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Global Oil Market Outlook

Road to Recovery

Alfred Luaces
Chevron Strategy & Sustainability

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Road to recovery starts with demand and runs through refining

key points

Demand

- **Fuel demand grew robustly** in 2021 after a drop in 2020
- Demand is expected to grow strongly in 2022 as countries learn to live with endemic Covid, but it may take until 2023 before demand exceeds 2019 levels
- Jet fuel demand recovery will lag gasoline and diesel; lifting of international travel restrictions is key to recovery

Oil Supply

- **Abundant supply** continues to be a key market condition
- OPEC is managing production to keep prices from dropping
- Permian Basin and other tight oil plays remain cost competitive, but production has been slow to recover as producers reigned in capital spending to fix balance sheets
- California production is in long term decline. Attractive development opportunities are limited relative to others in US.

Oil Refining

- **Excess capacity** emerged as demand fell in the pandemic
- Industry profitability remained challenged for most of 2021 but signs of improvement emerged in 4Q21. Recovery depends on how quickly demand returns and on shut down of inefficient refineries.
- Several new refineries planned before 2020 are expected to start up in the coming years potentially limiting industry profitability

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Oil Demand

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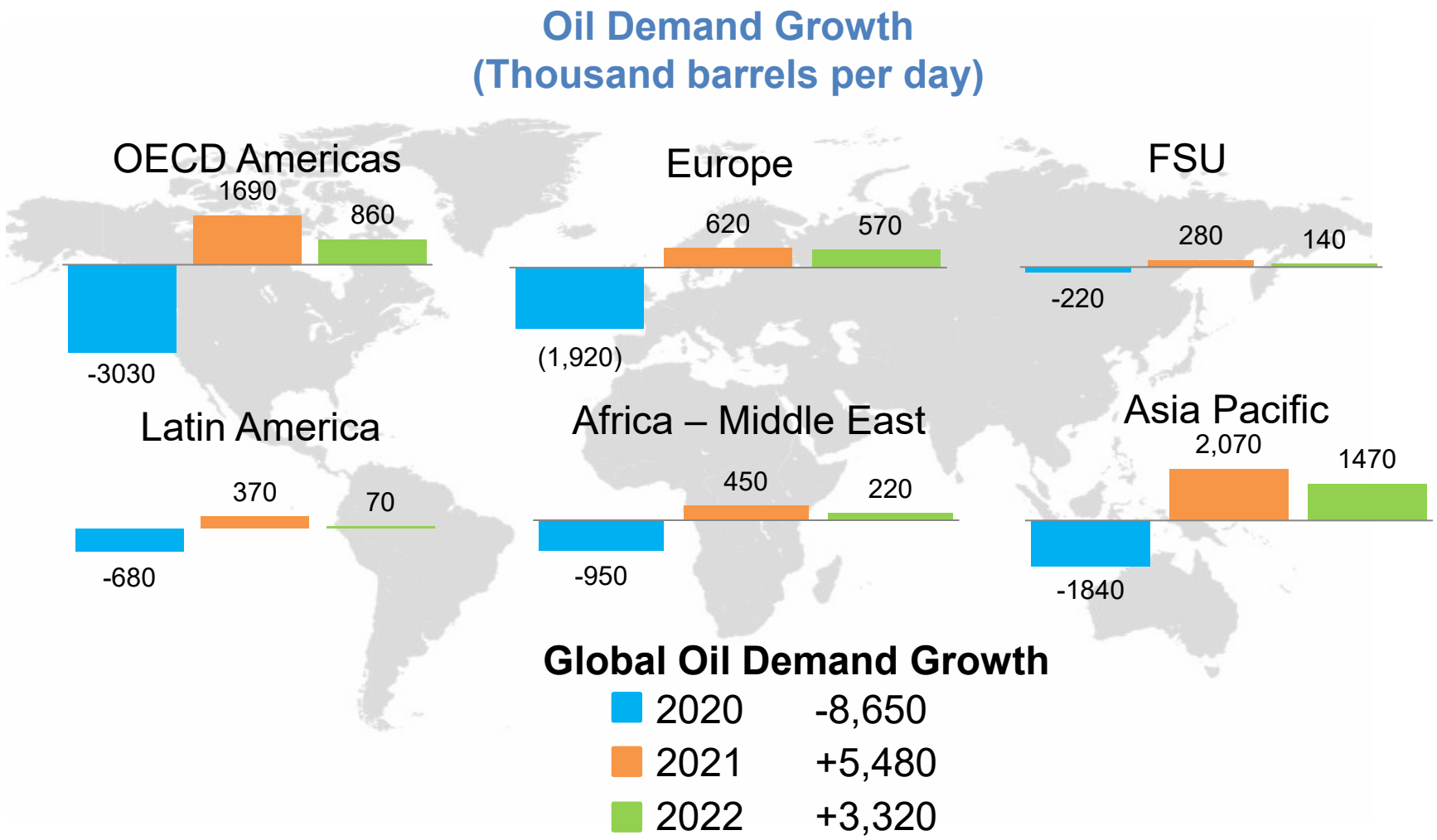
Oil demand recovery underway in all regions with Asian economies leading

IEA expects that global oil demand in 2022 will slightly exceed 2019 level



Source: IEA

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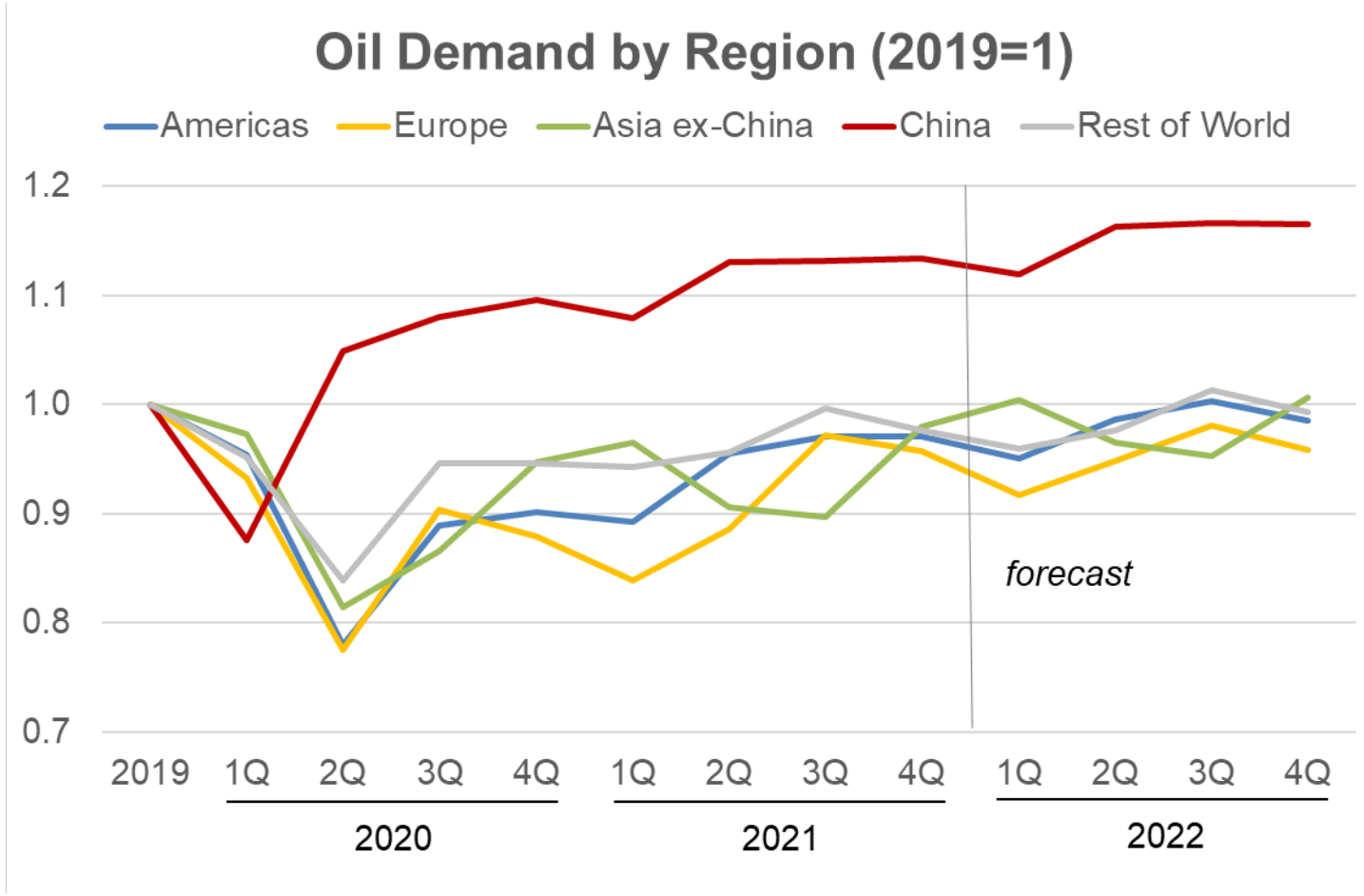
China’s oil demand least affected by the pandemic

Europe’s recovery is lagging that of most other regions. North America continues steady path of recovery.



Source: IEA Oil Market Report

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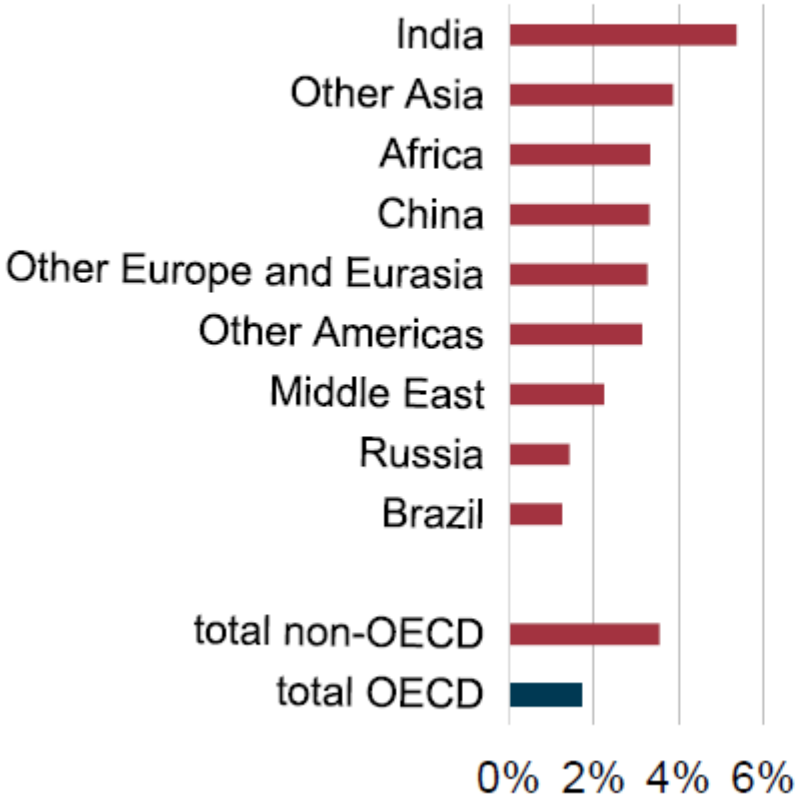
Long-term Energy Demand driven by economic growth in developing countries

Renewable energy is growing the fastest and is the dominant source for electricity generation by 2040. Oil demand remains an important energy source for transportation.

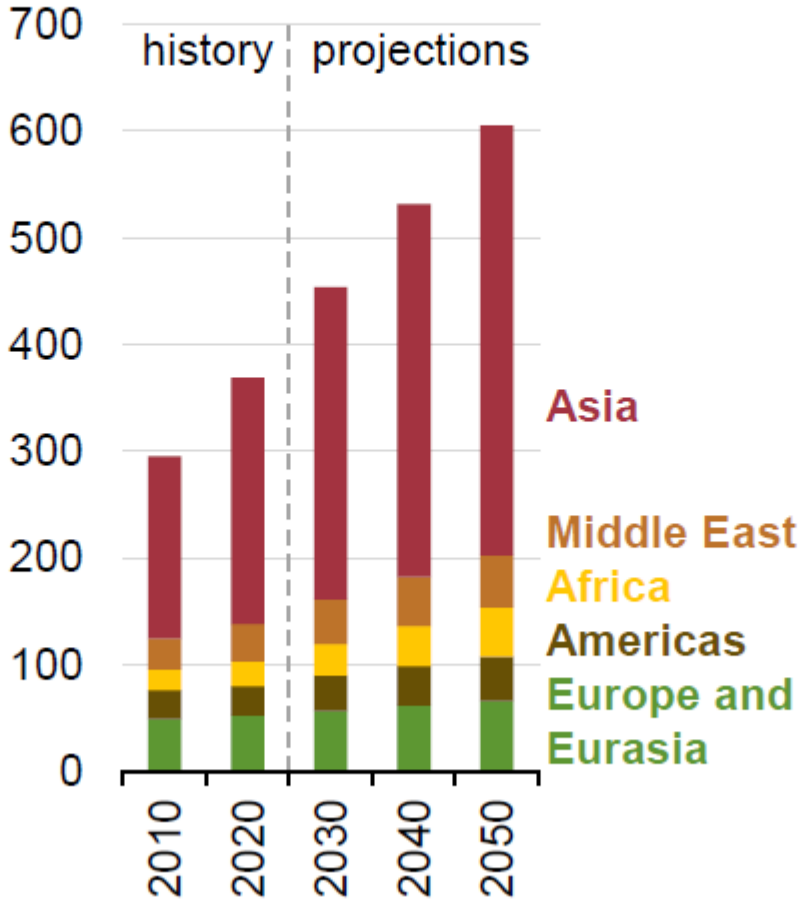
Average annual percentage change in GDP, 2020–2050, select regions

percentage



Non-OECD energy consumption by region

quadrillion British thermal units



OECD energy consumption by region

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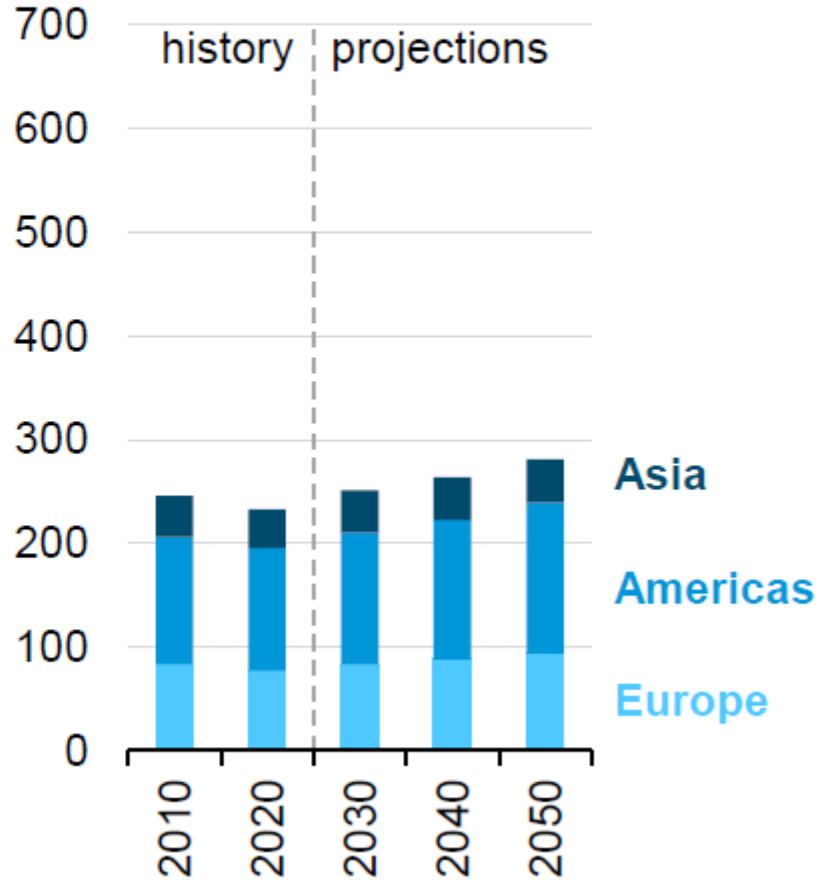

Source: U.S. EIA, International Energy Outlook, Reference case; Oct 2021

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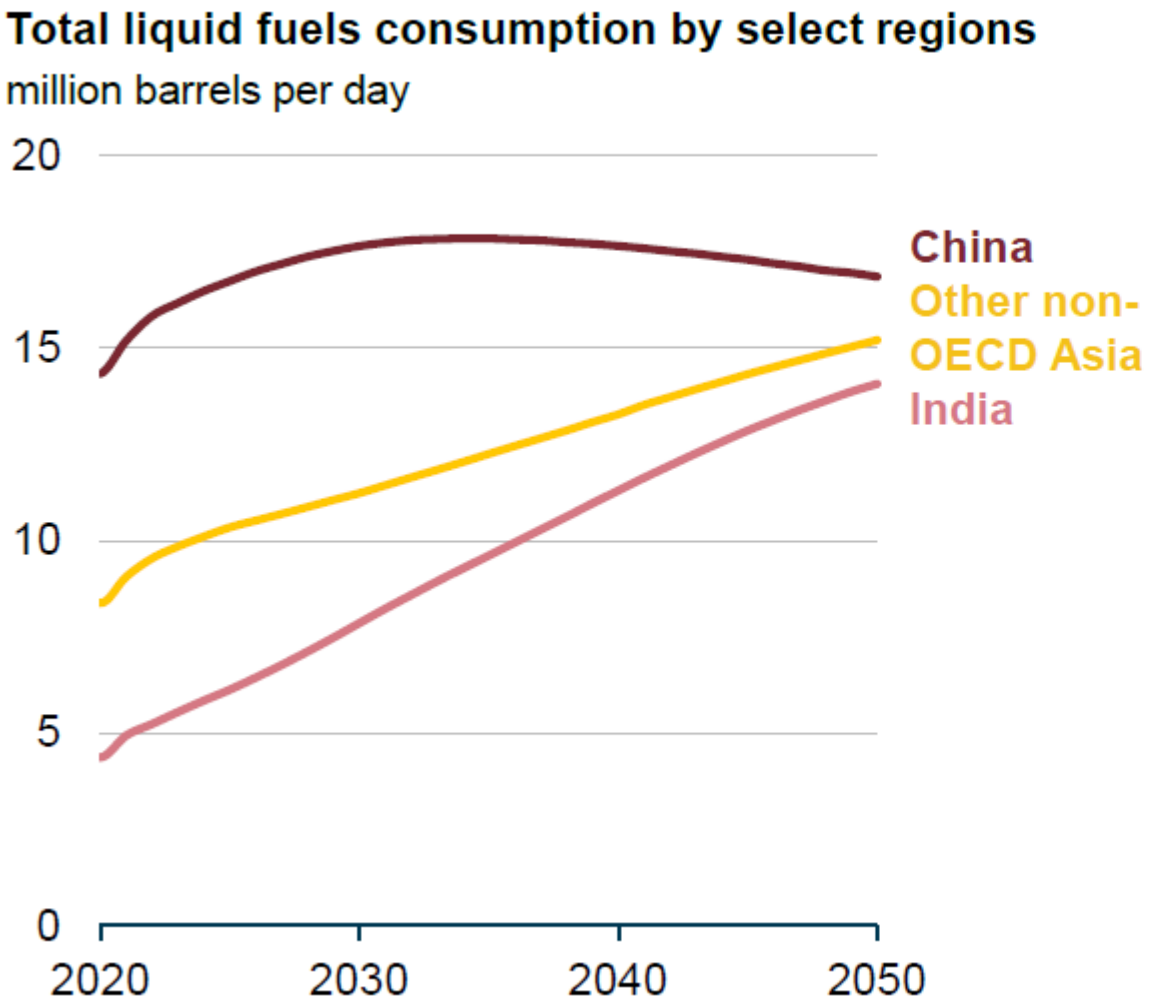
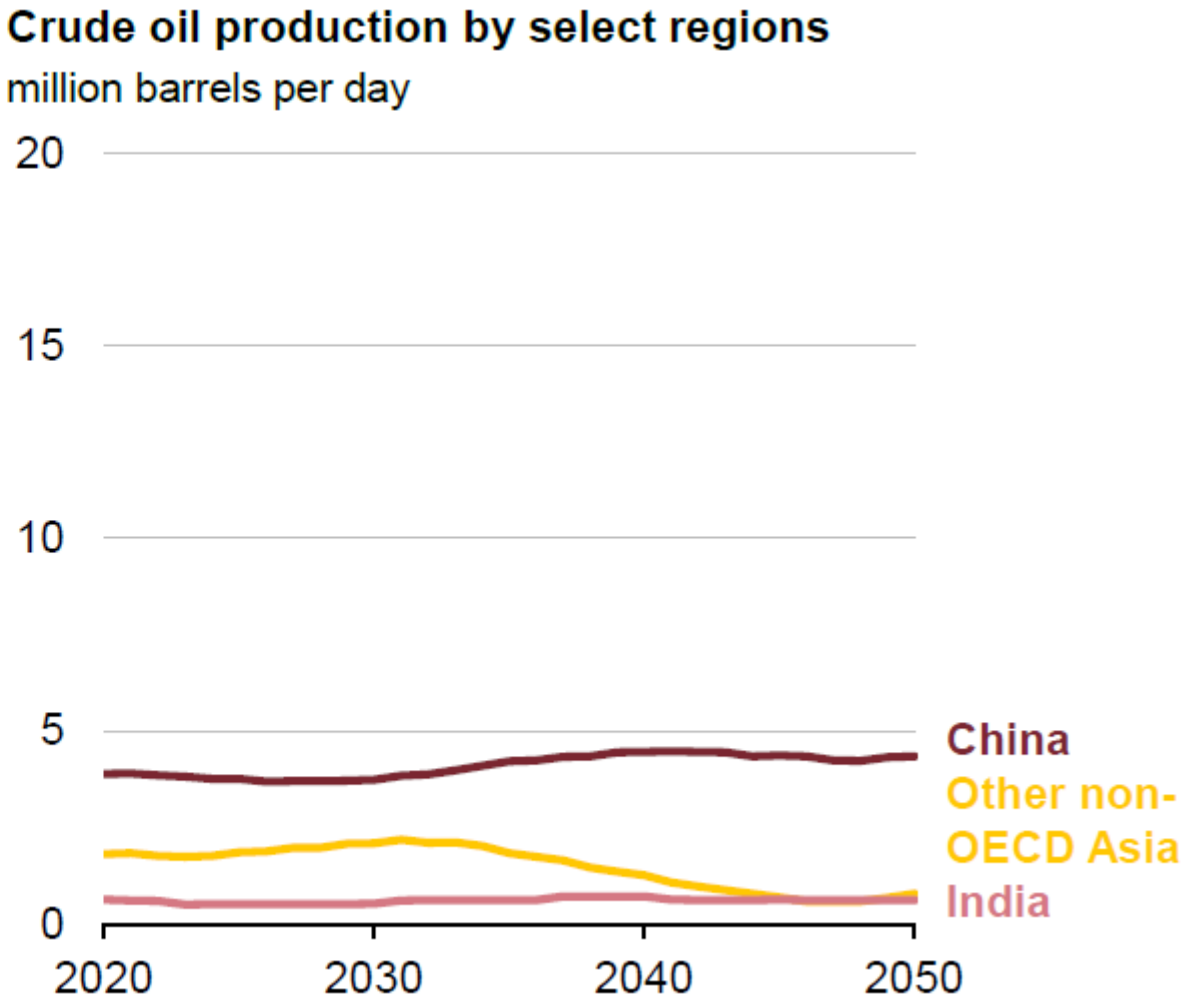
Developing countries in Asia are key drivers of global oil demand growth

Asia's appetite for oil will lead to a greater reliance on supplies from the Middle East, Russia and the Americas





Source: U.S. EIA, International Energy Outlook, Reference case; Oct 2021

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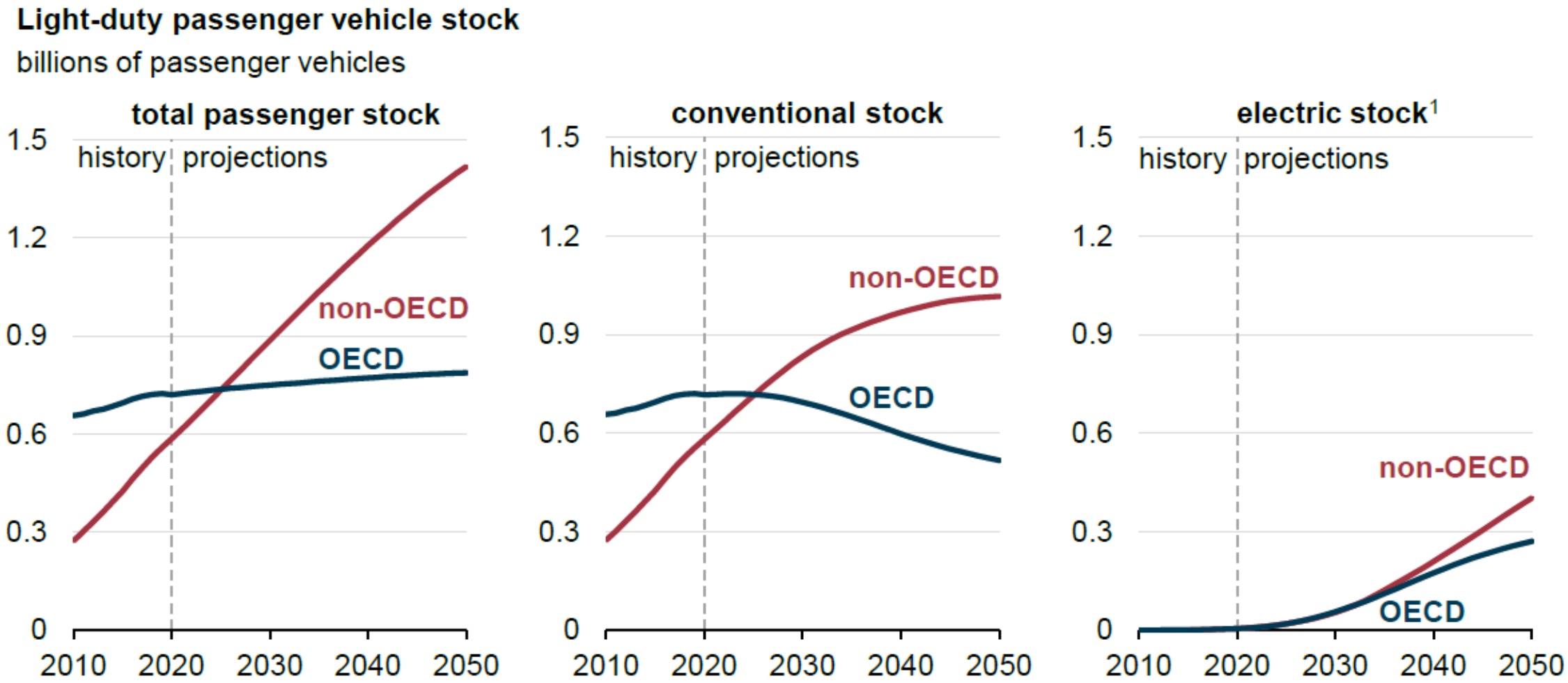
Electric vehicles are expected to make up about 30% of the fleet by 2050

The shift in vehicle preference is enabled by technology, government policies and consumer preferences



[1] *Electric stock includes full battery electric vehicles (BEVs) or all-electric vehicles and plug-in hybrid electric vehicles (PHEVs) that run on liquid fuels when batteries become depleted*

Source: U.S. EIA, International Energy Outlook, Reference case; Oct 2021

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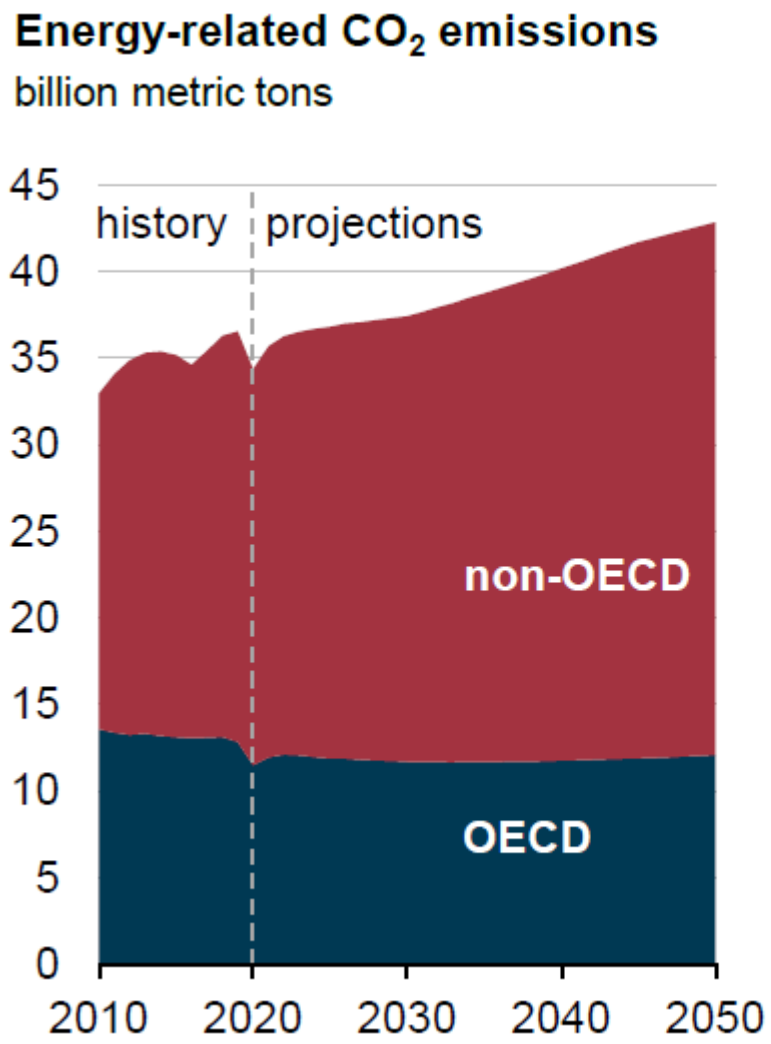
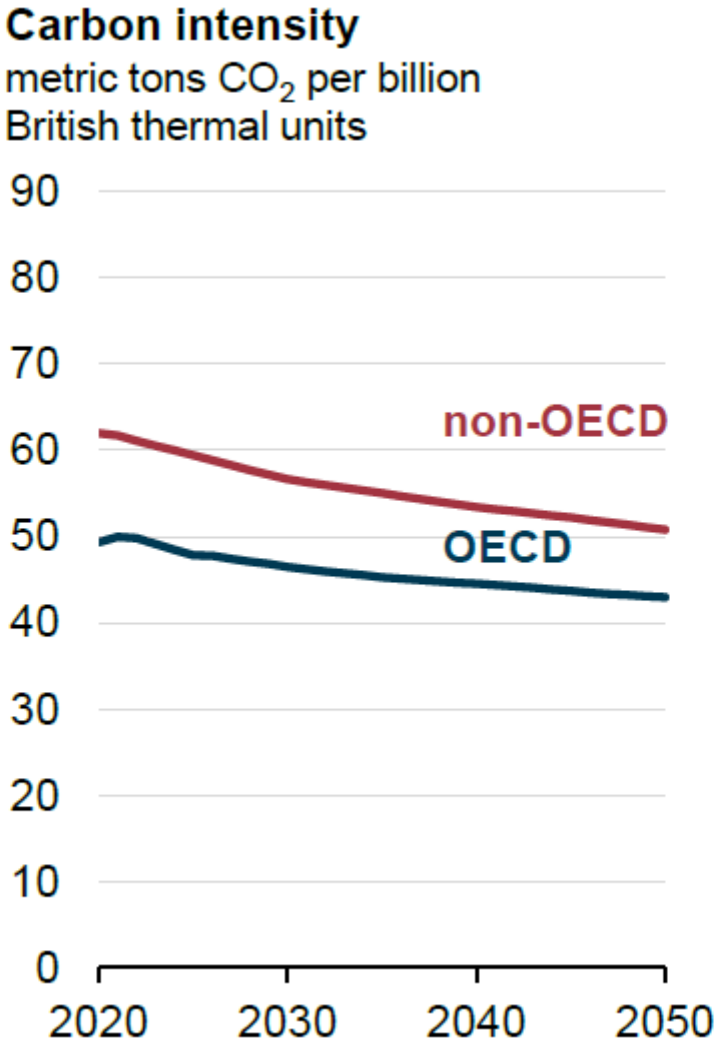
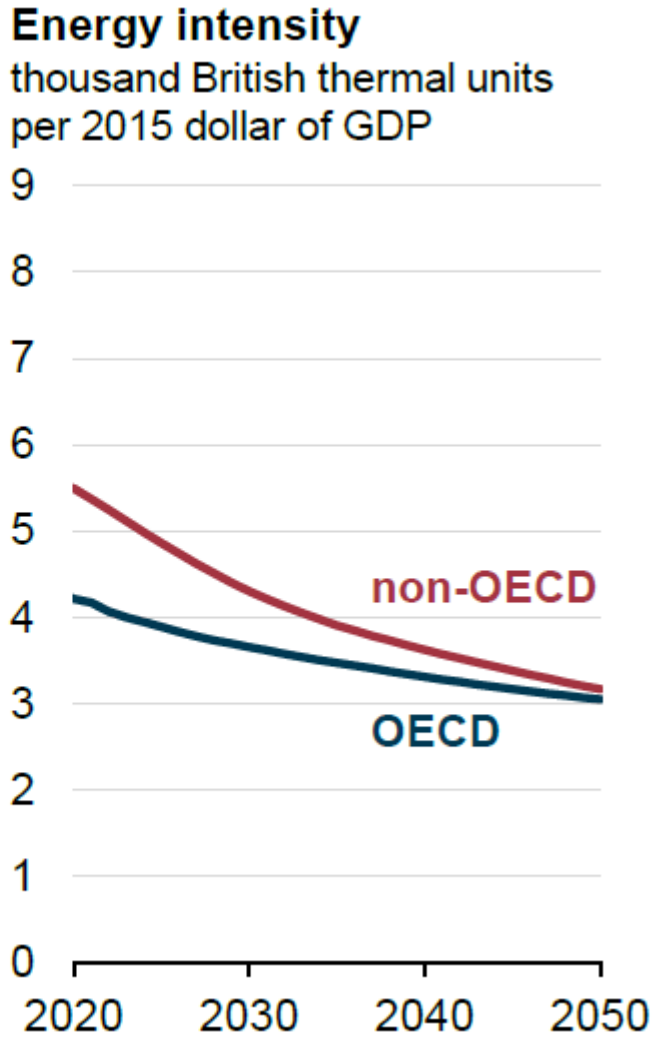
CO_2 emissions rise despite improvements in carbon intensity and efficiency

The shift in vehicle preference is enabled by technology, government policies and consumer preferences







Source: U.S. EIA, International Energy Outlook, Reference case; Oct 2021

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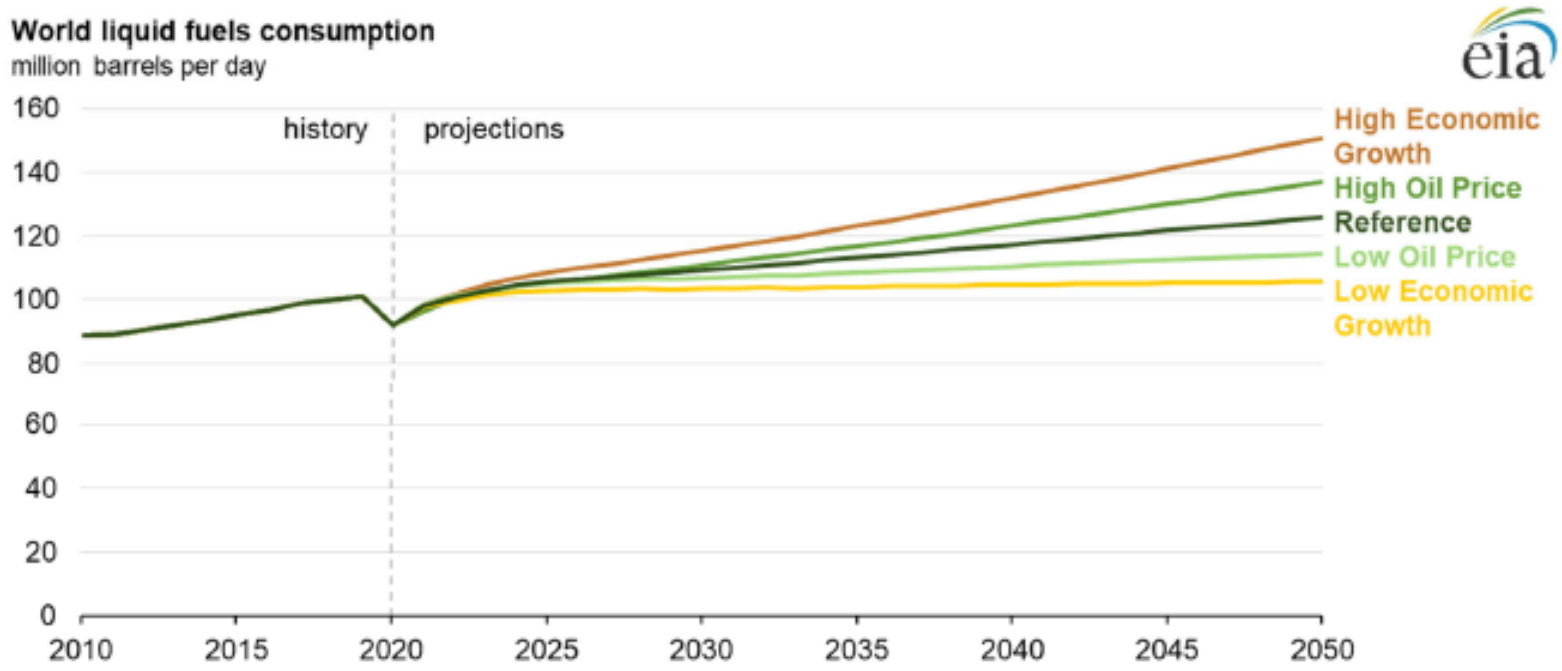
Scenarios illustrate the potential range of outcomes for the oil market

All scenarios by EIA have increasing demand through 2050; global resources deemed adequate for all scenarios



Source: U.S. Energy Information Administration, *International Energy Outlook 2021* (IEO2021) Reference case, Economic Growth cases, and Oil price cases

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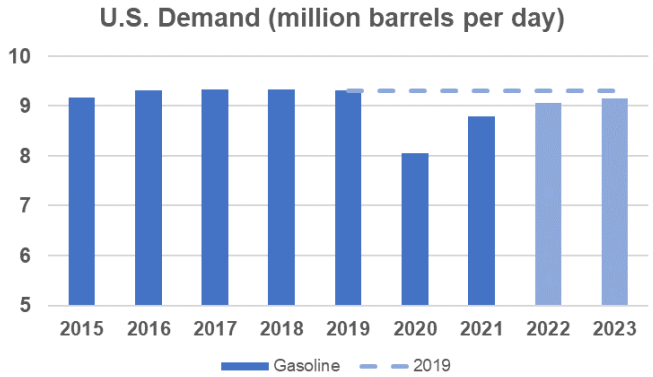
U.S. gasoline and diesel demand is recovering but jet fuel will lag

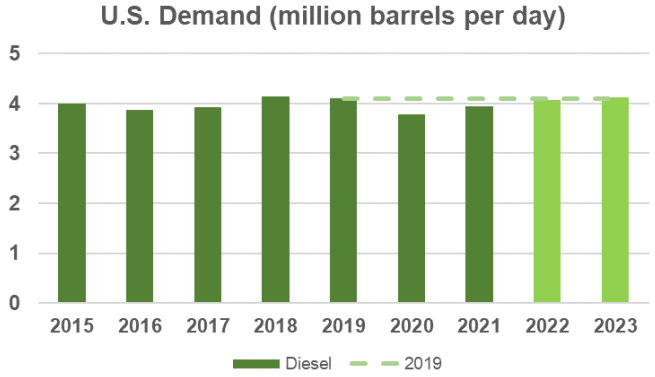
Gasoline



Source: U.S. Energy Information Administration

- Summer 2021 demand was almost back to 2019 levels
- Expecting continued demand growth in 2022 as COVID concerns ease
- Potential upside in summer from pent up travel demand
- Long term demand affected by new behaviors such as work from home; uncertainty is significant

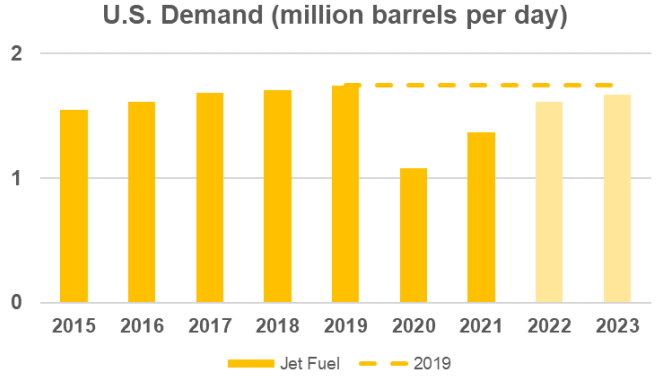
Diesel Fuel



Source: U.S. Energy Information Administration

- Least affected product due to strong growth in online sales and resilient construction activity
- Demand in 2021 was very close to pre-pandemic level. Strong demand for consumer goods and a resilient construction sector drove diesel use.
- Long term demand supported by infrastructure spending

Jet Fuel



Source: U.S. Energy Information Administration

- Most affected product in 2020
- Demand in 2021 rebounded with increasing domestic flights; primarily leisure travel
- Expecting moderate growth in 2022 as international travel restrictions are lifted and business travel ramps up
- Long term recovery to 2019 level is uncertain because of greater acceptance of video conferencing by business

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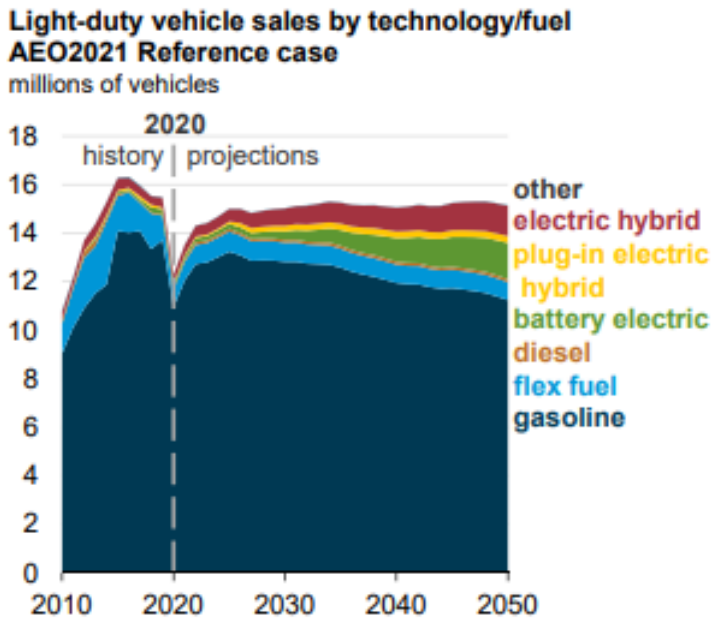
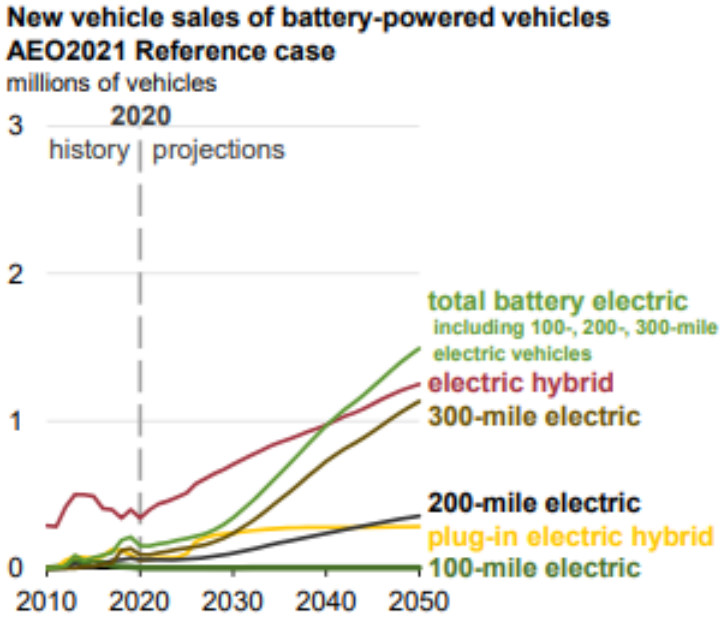
U.S. vehicle trends point to higher fuel efficiency and EV substitution



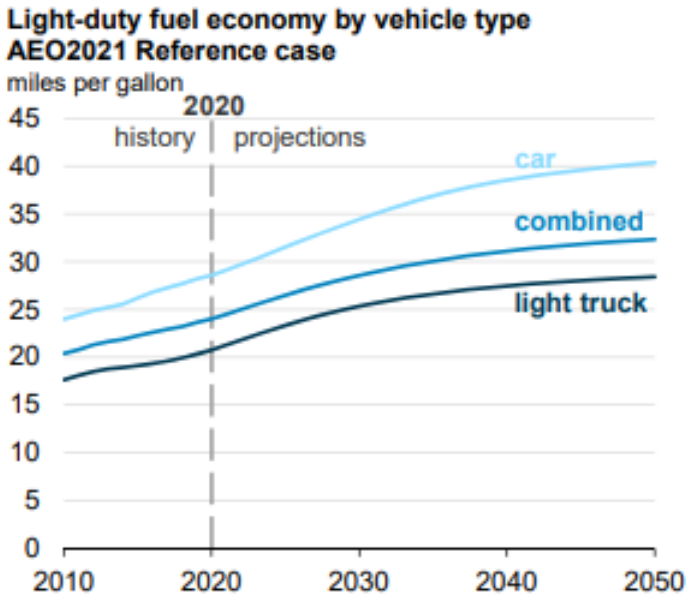
Source: U.S. Energy Information Administration, AEO2021 issued Feb. 2021.

- Gasoline-fueled vehicles' market share will erode as electric vehicle availability increases



Source: U.S. Energy Information Administration, AEO2021 issued Feb. 2021.

- Major manufacturers are starting to shift focus to EVs from ICE-vehicles
- Near term availability of affordable EVs is limited
- Consumer preference for light trucks and SUVs also acting to limit EV sales
- Longer term, expect EV sales to grow rapidly as value proposition improves



Source: U.S. Energy Information Administration, AEO2021 issued Feb. 2021.

- Efficiency improvements have materialized over last 10 years
- Expect continued improvement as more hybrids enter the fleet

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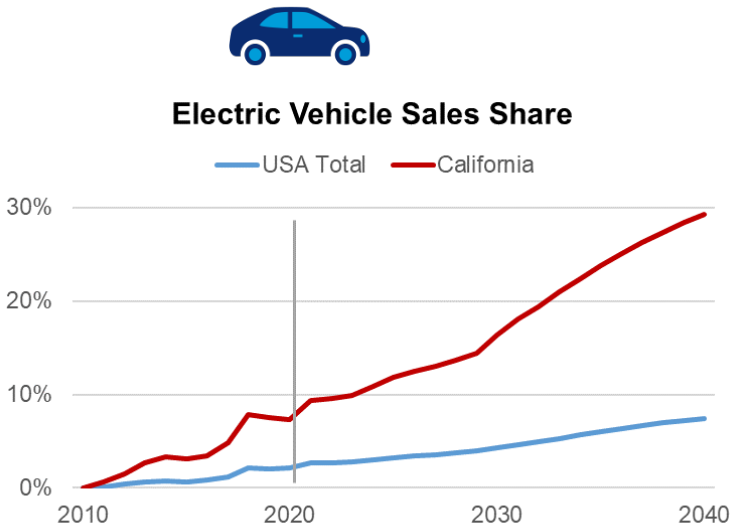
California demand for refined fuel expected to decline as efficiency improves

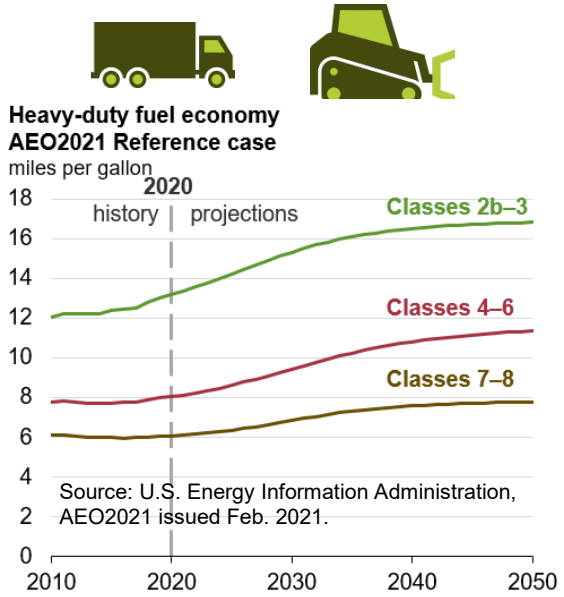
Gasoline



Source: US EIA AEO2021; EVs and PHEVs as share of total light duty sales

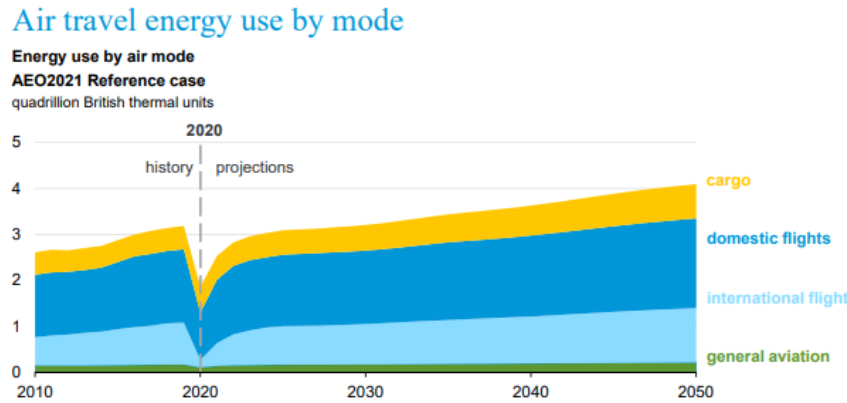
- California has the highest EV sales share of any state
- Potential to increase even faster if internal combustion engine ban is put in place

Diesel Fuel



- Medium and Heavy Duty vehicles are increasingly fueled by natural gas, renewable diesel, and electricity.
- Hydrogen-fueled Heavy Duty trucks are also emerging as a competitor to traditional diesel-fueled trucks.

Jet Fuel



Source: U.S. Energy Information Administration, AEO2021 issued Feb. 2021.

- Jet fuel demand in California was more deeply affected by the pandemic than other states
  - High level of domestic and international passenger/cargo traffic
- Refineries in California are configured to produce large share of jet fuel

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Oil Supply

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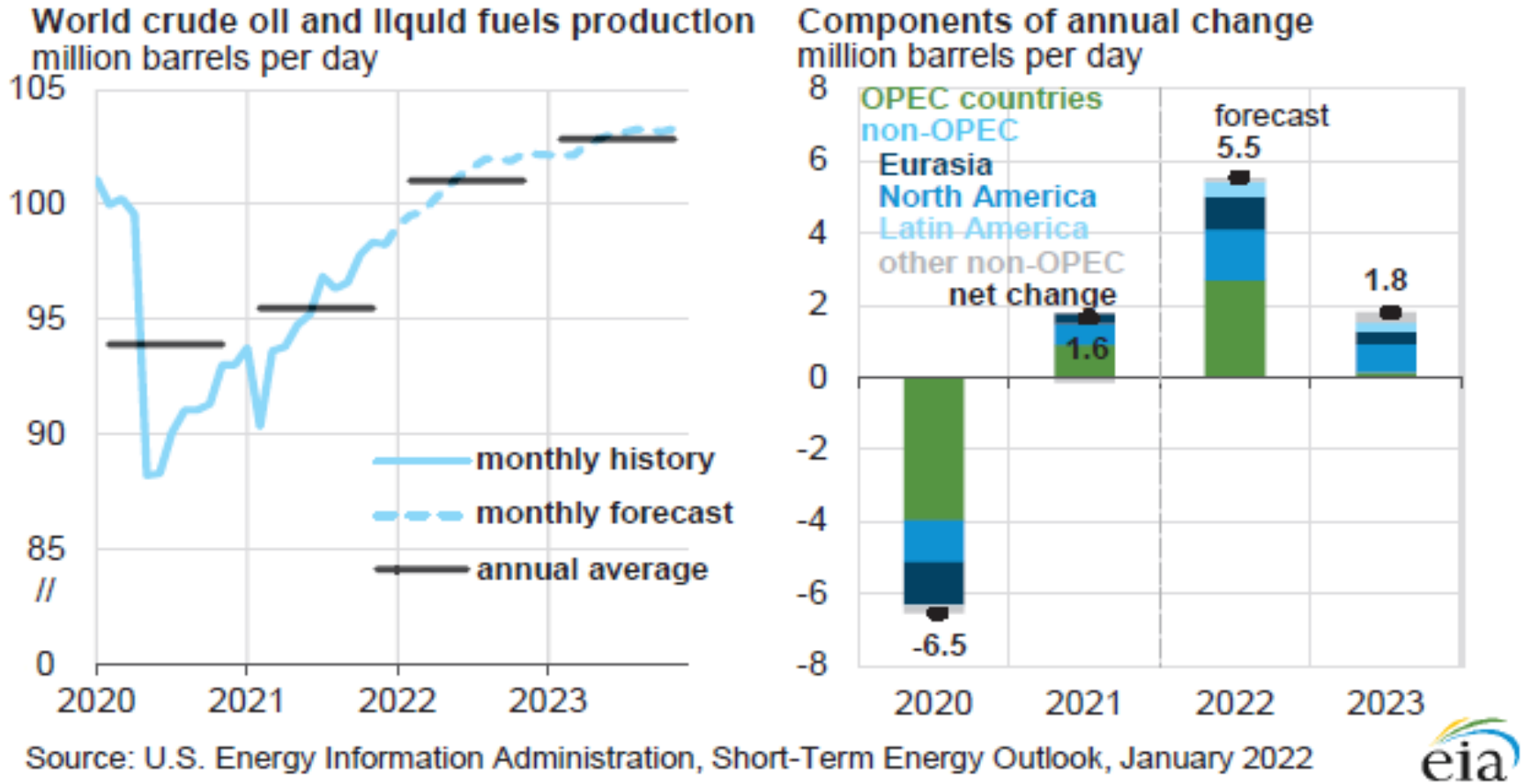
OPEC production cuts helped stabilize prices in 2020 and led to higher prices in 2021

OPEC expected to be a major source of new supply in 2022, but growth from other regions needed to balance the market



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, January 2022

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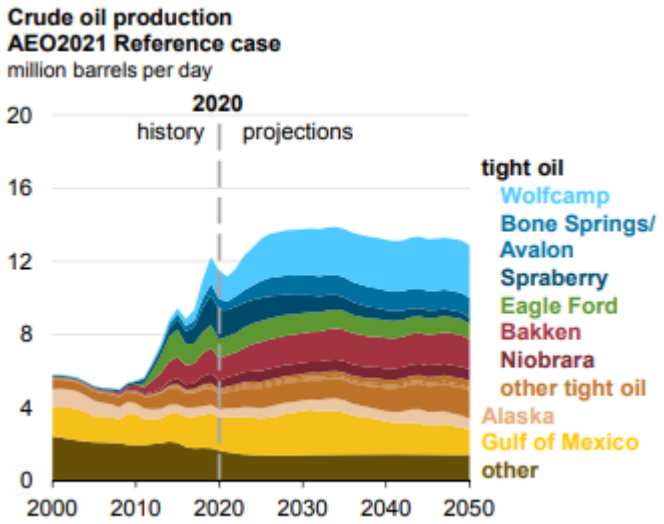
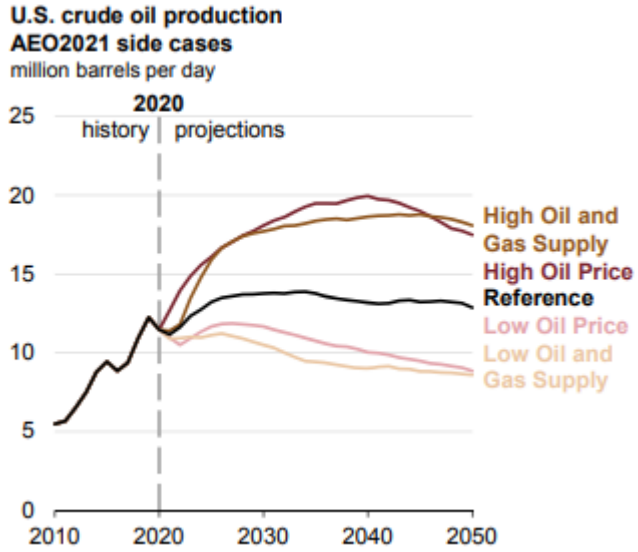
U.S. crude production outlook is strong with Permian Basin leading growth

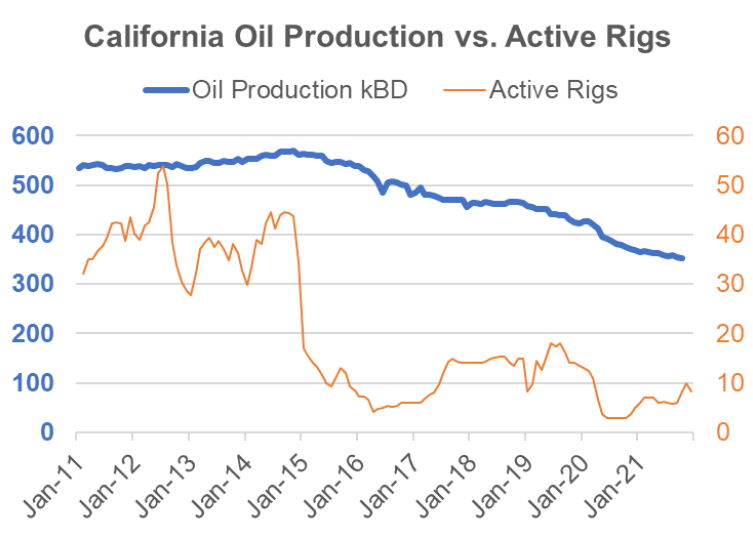
California production is likely to continue its historical decline



Source: U.S. Energy Information Administration, AEO2021 issued Feb. 2021.



Source: U.S. Energy Information Administration, AEO2021 issued Feb. 2021.



Sources: US EIA historical production; Baker Hughes rig data

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Oil Refining

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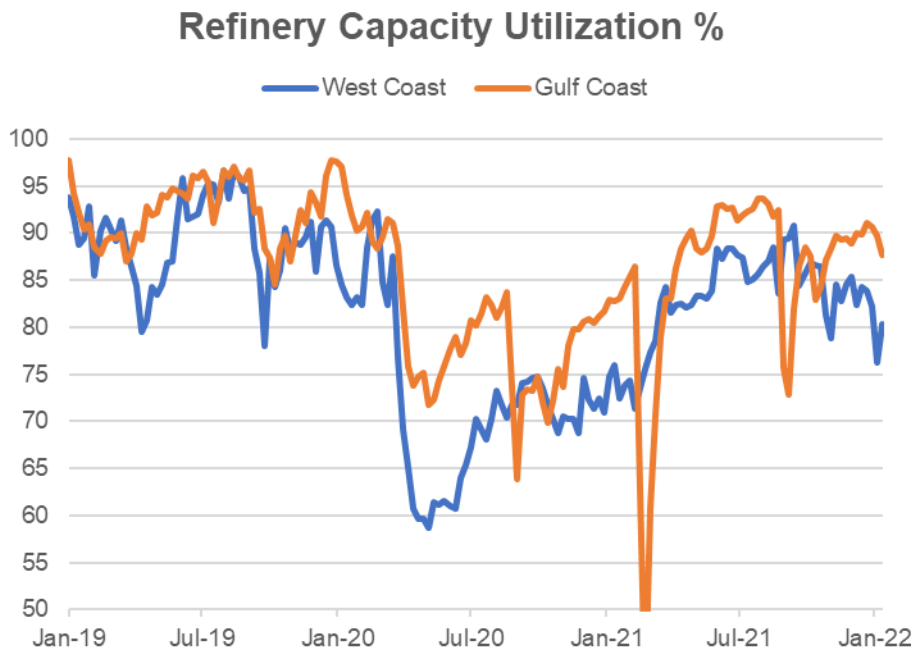
U.S. refinery capacity utilization is improving but remains low compared to 2019

West Coast utilization is lagging other U.S. regions due to jet fuel demand drop. Capacity rationalization has been widespread within the U.S., but also in Asia and Europe. Some sites in the U.S. will be converted to produce biofuels.



Source: U.S. Energy Information Administration

Announced U.S. Refinery Closures

State	Company	Refinery Site	CDU Capacity, kb/d	Closure Year
LA	Shell	Convent	260	2020
CA	Marathon	Martinez	166	2020
NJ	PBF	Paulsboro	80	2020
WY	HollyFrontier	Cheyenne	52	2021
NM	Marathon	Gallup	25	2020
ND	Marathon	Dickinson	20	2020
LA	P66	Belle Chase	250	2021
CA	P66	San Francisco	140	2023
			993	

Source: Publicly announced refinery closures.

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Oil Refining business is becoming more competitive

Demand growth is slowing

- Increasing vehicle efficiency expected to be the key driver of gasoline demand growth slowdown
- Refiners in markets with excess product must find new markets (usually exports) or reduce crude oil processing

New refineries in Asia

- Large state-of-the-art refineries are being built in China and India to help meet local demand, but also to export products
- Less competitive refineries in the Pacific Basin are likely to be the most affected

Less heavy crude available

- Surge of light crude production from the US is crowding out heavy crude supply that is a mainstay for complex refiners
- Sanctions on Venezuela and Iran are compounding the problem
- Complex refineries find it more difficult to fully use their installed equipment

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Q & A

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