



Impact of COVID-19 on the Energy Transition & Industry Or: Better decarbonizing the oil and gas industry?

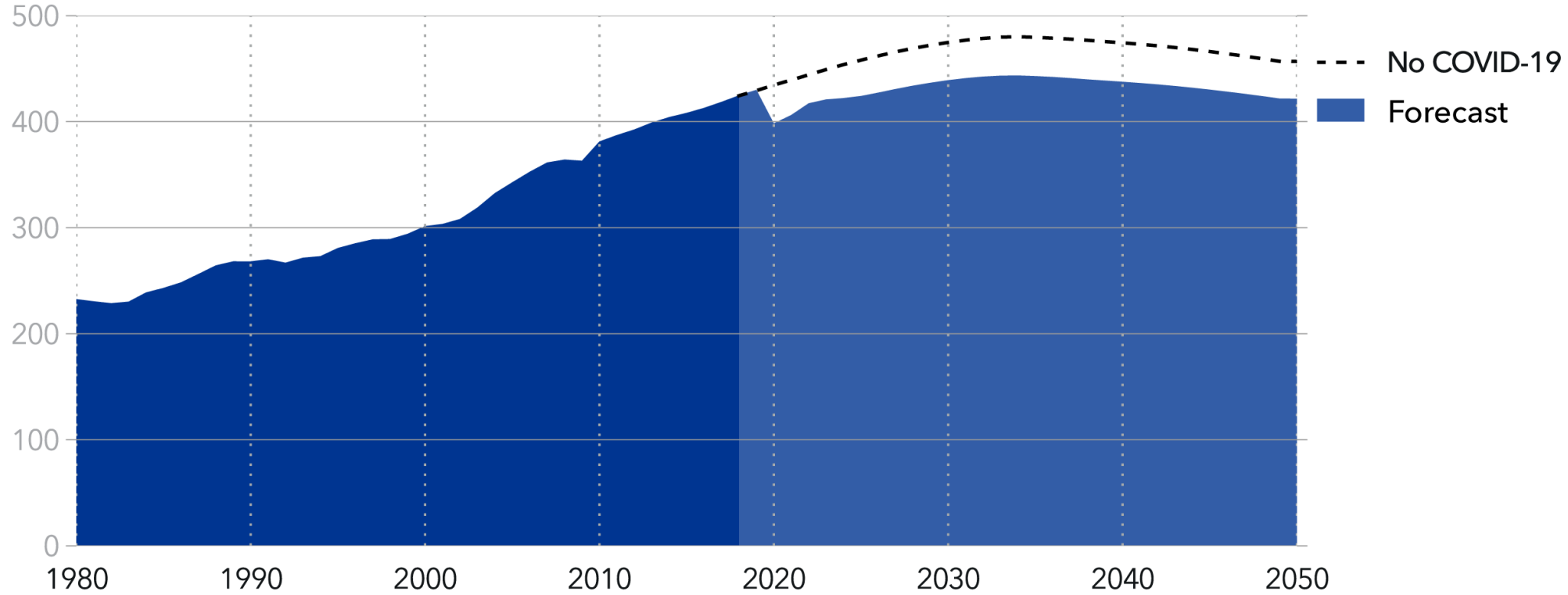
Dr. Felix Weise

10 December 2020

World energy demand slows

World final energy demand - with and without COVID-19

Units: EJ/yr

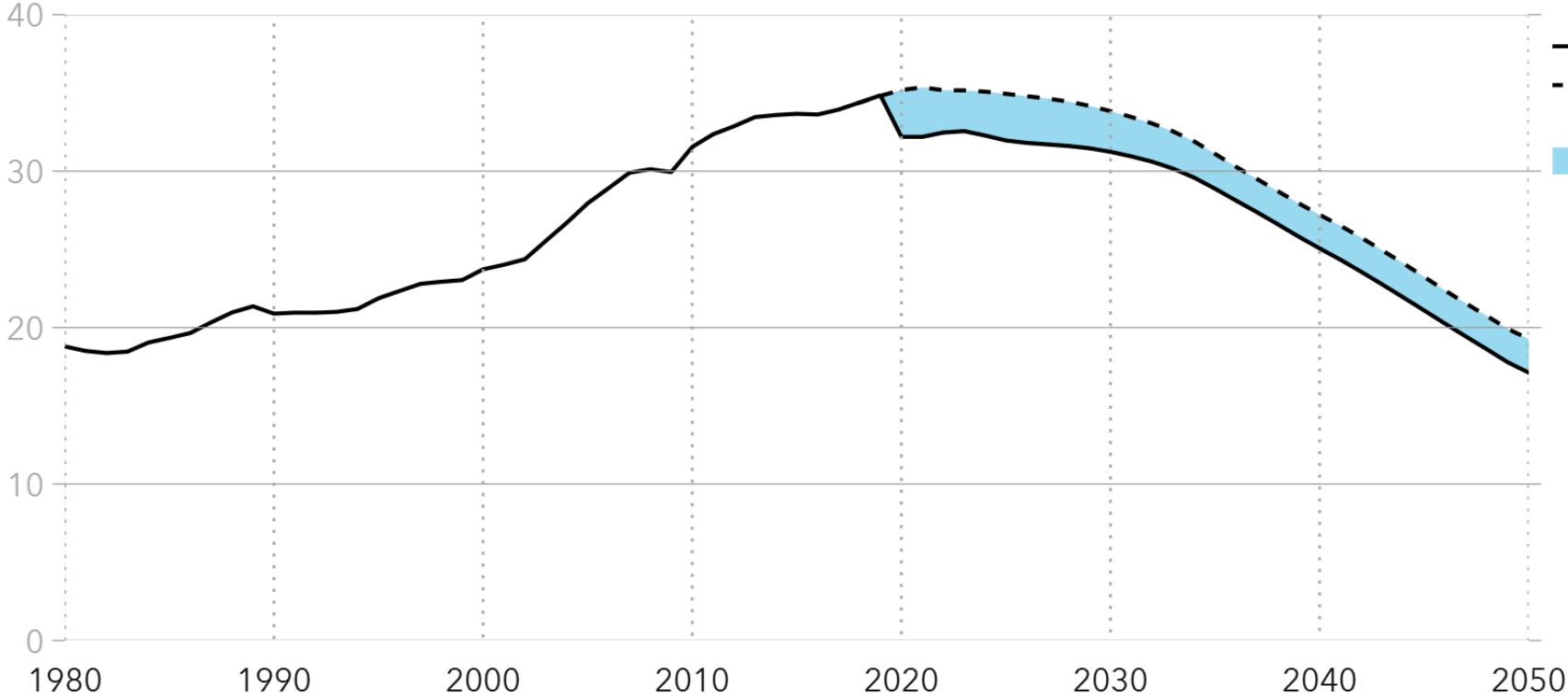


Historical data source: IEA WEB (2019)

Deep decarbonization is still 15 years away

World energy-related CO₂ emissions - with and without COVID-19

Units: GtCO₂/yr



- Base
- - - No COVID-19
- Avoided emissions = 75 Gt CO₂

Pressure is mounting to decarbonize the oil and gas industry



25%

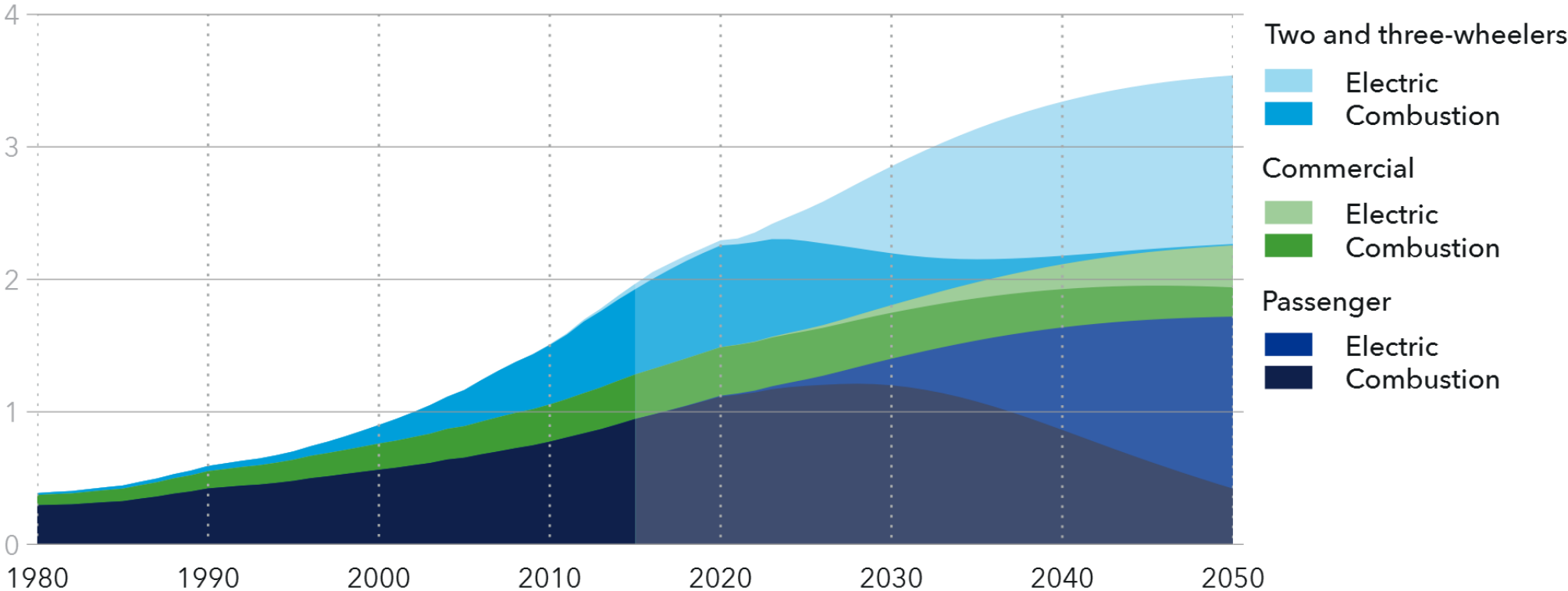


75%

Number of vehicles expand by 75%

World number of road vehicles by type and drivetrain

Units: Billion vehicles

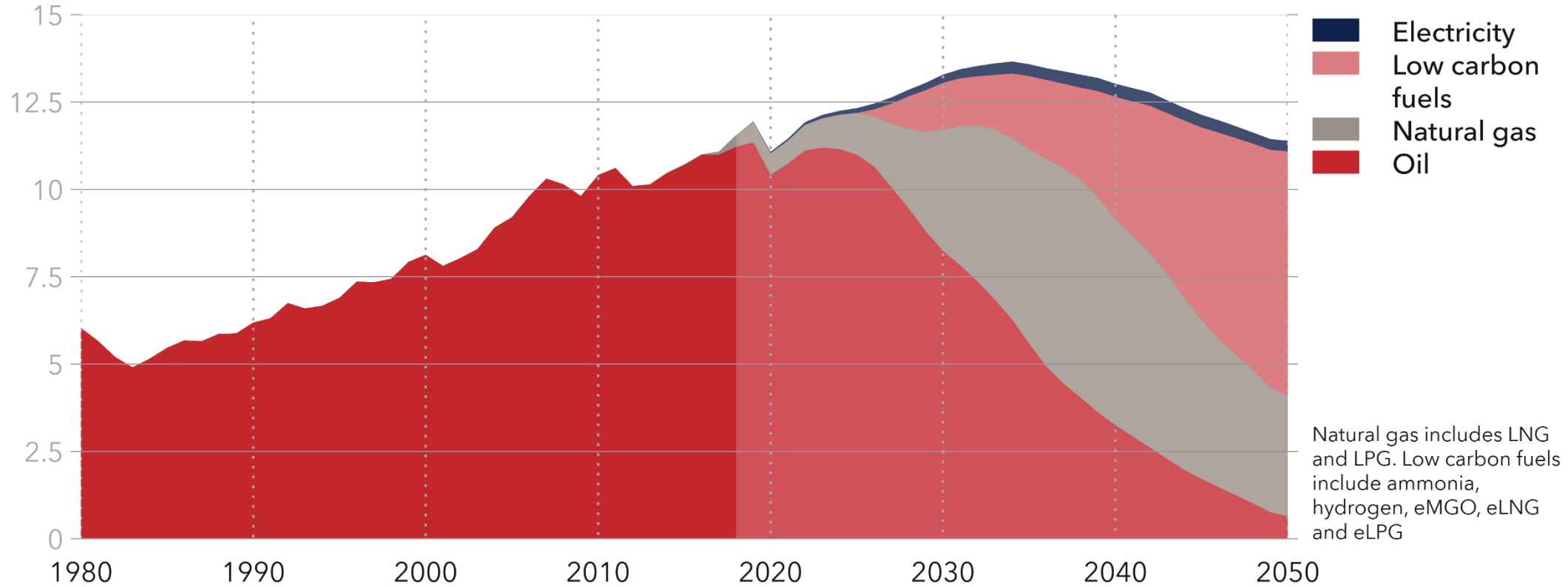


Combustion vehicles include ICEs and PHEVs. Electric vehicles include BEVs and FCEVs.
 Historical data source: OICA (2016), IEA GEVO (2018)

The maritime fuel mix will change dramatically

World maritime subsector energy demand by carrier

Units: EJ/yr



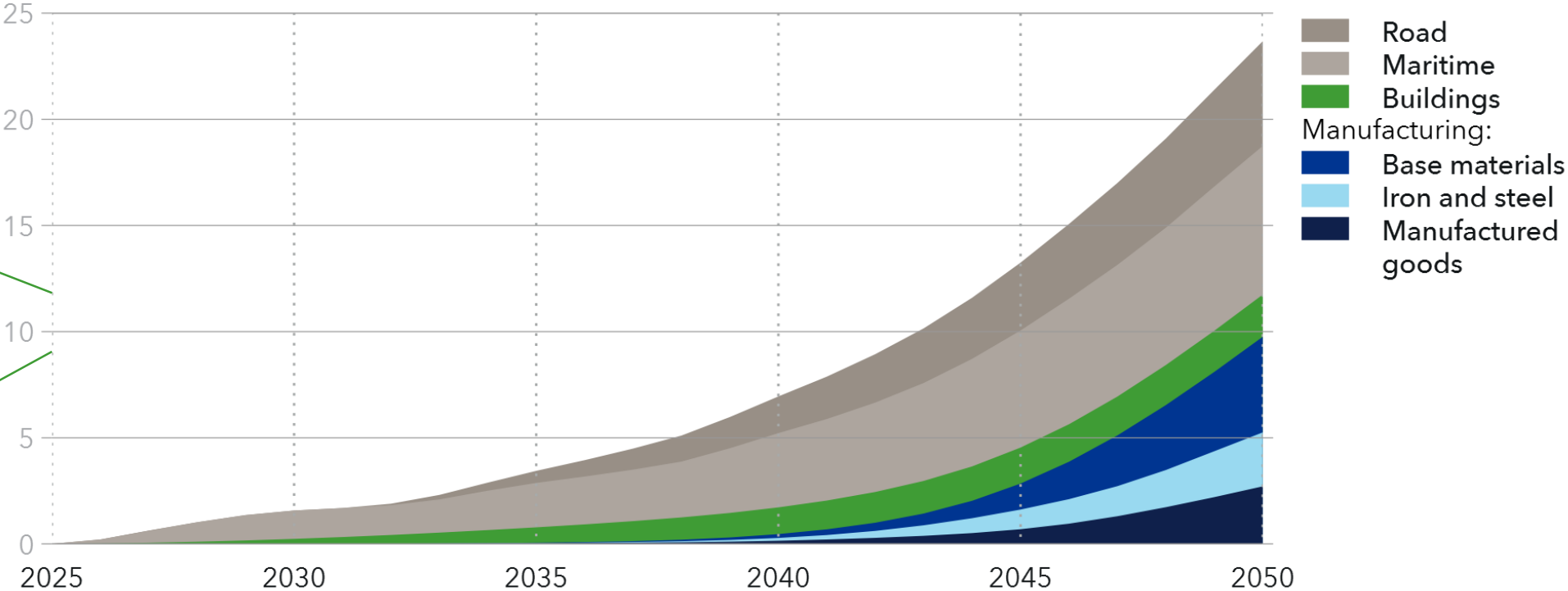
Natural gas includes LNG and LPG. Low carbon fuels include ammonia, hydrogen, eMGO, eLNG and eLPG

Historical data source: IEA WEB (2019)

Hydrogen could be transformative in the energy transition

World hydrogen demand by sector

Units: EJ/yr



12 EJ = 100m tonnes of hydrogen

Today's hydrogen production for feedstock (~72m tonnes)

Only includes hydrogen as energy carrier. Maritime sythetic fuels are counted as hydrogen.

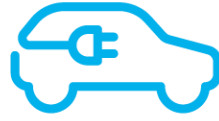
Policy factors influencing the Outlook



**RENEWABLE
POWER SUPPORT**



**ENERGY STORAGE
SUPPORT**



**ZERO EMISSION
VEHICLE SUPPORT**



**HYDROGEN
SUPPORT**



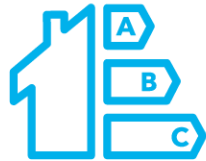
**FUEL-, ENERGY- AND
CARBON TAXATION**



**PLASTIC POLLUTION
INTERVENTIONS**



**CARBON CAPTURE
SUPPORT**



**ENERGY EFFICIENCY
STANDARDS**



**BANS AND
PHASE-OUT PLANS**

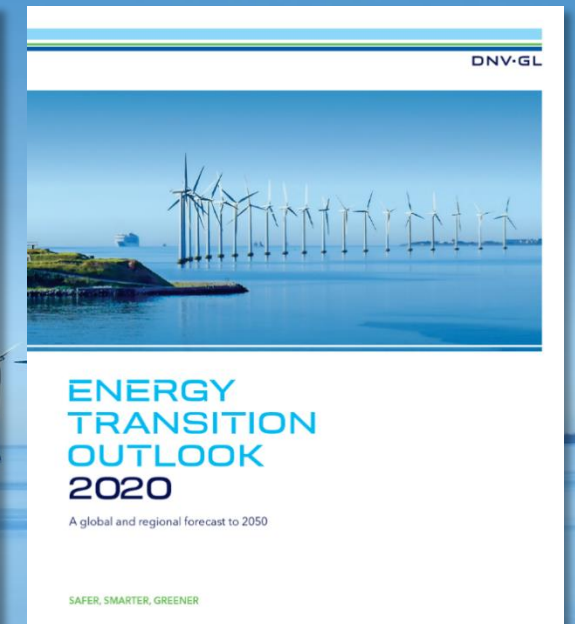
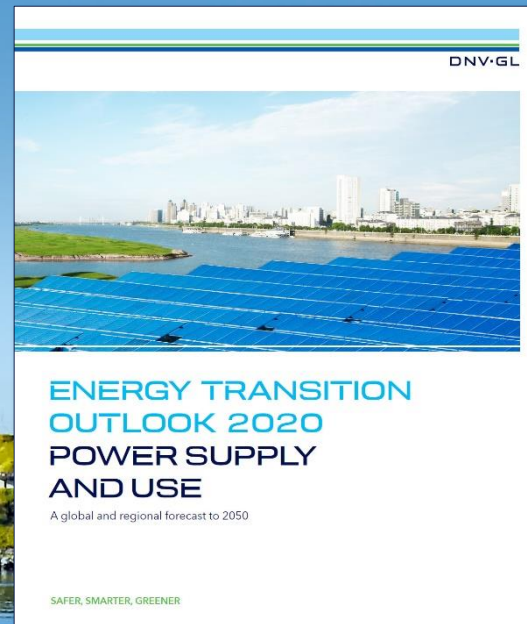
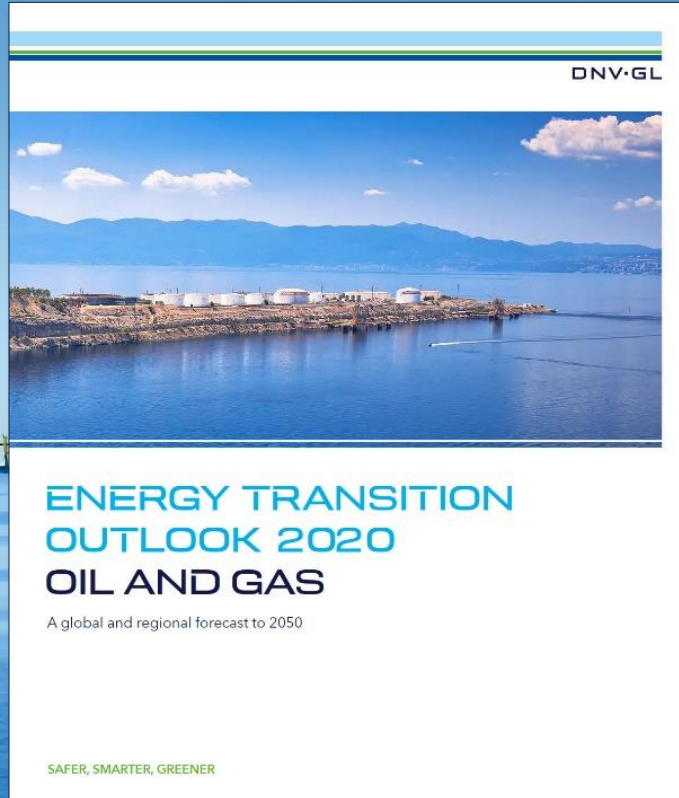


**CARBON-PRICING
SCHEMES**



**AIR-POLLUTION
INTERVENTIONS**

Thanks a lot for your attention!



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