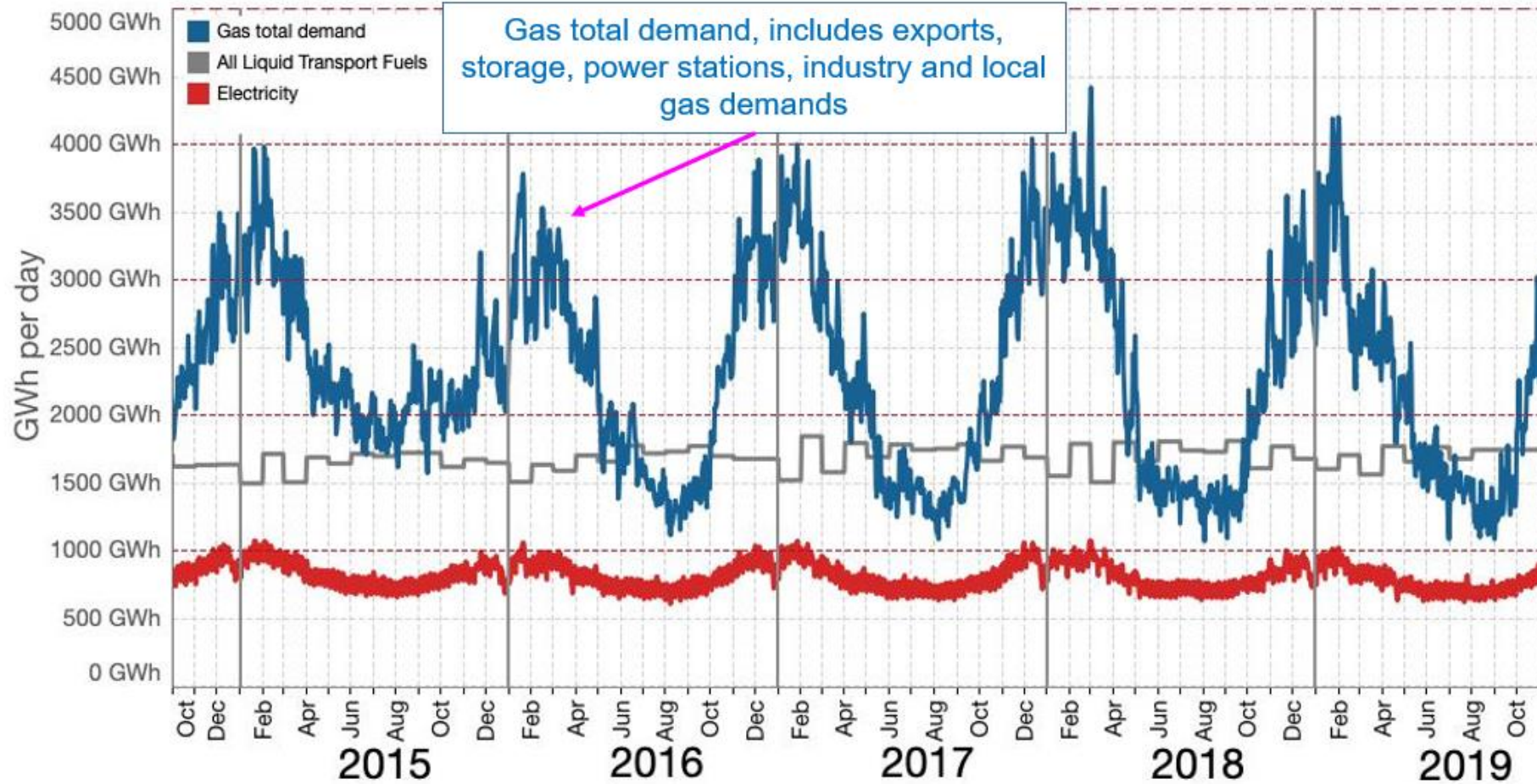


Hydrogen in an electrified UK

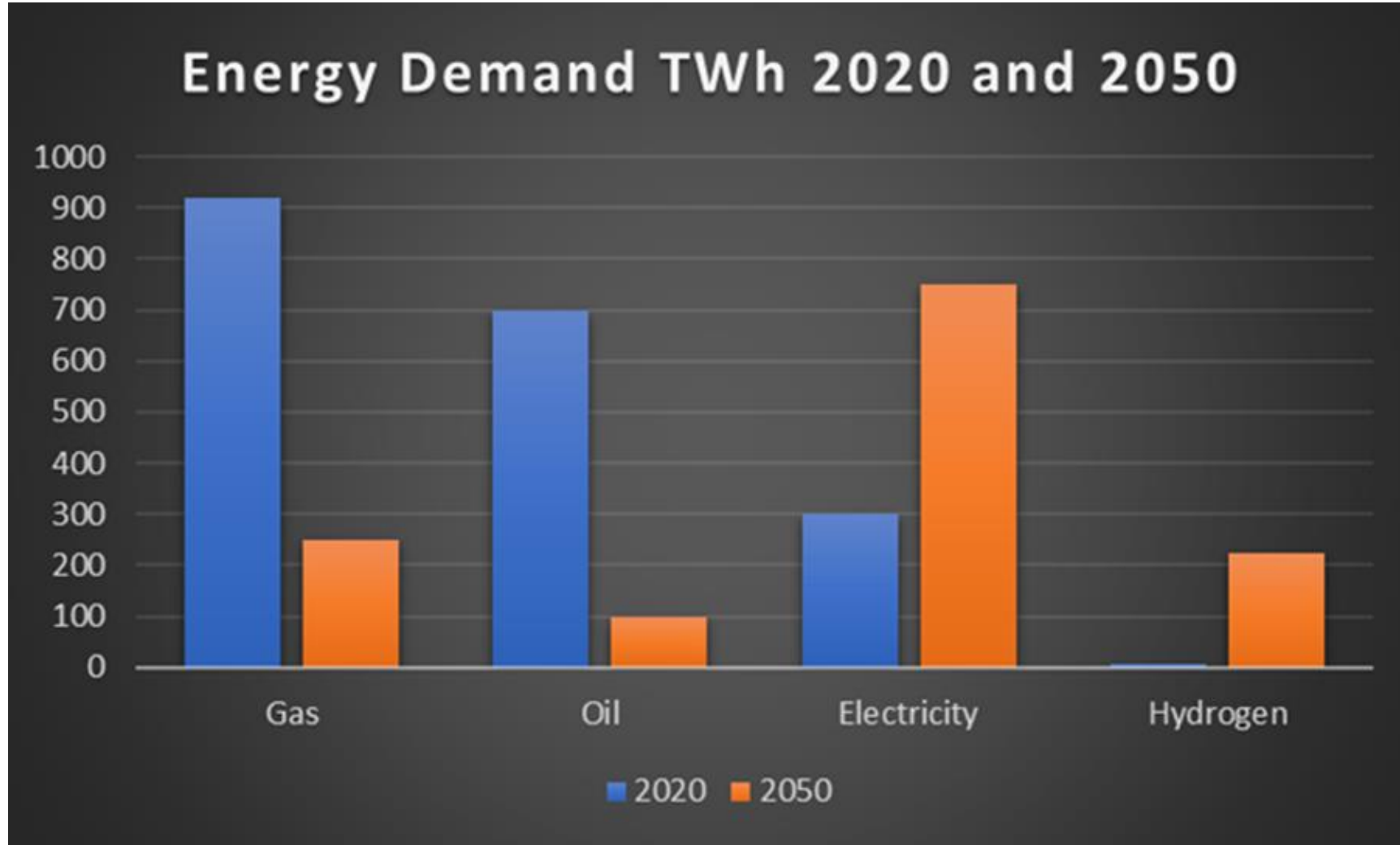
SPE Jan 2023

- **Tony Smith**
- **tsmith@peellandp.co.uk**

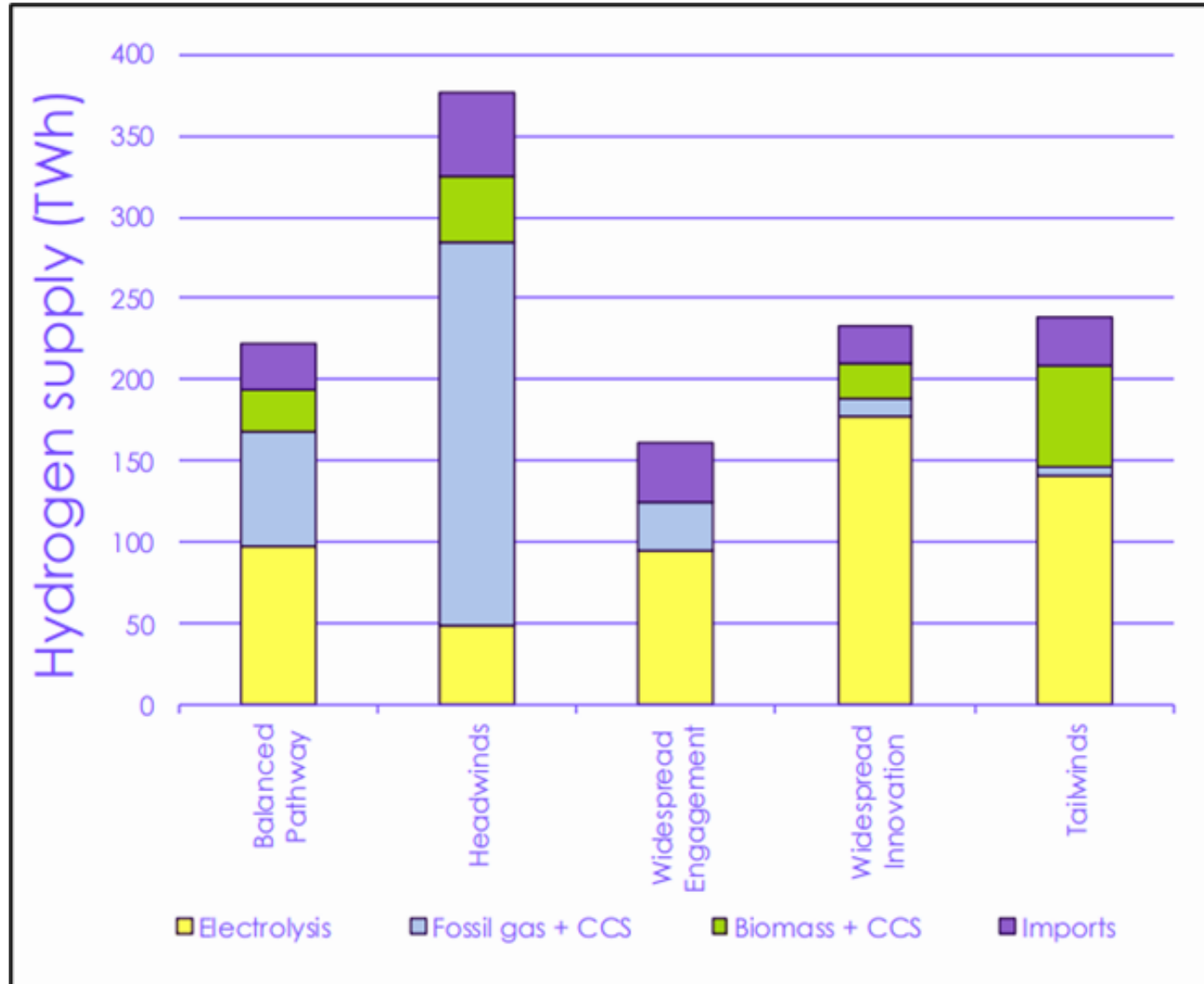
Electrification of UK energy is a tough ask



Electrification of UK energy is a tough ask



Data from CCC 6th carbon budget

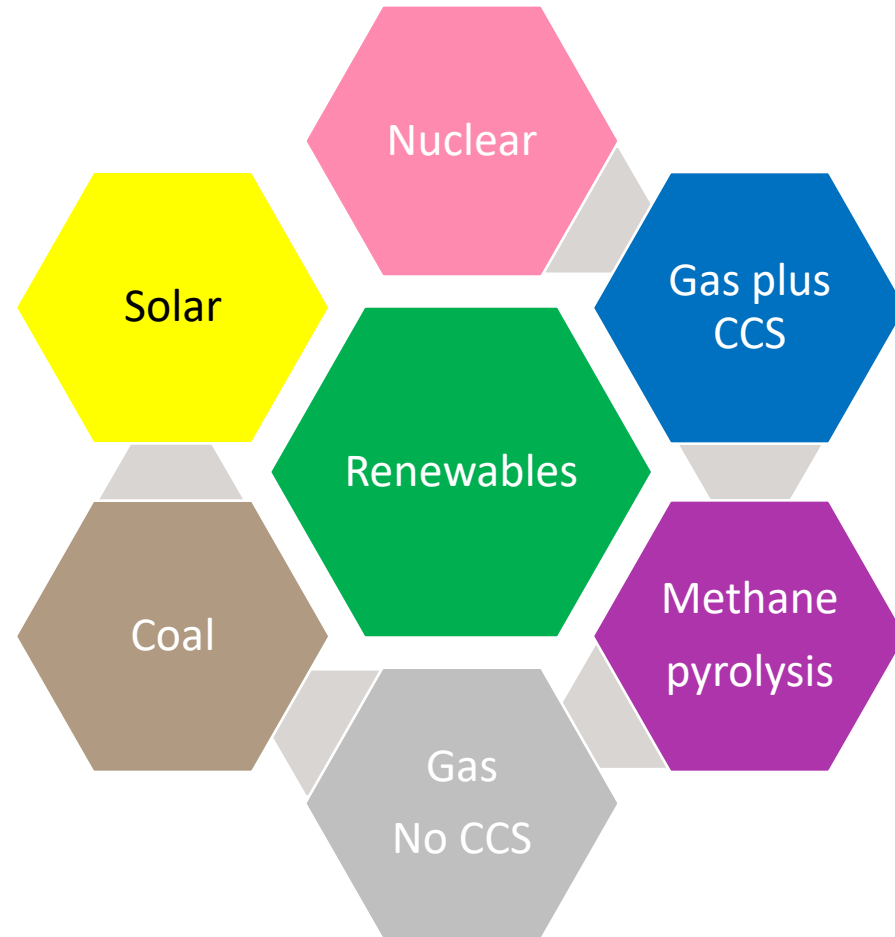


**CCC 6th Carbon
Budget 2050
Scenarios**

The hydrogen rainbow

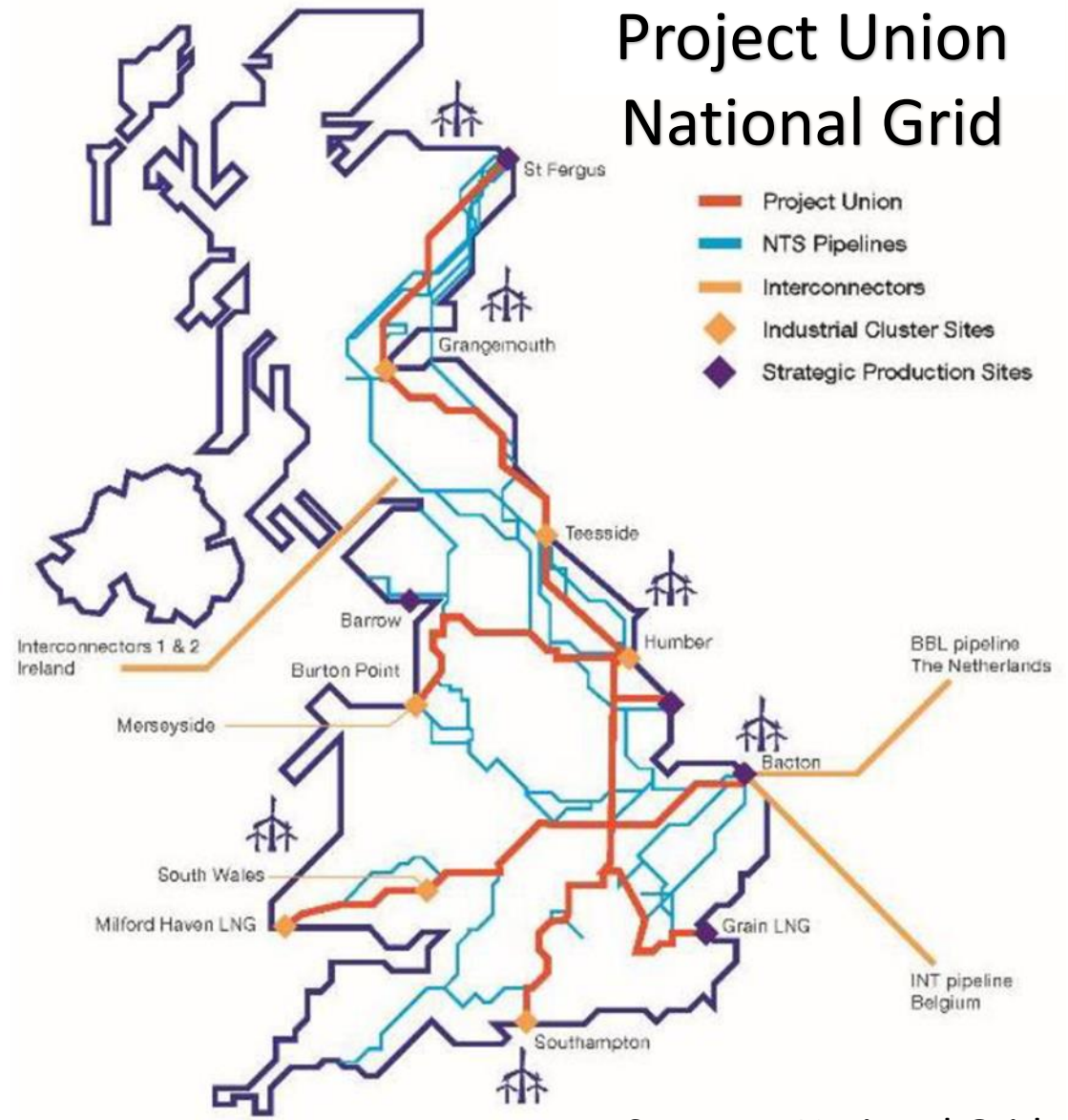
Low carbon hydrogen standard

20gCO_{2e}/MJ(LHV)



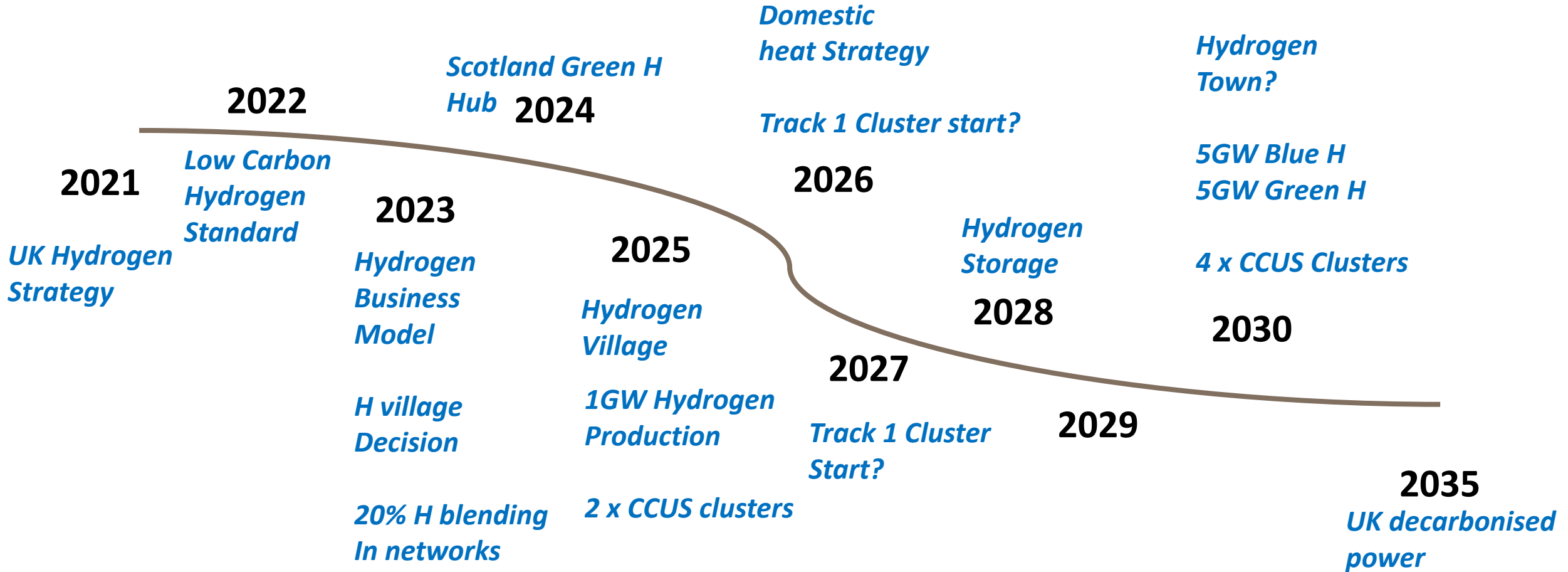
Clusters and connections

- HyNet and ECC Track 1
 - Acorn as “Reserve”
 - Track 2 clusters competing for funds
 - Plus Green Hydrogen Clusters
-
- Clusters ‘make the market’ based on Blue H but cost of nat gas up....
 - CfD based H business model



Source: National Grid

Brief UK Hydrogen Timeline



Potential disruptors

- Safety, public acceptance, price, efficiency
- Multi GW green hydrogen (ammonia)
- Further high baseload electrification e.g.
 - Nuclear SMRs
 - Xlinks - Moroccan wind/solar to UK 3.6GWpa 20hrs/day
 - Technology – large scale batteries
- Liquid H and Liquid Organic H Carrier technologies
- Energy trilemma applies
 - security, affordability, sustainability

Reference sites

1. Monolith: www.monolith-corp.com
2. Hysata: www.hysata.com
3. Neom: www.neom.com
4. Xlinks Morocco www.xlinks.co
5. LOHC www.hystoc.eu
6. Hy4heat www.hy4heat.info/WP7

Summary

- Hydrogen likely to be part of UK largely electrified net zero energy mix
- Jury out on hydrogen market reach particularly into domestic heat and HGV markets
- Blending - opportunity to have early carbon reductions
- CCUS critically important meet Net Zero
- Increasing emphasis on Green hydrogen
- Imported green hydrogen as ammonia a likely disruptor

Thanks for Listening

HyNet

