

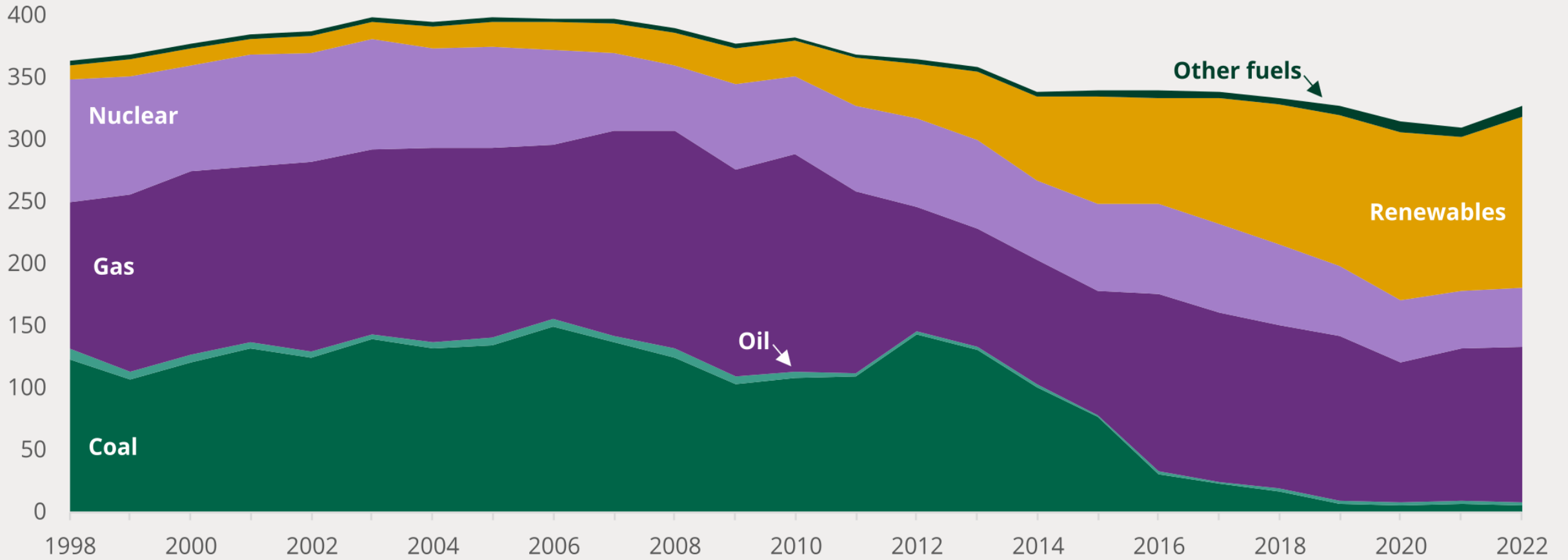
Unlocking the benefits of Energy Flexibility

By

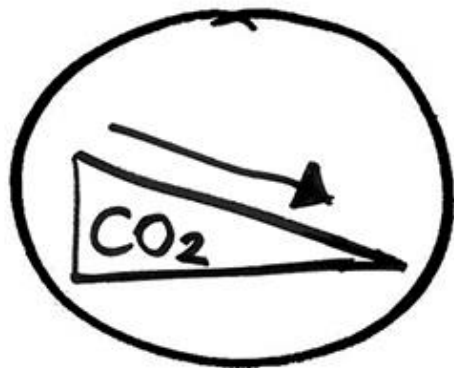
Kevin McDonald

The proportion of electricity generated from renewable sources has increased to two fifths over time in the UK

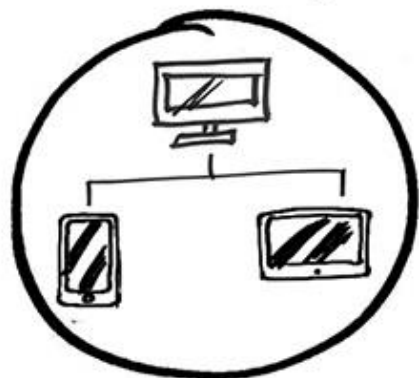
Terawatt hours (TWh)



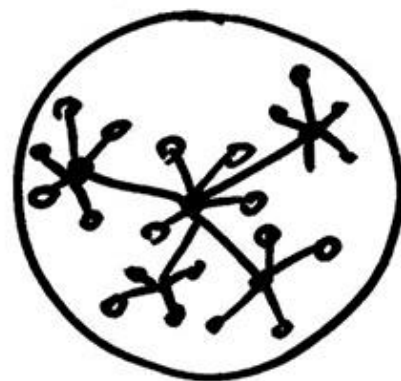
Decarbonisation



Grid 2.0

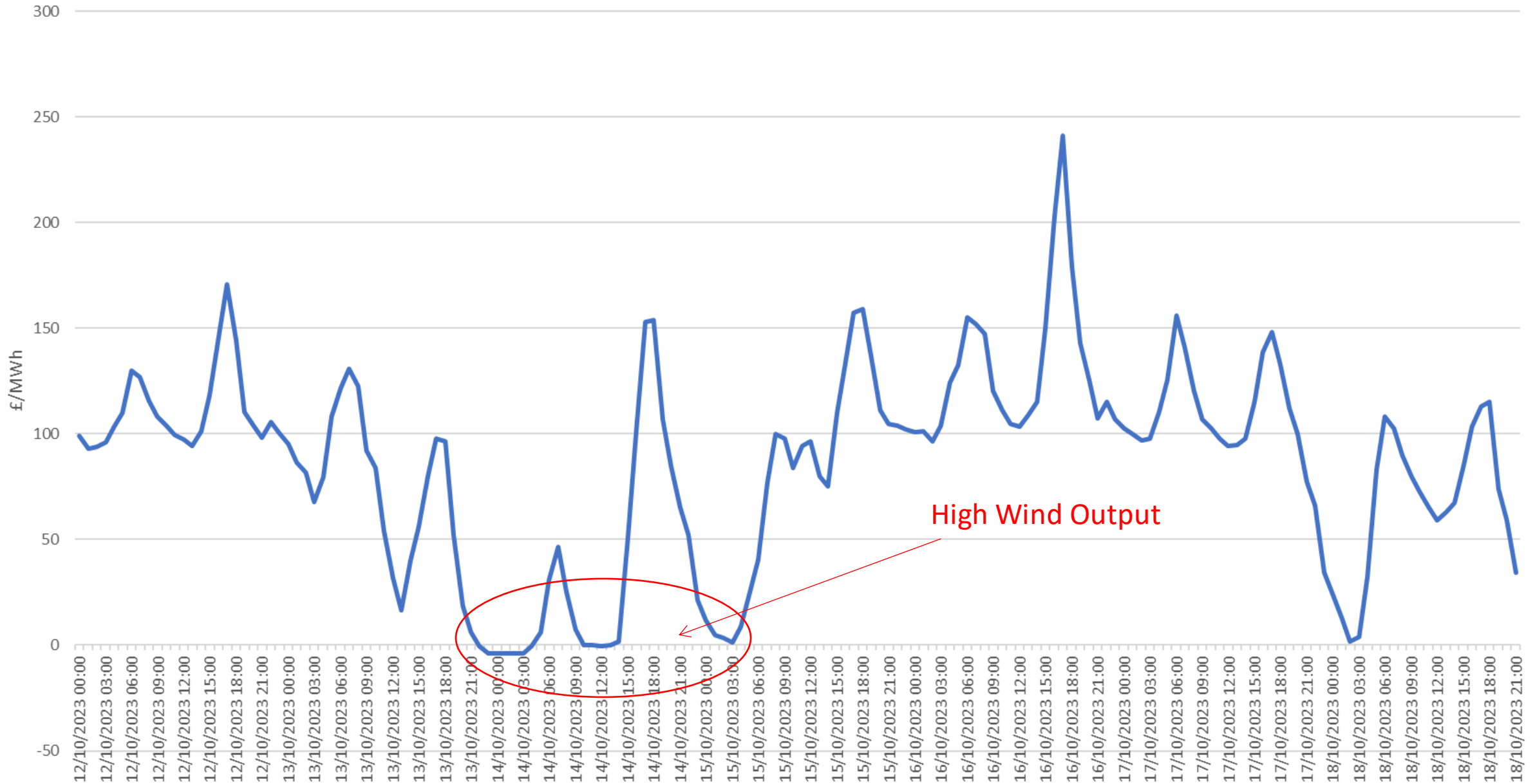


Digitisation



Decentralisation

N2EX DA prices



Residential DSR

Smart home energy
management
Domestic battery storage
Heat pumps with thermal storage

Industrial & Commercial DSR

Behind the meter generation
and storage
Industrial process flexibility
Commercial heat pump flexibility

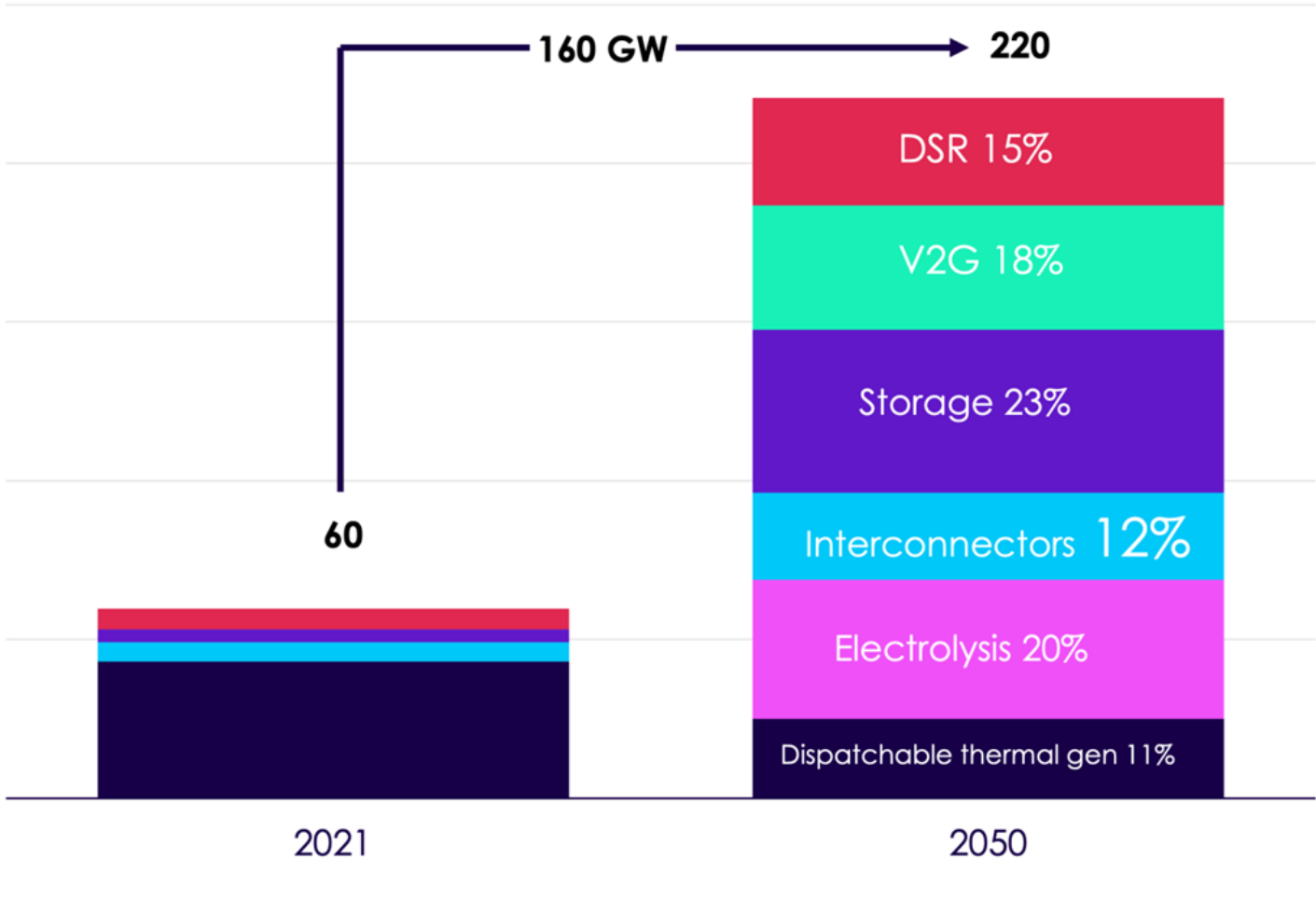
Demand side flexibility



Transport DSR

Smart charging and
vehicle-to-grid

Total installed flexible capacity (GW)

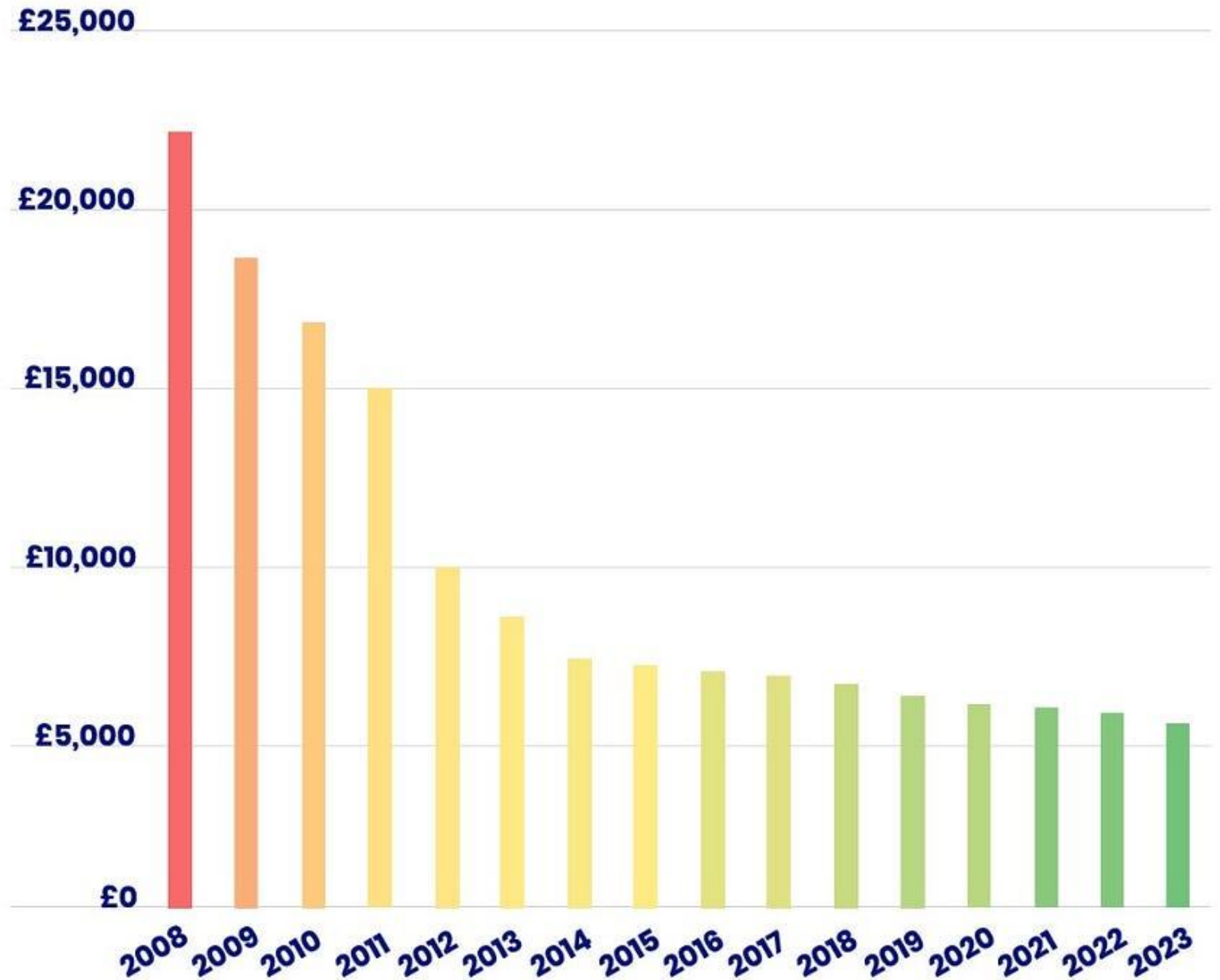


2023

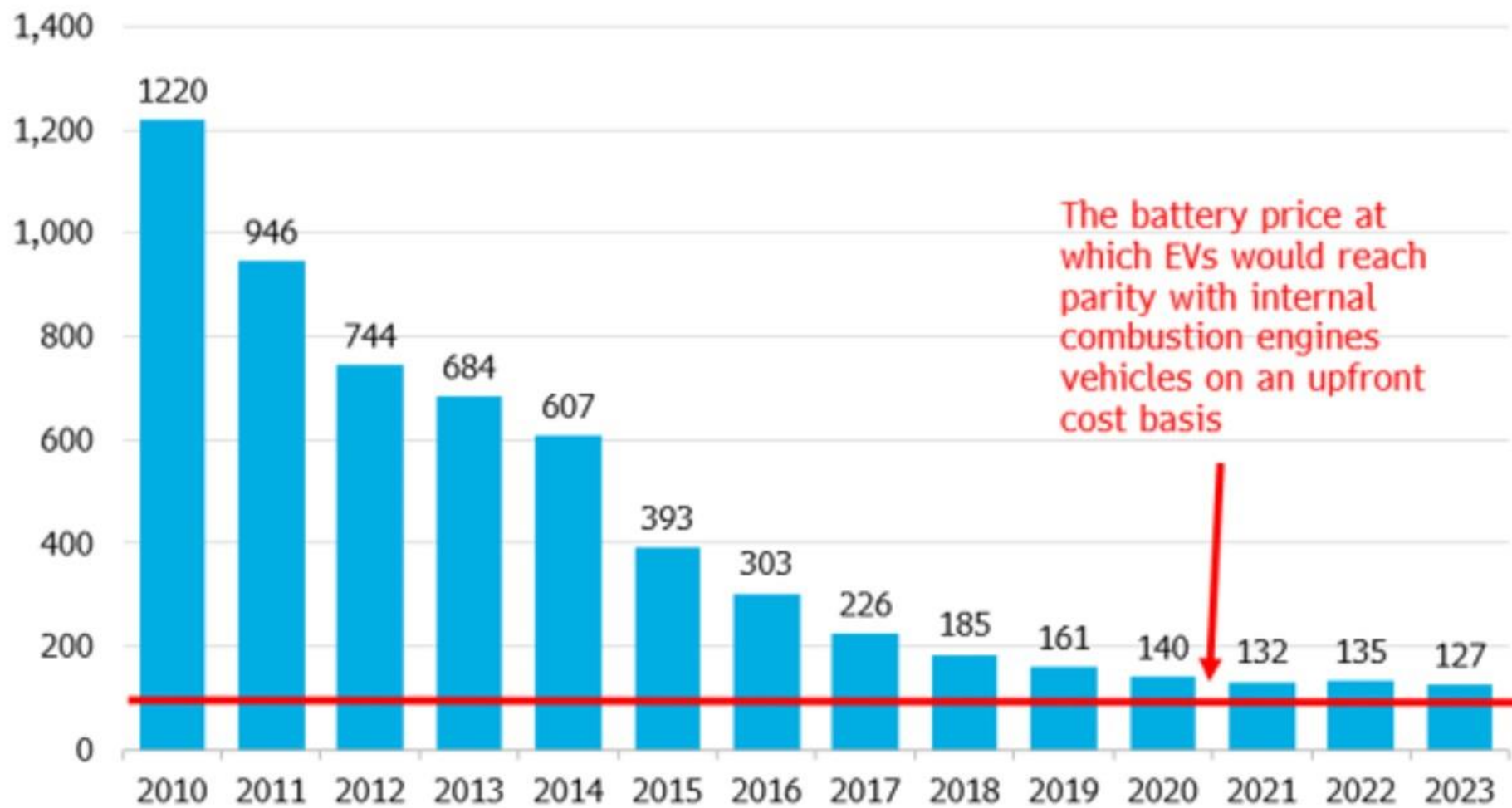
THE AVERAGE
COST OF
INSTALLING
SOLAR PANELS
HAS REDUCED

80%

SINCE 2008



Real 2021 \$ per kilowatt-hour



Source: BloombergNEF. Note: Forecast prices are in nominal terms, observed prices are in real 2021 \$ per kilowatt-hour.



Requires bidirectional or DC charger



profits



Sell surplus of stored energy back to the grid, or

savings



Use stored energy to reduce house or building energy peak consumption



Optimal charge required for the day based on trip planning
+
profits or savings