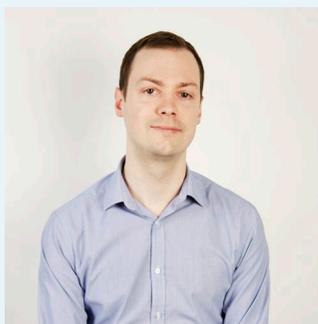


Chart of the Week

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“In a “Clockwork Zero” scenario, hydrogen overtakes both gas and petroleum in its importance between 2045 and 2050.”

ES Catapult: shifting energy vectors in net zero

This month, we launch our first *Energy: Net zero* publication – the new name for the revamped *Energy:2030*. This publication, with a renewed focus on answering the net zero question, is a sister publication to *Energy Spectrum* and issues at the end of each month.

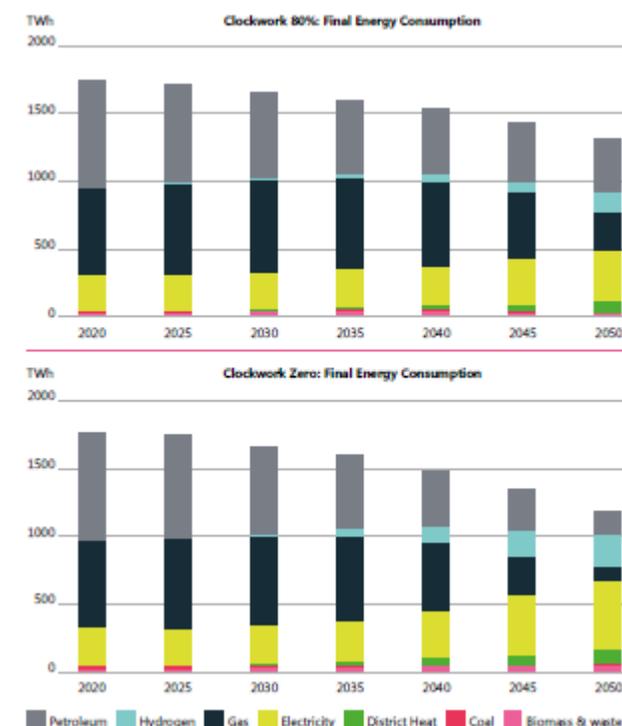
In this week’s *Chart of the Week*, we pick out a chart from Energy Systems (ES) Catapult which, in its report *Innovating to Net Zero* published earlier this month, presented two distinct pathways to a 2050 net energy system: centralised (Clockwork) and decentralised (Patchwork).

In a Patchwork pathway, central government takes less of a leading role, resulting in a patchwork of regional low carbon strategies. In a Clockwork pathway, coordination from central government drives long-term investment in strategic energy infrastructure.

The Figure shows the final energy consumption for 80% and total net zero targets from 2020-50 under the Clockwork pathway. The three principal energy vectors of petroleum, gas and electricity are prominent in all years to 2050 in a “Clockwork 80%” scenario. In a “Clockwork Zero” scenario, hydrogen overtakes both gas and petroleum in its importance between 2045 and 2050. Also notable here is the rapid rise and domination of electricity as a vector. 73% of the mix is comprised of electricity (43%), hydrogen and district heat by 2050.

Most of the remaining fossil fuel component is used in industry and aviation in “Clockwork Zero”. Negative emissions (CO₂ removal initiatives) can help

Final energy consumption for 80% and net zero targets



Source: ES Catapult



counter residual emissions from these activities in the net zero scenario.

For ongoing analysis and insight into net zero pathways, as well as the technologies, policies and markets that will help us achieve net zero, contact n.mearns@cornwall-insight for a free trial of *Energy: Net Zero* or call 01603 542119.

