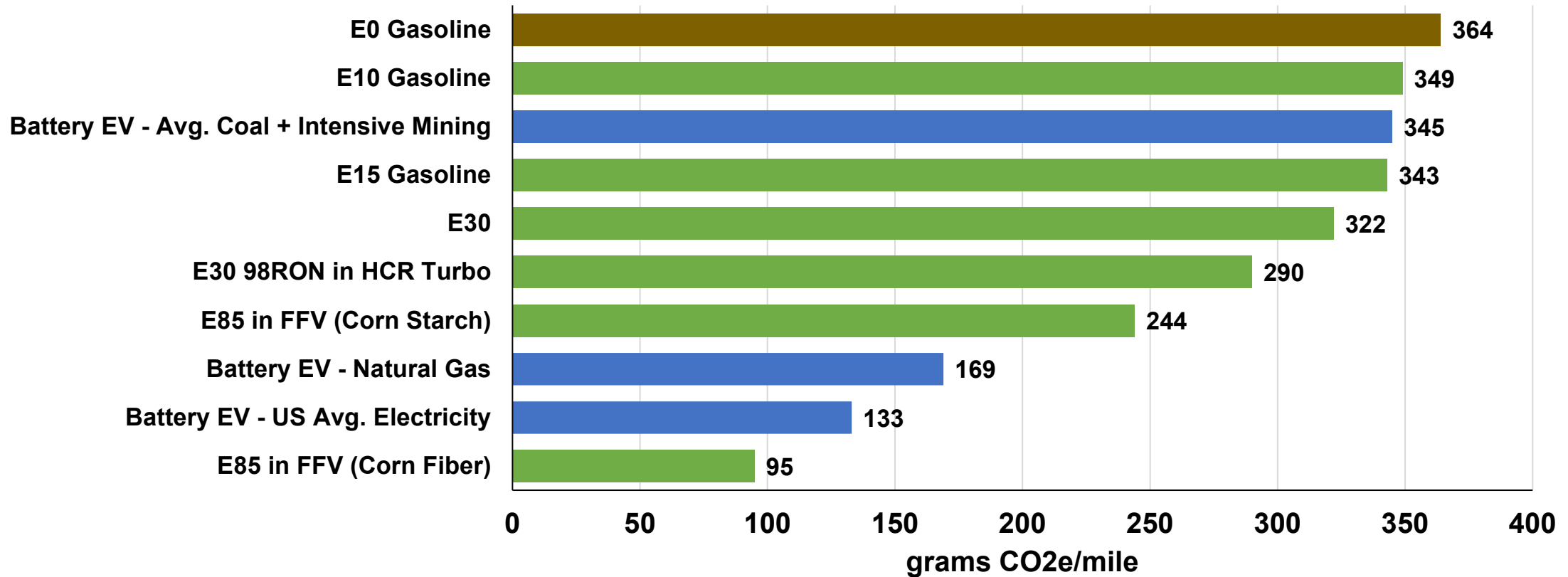
- Higher purchase price
- Higher insurance costs
- Higher costs for parts and repair
- Lower resale value
- Range anxiety
- Lack of charging stations
- Unreliability of chargers
- Need to install home charging
- Length of time to charge
- Cold/hot weather performance issues
- Battery fires
- Heavier vehicle weight/crashworthiness
- Reliance on foreign minerals/batteries
- Power outages/grid reliability

Rivian R1T EV Pickup Combusts at Electrify America Charging Station



# Comparing Lifecycle Emissions

## Mid-Size SUV: Lifecycle GHG Emissions (Upstream + Tailpipe)



Sources: DOE Argonne GREET1\_2022; DOE/EPA Fueleconomy.gov; Int. Energy Agency  
Assumes corn starch ethanol CI of 53 g/MJ and corn fiber ethanol CI of 25 g/MJ



**44-52%**

**Average Reduction in GHG Emissions Compared to Gasoline<sup>1</sup>**

**70%**

**Average GHG Reduction Expected by 2025-2030**

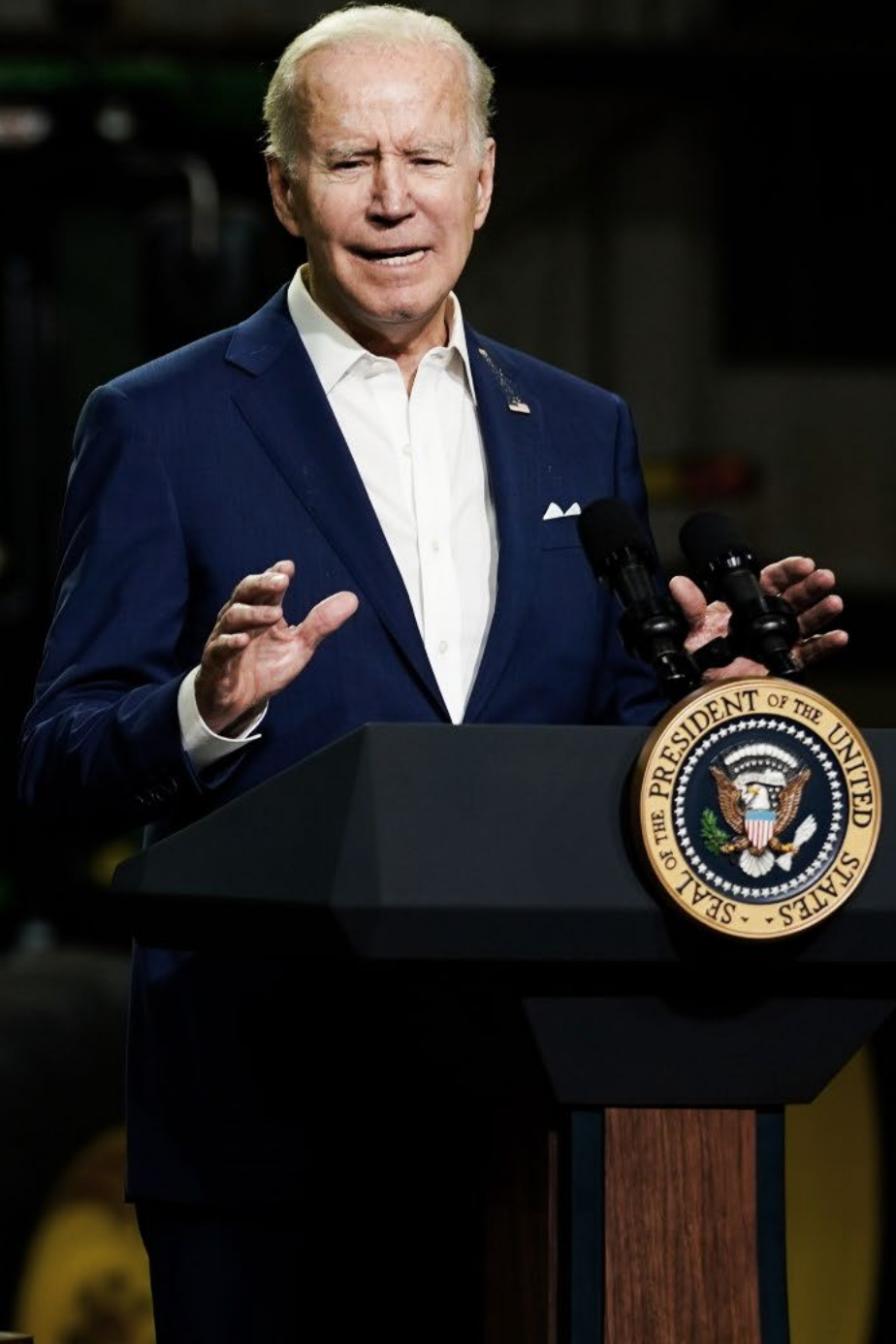
**100%+**

**GHG Reduction Possible by 2040-2050 (“Net Zero”)**

1. Dept. of Energy Argonne National Laboratory; Environmental Health & Engineering, Harvard University, MIT, Tufts University

**“You simply can’t get  
to net zero by 2050  
without biofuels.”**

***— President Joe Biden  
April 12, 2022***



# **Inflation Reduction Act**

- **Clean Fuel Production Credit (up to \$1/gal.)**
- **Sustainable Aviation Fuel Credit (\$1.25-1.75/gal.)**
- **Extended/expanded CCUS Credit (\$60-85/MT)**
- **\$500 Million Higher Biofuel Blend Infrastructure**
- **\$20 Billion in Ag Conservation/Carbon Programs**



POWERED BY  
ETHANOL AND ELECTRICITY

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