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National Grid Business Development

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Dear Sirs

A SMART, FLEXIBLE ENERGY SYSTEM – A call for evidence

Thank you for the opportunity to respond to the above consultation.

National Grid Business Development (NGBD) has been established to deliver the organisation's strategic growth ambitions, securing new business in the UK and other parts of the European market.

NGBD, which is legally and physically separate from National Grid's RIIO-regulated businesses, is focused on developing flexible energy systems for the future, designing secure, cost-effective and sustainable solutions for customers. Current key areas of focus include the development of new subsea electricity interconnectors and distributed energy resources, including battery storage.

In addition to its business development activities, National Grid owns a portfolio of operational businesses that already provide a wide range of energy products and services to customers in competitive markets:

- a. National Grid Interconnector Holdings Limited: owns stakes in subsea electricity interconnectors to France and the Netherlands and, together with partners, is constructing new links to Norway and Belgium.
- b. Grain LNG: Europe's largest LNG import terminal, which is able to meet 20% of UK gas demand.
- c. National Grid Metering: manages and maintains over 14 million industrial, commercial and domestic gas meters across the UK.
- d. National Grid Smart: a new smart metering business that provides services to support suppliers with the roll-out of smart meters across the UK.

Executive Summary

NGBD welcomes this call for evidence. This response highlights our views as a developer of complex, multi-jurisdictional infrastructure projects in the UK as well as of smart and flexible energy system solutions in the US, and provides considerations we believe the Department for Business, Energy and Industrial Strategy (BEIS) and Ofgem should take account of when producing respective plans for a smart, flexible energy system.

We are fully supportive of the ideas, solutions and focus areas within the call for evidence and the recognition that in the emerging smart and flexible energy system landscape changes need to be initiated to maximise the benefits to consumers.

NGBD is both legally and physically separate from other parts of the National Grid businesses. This is supported through rigorous and appropriate business separation procedures and codes of conduct. When interacting with any other National Grid business entities, we are treated as any other commercial developer would be, such that we only have access to publically available information and as with any other developer, our services are supplied on a commercially contractual basis.

NGBD as a Smart and Flexible Energy System Developer

Our ambition is to expand our smart and flexible energy system portfolio, bringing vital and tested experience and capabilities, refined in the United States of America over a number of years, to the United Kingdom. We believe that by sharing our breadth of knowledge and experience, through the development of commercially viable UK projects, that this will help to stimulate the market, and in return provide benefit to the UK economy and consumers.

In the US, our smart and flexible energy solutions offer grid resilience within delicate energy systems, at the lowest cost to the consumer. These include:

- **Buffalo Niagara Medical Campus Microgrid**
For the project, covering 120 acres, we worked with developers to produce a comprehensive energy system solution, which includes solar, wind and electric vehicle charging and all with the capability to be run completely off grid with its own battery energy storage. We are expanding this knowledge and capabilities to benefit the surrounding fruit belt by bringing similar solutions such as roof top solar and storage.
- **Massachusetts Solar & Solar Connections**
National Grid is named as one of the top five utilities, connecting the most megawatts of solar energy in the United States. To maximise these benefits to consumers National Grid is building large scale solar strategically located near centres of high demand.
- **Upstate New York Grid Resilience and Private Wire Microgrid**
This part of the US is affected by some of the nation's most severe storms. To help alleviate some of the associated energy challenges, we were involved in an innovative underground microgrid in Potsdam, New York, which brings together a new distribution loop that functions independently from the distribution grid and connects embedded and renewable sources of energy allowing an islanded resilient solution, should it be needed.

NGBD also has significant experience of developing interconnector projects in an ever increasing competitive area of the market. We have been instrumental in working with the regulator to develop the regulatory cap and floor regime, which has helped stimulate the market, increased competition – with a number of new interconnector developers coming forward under window one and two – and thereby successful unlocking investment in electricity interconnectors for the benefits of consumers, and UK security of supply.

Taking into account business separation rules and with a view to enhancing competition, innovation and market stimulation, we strongly believe that NGBD could play a valuable role in the distributed energy landscape. The NGBD commercial solutions could result in facilitation and acceleration of a competitive market to deliver greater consumer benefits and contribute significantly to the Government carbon reduction targets. However, with the current regulatory limitations placed on ownership of storage we believe that this risks damaging the potential consumer benefits that a level playing field could deliver.

We believe that we can apply our strong experience and capabilities, gained from the US and our interconnectors development projects, to the development of smart and flexible energy system solutions in the UK, in particular to:

- a. Own, sell, lease or operate storage and Distributed Energy (DE) solutions for consumers and communities.
- b. Build and operate assets that are able to bid into the ancillary services market.

- c. To participate, compete and facilitate in market areas such as Smart Grid solutions where NG BD would design, build and operate end to end solutions for consumers.

These solutions would adopt a mix of technologies such as micro-generation, storage, demand response, private wire networks and smart control software platforms to achieve tailored solutions to drive consumer benefits.

Light touch regulation to encourage competition and innovation

We strongly believe that consumers and communities buying smart and flexible energy solutions such as storage should be able to do so from as many providers as possible - as this would result in lower prices and more innovative solutions that benefit consumers.

It is important that energy, data and communications are seen as integrated components in a flexible smart energy system and, as such, rules and regulations need to be adaptable to facilitate the development of these technologies and emergence of competitive markets with the best outcome to the consumer.

To ensure the decentralised market is allowed to develop in the most efficient way, regulation of market players should be light touch, with very few limitations placed upon it. Specifically, we would advocate a regime that uses exemptions and non-regulated/licenced activities that parallel the exemptions in the generation licence. This would allow market development to achieve the success' that have been seen in micro generation markets such as domestic solar.

Early intervention with repressive regulation would stifle innovation and discourage participants from entering and developing this space.

When the current applicable energy legislation and regulations were developed the smart and flexible technologies did not exist and were therefore designed for different energy systems. For example the Electricity Act 1989 requires that certain activities are licenced and storage is not mentioned in the Act. However, over time it has fallen under the remit of the generation licencing regime but we would argue that the transformational way the energy system is changing shows that storage is a unique class of the energy infrastructure that is not generation, trading or supply and therefore warrants separate treatment.

Recognition of this is that battery storage acts both as a generation asset and a demand asset and compressed liquid energy storage systems are analogous to industrial feedstocks. As storage develops and moves away from purely Hydro it diverges further from being analogous to generation.

Storage as a separate asset class to increase competition

Our proposal is for electricity storage to be regulated as a separate class of assets in the Electricity Act. This separate licencing regime will ensure the market is opened up to the widest possible pool of participants. As with the case for interconnectors this would drive more rapid adoption of the technology at the lowest cost to bill-payers.

We see large scale storage (connecting direct to Transmission or Distribution networks) as a separate market from consumer-level storage (storage in households and communities). We believe the difference between these markets should be reflected in regulation - allowing a more flexible approach to consumer storage. To account for these differences and to ensure market lock out or market distortion does not occur the electricity storage licencing regime should include thresholds and delimitations within the administration.

Behind the meter storage should be licence exempt with no limitations on whom and how these assets can be utilised. This will drive the uptake of innovative solutions that deliver consumer benefits such as peer to peer energy agreements.

As a developer in storage that has closely studied the economics of energy storage technologies, we believe that contractual certainty is needed to ensure a clear business case signal for investors to move forward and progress projects. We believe that the current four year term for flexibility contracts

does not give this certainty. This risks creating a fleet of stranded assets; as the cost of batteries comes down, those who first entered the market risk being priced out. This risk is effecting investment. To overcome this, the System Operator should be incentivised to offer a mix of short, medium, and long term contracts providing some certainty to investors while ensuring competition and value for consumers.

We are happy to discuss our views contained within this letter, should that be helpful. For further details, please contact David Bevan (dave.bevan@nationalgrid.com).

Yours sincerely

A handwritten signature in dark ink, appearing to read 'Ian Graves', with a stylized flourish at the end.

Ian Graves
Director
National Grid Business Development