

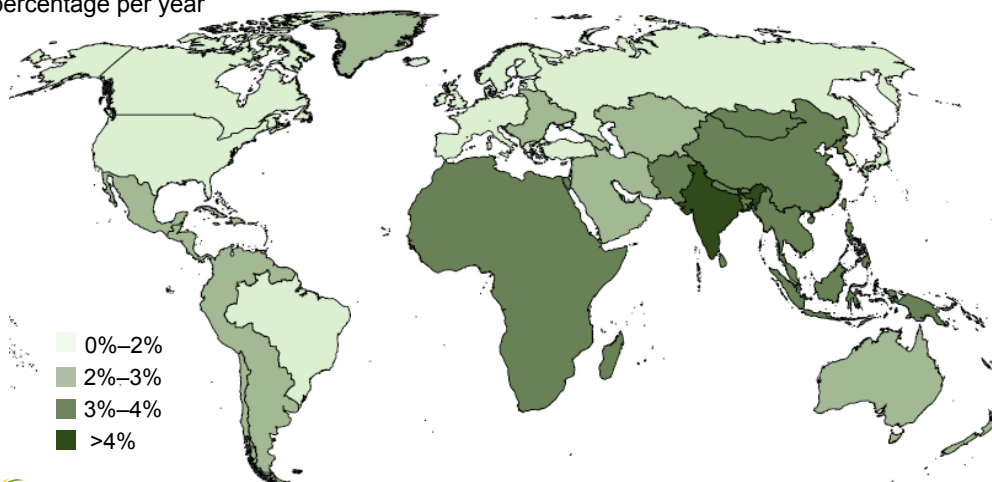


Manufacturing centers are shifting toward Africa and South Asia, especially India, resulting in energy consumption growth



Most economic growth happens in non-OECD countries, where GDP per person nearly triples from 2018 to 2050

Average annual percentage change in GDP (gross domestic product), 2018–2050
percentage per year



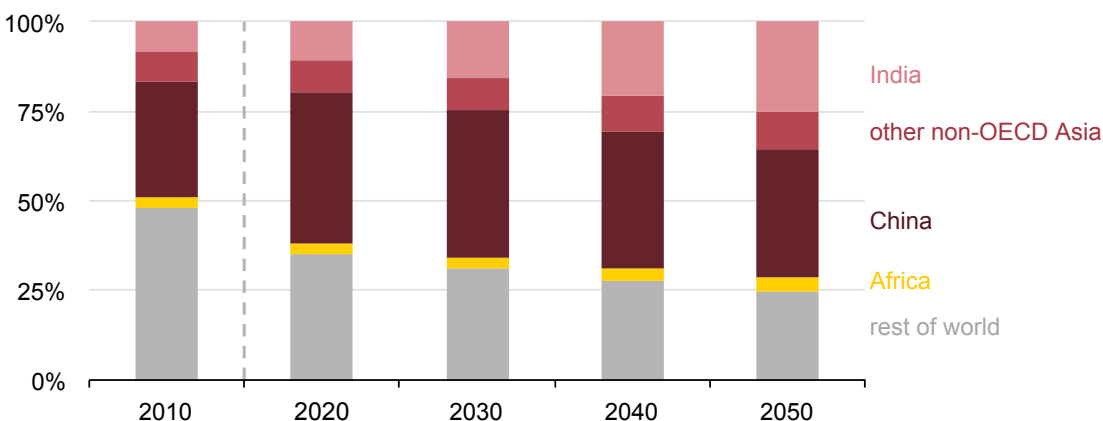
Source: U.S. Energy Information Administration, *International Energy Outlook 2019*



Most energy-intensive manufacturing shifts to non-OECD Asia and, increasingly, to India

Energy-intensive manufacturing gross output¹ by region

share



¹Measured in purchasing power parity



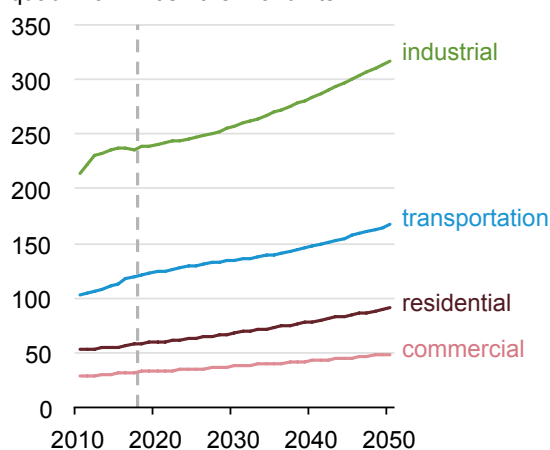
Source: U.S. Energy Information Administration, *International Energy Outlook 2019*



The industrial sector is the largest consumer of energy, and energy-intensive manufacturing is the largest component in the sector

End-use energy consumption by sector

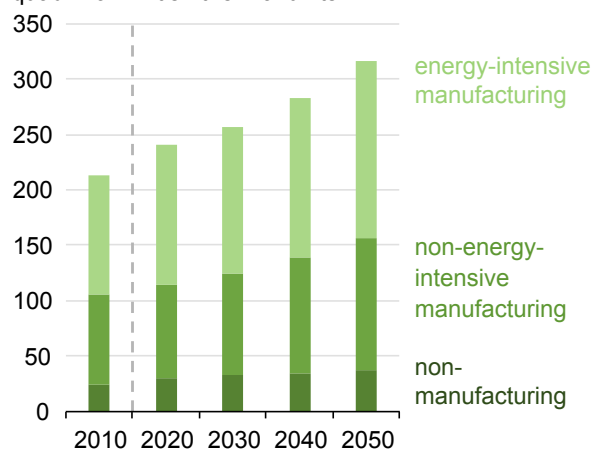
quadrillion British thermal units



Source: U.S. Energy Information Administration, *International Energy Outlook 2019*

Energy consumption by industrial subsector

quadrillion British thermal units



Source: U.S. Energy Information Administration, *International Energy Outlook 2019*



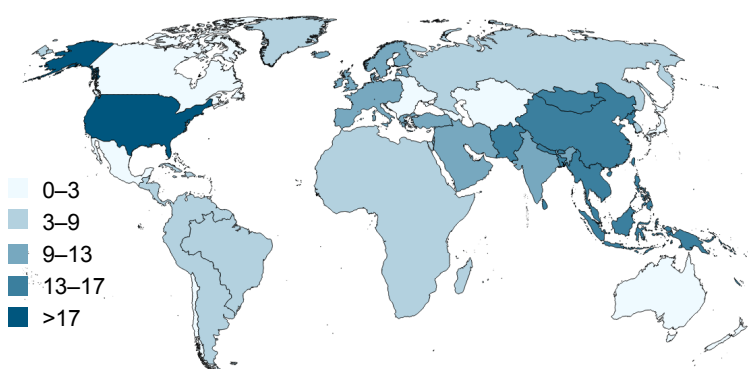
Natural gas and petroleum product consumption is rising in Asia faster than supply is growing, potentially shifting trade patterns and infrastructure investments



Consumption of liquid fuels increases 24% between 2018 and 2050, driven by Asia and Africa

Consumption of liquid fuels in 2050

million barrels per day

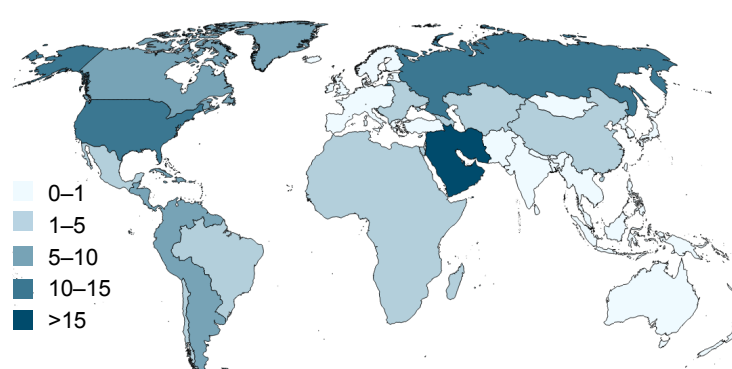


EIA Source: U.S. Energy Information Administration, *International Energy Outlook 2019*

Supply of crude oil increases 44% between 2018 and 2050, and production remains high in OPEC, Russia, and the United States

Supply of crude oil in 2050

million barrels per day



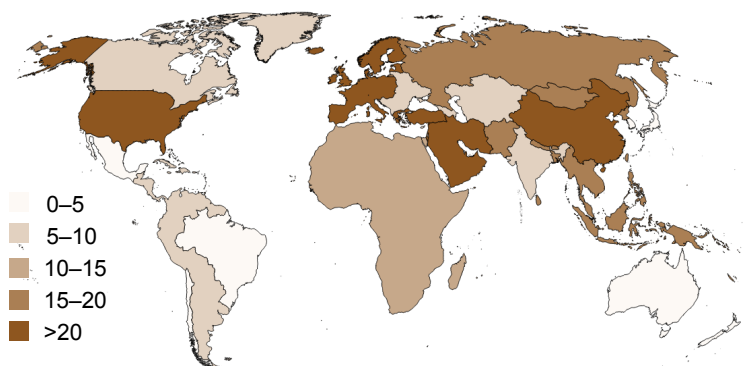
EIA Source: U.S. Energy Information Administration, *International Energy Outlook 2019*



Natural gas consumption rises in Asia, even as regional production stays flat

Consumption of natural gas in 2050

trillion cubic feet

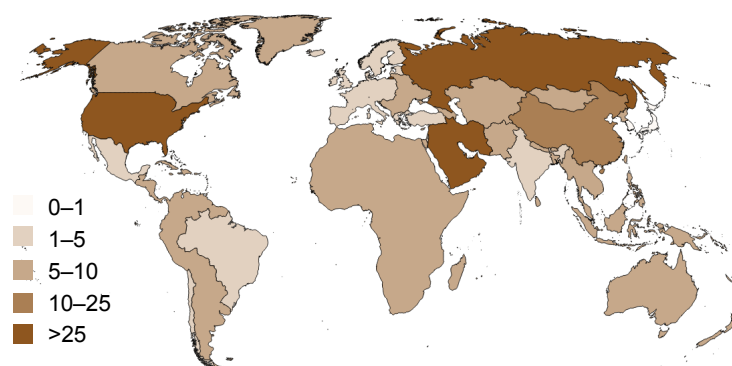


EIA Source: U.S. Energy Information Administration, *International Energy Outlook 2019*

The United States remains the world's largest natural gas producer through 2050

Supply of natural gas in 2050

trillion cubic feet



EIA Source: U.S. Energy Information Administration, *International Energy Outlook 2019*



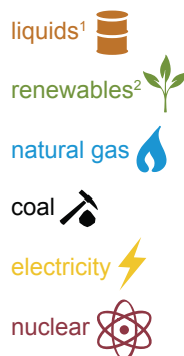
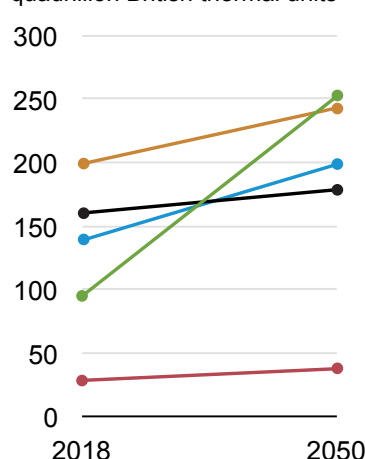
End-use consumption is increasingly shifting toward electricity



Renewables displace petroleum as the most used energy source, as electricity use grows faster than any other end-use fuel

Primary energy consumption

quadrillion British thermal units

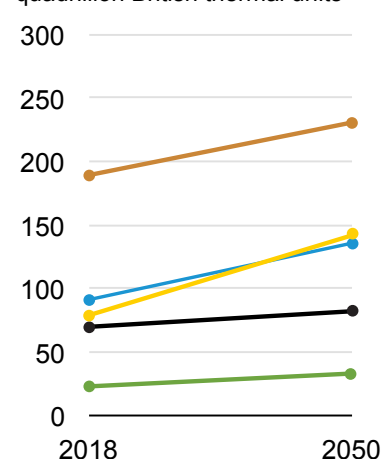


1. Includes petroleum and liquid biofuels 2. End use is largely biomass

Source: U.S. Energy Information Administration, *International Energy Outlook 2019*

End-use energy consumption

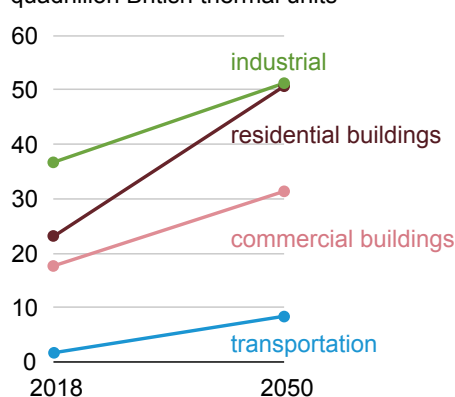
quadrillion British thermal units



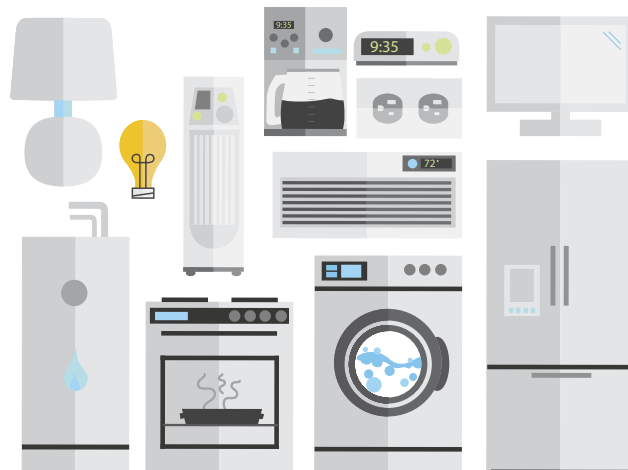
Electricity use grows in the buildings sectors, as access to electricity and electrical appliance use increases in non-OECD countries

Electricity use by sector

quadrillion British thermal units



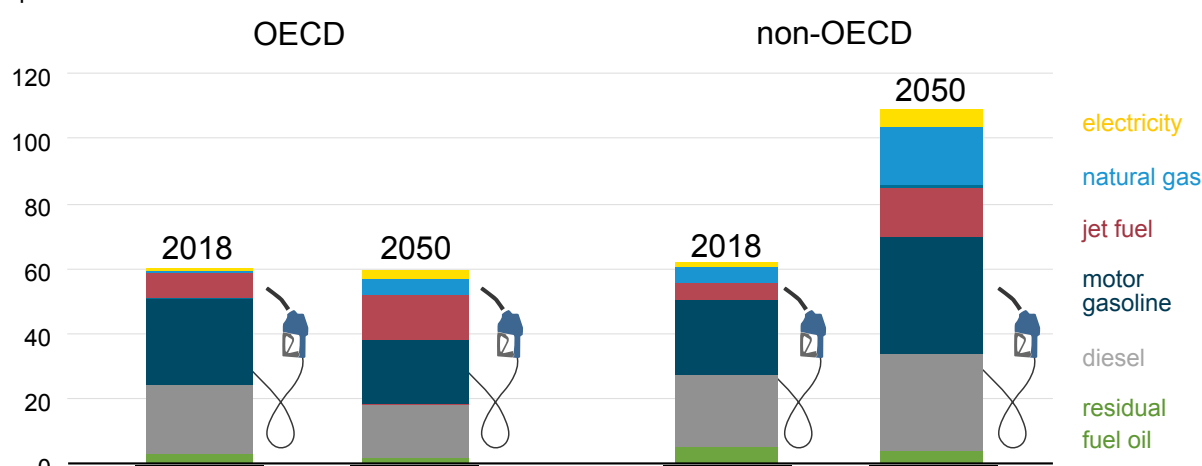
Source: U.S. Energy Information Administration, *International Energy Outlook 2019*



Motor gasoline and diesel continue to be the dominant transportation fuels, but the consumption of jet fuel, natural gas, and electricity all increase

Transportation energy consumption

quadrillion British thermal units



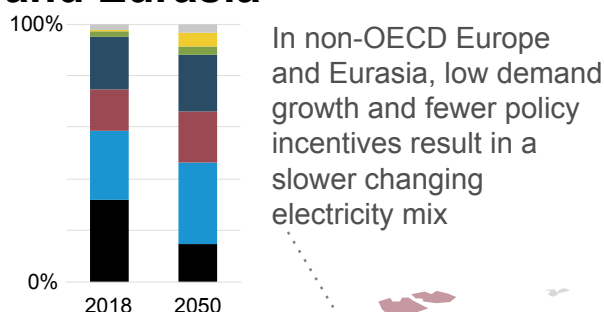
Source: U.S. Energy Information Administration, *International Energy Outlook 2019*



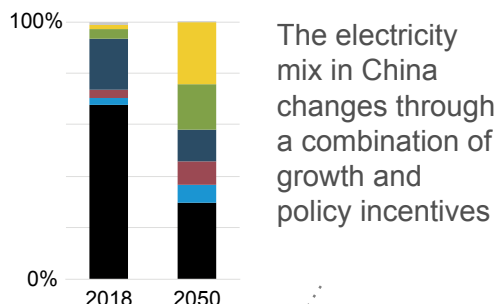
Falling costs, demand growth, and policy all work together to shift the electricity generation mix

Share of net electricity generation

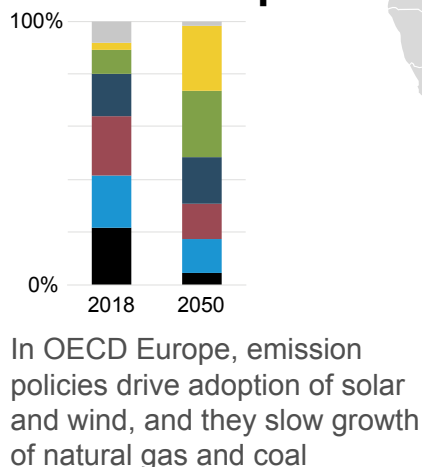
Non-OECD Europe and Eurasia



China



OECD Europe



India

