

The Outlook for Global Oil Demand During the Energy Transition

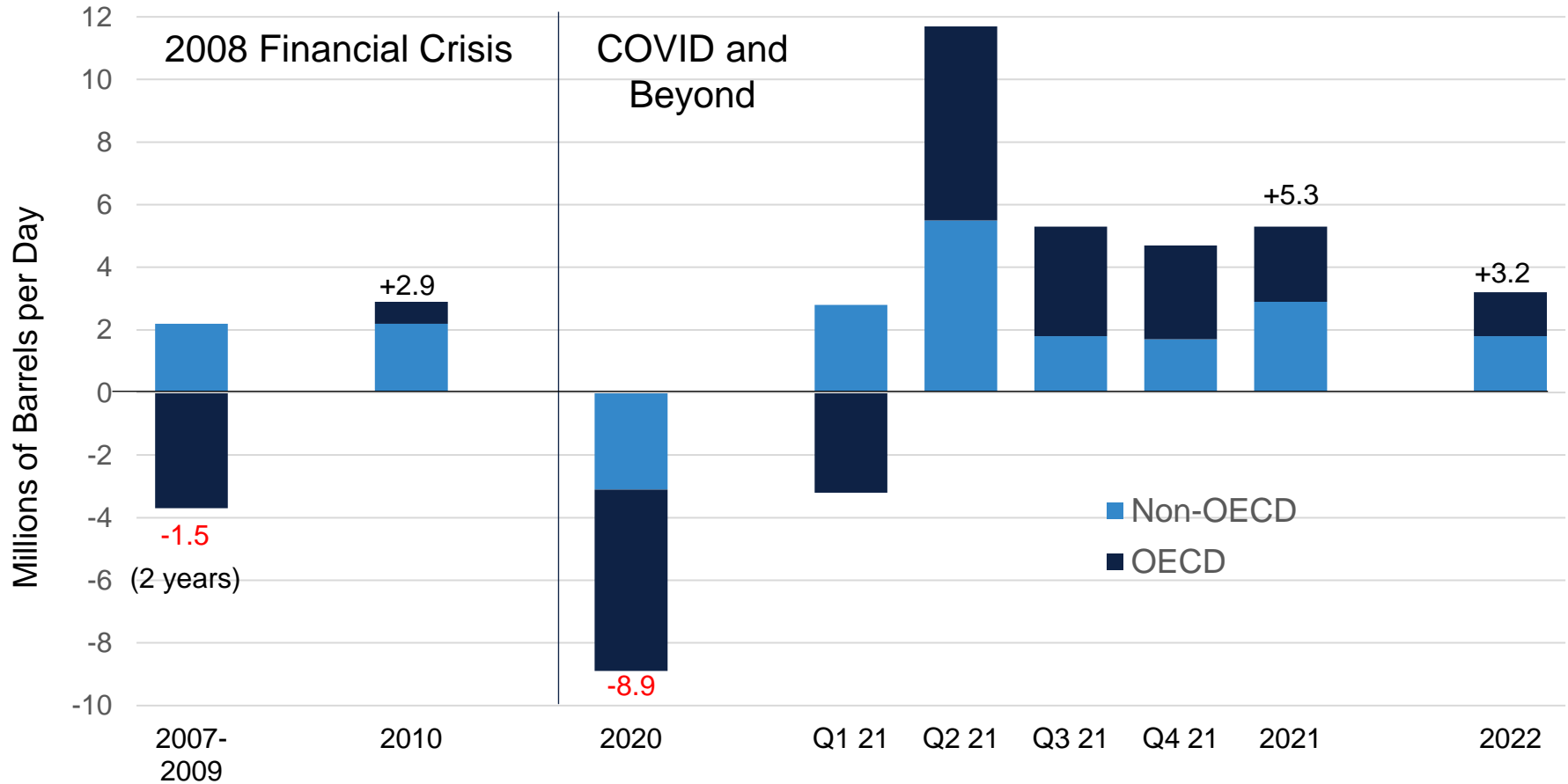
Marianne Kah
IAEE Webinar
September 1, 2021

Link to report:

<https://www.energypolicy.columbia.edu/research/report/will-covid-drive-early-peak-transportation-activity-and-oil-demand>

Change in Global Oil Demand: COVID vs. the 2008-2009 Financial Crisis

Global Oil Demand Year-Over-Year Growth / (Decline)

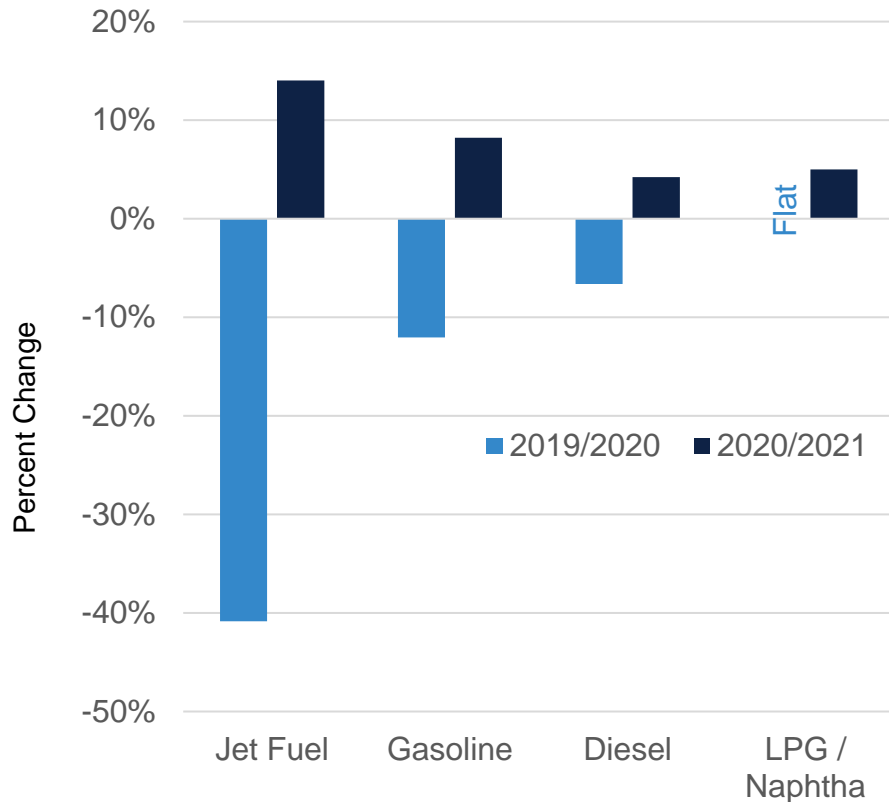


*Year-over-year and quarter-over-quarter except where noted

Source: International Energy Agency, Oil Market Report, August, 2021 and IEA Annual Statistical Supplemental 2007-2009

Global Refined Product Demand by Major Fuel Type

Percent Change in Fuel Demand in 2020 and Forecast for 2021



2020

- Jet fuel was most adversely impacted by COVID
- Gasoline demand was more resilient than jet fuel demand because:
 - Personal vehicles were deemed safe
 - Driving substituted for mass transit and short flights
- Diesel demand was more resilient than gasoline demand because:
 - Trucking and agriculture remained robust
 - E-commerce increased trucking
- LPG / naphtha demand were least impacted during COVID in 2020

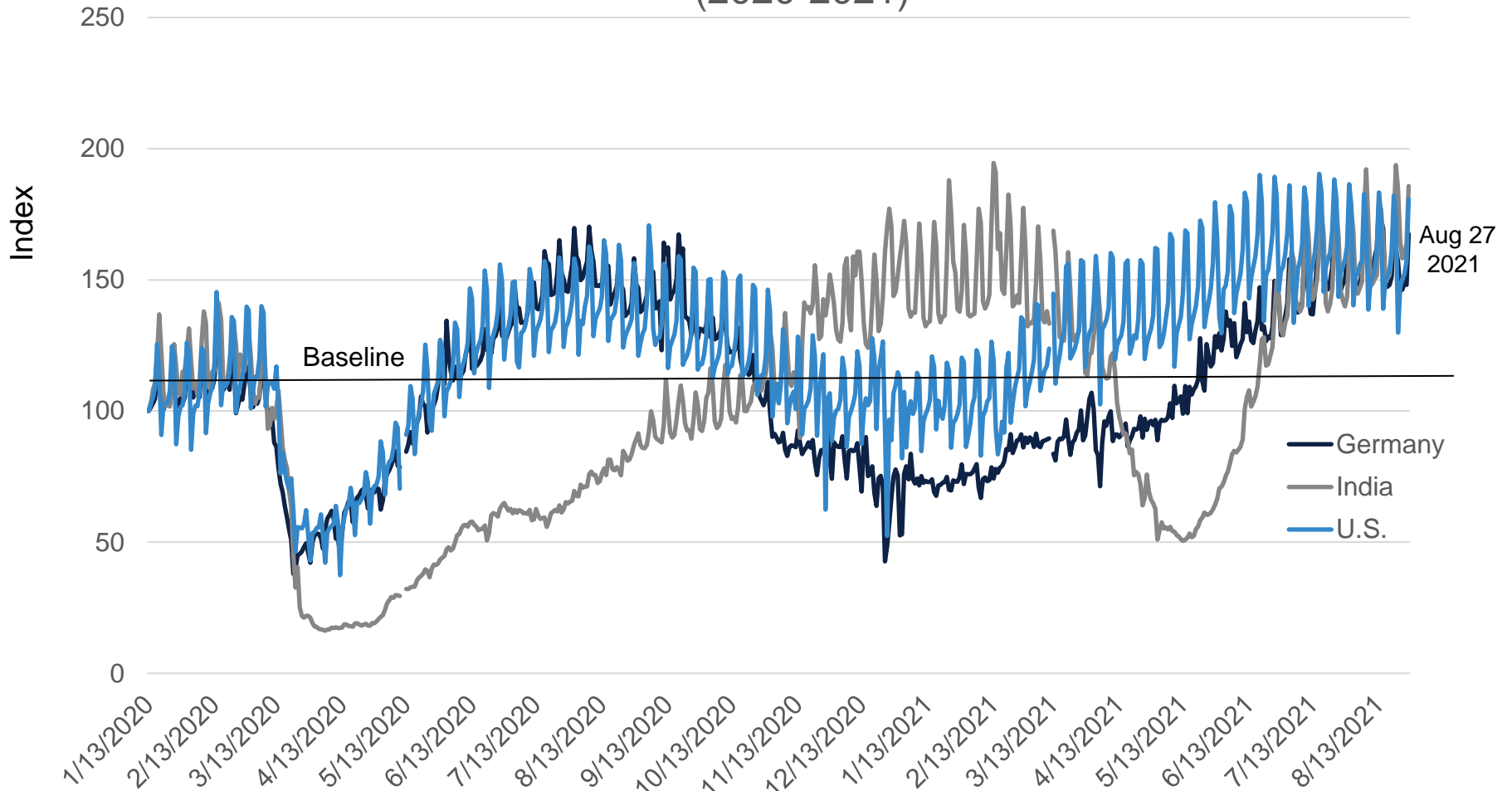
2021

- Gasoline and diesel expected to recover about two-thirds of the demand lost in 2020

Source: International Energy Agency, Oil Market Report, August, 2021

Driving Trends in Selected Countries

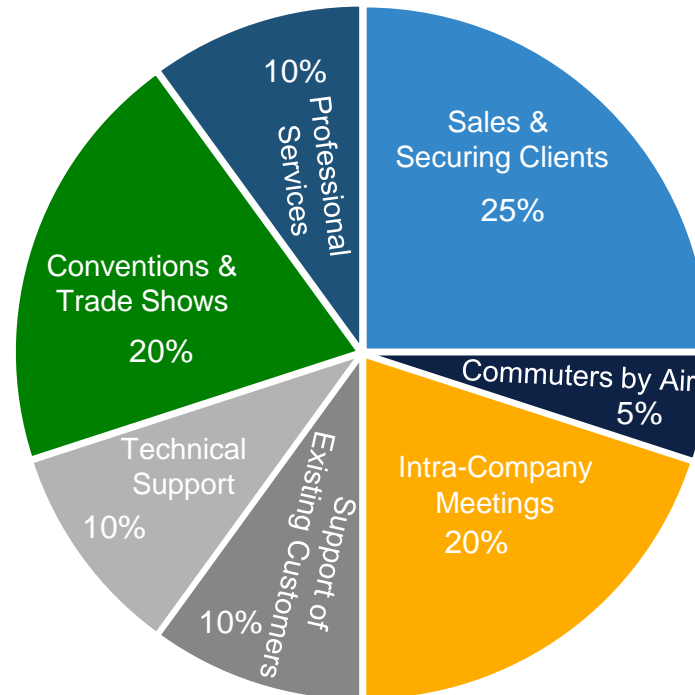
Apple Mobility App Traffic Data (2020-2021)



This chart only has directional implications. It represents the change in volume of people driving in their communities, based on requests to Apple Maps for directions. <https://www.apple.com/covid19/mobility>

Airline Business Travel Activity by Trip Purpose

Approximate shares of airline traffic



Three quarters of business travel is not directly related to capturing new customers

Percentages based upon a review of reports from government, commercial and academic sources with assessments made by a group of travel industry professionals coordinated by IdeaWorksCompany

Structural Impacts of COVID on Global Oil Demand

Reduces Oil Demand

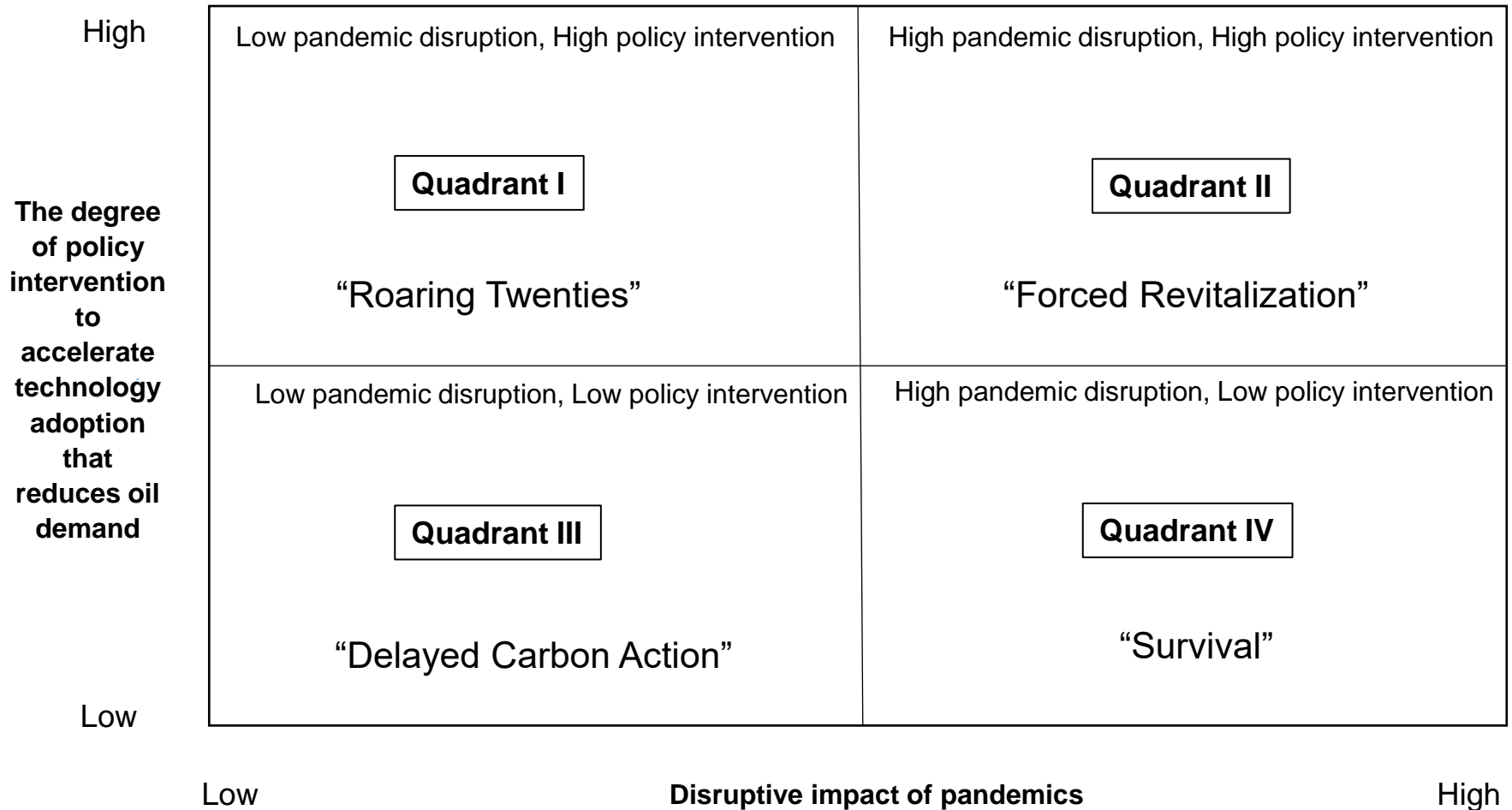
- Government policies accelerating the energy transition
 - Green stimulus
 - Incentivizing EVs and charging infrastructure
 - Green Deal in EU
 - Support for renewable hydrogen
 - China becoming carbon neutral by 2060
- Acceleration of digitalization trends that reduce need for mobility
 - Telecommuting
 - Teleconferencing
 - Tele-shopping
 - 3D printing

Increases Oil Demand

- Increased dominance of personal vehicles and reduction in use of mass transit
- Movement out of largest cities to suburbs and smaller cities where people drive more
- Digitalization can also encourage driving
 - Telecommuters spend freed up time driving more for other reasons
 - E-commerce with frequent deliveries can increase miles traveled by trucks
- Increase in single use plastics
 - Personal protection equipment
 - Food take-out containers
 - E-commerce packaging

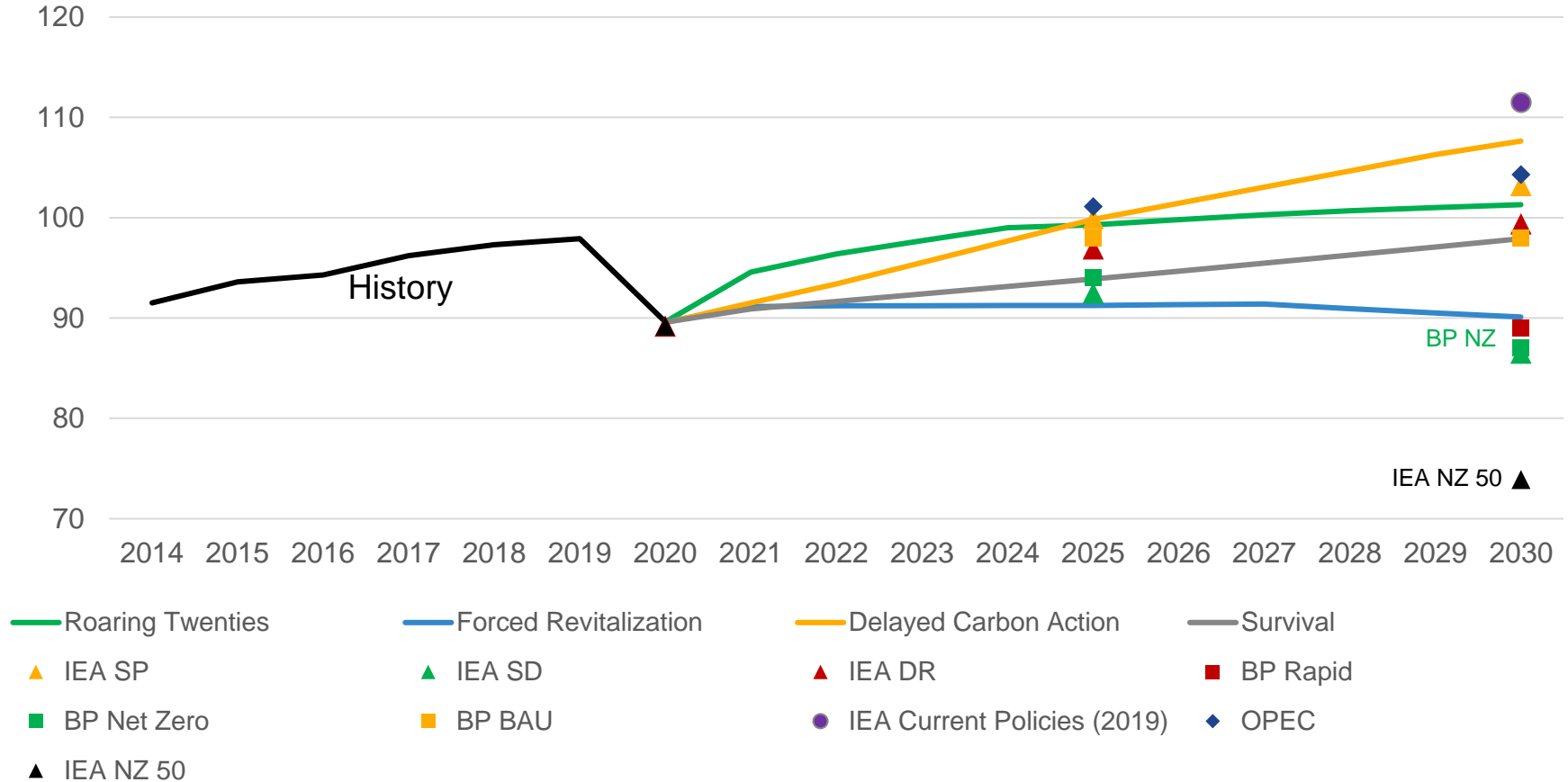
There could be a permanent downshift in global oil demand

Scenarios Developed



Global Oil Demand* Across All Scenarios

Million Barrels per Day

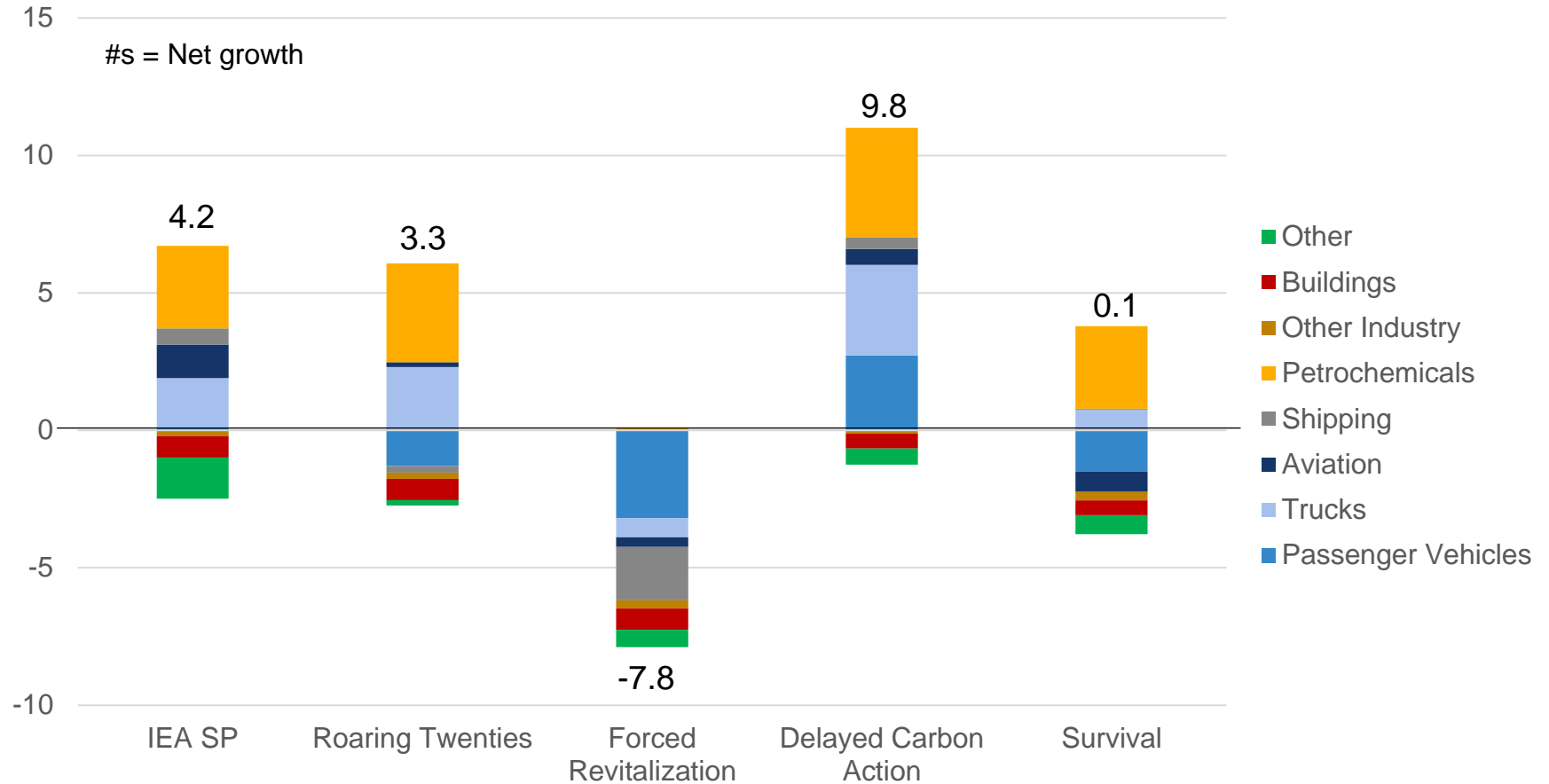


In three of our four scenarios, global oil demand doesn't peak before 2030

Data Sources: Historical data – International Energy Agency Annual Statistical Supplement (2020); IEA 2020 World Energy Outlook forecast, Stated Policies (SP), Sustainable Development (SD), and Delayed Recovery (DR) scenarios; IEA 2019 World Energy Outlook Current Policies scenario; BP Energy Outlook, 2020; OPEC World Oil Outlook 2020* Excluding biofuels

Global Oil Demand* Growth by Sector

Growth from 2019 – 2030 in Million Barrels per Day



Growth in petrochemical and truck demand offsets decline in passenger vehicle sector

Source: IEA 2020 World Energy Outlook forecast, Stated Policies (SP) and scenarios from CGEP *Excludes biofuels

Key Observations

- Global oil demand is unlikely to peak before 2030 without very weak global economic growth and aggressive government climate policy
- Even if global oil demand peaks prior to 2030, it is unlikely to decline precipitously unless the world is on a net zero 2050 trajectory
- With current policies contemplated, the world is unlikely to get on the net zero 2050 trajectory by 2030
- With the rising ESG movement constraining investment in new oil supplies and high natural oil production decline rates, global oil supply may not keep pace with global oil demand in the next decade

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