



HM Government

British Energy Security Strategy

Secure, clean and affordable
British energy for the long term

April 2022

Networks, storage and flexibility



Accelerating our domestic supply of clean and affordable electricity also requires accelerating the connecting network infrastructure to support it. Within this decade, our modern system will prioritise two key features: anticipating need because planning ahead minimises cost and public disruption; and hyper-flexibility in matching supply and demand so that minimal energy is wasted. This more efficient, locally-responsive system could bring down costs by up to £10 billion a year by 2050.

Flexibility has always been the valuable heart of our system, ensuring power can flow quickly from where it's produced to where it's needed. In 2021, the onshore electricity network had approximately 18,000 km of high voltage transmission cables, and approximately 800,000 km of lower voltage distribution lines, enough to stretch around the world 20 times. Networks are a complex system that have been slow in their transformation. We aim to halve the time it takes to get this infrastructure built so we can double the pace.

On costs, building ahead of need, where good value for money, may mean paying more in the short term for an asset that isn't efficiently utilised immediately but is the cheapest option over the long term and reduces the need for repeated disruptive works to continually upgrade the system.

On uncertainty, whilst there are many future decisions yet to be taken, and a need for an agile approach to network infrastructure, we do know that electricity demand is highly likely to double by 2050.

On competition, price signals can harness the power of responsive demand to minimise wasted energy and deliver far more efficient distribution of power than a state-planned system ever could.

We will ensure **lower total costs** by offering clear signals on future need by:

- **Establishing the Future System Operator** as soon as practicable to drive our overall transition and oversee the UK energy system.
- Publishing a **strategic framework** this year with Ofgem for how networks will deliver net zero.
- **Appointing an Electricity Networks Commissioner** to advise Government on policies and regulatory changes to accelerate progress on network infrastructure.
- **Setting out a blueprint for the whole system by the end of 2022 in the Holistic Network Design (HND) and Centralised Strategic Network Plan (CSNP).** The HND will identify strategic infrastructure needed to deliver offshore wind by 2030. Certain infrastructure identified in the HND and CSNP will be exempt from the introduction of onshore network competition.
- **Updating the National Policy Statements to recognise these blueprints** in the planning system, increasing certainty for the planning inspectorate, developers and other stakeholders, and speeding up delivery.
- **Ensuring Ofgem expedites its approvals process** to build networks in anticipation of major new sources of generation and demand. Government will set out the importance of strategic network investment in its forthcoming Strategy and Policy Statement for Ofgem.
- Working with developers and the supply chain, we will increase **pipeline visibility and certainty** to help accelerate procurement timelines. And we will work with Ofgem to speed up connections to the local distribution networks.
- **Dramatically reduce timelines for delivering strategic onshore transmission network infrastructure by around three years.** We will work with Ofgem, network operators and the supply chain to find further savings, for example in the procurement, manufacture and construction stages. **Overall, we aspire to halve the end-to-end process by the mid-2020s.**
- **Ensuring that local communities can benefit** from development of onshore infrastructure in their area, we will consult on community benefit options. We will launch an Offshore Coordination Support Scheme which will de-risk delivery of well-advanced offshore wind projects.

We will ensure a more **flexible**, efficient system for both generators and users by:

- Encouraging all forms of flexibility with sufficient large-scale, long-duration electricity storage to balance the overall system by developing appropriate policy to enable investment.
- Ensuring consideration is given to the **siting of hydrogen electrolyzers** to best use surplus low carbon electricity and reduce network constraints.
- Undertaking a comprehensive **Review of Electricity Market Arrangements (REMA)** in Great Britain, with high-level options for reform set out this summer.
- Ensuring we have a retail market fit for purpose. We will **join REMA up with our ongoing retail review** to ensure that consumers fully benefit from the next phase of our energy revolution, setting out plans before the next price cap period.

- Smartening up the system with more **flexible pricing**, through Time of Use tariffs and battery storage through Electric Vehicles.
- Ensure all new homes are designed so that **smart meters can be fitted from the outset**, in advance of the Future Homes and Buildings Standards by 2024.