



Shell Scenarios

# The Energy Security Scenarios

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# Warning: Uncertainties ahead

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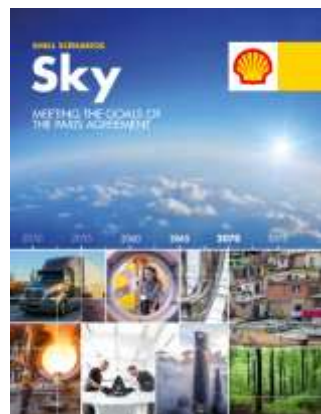
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Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as "aim", "ambition", "anticipate", "believe", "could", "estimate", "expect", "goals", "intend", "may", "milestones", "objectives", "outlook", "plan", "probably", "project", "risks", "schedule", "seek", "should", "target", "will" and similar terms and phrases.

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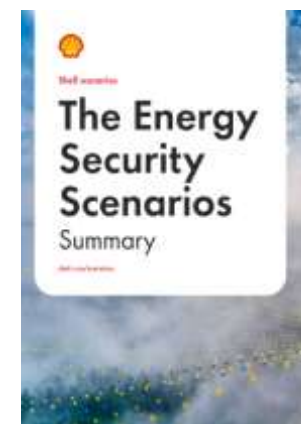
# Our scenarios are driven by climate, security and technology



2015  
Paris  
Agreement



2020  
Pandemic



2022  
Russian  
Invasion

2018-19  
Digitalisation  
excitement

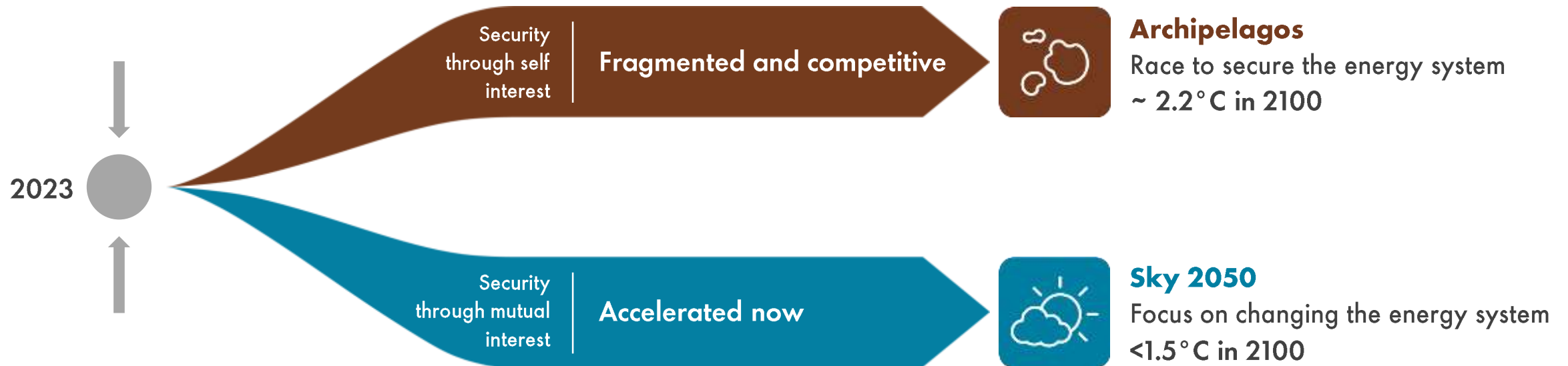


2021  
IEA NZE  
scenario



2024  
AI excitement

# The Energy Security Scenarios: **Sky 2050** and **Archipelagos**

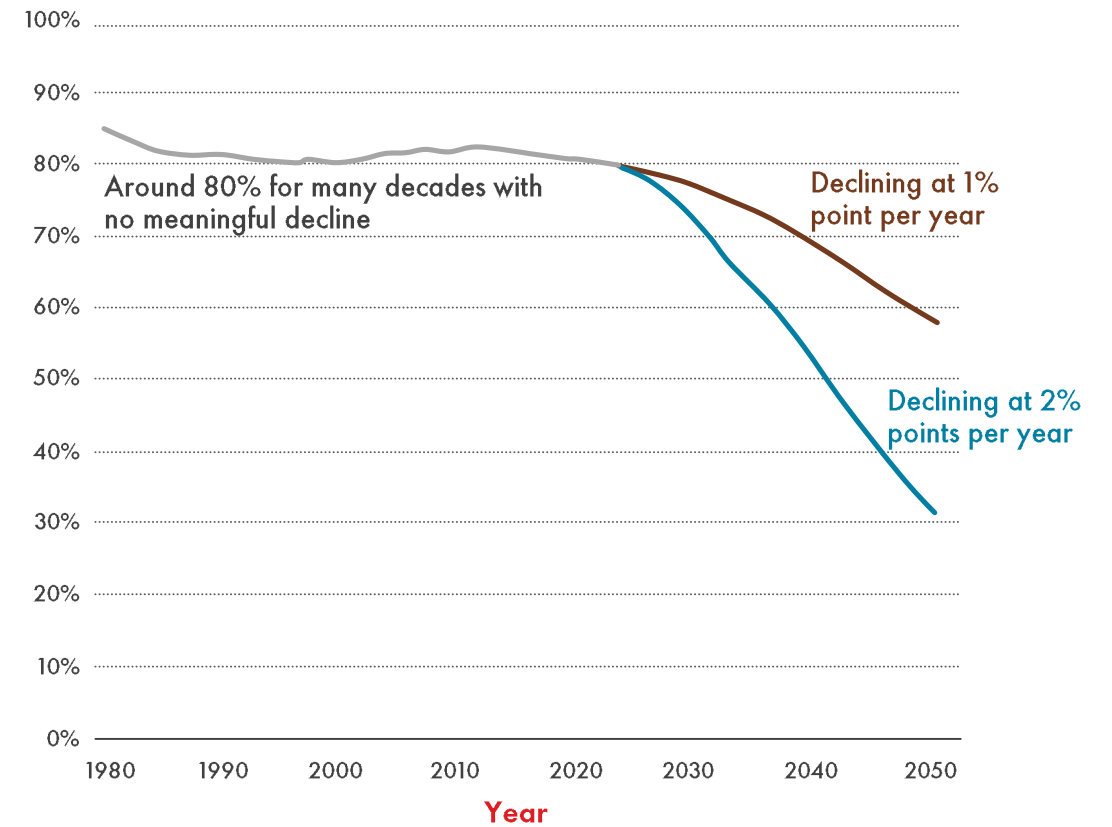


# In both scenarios fossil fuels start to lose market share



Oil, coal and gas as a fraction of total primary energy

Fraction of primary energy (%)

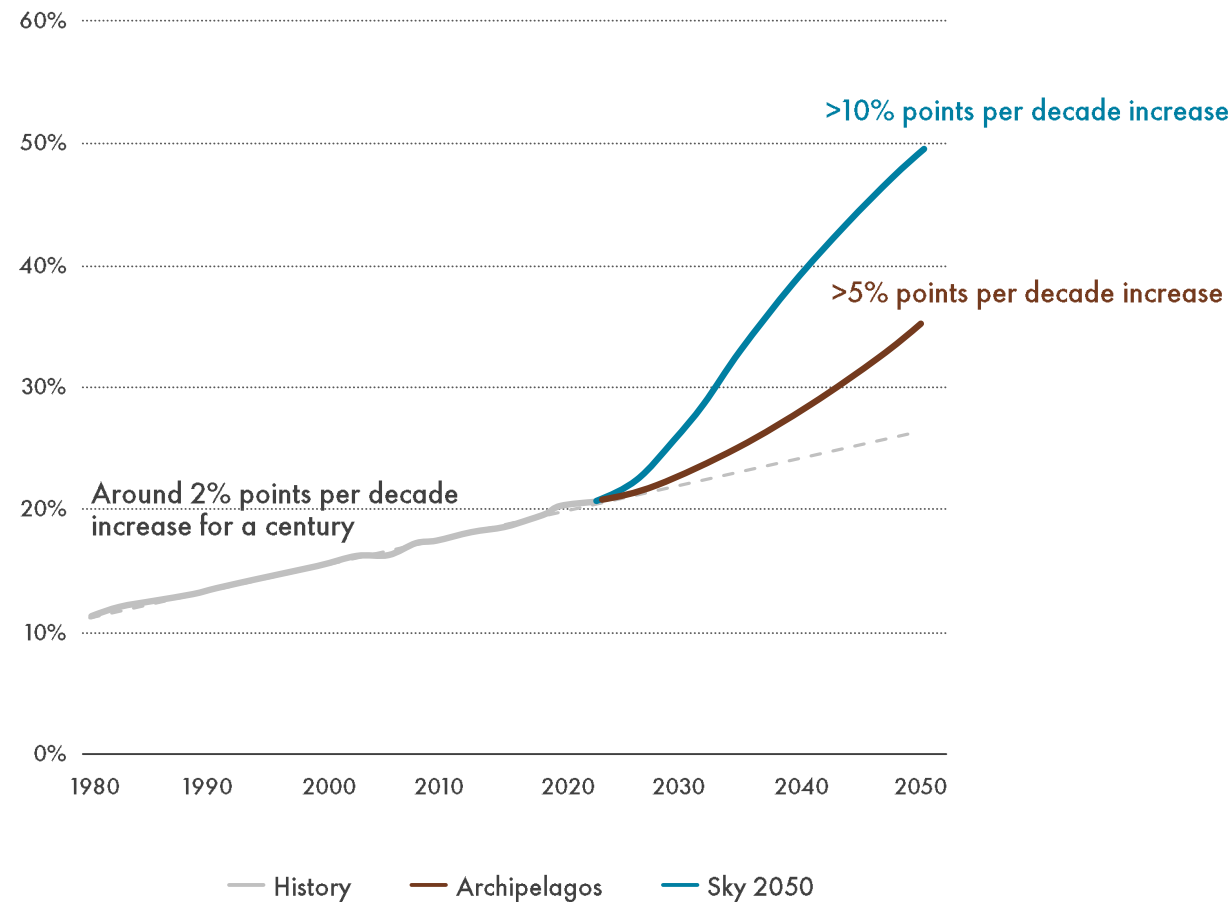


# In the long-term electrification accelerates



Electricity as a fraction of total final energy

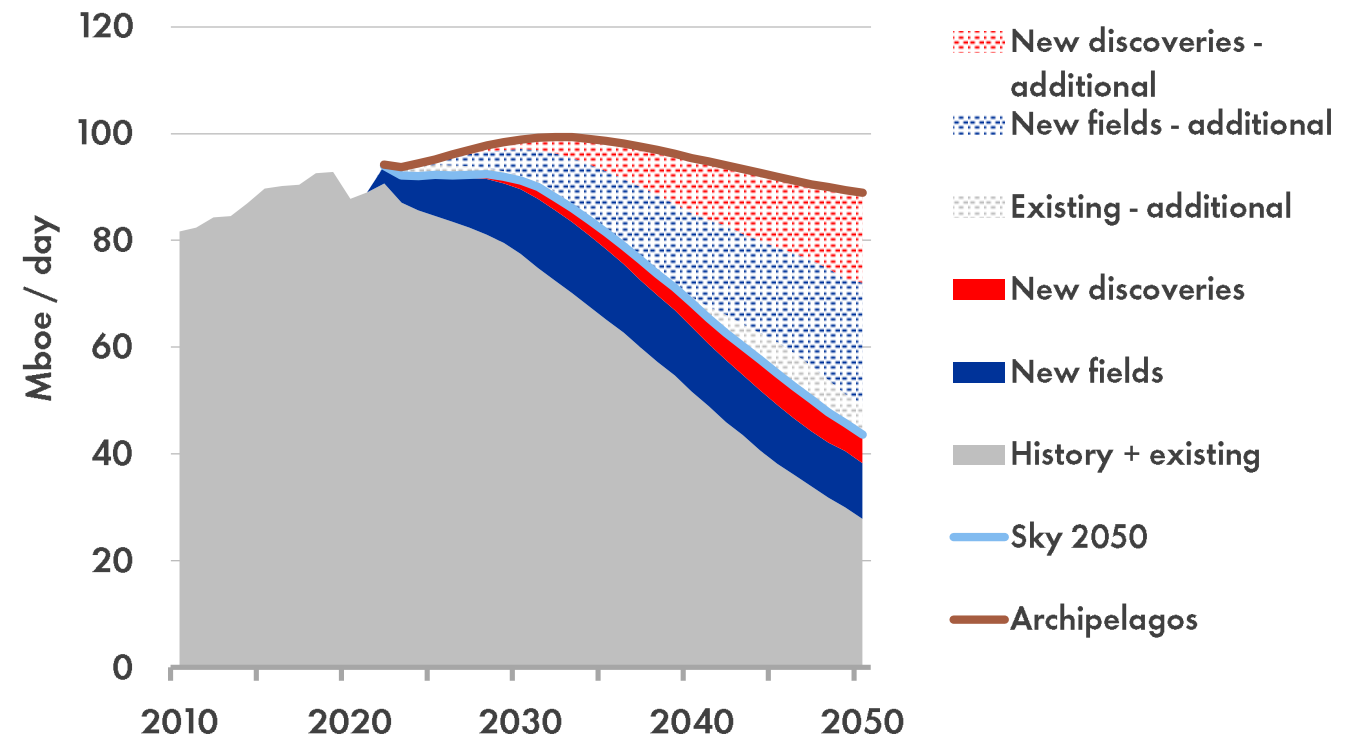
Fraction of final energy (%)



# Continue oil & gas investment is required



Oil production by origin

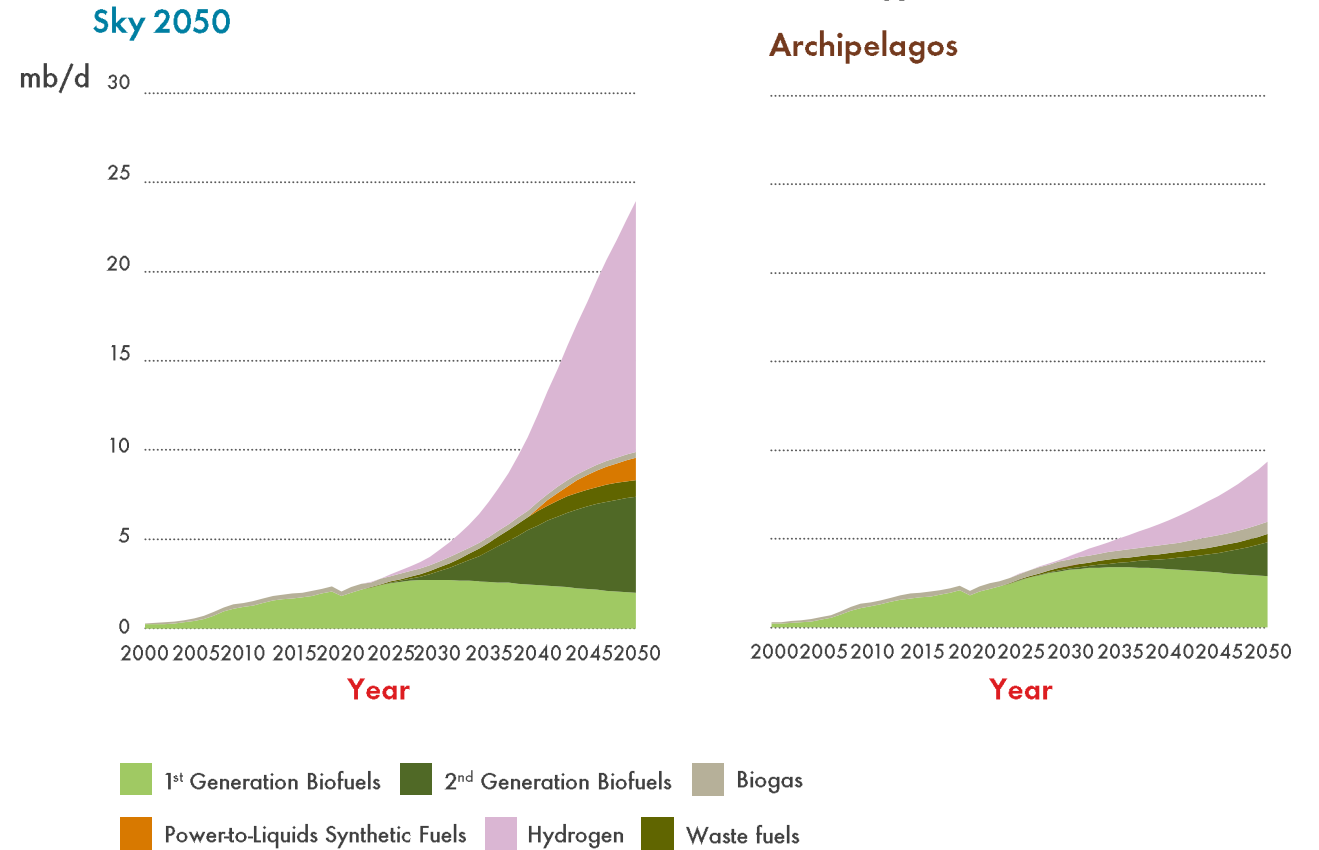


# Low carbon molecular fuels will need to grow

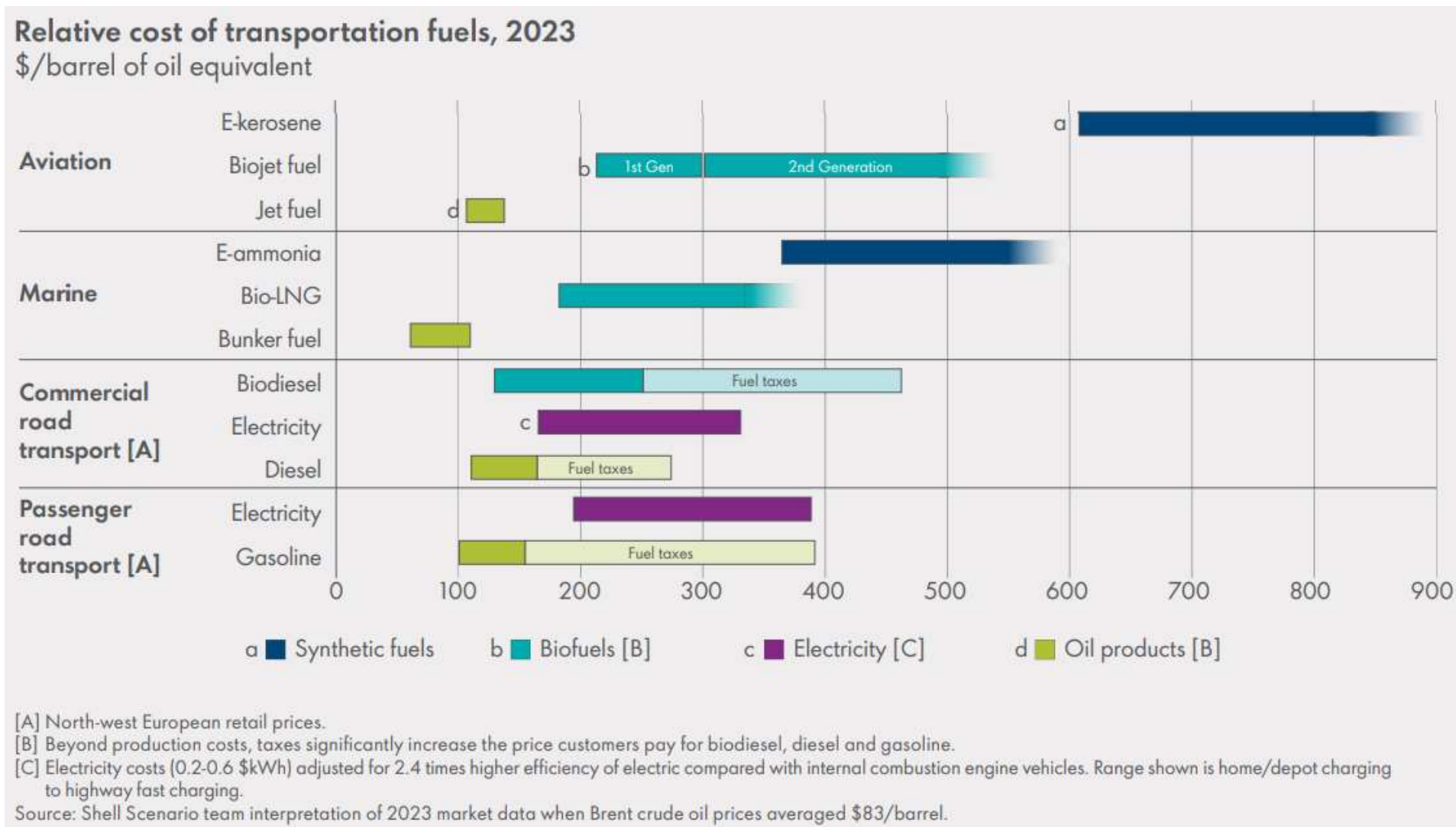
Shell Holland Hydrogen 1 (under construction)



Low carbon fuels in final energy



# The relative cost of transport fuels in 2023

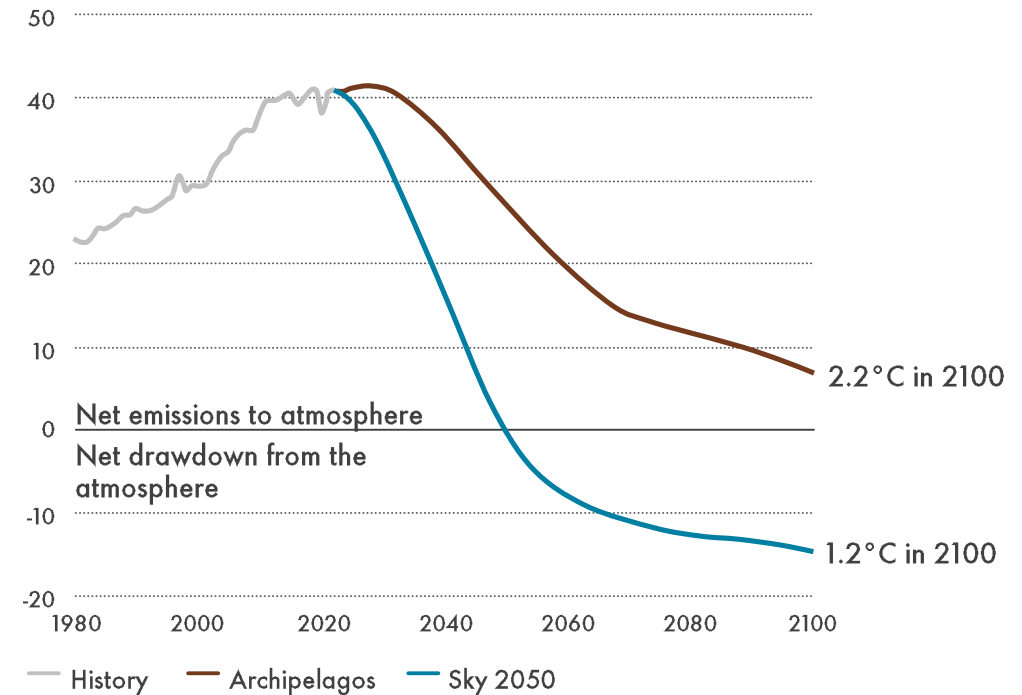


# Carbon capture and storage and removals will also be needed



## Global anthropogenic CO<sub>2</sub> emissions

Energy, Industrial processes and land use, CO<sub>2</sub> emissions (Gt per year)



# Four energy transition archetypes are emerging, each with a differing pace

**Innovation Wins**  
(new solutions with  
rapid commercialisation)

**Green Dream**  
(rapid shift from oil and gas  
and reduced energy demand)

**Great Wall of Change**  
(a China-led low-carbon infrastructure push)

**Surfers**  
(riding the waves of opportunity)

