

The U.S. Energy Outlook



2011 EIA Energy Conference

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Overview

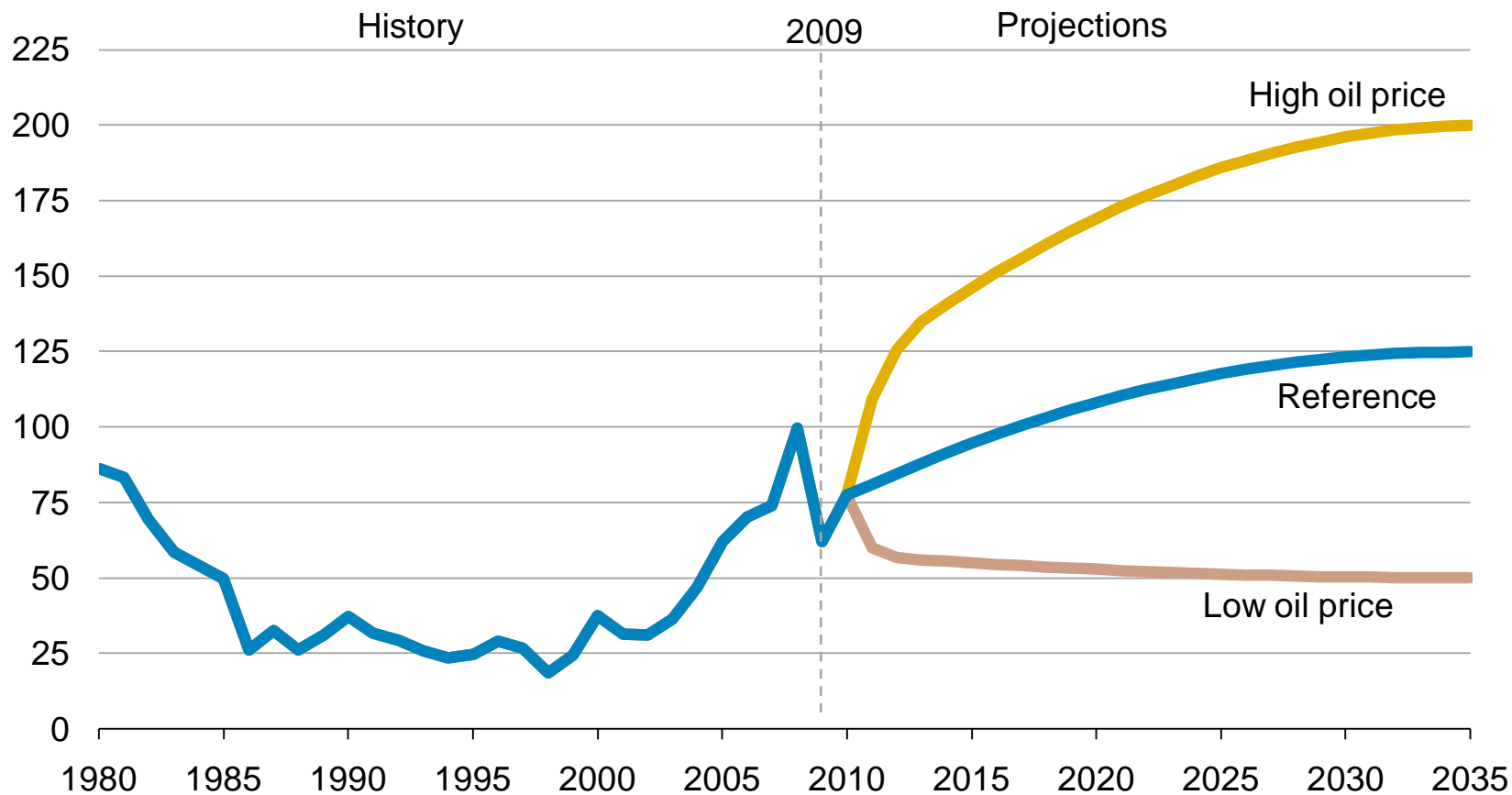
- AEO2011 scenarios/sensitivity cases
- Impact of different world oil prices on supply and demand
 - Alternative world oil prices
 - Liquid fuels supply and demand
- Impact of alternative vehicle efficiency standards on vehicle fleets
 - Vehicle efficiency standards
 - U.S. light duty vehicle sales
- Alternative shale gas recovery assumptions on natural gas supply
 - Wellhead natural gas prices
 - Natural gas supply
- Impact of alternative environmental regulations on energy use
 - Power sector electricity generation
 - Electricity generation by renewable fuels
 - U.S. CO₂ emissions

AEO2011 scenarios – a new record

- Reference
- High and Low Economic Growth
- High and Low Oil Price (Traditional and High and Low non-OECD Growth) (4)
- Building Technology Cases (2010, High, and Best Available)
- Industrial Technology (2010 and High Technology)
- High and Low Technology Cost for: Transportation; Nuclear; Fossil; Renewable; Coal; Plant Capital Costs (12)
- Rapid and Slow Oil and Gas Supply Technology
- High and Low LNG
- Integrated High and Low Technology
- High and Low Shale Recovery factors and Ultimate Recovery (4)
- Outer continental shelf: High Resources, High Costs, Limited Access
- High and Low E15 Penetration
- Low Carbon Dioxide Enhanced Oil Recovery (2)
- Policy related: Extended Policy, No Sunset, and Expanded Standards and Expanded Standards and Codes, No Greenhouse Gas Concern, FGD Scrubber Retrofit Required (4), Air Transport + 90% Mercury MACT (2)
- Light-duty Vehicle CAFE Growth of 3% and 6% and Heavy-duty Truck Fuel Economy Standards

Oil prices in the Reference case rise steadily; the *AEO2011* includes a wide range of prices

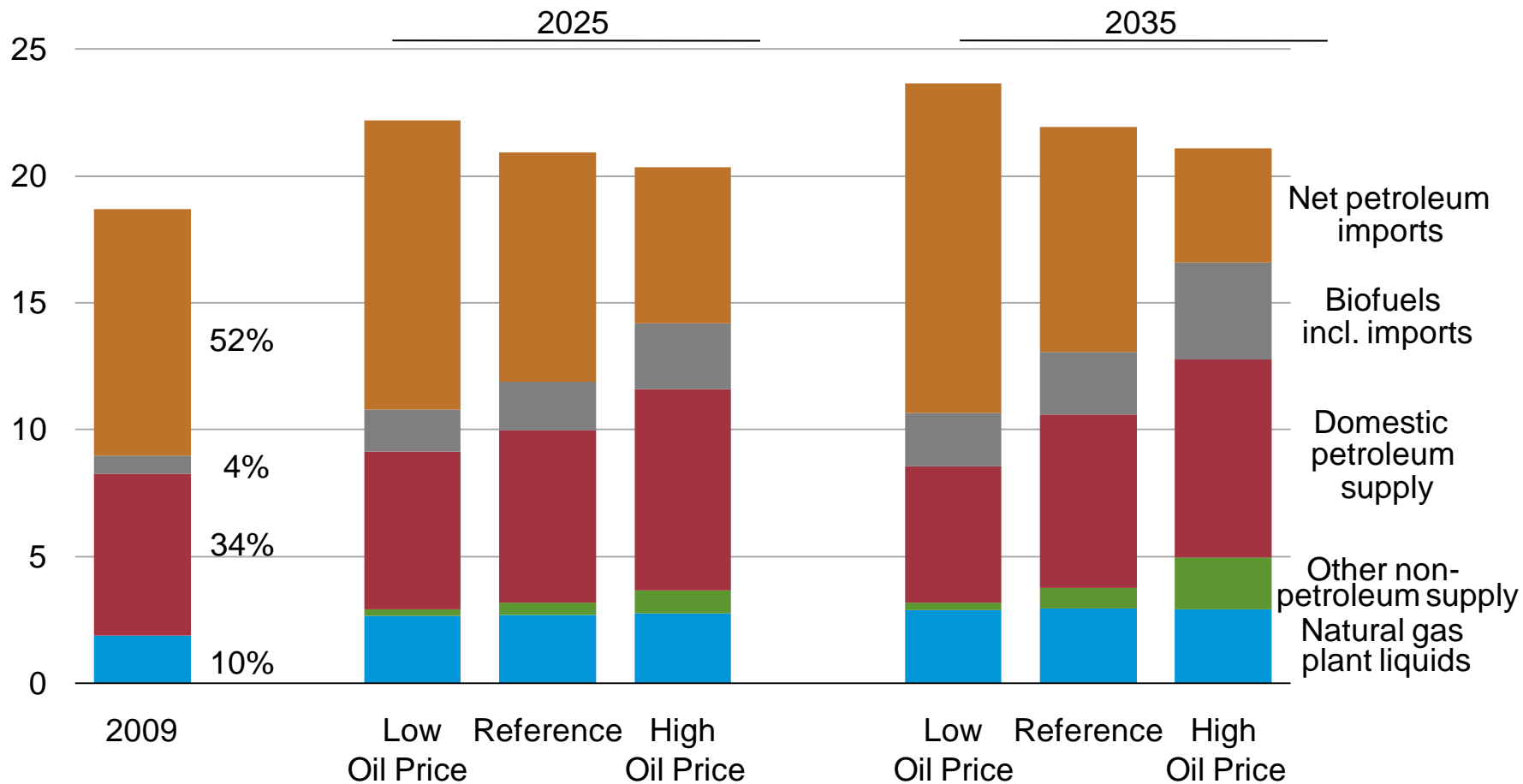
average annual price of imported low sulfur light crude oil
2009 dollars per barrel



Source: EIA, Annual Energy Outlook 2011

U.S. imports of liquid fuels fall due to increased domestic production – including biofuels – and greater efficiency

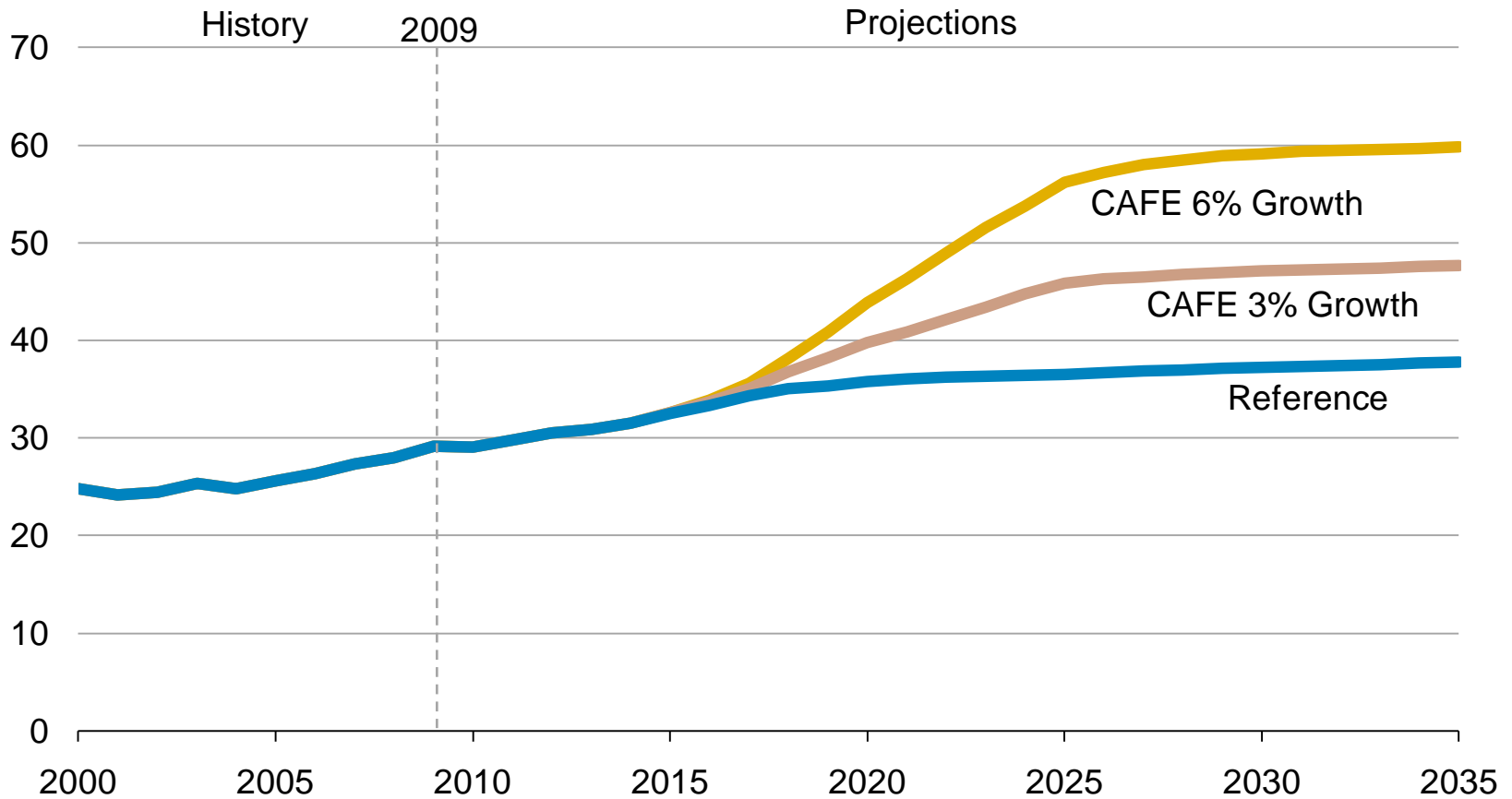
U.S. liquid fuels consumption
million barrels per day



Source: EIA, Annual Energy Outlook 2011

New light-duty vehicle efficiency compliance increases to almost 36 miles per gallon – to 59 miles per gallon by 2025 with more stringent standards

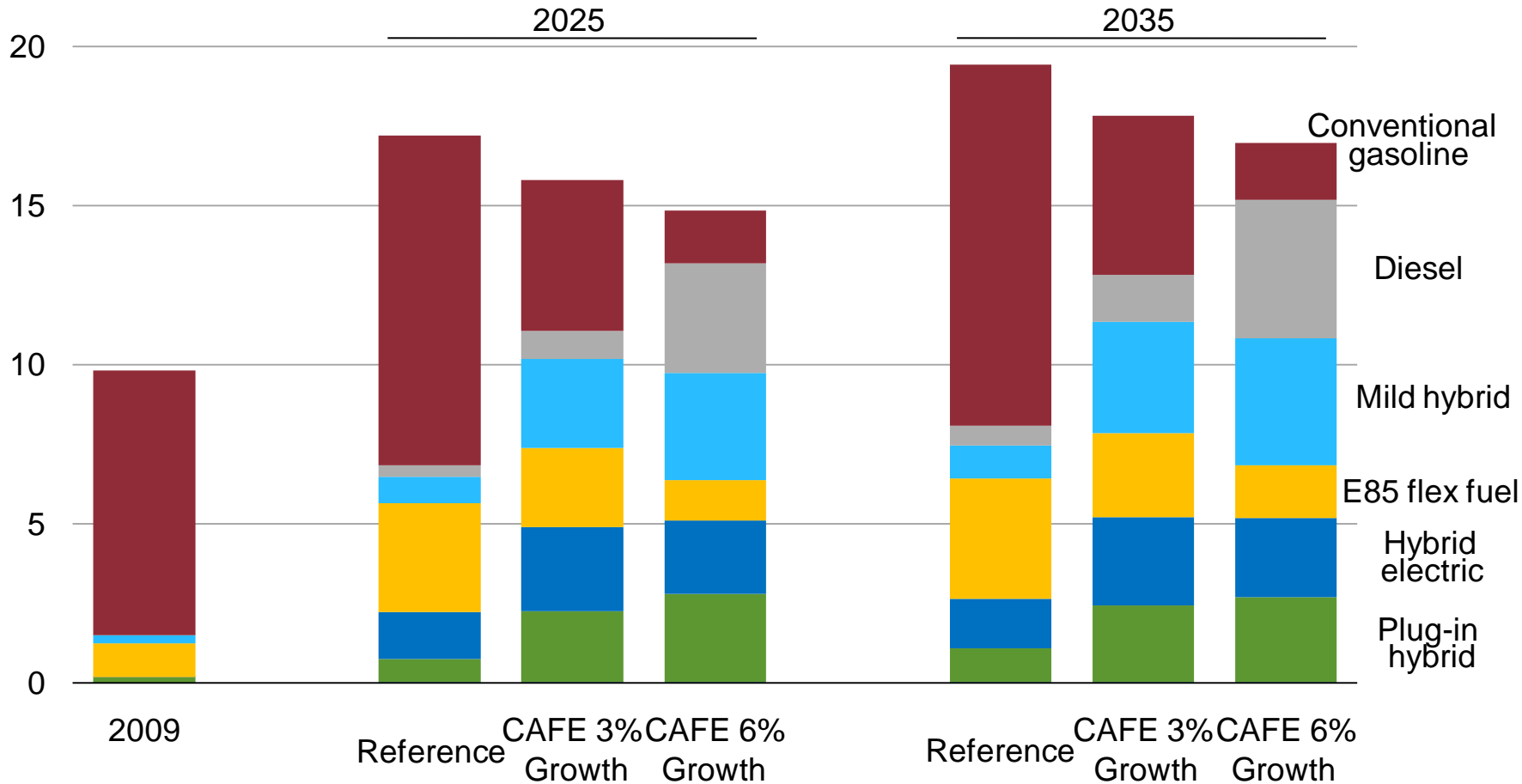
light-duty vehicle fuel efficiency
miles per gallon



Source: EIA, Annual Energy Outlook 2011

Alternative-fueled vehicle sales increase with increasing CAFE

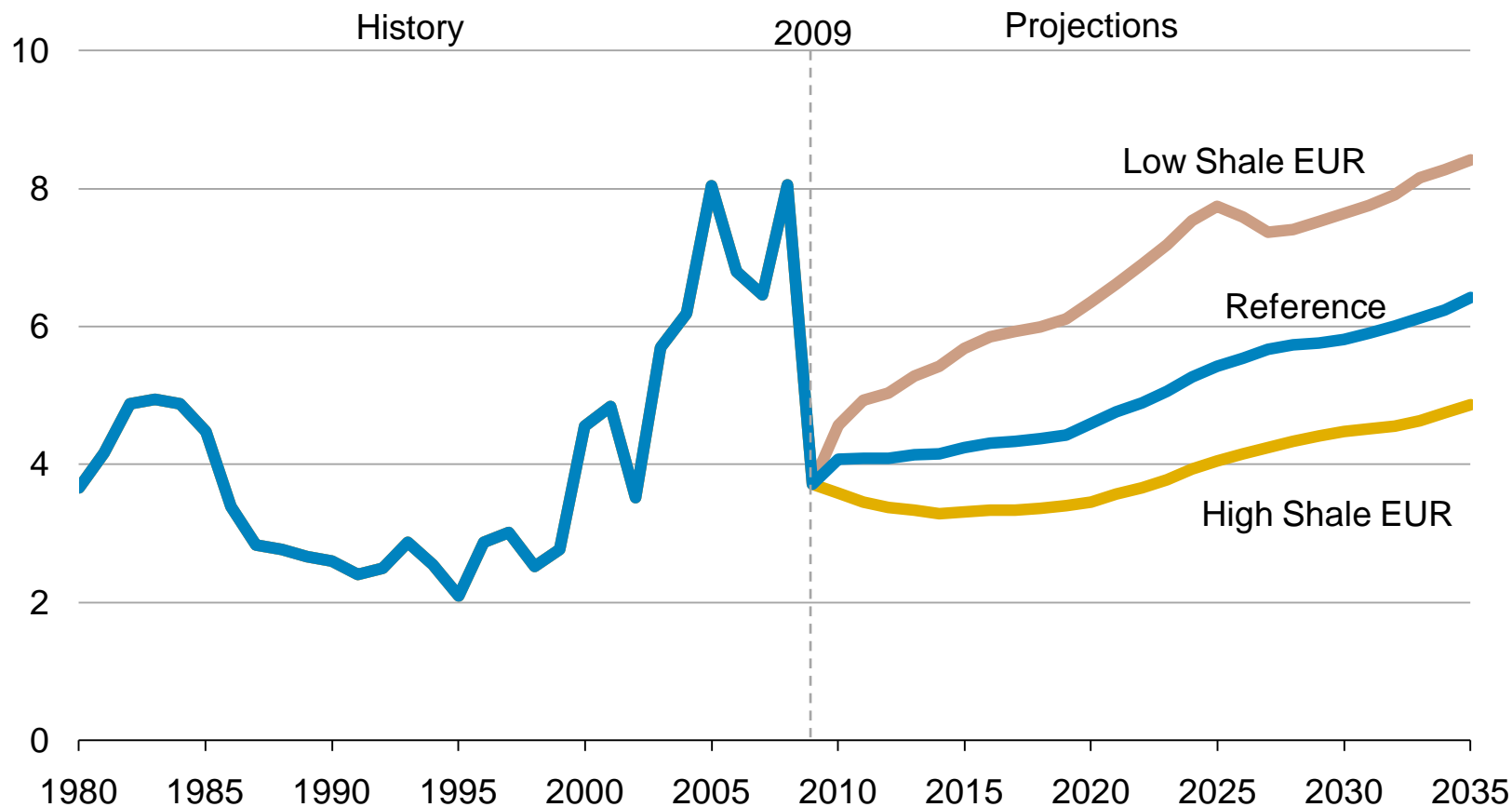
U.S. light car and truck sales
millions



Source: EIA, Annual Energy Outlook 2011

Natural gas price projections vary based on resource base assumptions

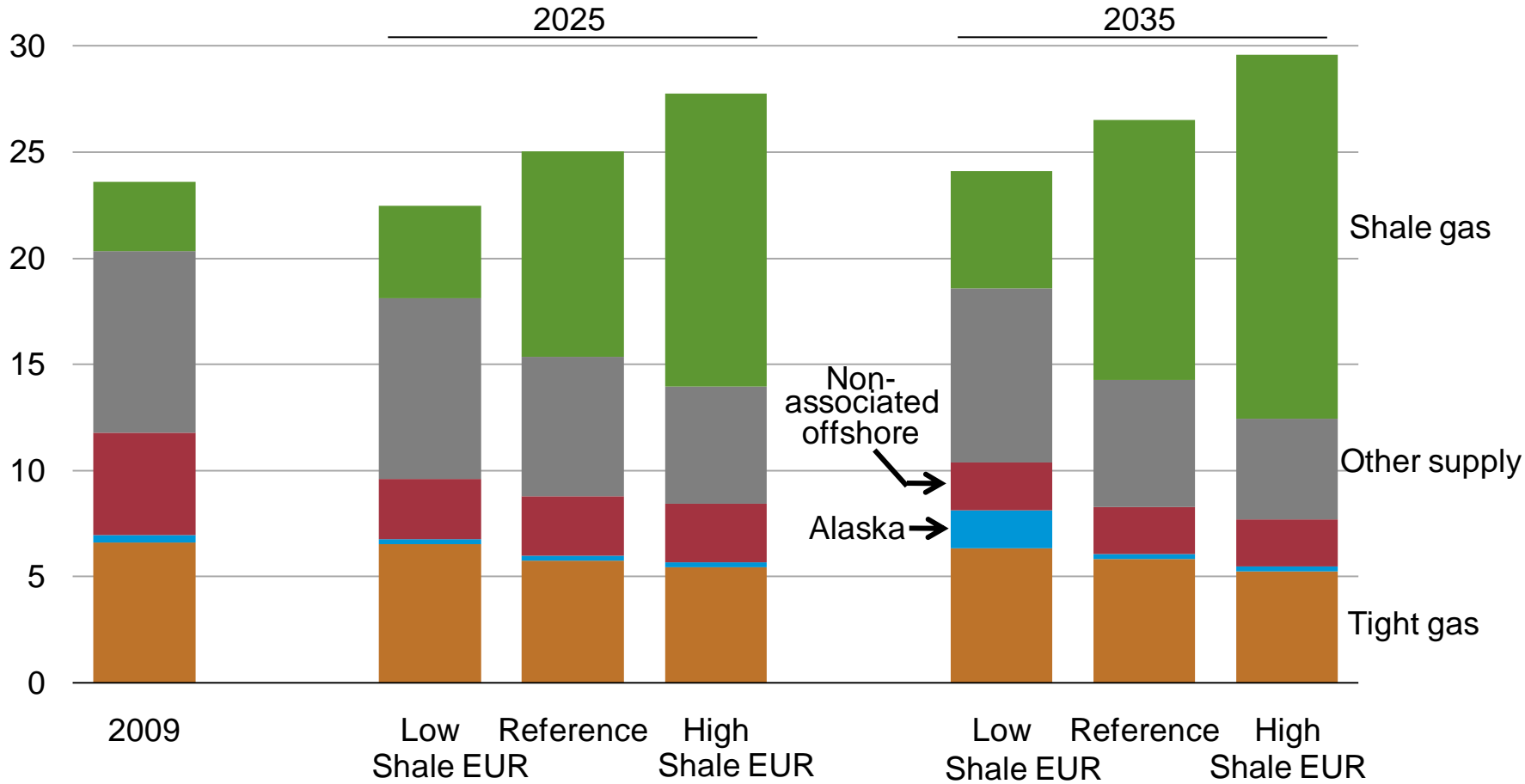
lower-48 average natural gas wellhead price
2009 dollars per thousand cubic feet



Source: EIA, Annual Energy Outlook 2011

Shale gas offsets declines in other U.S. supply to meet consumption growth and lower import needs

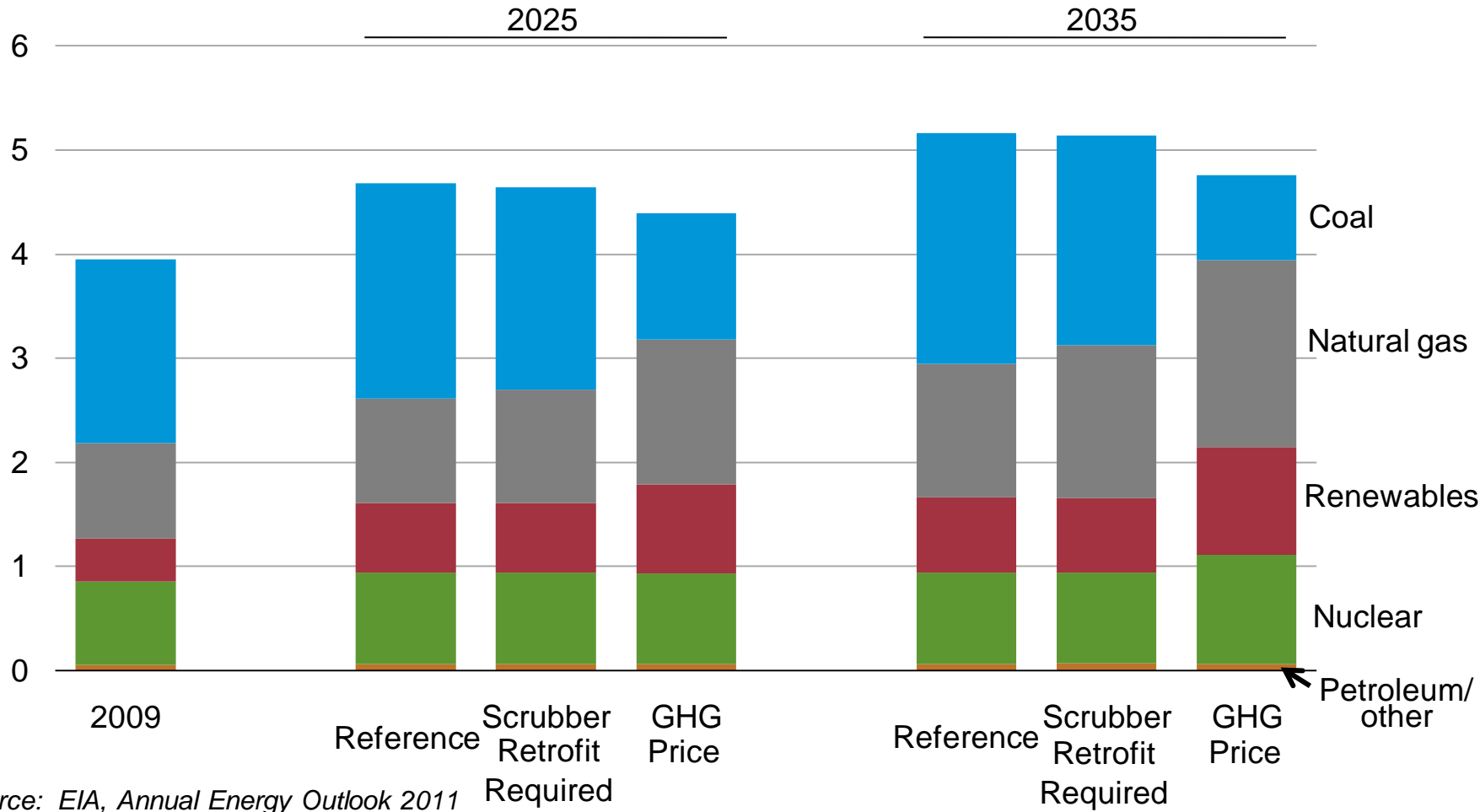
U.S. dry natural gas
trillion cubic feet per year



Source: EIA, Annual Energy Outlook 2011

The projected electricity mix gradually shifts to lower-carbon options, with generation from natural gas rising 40% and renewables rising 75%

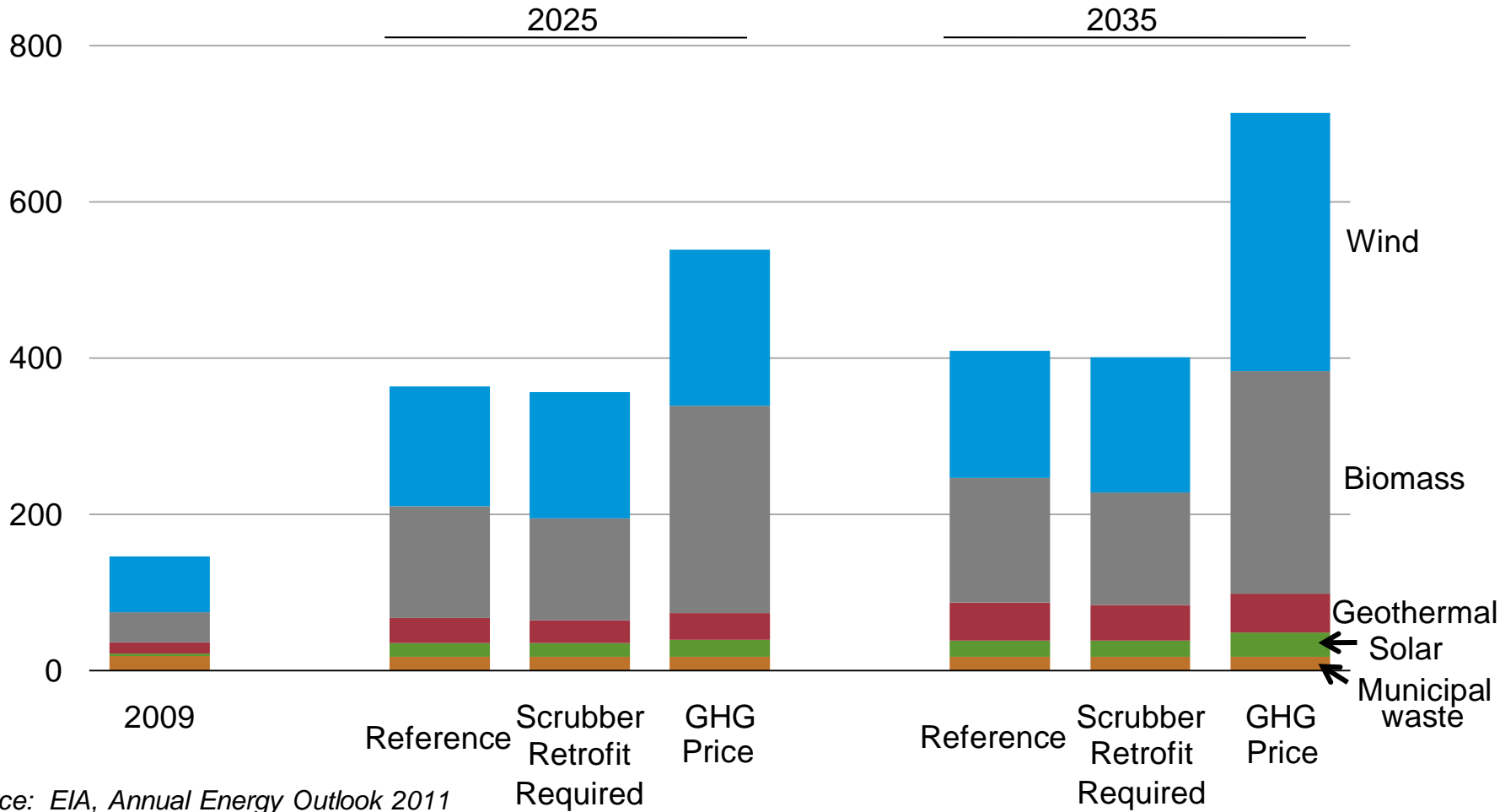
U.S. electricity generation by fuel
trillion kilowatthours



Source: EIA, Annual Energy Outlook 2011

Non-hydro renewable sources grow nearly three-fold by 2035; growth climbs to nearly five-fold with a price on CO₂ emissions

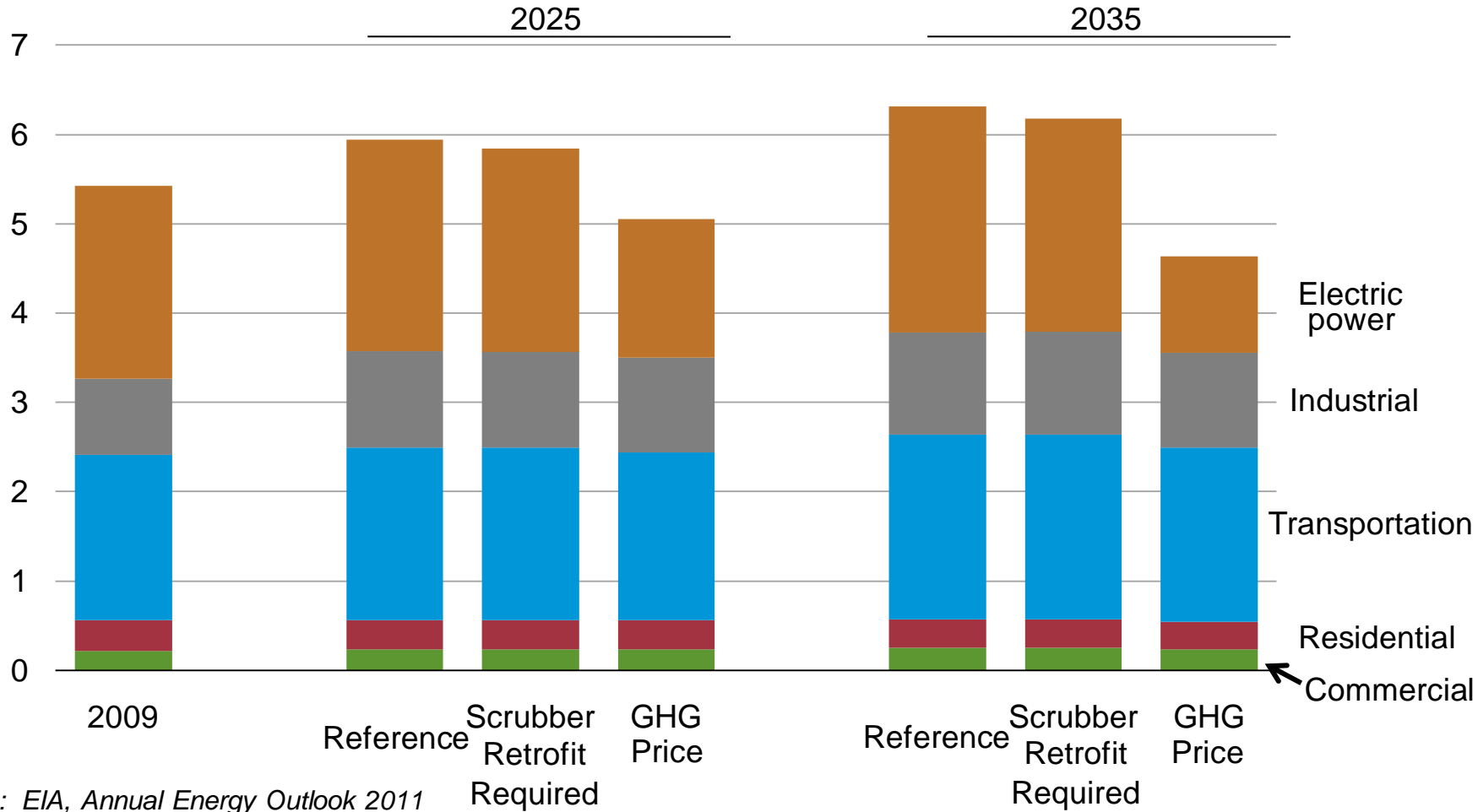
non-hydropower renewable generation
billion kilowatthours



Source: EIA, Annual Energy Outlook 2011

U.S. carbon dioxide emissions reach 2005 levels in 2027

U.S. carbon dioxide emissions
billion metric tons carbon dioxide



Source: EIA, Annual Energy Outlook 2011

For more information

U.S. Energy Information Administration home page | www.eia.gov

Short-Term Energy Outlook | www.eia.gov/steo

Annual Energy Outlook | www.eia.gov/aeo

International Energy Outlook | www.eia.gov/ieo

Monthly Energy Review | www.eia.gov/mer

EIA Information Center

(202) 586-8800 | email: InfoCtr@eia.gov

Live expert from 9:00 a.m. – 5:00 p.m. EST

Monday – Friday (excluding Federal holidays)

AEO2011 Reference Case Update

- Updates based on changes in regulation or legislation
 - Adds 30% ITC to fuel cells with 2016 expiration date
 - Updated 2011 cellulosic ethanol subsidy
 - Updated ethanol tax credit, biodiesel tax credit, and ethanol tariff through 2011
 - Allowed E15 in model-year 2001-2006 light-duty vehicles (in addition to 2007-present)
- Updates based on new information
 - Retired Oyster Creek nuclear plant at end of 2019
 - Revised amount of wind builds in 2012 (7 rather than 10 gigawatts)
 - Benchmarked oil production to January STEO (including revision to undiscovered oil drilling schedules)
 - Delayed additional deep water offshore projects
 - Updated electric vehicle, hybrid electric, micro-hybrids, and plug-in electric vehicles sales
- Updates based on National Energy Modeling System enhancements
 - Changed the economic life for coalbed methane plays
 - Updates carbon dioxide enhanced oil recovery
 - Updated natural gas reserve reporting;
 - Updated battery cost curve