Clean power 2030

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CP30 Headlines

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Clean Power 2030 Headlines

Clean Power by 2030 is achievable

- Outer edge of feasibility
- Herculean effort

Clean Power will require doing things differently

- Major scale-up in delivery
- Multiple major reforms required

Clean Power can bring benefits for GB

- Carbon targets
- Investment, jobs
- Cut link to gas prices

Clean Power in numbers			
	GB clean power as share of GB consumption[1]	**Share of unabated fossil generation[2]**	**Carbon Intensity[3]**
Currently	~60%	33%	~150 gCO_2e
Clean Power 2030	≥100%	<5%	< 20 gCO_2e

[1] Annual TWh domestic clean power production over total electricity consumed by GB homes and businesses
[2] Unabated fossil generation as a proportion of total electricity generation excluding exports
[3] Carbon emitted from GB electricity production (gross, excl combined heat and power, and energy from waste)

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The Clean Power System in 2030

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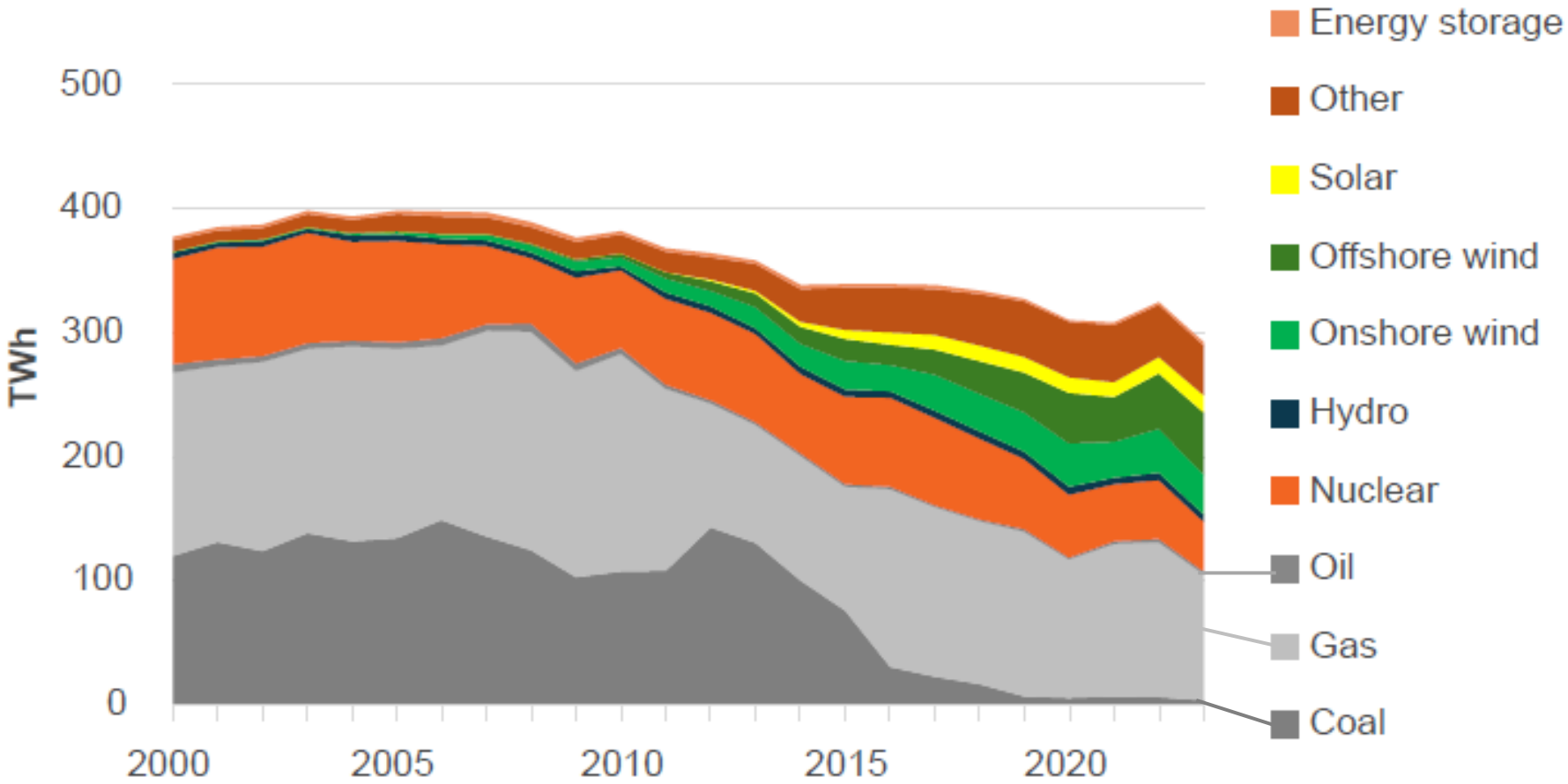
The foundations are in place…

Efficiency and clean sources have already reduced the share of fossil fuel generation to around a third



Project pipelines

Technology costs

Network plans

Technical capabilities

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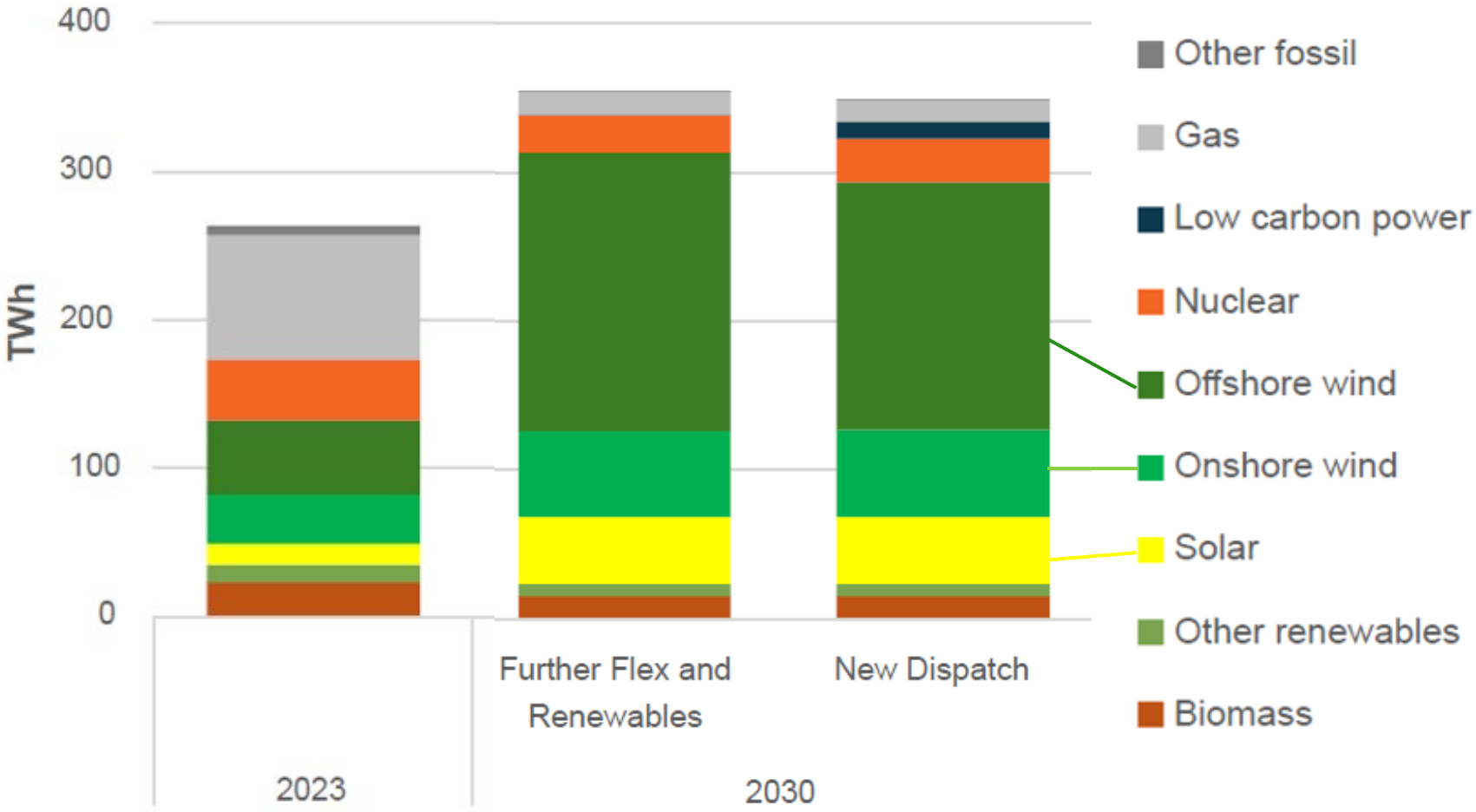
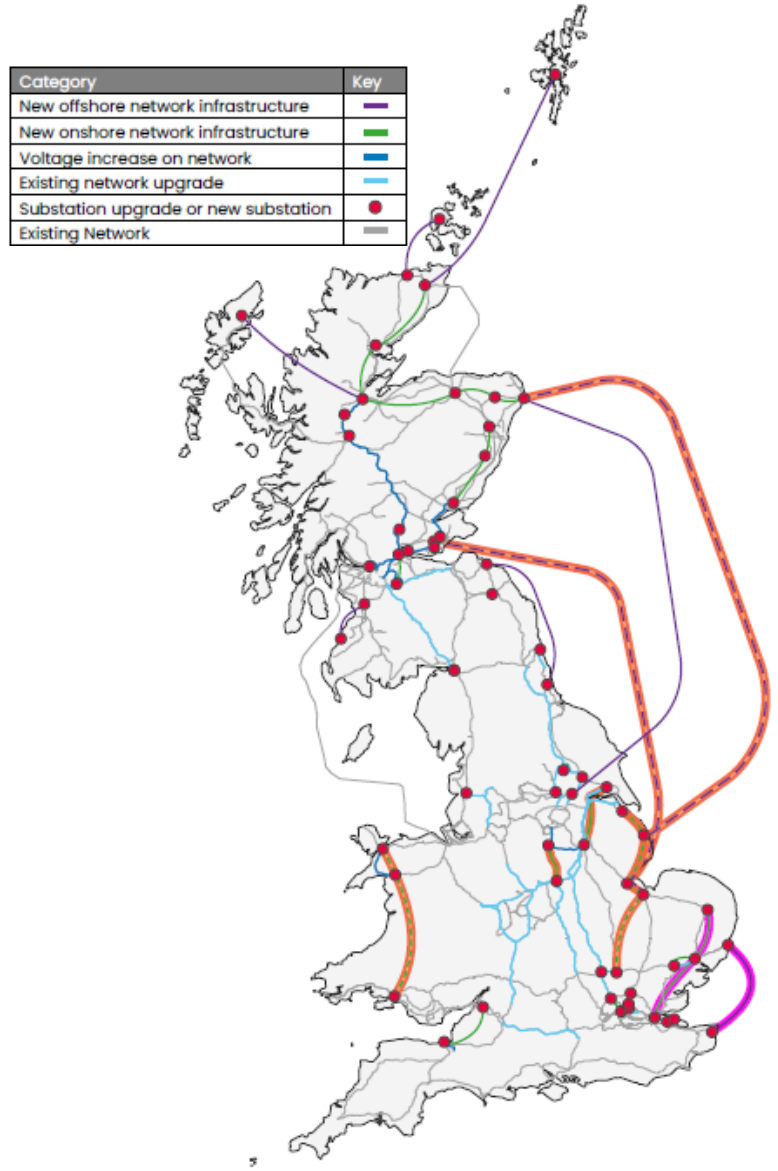
We need a huge scale-up in wind and solar, and rapid expansion of the grid





Pink = need accelerated delivery
Orange =accelerated delivery lowers constraints

The role of storage

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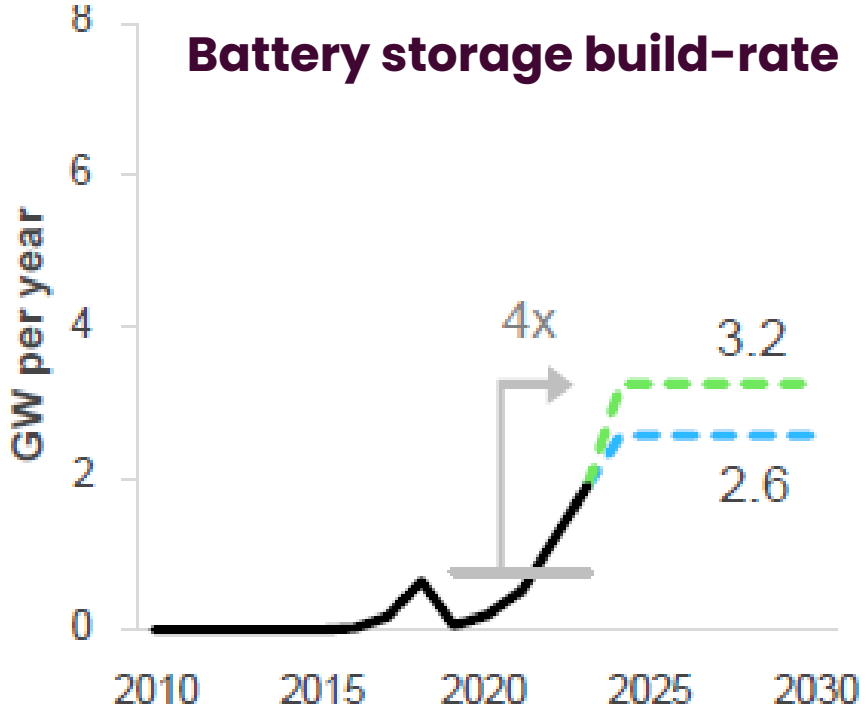
New sources of flexibility are vital for clean power

Major scale-up in battery storage, accelerating deployment to deliver 23-27 GW by 2030



Long Duration Energy Storage (LDES) up from 3 GW to 5-8 GW*

Interconnector capacity increases from 8.4 to 12.5 GW*

4x more demand flexibility, largely from vehicles and smart appliances

Clean dispatchable generation has an outsized value

Note: LDES included at 4-6 GW and interconnectors at 12-14 GW in 2030 in the Government's *Clean Power 2030 Action Plan*.

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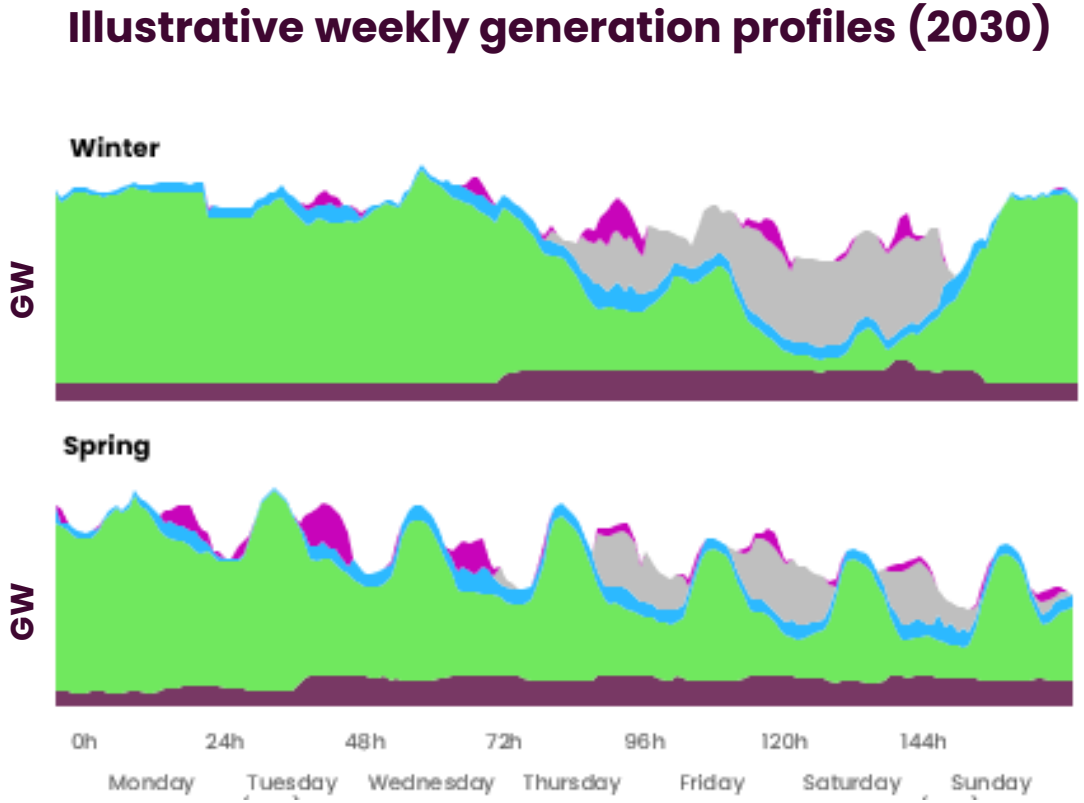
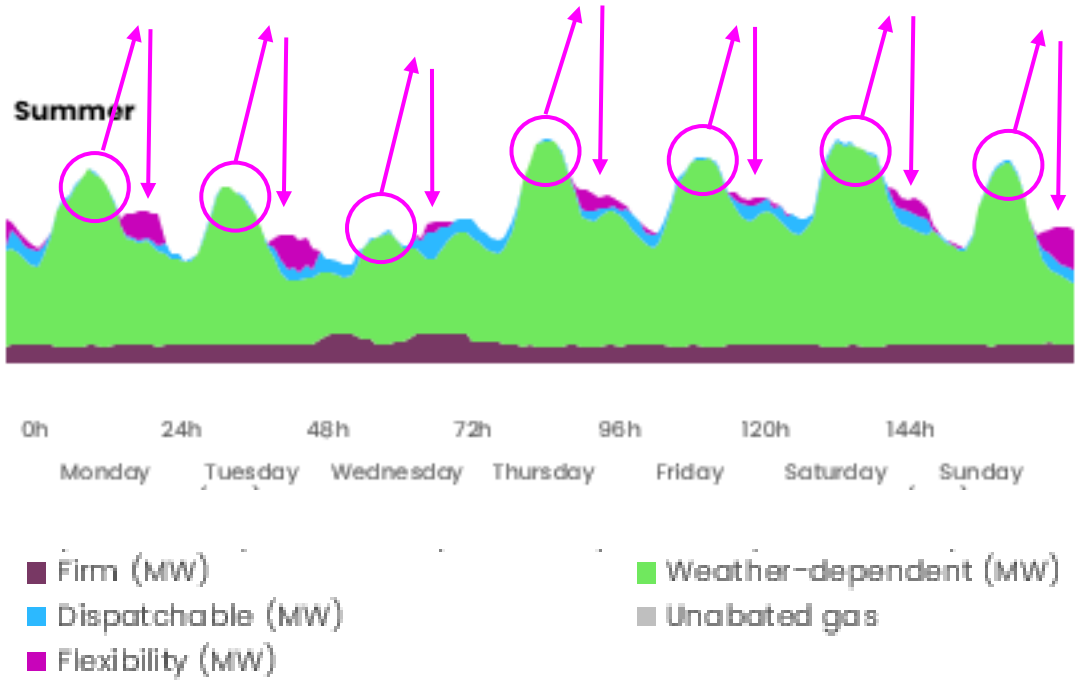
An evolving flexibility challenge

Illustrative weekly generation profiles (2030)





Source: NESO, CP30 Further Flex and Renewables scenario.
*Note: **Firm** includes nuclear, hydro, CHP and waste. **Weather-dependent** includes onshore wind, offshore wind and solar. **Dispatchable** includes biomass, pumped hydro, gas with CCS and hydrogen to power. **Flexibility** includes batteries and residential flexibility. Chart only shows when flexibility is discharging, not charging.*

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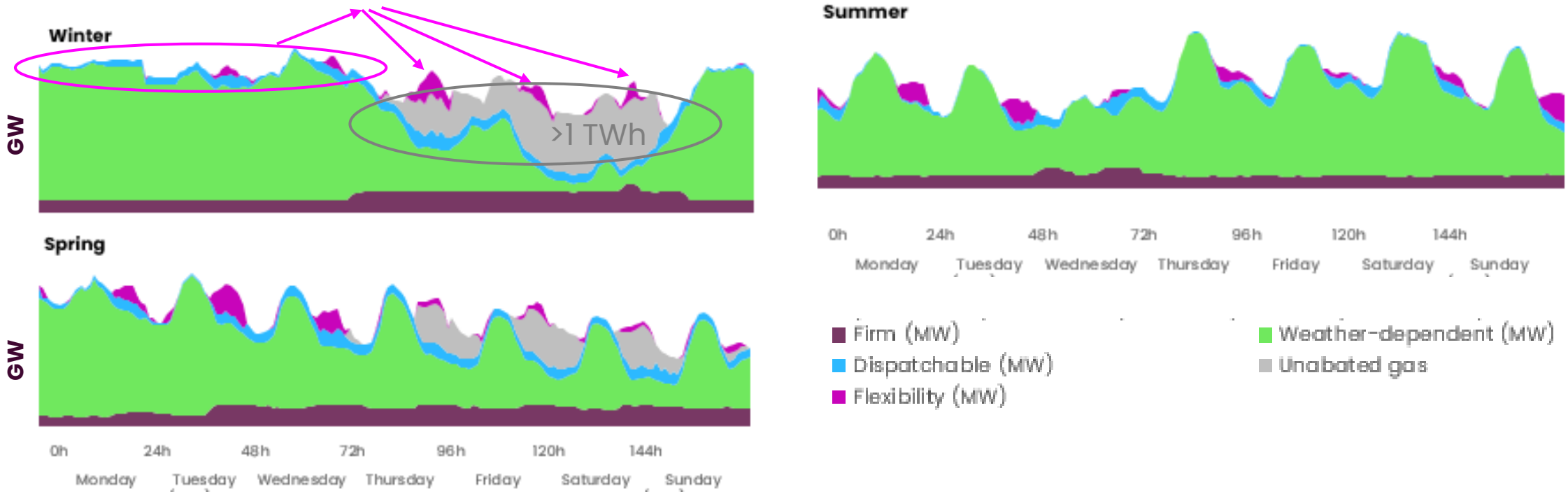

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Next steps

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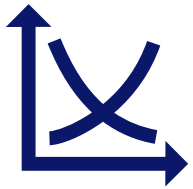
Speed and collaboration are fundamental for Clean Power 2030



Mission Control & the Clean Power Action Plan

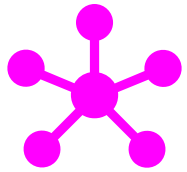
Planning reforms

Supply chains & workforce

Key decisions, including

- REMA (Market Arrangements)
- Renewable auction Round 7
- Bilateral negotiations
- Low Carbon Flexibility Roadmap
- LDES Cap and Floor

Connections reform



Strategic Spatial Energy Plan

NESO as a delivery partner

- Digitalisation and Innovation
- Markets Roadmap, Operability Strategy & Balancing Programme
- Grid forming batteries
- Skip rates

Key
Government
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Thank you

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