NFU Consultation Response

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BEIS/Ofgem call for evidence: a Smart, Flexible Energy System

The National Farmers' Union of England and Wales (NFU) has 55,000 members with an interest in farming and the rural economy.

With 75 per cent of national land area in the agricultural sector, NFU members have a significant interest in land-based renewable energy production, where they can benefit directly in the short and medium term as energy producers themselves or as hosts for energy plant developed by others. Our own market research, as well as that of other organisations, suggests that more than one-third of farmers and growers have already invested in some form of renewable energy production for self-supply or export to other users. We estimate that farmers own or host around 60% of Britain's solar power capacity, over half of AD capacity and the majority of wind power, while playing a significant role in the supply or fuelling of renewable heat.

The NFU is especially supportive of farmer-owned small and medium scale energy projects, particularly schemes which deliver multiple benefits from the land or which help farmers to achieve local environmental objectives (e.g. resource protection, biodiversity). Furthermore, we anticipate that there are likely to be a range of profitable on-farm applications of energy storage for our members' businesses. These may include small-to-medium sized domestic or commercial systems that capture and release electricity from solar or wind generation, or enhanced back-up generator systems and large electricity stores coupled to solar farms or directly to the electricity distribution network. However, some of these services and business models have yet to be developed as potential sources of income.

New developments in 'smart energy', electricity storage and ancillary network services are likely to enable farmers to connect more intermittent renewables like solar PV and wind power to weak electricity networks in remote areas, where on-site generation may have been previously dismissed as impractical. The NFU welcomes these emerging opportunities for more of our members to manage their energy input costs, supporting profitable agriculture.

General comments

The NFU would like to make the following observations concerning the main issues raised in the Call for Evidence document.

- **We welcome this Call for Evidence, and understand that a growing proportion of new power generating capacity comprises small to medium scale renewables, connected to local 'distribution' networks instead of the long-distance transmission network**. Across the UK and Europe, distributed generation is expected to account for over 20% of power production by the early 2020s. A related market trend is the growing importance of 'ancillary services' which stabilise the power grid and enhance energy security.

- **The NFU is concerned that its farmer and grower members should not have to bear a significant increase in network usage charges, since they are often both users and self-generators of electricity.** However, we are also aware of an emerging variety of opportunities for farmers to host or invest in electricity storage systems, whether located close to major power lines or embedded within renewables projects. We acknowledge the recent Solar Trade Association/Aurora Energy report on the system integration cost benefits of solar PV in combination with storage.

- **Ofgem's responsibility for protecting consumers should extend to informing and explaining to energy bill payers about the level of investment needed by DNOs (Distribution Network Operators) as well as by the transmission network**. This is consistent with the overall process of electricity market reform and decarbonisation, as well as the harmonisation of Europe-wide grid codes/standards.

- **We have previously called for the accelerated introduction of cross-government incentives for time-constrained export-limited connections and energy storage that can help DNOs with managing local networks,** as part of the new business environment of 'flexible' or 'alternative' generation connection offers. These should take the form of enhanced capital allowances, tax reliefs, etc., rather than grants or subsidies.

- **The NFU is keen to see a regulatory framework that is fit for purpose in maximising the opportunities for SMEs** (including farmers and growers) to benefit from on-site generation (behind the meter) as well as providing network balancing services to other users and the local/national system operators. The emerging regulatory framework must suit both the advances in technology and the needs of investors/finance providers, along with the willingness of the land-based sector to host these new storage assets.

- **We would like farmers to be offered access to voluntary demand-side response measures at the same pace as other domestic and commercial electricity users.** However, we prefer such changes not to be obligatory, allowing individual farm enterprises flexibility in adopting smart energy measures. For example, we anticipate variable time-of-day tariffs and vehicle-to-grid (V2G) battery storage technology to become increasingly important for the farm businesses of the future.

- **Lastly, the NFU would like to see farmers who host or operate suitable generation assets (e.g. AD plants, mini-hydro power) and manageable demand loads (e.g. cold stores, chilled storage of agricultural produce) incentivised to offer 'Dynamic Frequency Response' services to the electricity network by modulating their output or demand as required by the Transmission Operator**.

Consultation questions

The NFU would like to submit responses to selected questions posed in this Call for Evidence, in addition to the comments made above on the wider policy context.

Removing policy and regulatory barriers - Enabling Storage

Q1. Have we identified and correctly assessed the main policy and regulatory barriers to the development of storage? Are there any additional barriers faced by industry? Please provide evidence to support your views.

The NFU agrees with other stakeholders that BEIS and Ofgem have correctly identified the main barriers, and we call upon Government to address them swiftly. However, some other areas of energy policy (e.g. embedded benefits review, harsh cuts to renewables incentives) appear to conflict with these aims. We endorse the efforts of others to develop minimum consumer standards for best practice, safety, technical specifications, etc., in order to get the emerging UK industry off to a good start with a high-quality reputation.

> *Q2. Have we identified and correctly assessed the issues regarding network connections for storage? Have we identified the correct areas where more progress is required?*

Yes, but in common with other stakeholders, we believe network connections for storage should be prioritised where they help to free up 'space' for other distributed generators to connect. Clarity from Ofgem is also required to enable and encourage co-location or retrofitting of storage assets with renewable generation projects.

> *Q4. Do you agree with our assessment that network operators could use storage to support their networks? Are there sufficient existing safeguards to enable the development of a competitive market for storage? Are there any circumstances in which network companies should own storage?*

DNO ownership of storage, subject to regulatory oversight of unfair competition, could be helpful as long it encouraged greater innovation by these rather conservatively managed organisations. In order to promote fairness, equivalent standards would need to apply nationally.

> *Q5. Do you agree with our assessment of the regulatory approaches available to provide greater clarity for storage? Please provide evidence to support your views, including any alternative regulatory approaches that you believe we should consider, and your views on how the capacity of a storage installation should be assessed for planning purposes.*

The NFU agrees with other stakeholders that both a short-term 'fix' and a longer-term solution through primary legislation are probably required to support and speed up deployment of storage. For planning purposes, we have previously proposed to Defra and DCLG (Rural Planning Review, 2016) that permitted development rights for small and medium battery storage facilities, regarded as 'reasonably necessary' for the purposes of agriculture, should be a priority to support rural growth and innovation. Where finished in green or camouflage colours, the NFU believes such structures will be of a scale that poses only a negligible visual and landscape impact, with minimal noise nuisance or contamination risk.

> *Q6. Do you agree with any of the proposed definitions of storage? If applicable, how would you amend any of these definitions?*

Like other stakeholders, we agree with the existing working definition from the Energy Storage Network, which is fit for purpose and needs to be formally recognised to avoid any further delays to progress.

Providing price signals for flexibility - Smart Tariffs

> *Q15. To what extent do you believe Government and Ofgem should play a role in promoting smart tariffs or enabling new business models in this area? Please provide a rationale for your answer, and, if you feel Government and Ofgem should play a role, examples of the sort of interventions which might be helpful.*

> *Q16. If deemed appropriate, when would it be most sensible for Government/Ofgem to take any further action to drive the market (i.e. what are the relevant trigger points for determining whether to take action)? Please provide a rationale for your answer.*

Q18. Do you recognise the reasons we have identified for why suppliers may not offer or why larger non-domestic consumers may not take up, smart tariffs? If so, please provide details, especially if you have experienced them. Have we missed any?

The NFU agrees with other stakeholders that the Government and Ofgem should commit to a clear timetable for rolling out half-hourly metering, supported by promotional campaigns to explain the advantages to both commercial and domestic consumers of time-of-day smart tariffs (e.g. the P272 process for larger non-domestic consumers). This would encourage greater flexibility and shifts in consumer demand, but it needs to be accompanied by clear information on the cost advantages and the balance between fixed metering costs and energy use costs. Some farmers' electricity use is very seasonal (e.g. grain drying), so they need reassurance that their annual bills would not necessarily be lower and more comprehensible on a simple fixed tariff. Ideally there should be the flexibility for individual farm enterprises to decide whether to adopt specific smart energy measures. Likewise, small-scale microgenerators receiving Feed-In Tariffs need reassurance that smart metering will not conflict with their current right to receive payment for 50% deemed exported power.

Providing price signals for flexibility - Smart Distribution Tariffs - Incremental Change

Q21. How problematic and urgent are any disparities between the treatment of different types of distribution connected users? An example could be that that in the Common Distribution Charging Methodology generators are paid 'charges' which would suggest they add no network cost and only net demand.

The NFU agrees with other stakeholders that a full-scale review of grid access charging would be preferable to the current piecemeal approach, e.g. the embedded benefits review, in order to set out greater long-term certainty.

Providing price signals for flexibility - Smart Distribution Tariffs – Fundamental Change

Q22. Do you anticipate that underlying network cost drivers are likely to substantively change as the use of the distribution network changes? If so, in what way and how should DUoS charges change as a result?

Ideally, a substantial proportion of new demand load (e.g. for the predicted electrification of transport and heat services) will be met directly from the distribution network rather than passed through from the transmission network, so the basis for underlying network costs will change markedly in the future. Network charges ought to reflect the inherent value of locating generation close to demand.

Providing price signals for flexibility - Other Government Policies

Q25. Can you provide evidence to show how existing Government policies can help or hinder the transition to a smart energy future?

Existing Government policies on renewable electricity (FiTs, RO, CfD) will need to be compatible with the push for smart energy and storage, and the definition of storage will need to be aligned across all policy measures. Further policy measures to enable rapid decarbonisation of electricity and other energy services must recognise the interdependence of intermittent renewables, storage and despatchable renewables.

Q26. What changes to CM application/verification processes could reduce barriers to flexibility in the near term, and what longer term evolutions within/alongside the CM might be needed to enable newer forms of flexibility (such as storage and DSR) to contribute in light of future smart system developments?

The NFU agrees with other stakeholders that longer-term contracts (e.g. 7 years or more) should be available to storage and demand reduction investments, and restrictions on 'stacking' of multiple income streams need to be removed. Enhanced payments for high performance fast-response systems would further incentivise network flexibility through improved storage capabilities.

> *Q27. Do you have any evidence to support measures that would best incentivise renewable generation, but fully account for the costs and benefits of distributed generation on a smart system?*

The NFU supports number of the ideas suggested by other stakeholders, including reform of the Levy Control Framework to enable future deployment of renewables, and the introduction of 'market-stabilising' or 'subsidy-free' CfDs, open to all renewables with or without storage, as well as other fiscal measures such as Enhanced Capital Allowances.

A system for the consumer - Ultra Low Emission Vehicles

> *Q33. How might Government and industry best engage electric vehicle users to promote smart charging for system benefit?*

> *Q34. What barriers are there for vehicle and electricity system participants (e.g. vehicle manufacturers, aggregators, energy suppliers, network and system operators) to develop consumer propositions for the:*
> *• control or shift of electricity consumption during vehicle charging; or*
> *• utilisation of an electric vehicle battery for putting electricity back into homes, businesses or the network?*

The NFU anticipates that vehicle-to-grid (V2G) battery storage technology could become increasingly important for farm businesses connected to weak rural networks in the future – if suitable enabling policy measures, financial incentives and interruptible electric charging tariffs were available. The expected introduction of diesel-electric hybrid and battery electric transmissions in a range of agricultural ULEVs may create an opportunity for 'smart' charging of such vehicles in large solar PV roofed 'carport-style' machinery sheds. In addition to having access to low-cost solar charging, the battery packs in such ULEVs would be able to earn income towards their recharging and maintenance costs by providing V2G network balancing services while they are on-charge.