

Annual Energy Outlook 2021

with projections to 2050

Chart library



#AEO2021

February 3, 2021
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February 2021

U.S. Energy Information Administration
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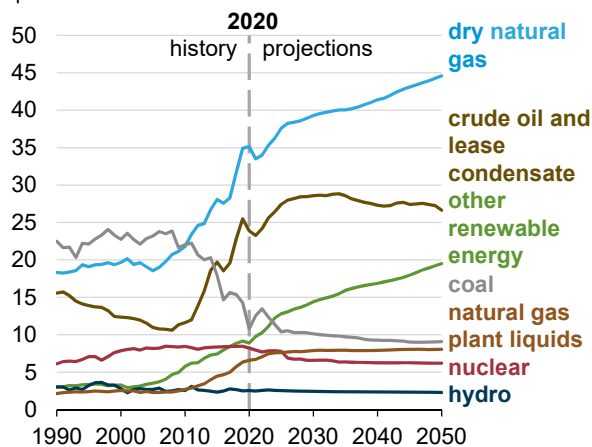
Overview of U.S. energy markets

The *Annual Energy Outlook* (AEO) presents modeled projections of future energy production and energy use in the United States.

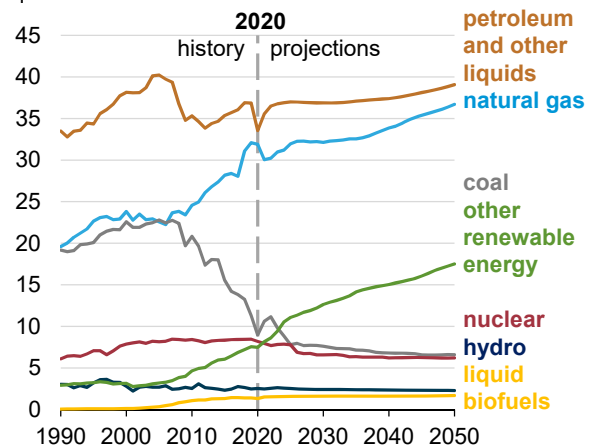


Energy production and consumption

Energy production by source
AEO2021 Reference case
quadrillion British thermal units



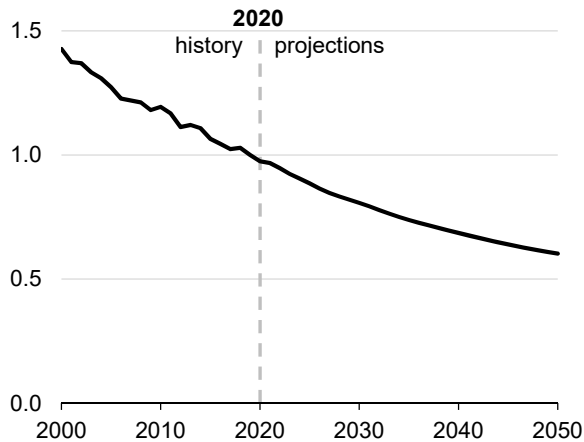
Energy consumption by fuel
AEO2021 Reference case
quadrillion British thermal units



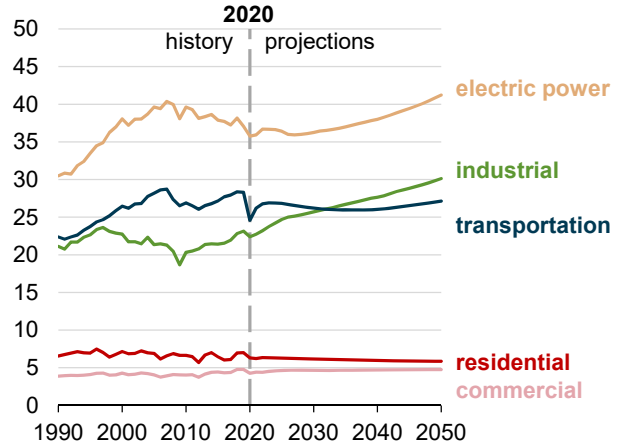


Energy intensity and consumption

Indexed total energy intensity of the U.S. economy
AEO2021 Reference case
2019 = 1.0



Energy consumption by sector
AEO2021 Reference case
quadrillion British thermal units



Note: Total energy intensity calculation reflects primary energy, which includes electricity losses.



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

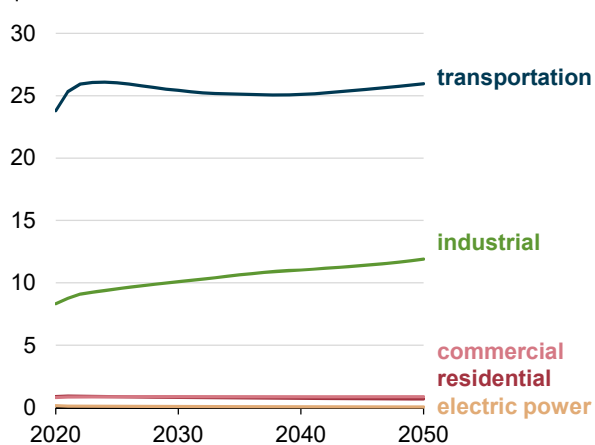
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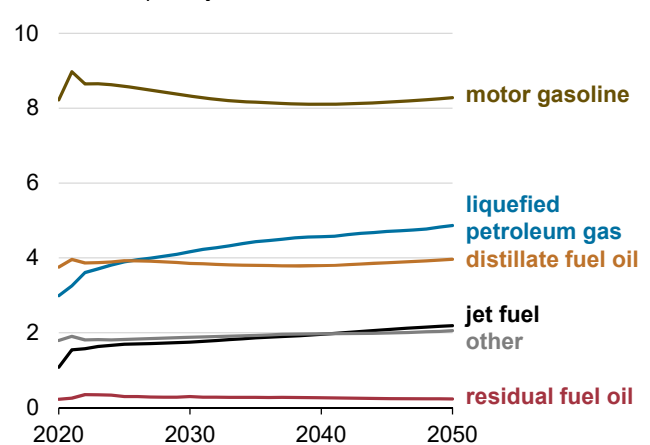


Petroleum consumption by sector and fuel type

Petroleum and other liquids consumption by sector
AEO2021 Reference case
quadrillion British thermal units



Petroleum and other liquids consumption by fuel type
AEO2021 Reference case
million barrels per day



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

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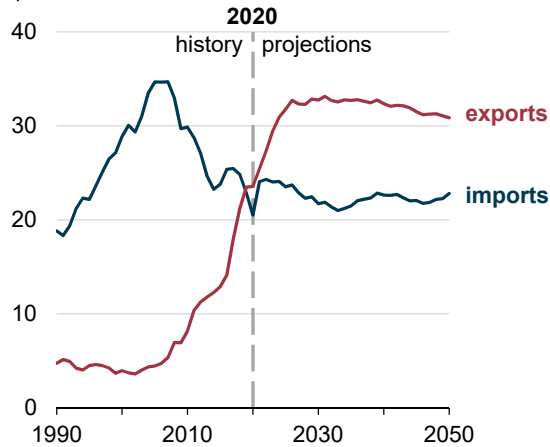


Energy imports and exports

Gross energy trade

AEO2021 Reference case

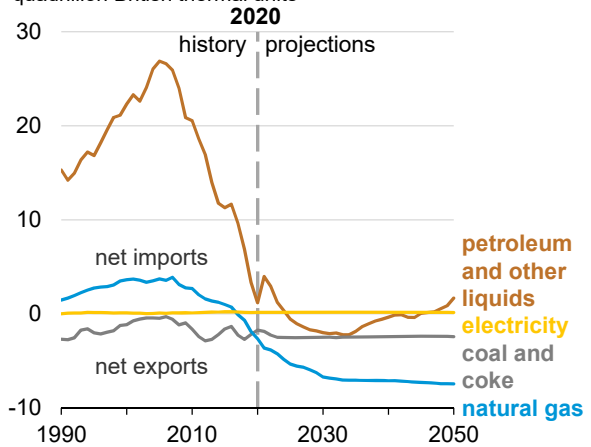
quadrillion British thermal units



Net energy imports

AEO2021 Reference case

quadrillion British thermal units



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

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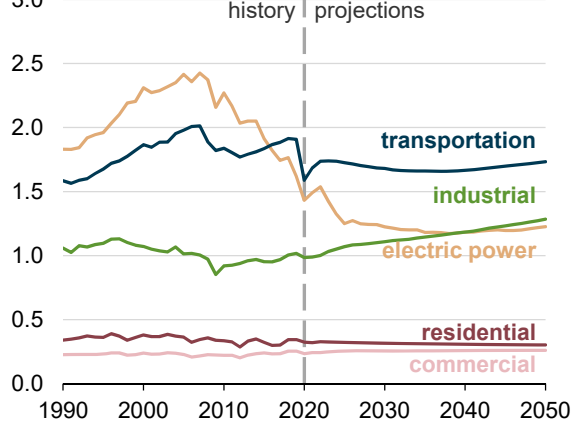


Energy-related carbon dioxide emissions by sector and fuel source

Energy-related carbon dioxide emissions by sector

AEO2021 Reference case

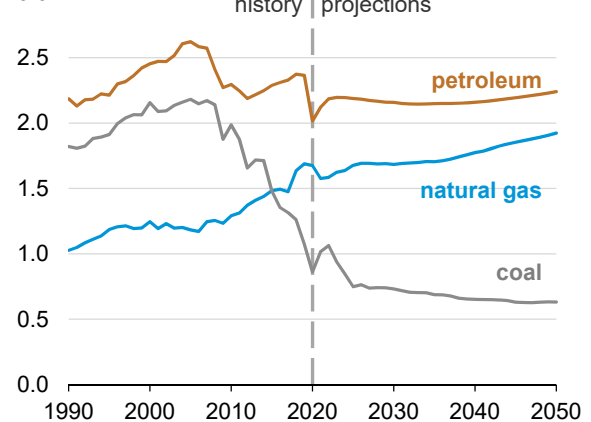
billion metric tons



Energy-related carbon dioxide emissions by fuel

AEO2021 Reference case

billion metric tons



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

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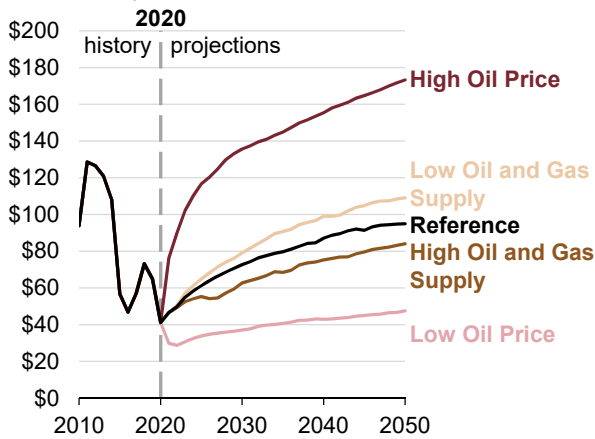


Critical drivers

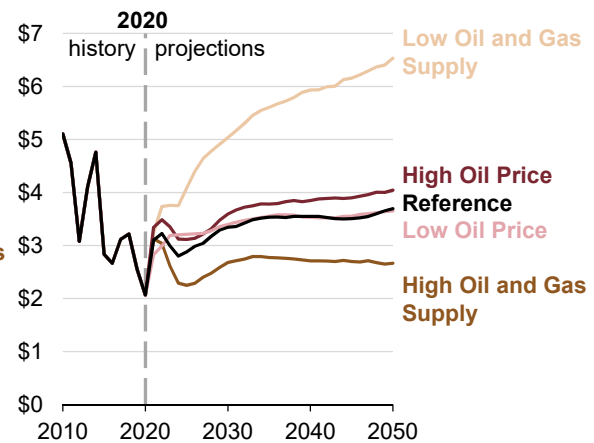


Crude oil price assumptions and natural gas price projections

North Sea Brent crude oil price
AEO2021 side cases
 2020 dollars per barrel



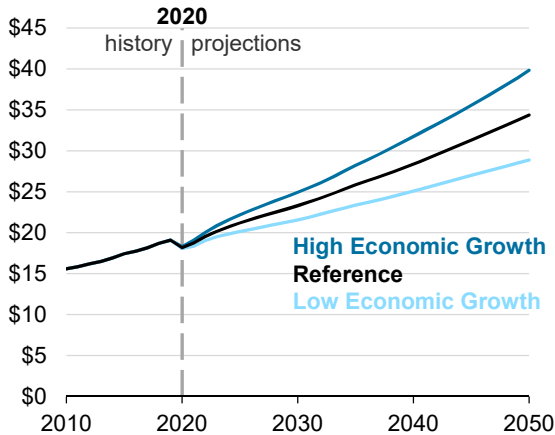
Natural gas price at Henry Hub
AEO2021 side cases
 2020 dollars per million British thermal units



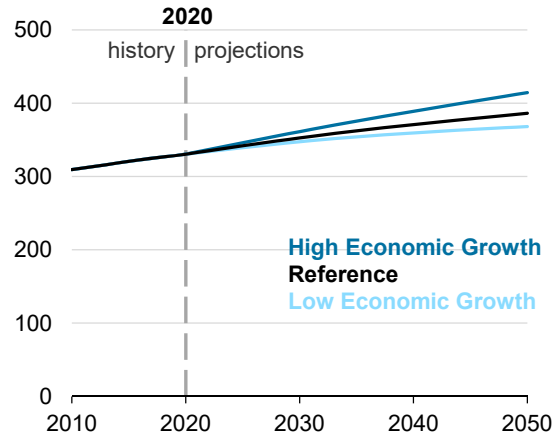


Gross domestic product and population growth assumptions

U.S. gross domestic product assumptions
AEO2021 economic growth cases
trillion 2012 dollars



U.S. population assumptions
AEO2021 economic growth cases
millions



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

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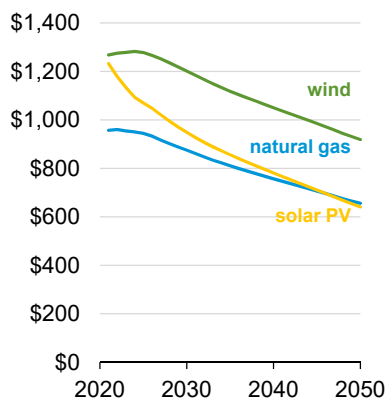
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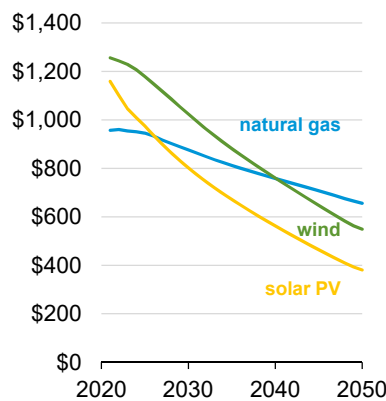
Installation cost for solar photovoltaic (PV), wind, and natural gas capacity in renewable cost cases

Overnight installation cost, AEO2021 renewables cost cases

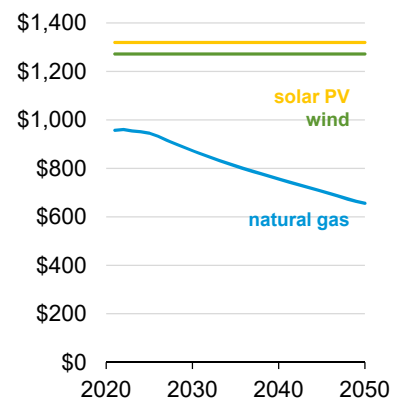
Reference case
2020 dollars per kilowatt



Low Renewables Cost case
2020 dollars per kilowatt



High Renewables Cost case
2020 dollars per kilowatt



Note: Series begin in 2021.



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

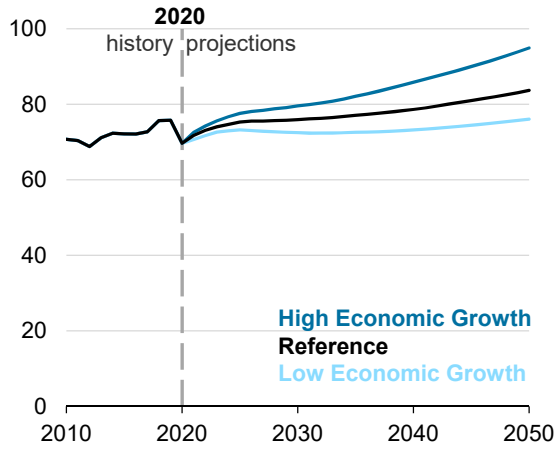
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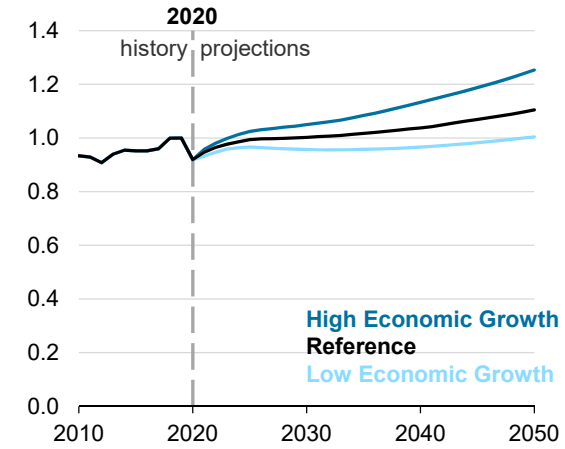


Delivered energy

Delivered energy across end-use sectors
AEO2021 economic growth cases
quadrillion British thermal units



Indexed delivered energy across end-use sectors
AEO2021 economic growth cases
2019 = 1.0



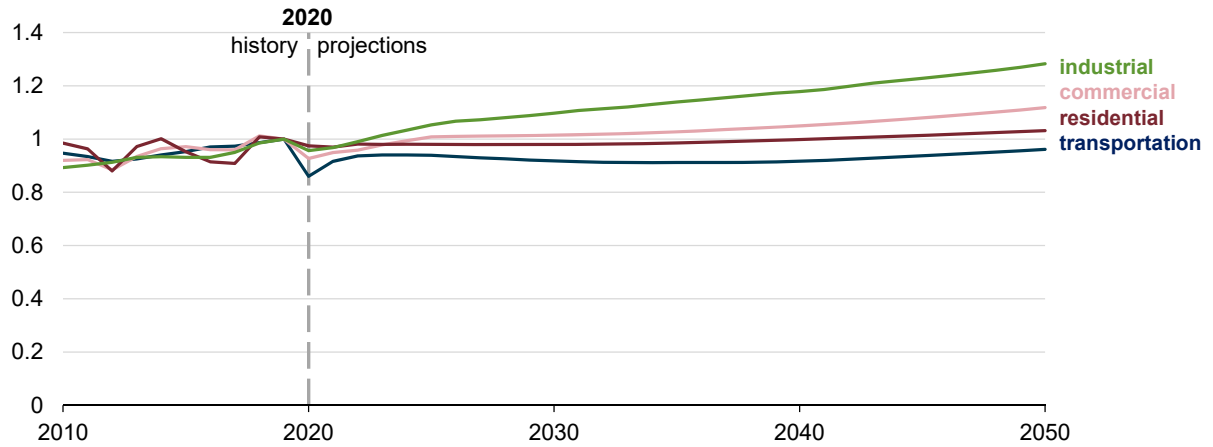
Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

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Delivered energy by end-use sector

Indexed delivered energy by end-use sector
AEO2021 Reference case
2019 = 1.0



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2021* (AEO2021)

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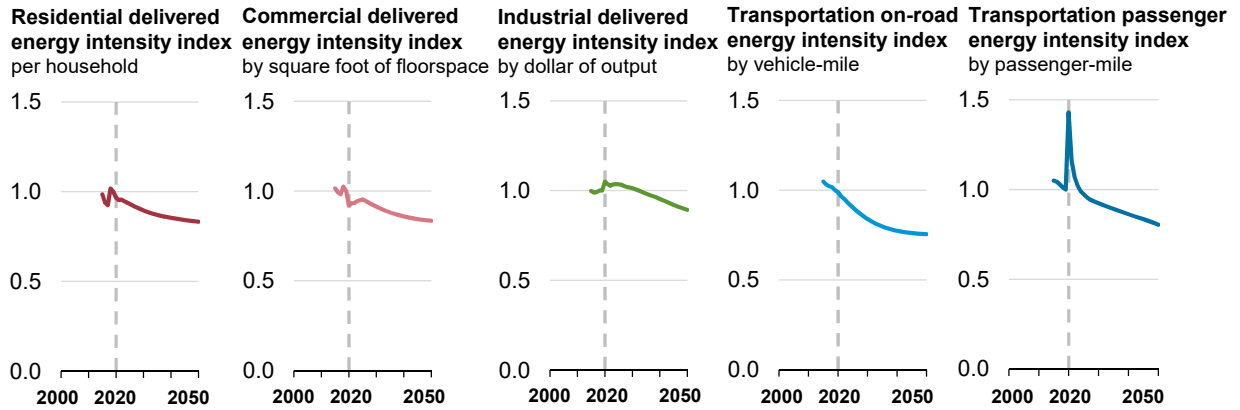


Delivered energy intensity by sector

Indexed delivered energy intensity by sector

AEO2021 Reference case

2019 = 1.0



Note: Energy intensity at the end-use sector level is typically measured relative to an indicator that most directly affects delivered energy consumption within the sector (for example, household, dollar of output, or vehicle-mile).