Annual Energy Outlook 2016

Modeling updates in the transportation sector

For
AEO2016 Working Group
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AEO2016 Transportation Demand Model Updates

• Domestic and international marine - International Convention for the Prevention of Pollution from Ships (MARPOL)

• On-road vehicles
  – Light duty vehicles (LDV)
  – Heavy duty vehicles (HDV)

• Side cases
MARPOL impacts fuel and technology choice

• MARPOL emission controls and fuel standards

  – Reflect enacted standards for domestic and international vessels operating in Emission Control Areas (ECA)
  – ECAs extends up to 200 nautical miles from coasts of the United States (March 26, 2010)
  – Reflect ship efficiency improvements, shipping demand changes, and fuel price fluctuations
MARPOL impacts fuel and technology choice

- ECA fuel standard or equivalent exhaust gas cleaning devices
  - Sulphur at 10,000 ppm in 2010
  - Sulphur at 1,000 ppm in 2015

- Global fuel standard or equivalent exhaust gas cleaning devices
  - Sulphur at 35,000 ppm in 2012
  - Sulphur at 5,000 ppm in 2020 (subject to change based on a 2018 fuel study)

Light duty vehicle updates impact fuel usage and regional analysis

- Update historical new light-duty vehicle attribute and fuel economy data through 2013
- Update light-duty vehicle stock, sales and travel demand by Census division through 2014
- ZEV mandates
  - Update model to reflect current ZEV mandates and credits
Light-duty vehicle CAFE compliance

Source: U.S. Department of Transportation, Summary of Fuel Economy Performance, 2014
Heavy duty vehicle updates impact fuel usage and regional analysis

• Update heavy-duty vehicle stock, sales and travel demand by Census division through 2014

• Heavy duty vehicle model updates
  – New technologies
  – Expand and realign compliance classifications from 13 to 20 (including trailers)
  – Restructure industrial output categories

• Side case
  – Phase 2 of the MDV/HDV GHG and fuel efficiency standards
    • Still trying to determine how to handle trailers in model
    • Will be reaching out to the EPA to discuss drive cycle changes
Percent diesel heavy duty vehicles on road by Census division

Source: 2014 Polk data

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Percent gasoline heavy duty vehicles on road by Census division

Source: 2014 Polk data
Comments/discussion

• Pressing suggestions for AEO2016

• Comments or suggestions for AEO2017
  – Contact Transportation Team if interested in taking part in topical Working Group meetings next year
Discussion/questions

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