

Briefing

How building clean flexible power can reduce the need for a strategic reserve of gas power

July 2024



Summary

Accelerating the deployment of clean flexible power technologies, including long term energy storage, hydrogen power and demand side flexibility will reduce the amount of back up unabated gas power in a strategic reserve, needed to balance a renewables based grid.

Cutting the amount of gas back up needed would mean a smaller strategic reserve necessary to keep the lights on. This can lower government costs, making the clean power mission easier to achieve.

The government should immediately establish a 'clean flexible power task force', modelled on the highly successful Covid-19 vaccine task force, under Chris Stark's Mission Control, with a senior minister responsible for delivery.

A vaccine task force approach to grow clean flexible power

The government's mission for Britain to become a clean energy superpower, with a clean power system by 2030, is the right one for the country. But a laser like focus on delivery will be required to achieve it. Rapid acceleration of renewables deployment is critical, turbocharged by the GB Energy Bill and Planning and Infrastructure Bill, but this alone will be insufficient to reach the 2030 target. Urgent progress on developing flexible power solutions is also essential.

Beyond durations of a few hours (served well by grid scale batteries), power system flexibility is currently provided by unabated gas power stations. Alternatives with lower climate impacts, such as long term energy storage, hydrogen power, gas with carbon capture and storage (CCS) and demand side flexibility, must play a part in balancing energy demand and supply in a renewables dominated system in future.

Our [analysis](#) shows these technologies are likely to be cheaper than new gas capacity. There is no benefit in waiting for a market mechanism to discover

the optimal combination of technologies. As much of them as possible should be built as soon as possible.

While financial support mechanisms are being developed, they will not guarantee roll-out at the pace required. A vaccine task force style approach, overcoming deployment hurdles, would speed up the process.

A smaller strategic reserve?

The government has identified the need for a strategic reserve of unabated gas power in the medium term. This makes sense, since previous governments failed to develop the clean flexible technologies in time.

But building a strategic reserve will be costly. Faster roll-out of long duration clean flexible technologies, especially hydrogen power and storage and gas with CCS, could reduce the size of the reserve needed, bringing down overall costs.

First steps in government

To ensure costs are minimised and clean alternatives are maximised in balancing energy supply and demand, the new government should immediately convene a 'clean flexible power task force' under Mission Control, to drive the rapid deployment of at least 20GW of clean flexible power and increase demand side flexibility by 2030.

It is thought around [25GW of unabated gas power](#) could be needed as back up in a renewables dominated system, but every GW of clean flexibility developed will reduce the capacity required, as well as cutting greenhouse gas emissions and the economy's reliance on imported energy.

The task force should include industry, academic and civil society experts, as well as senior government ministers and those who were instrumental in the success of the vaccine task force, like Sir Patrick Vallance.

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