U.S. Transportation Update

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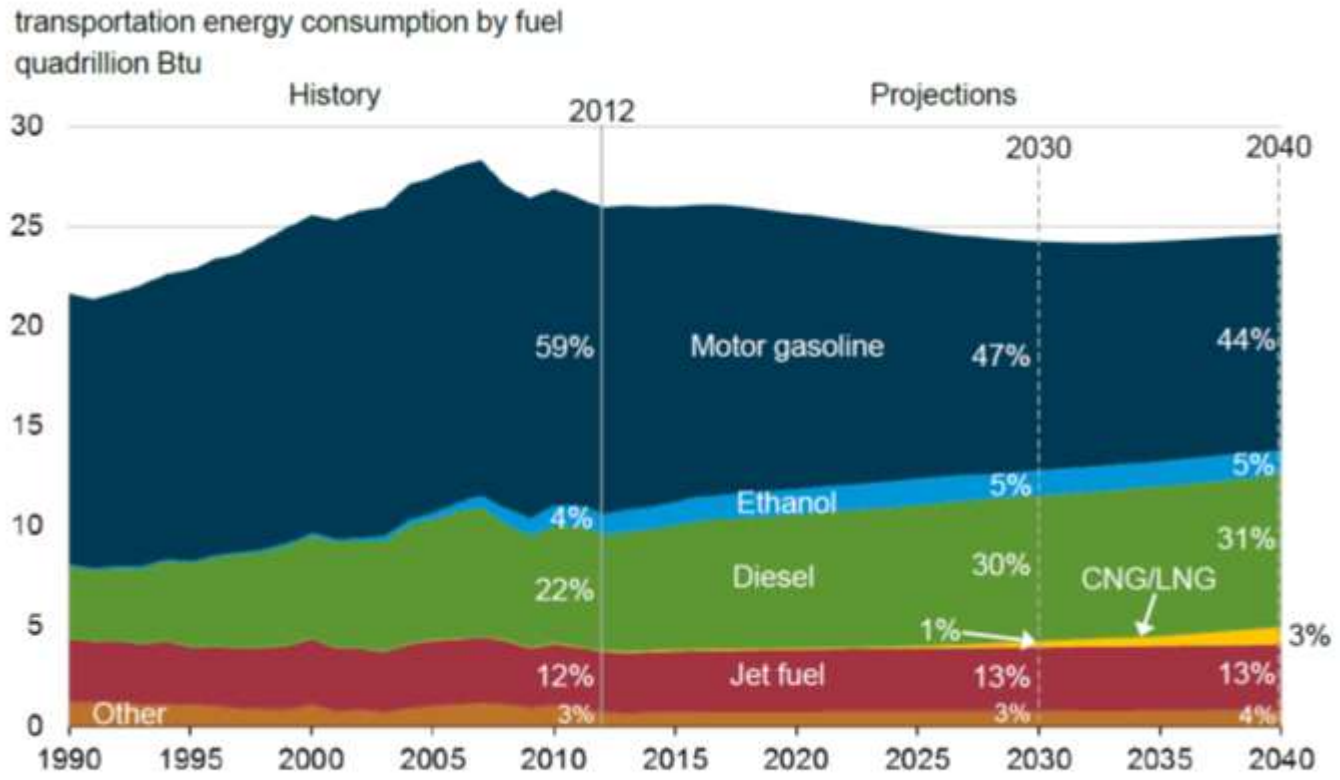
U.S. Key Results from the AEO2014 Reference Case*

- Growing domestic production of natural gas and oil continues to reshape the U.S. energy economy, with crude oil approaching the 1970 all-time high of 9.6 million barrels per day
- Light-duty vehicle energy use declines sharply reflecting slowing growth in vehicle miles traveled and accelerated improvement in vehicle efficiency
- With continued growth in shale gas production, natural gas becomes the largest source of U.S. electric power generation, surpassing coal by 2035, and boosting production and natural gas consumption in manufacturing
- Strong growth in domestic natural gas production supports increased exports of both pipeline and liquefied natural gas
- With strong growth in domestic oil and gas production, U.S. dependence on imported fuels falls sharply
- Improved efficiency of energy use and a shift away from carbon-intensive fuels keep U.S. energy-related carbon dioxide emissions below their 2005 level through 2040

*http://www.eia.gov/forecasts/aeo/er/early_consumption.cfm

Transportation sector motor gasoline demand declines, while diesel fuel accounts for a growing portion of the market



Source: EIA, Annual Energy Outlook 2014 Early Release

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Transportation Energy Efficiency within the DOE Vehicle Technology Office*

- The U.S. Department of Energy on August 14, 2014 announced the investment of more than $55 million for 31 new projects to accelerate the research and development of critical vehicle technologies that will improve fuel efficiency and reduce costs
- These new projects aim to meet the goals of the Energy Department's EV Everywhere Grand Challenge, a broader initiative launched in March 2012 to make plug-in electric vehicles (PEVs) as affordable and convenient to own and drive as today's gasoline-powered vehicles by 2022

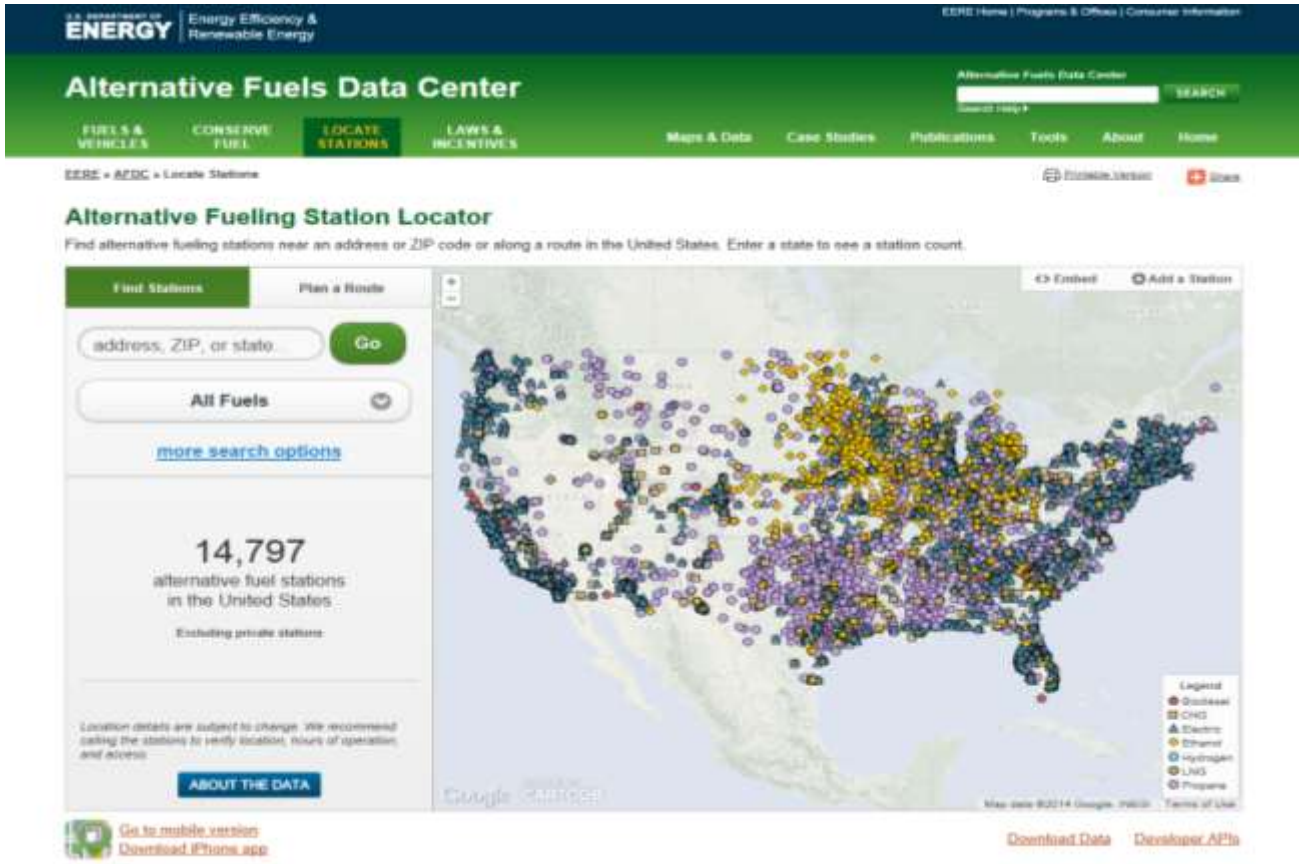
*http://energy.gov/eere/vehicles/vehicle-technologies-office

New $55 million for 31 projects directed at accelerating R&D of critical vehicle technologies to improve fuel efficiency*

- Critical technologies to meet the EV Everywhere Grand Challenge
  - 19 projects to reduce costs and improve performance of key PEV components
    - Development of low-cost, high strength automotive aluminum sheet
    - Beyond lithium ion technologies
- Fuel efficiency improvements in passenger vehicles and commercial trucks:
  - 12 projects including dual-fuel/bi-fuel technologies
    - Tire efficiency
    - Powertrain friction and wear reduction

*http://www.energy.gov/articles/energy-department-invests-more-55-million-advance-efficient-vehicle-technologies

Alternative fuels are a U.S. transportation priority*



*http://www.afdc.energy.gov/locator/stations/

SuperTruck is making leaps in fuel efficiency*

his Class 8 tractor-trailer by heavy-duty manufacturers Cummins and Peterbilt reaches more than 10 miles per gallon under real orld driving conditions. The truck was on display at the Energy Department today. | Photo by Sarah Gerrity, Energy Department

- The program goal is to develop tractor-trailers that are 50% more efficient than baseline models by 2015

*http://energy.gov/eere/articles/supertruck-making-leaps-fuel-efficiency

Thank you for your attention!

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