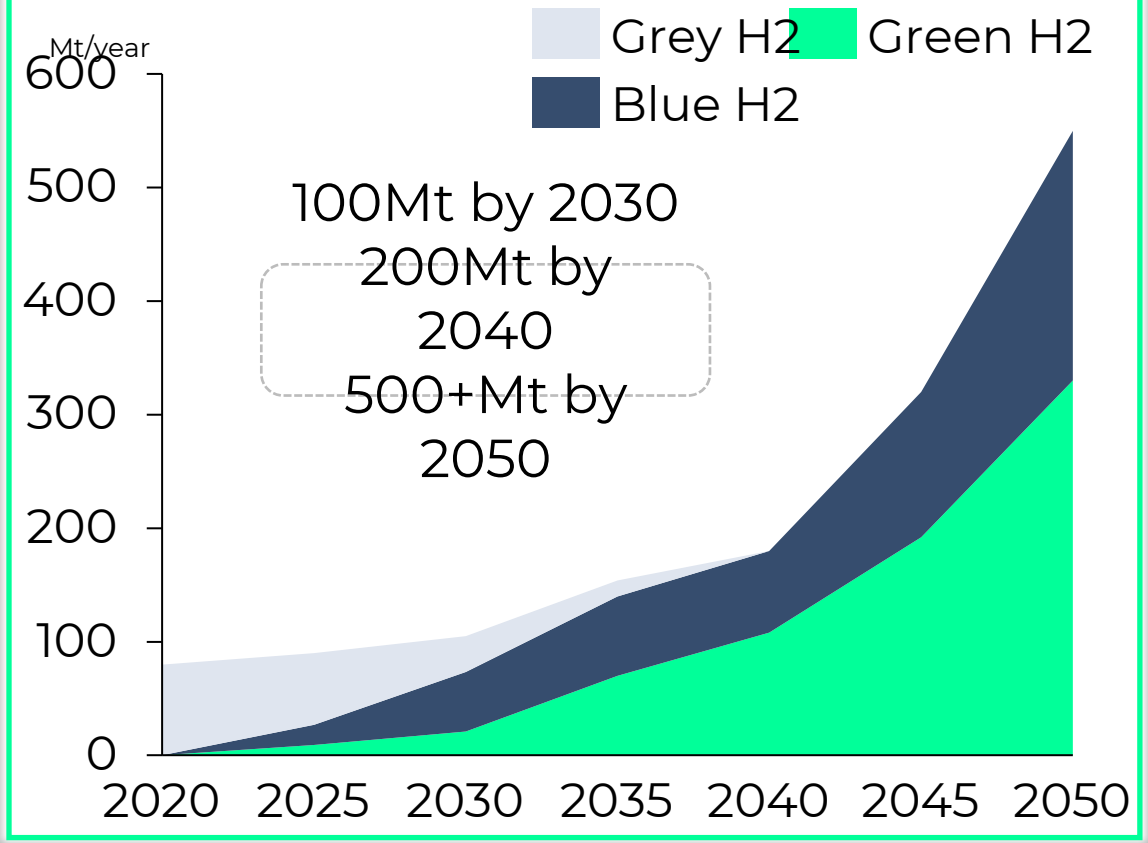

MOTIVE

Motive Fuels projections

Hydrogen Future demand

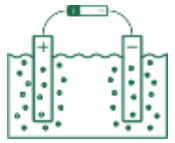
Global demand forecast



Green hydrogen production pathway

Renewable power PPA (REN)

Electrolysis: H20 + REN = H2 + O2



Motive Fuels Hydrogen Mobility use case

By 2050 in Europe, most long-range heavy duty vehicles will be running on hydrogen, renewable gas, or e-diesel/renewable jet fuel

Energy density requirement
Wh/kg

5k-10k

500 – 1k

50-100

The H2 Mobility Window

Articulated

Fixed bed

Operates many hours continuously. Impossible to have large batteries due to weight & volume limitations

Range requirement
Max km fast refill

2 hrs

4 hrs

8 hrs

12 hrs

Battery EVs

Batteries & Hybrids

Hydrogen

Renewable Natural Gas

Renewable Diesel & Jet Fuel

Emission Reduction Potential *

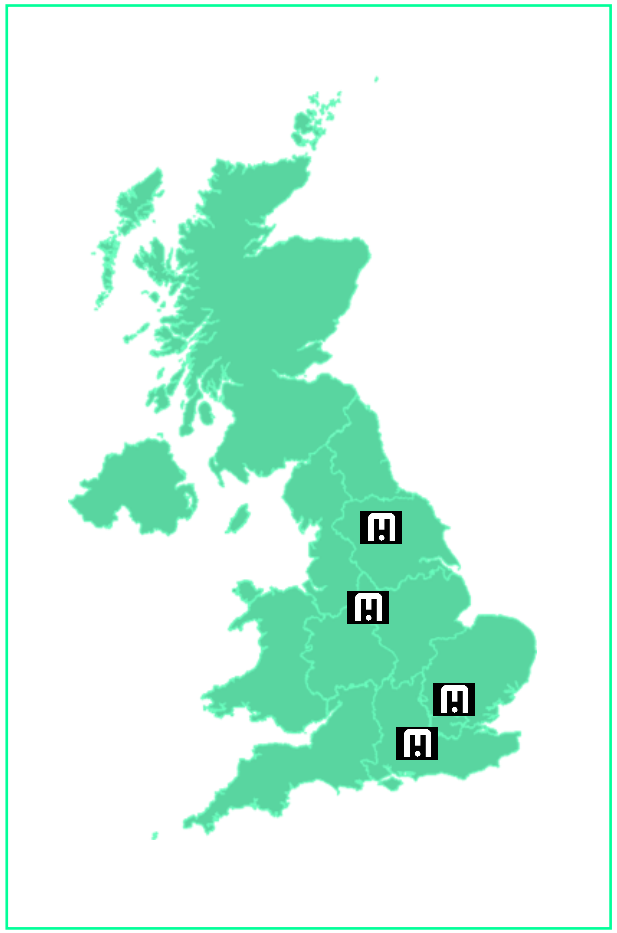
30-100%

60-130%

60-90%

*Note: Emission reductions depend on grid GHG content and renewable fuels process choices.
Source: Element Energy Report, UK Mobility Strategy

Motive Fuels Who we are

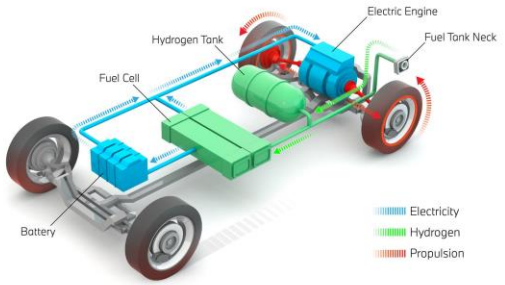


- UK's leading hydrogen refuelling operator
- We operate 4 of the 9 hydrogen refuelling stations in the UK
- We own and operate the only HGV hydrogen refuelling station
- We have priority access to electrolysers which are already nearing final construction

Vitol & ITM have pledged £60mln to the initial growth of H2 refuelling

Motive Fuels How do our stations work?

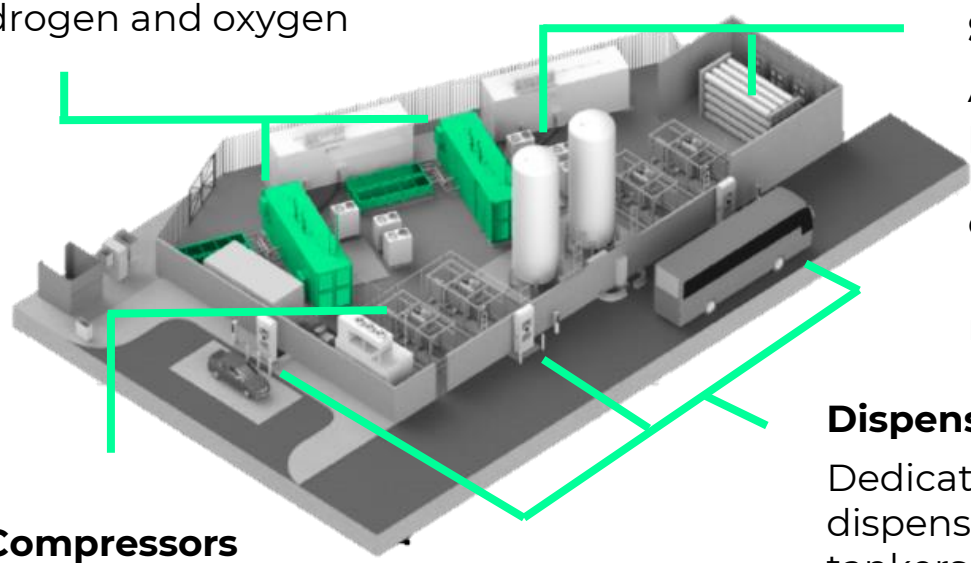
The fuel cell vehicle



- Hydrogen is stored in tanks as gas, when filling gas is pumped into the vehicle tank until its maximum pressure is reached.
- Hydrogen fuel cell is usually combined with a small battery to drive like an electric vehicle
- Only emission is water
- Can also be burned in engines, usually done in diesel conversions or for off-road plant.

Electrolysers

Use electricity to split water into hydrogen and oxygen



Storage

Allows use of off-peak and renewable electricity

Back-up to allow maintenance time

Compressors

Compress hydrogen for storage and vehicle tanks

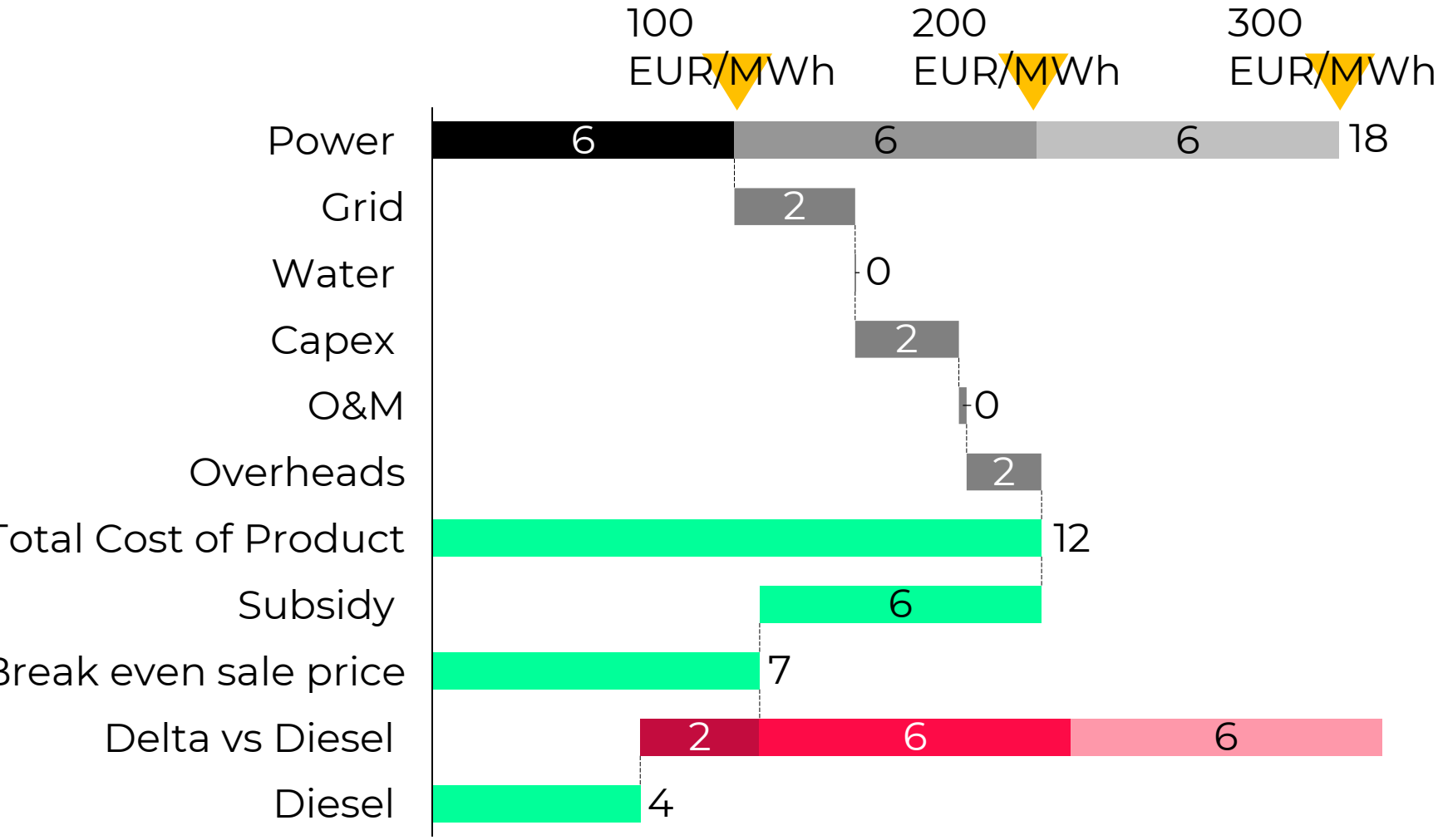
Dispensers

Dedicated dispensers for tankers, HGVs/buses and cars

Operate like a diesel pump

Authorised by a number plate/ fuel card

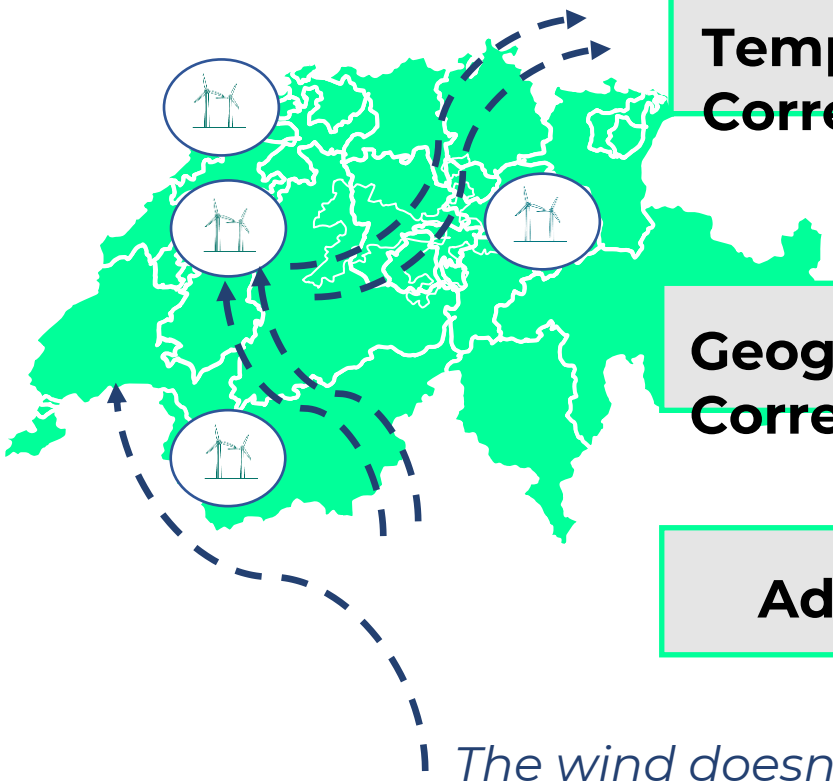
H2 Mobility The industry challenge



- The cost of energy makes up around 70% of the total cost of each kilo of H2
- it requires 60.6Kwh of energy to produce, compress and dispense 1kg of H2
- Without the ability to put in place long term renewable power purchase agreements the industry is exposed to fluctuations in the

H2 Mobility The industry challenge

The H2 mobility industry needs pragmatic rules around temporal and geographical correlation, as well as additionality.



Temporal Correlation

Problem: over-contract

Geographical Correlation

Problem: less renewable power available locally

Additionality

Creates sequential constraint

The wind doesn't always blow, and the sun doesn't always shine…in the same place every 30 minutes of the day….