

## **A SMART, FLEXIBLE ENERGY SYSTEM - A CALL FOR EVIDENCE**

### **SUBMISSION FROM THE MINERAL PRODUCTS ASSOCIATION**

#### **INTRODUCTION**

1. The Mineral Products Association (MPA) is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries. With the recent addition of British Precast and the British Association of Reinforcement (BAR), it has a growing membership of 480 companies and is the sectoral voice for mineral products. MPA Membership is made up of the vast majority of independent SME quarrying companies throughout the UK, as well as the 9 major international and global companies. It covers 100% of GB cement production, 90% of aggregates production, 95% of asphalt and over 70% of ready-mixed concrete production and precast concrete production.
2. Each year the industry supplies £20billion worth of materials and services to the Economy and is the largest supplier to the construction industry, which has annual output valued at £144billion. Industry production represents the largest materials flow in the UK economy and is also one of the largest manufacturing sectors. For more information visit: [www.mineralproducts.org](http://www.mineralproducts.org).
3. Only the questions where MPA is providing a response are included in the document. For more information concerning this call for evidence response, please contact:

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#### **QUESTIONS AND RESPONSES**

##### **REMOVING POLICY AND REGULATORY BARRIERS**

- Question 1. 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?**
4. A recent study<sup>i</sup> identified that the use of building thermal mass for pre-heating and pre-cooling is a poorly exploited means of reducing electricity peak demand. The Government should be mindful of this valuable opportunity and ensure that actions taken now to promote 'traditional' storage technologies do not hamper the development of this low-cost storage option or its access to the DSR market, as well as supporting the policy development and commercial piloting necessary to realise fully the storage potential of existing and new building stock.

5. The same value should be attributed to storage ‘behind the meter’ (that is storage which is consumed on site and not exported to the grid) as storage ‘before the meter’, because the flexibility provided is the same.
6. Barriers to storage include access to funding/long-term contracts, for example, Enhanced Frequency Response contracts are only for 4-years.
7. Aggregators need access to a ‘level playing field’; current storage and export arrangements disadvantage aggregators and direct providers and large-scale storage installations are only economically viable when used for balancing. Increasing system flexibility will mean making it easier to export stored energy to the grid, for example, storage operators not having to register as energy producers.
8. To benefit from increased system flexibility, consumers need to be able to compare effectively the services offered by aggregators, and need the flexibility to switch between DSR and storage providers and/or their services/tariffs. Equally, electricity supply contracts will have to be more flexible and able to account for DSR and storage/export activities of customers. Although the market is expected to move in this direction, the mechanisms to enable this change need clarification, and the appetite of suppliers and DNO’s to support such a change is not clear.

**Question 2. Have we identified and correctly assessed the issues regarding network connections for storage? Have we identified the correct areas where more progress is required?**

9. Regulations need to ensure availability and access of grid connections, avoiding speculative accumulation of connections that are never used.

**Question 6. Do you agree with any of the proposed definitions of storage? If applicable, how would you amend any of these definitions?**

10. As noted in the response to Question 1, there is a low-cost option to exploit the thermal mass of building for pre-heating and pre-cooling and deliver grid flexibility<sup>i</sup>. This form of storage would not fit with any definition of electricity storage that requires the reconversion of the stored energy to electricity. Given that the call for evidence recognises the need for reforms to “*support an integrated approach with the gas, heat and transport sectors*” (page 73, paragraph 3), it is important that any regulatory and legislative definition does not prevent the proper exploitation of the value for money storage resource of building thermal mass.

**Question 7. What are the impacts of the perceived barriers for aggregators and other market participants? Please provide your views on:**

- balancing services;
- extracting value from the balancing mechanism and wholesale market;
- other market barriers; and
- consumer protection.

**Do you have evidence of the benefits that could accrue to consumers from removing or reducing them?**

11. As noted in the response to Question 1, aggregators need access to free and open market to allow ensure organisations of all sizes are able to access the ‘flexibility’ market and

that it reaches its full potential. However, aggregators will need to be open and transparent with their customers concerning the costs and revenues generated; trust will be fundamentally important in the developing market.

12. Industry codes of conduct, similar to the DSR code of conduct in development by the Association of Decentralised Energy (ADE), might be useful to boost customer confidence in the emerging market, but any form of control must be sufficiently adaptable to allow innovation to meet the demands of the changing energy system landscape.

## PROVIDING PRICE SIGNALS FOR FLEXIBILITY

**Question 11. What types of enablers do you think could make accessing flexibility, and seeing a benefit from offering it, easier in future?**

13. The call for evidence states that the *“approach set out here is aligned with the development of the Government’s Industrial Strategy”* (page 7, paragraph 5). However, the approach does not recognise the needs of energy intensive manufacturing operating continuous processes and unable to participate in a ‘flexible’ system. ‘System value pricing’ that rewards flexibility over established demand may well disadvantage these industries. The lack of recognition for the value of continuous ‘baseload’ demand may lead to excessive systemic cost for such demand that is counterintuitive to an industrial strategy that supports high productivity, low carbon UK manufacturing.

**Question 14. Can you provide evidence to support changes to market and regulatory arrangements that would allow the efficient use of flexibility and what might be the Government’s, Ofgem’s, and System Operator’s role in making these changes?**

14. The design of market and pricing mechanisms must ensure that payments reward the outcomes most valuable to the energy system and in a manner that enables innovation in services offered, such as the use of buildings to deliver demand side flexibility (as mentioned in Question 1).

**Question 15. 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.**

15. Any intervention in the market needs to be careful alignment with the Government’s Industrial Strategy to ensure that fundamental industries that operate continuous processes, such as cement and lime manufacturing, are not disadvantaged. For example, the cement industry has invested heavily over recent decades to reduce energy demand, to use alternative energy sources, and to maximise energy efficiency. Market interventions which support sectors that have not made similar investments but which, by their nature, are able to take advantage of flexibility, are counterintuitive to a coherent Industrial Strategy.

**Question 18.** 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?

16. As mentioned in the response to Question 11, the approach fails to recognise that some large non-domestic consumers are unable to take advantage of smart tariffs and does not offer any system for rewarding ‘baseload demand’.

**Question 19.** Are distribution charges currently acting as a barrier to the development of a more flexible system? Please provide details, including experiences/case studies where relevant.

17. Similarly to the response to Question 11, proposals for time-of-use or capacity-based distribution network charges take no account of value provided by ‘baseload demand’ by industries that operate continuous processes and that, by their nature, are unable to participate in flexible systems, but which might be severely penalised by proposals for dynamic network tariffs. In proposing the implementation of flexible distribution network tariffs, the Government must give equal consideration to fixed or capped distribution network tariffs for non-domestic consumers that provide the confirmed revenue stream needed for continuous investment by network and system operators.

**Question 25.** Can you provide evidence to show how existing Government policies can help or hinder the transition to a smart energy future?

18. There is a plethora of different support schemes aiming to achieve similar ends, and it is difficult for industry consumers to understand which schemes run in parallel, which are mutually exclusive and which are their best options to participate. For example, the list of measures that affected the support available to potential applicants for Phase II EDR<sup>ii</sup> noted:

- six schemes where participation excluded involvement in Phase II EDR, and
- four schemes where existing participation might not be a barrier to Phase II EDR participation, but would increase the application complexity.

## A SYSTEM FOR THE CONSUMER

**Question 37.** Do you recognise the barriers we have identified to large non-domestic customers providing DSR? Can you provide evidence of additional barriers that we have not identified?

19. As noted in the responses to Question 11 and Question 19, many large non-domestic consumers are simply unable to participate in DSR because of the continuous nature of their operations. It is important to recognise the existence of this barrier to ensure that solutions do not create perverse incentives or market distortions.

**Question 38.** Do you think that existing initiatives are the best way to engage large non-domestic consumers with DSR? If not, what else do you think we should be doing?

20. As noted in the response to Question 25, there are a range of similar incentives and measures that are difficult to navigate. Clarity and simplification, and supporting tools might be more effective than additional initiatives.

## INNOVATION

**Question 47. Can you give specific examples of types of support that would be most effective in bringing forward innovation in these areas?**

21. It is notable that energy sector participants are able to access much of the support available (for example, the Electricity Network Innovation Competition is allocating £81m per year but only to network licensees). There could be value in making some of this funding available to a wider cohort of participants, participants without a vested interest in the status quo.

**Question 48. Do you think these are the right areas for innovation funding support? Please state reasons or, if possible, provide evidence to support your answer.**

22. As noted in the response to Question 1, a recent study<sup>i</sup> concluded that buildings are able to provide a significant role in delivering demand side flexibility. This opportunity is underdeveloped, but unrecognised in the areas identified for innovation funding. Whilst the innovation strands include storage costs, the focus is “grid scale storage technologies” and not the type of support needed to fully realise the storage and flexibility potential of buildings.
23. Specifically, funding is needed to undertake pilot projects that demonstrate the benefits of thermal storage in buildings and provide suitable data on which to base the policy and regulatory frameworks needed for further roll out.

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<sup>i</sup> 3E, Structural Thermal Energy Storage In Heavy Weight Buildings - Analysis And Recommendations To Provide Flexibility To The Electricity Grid, October 2016 - <http://www.theconcreteinitiative.eu/newsroom/publications/207-renewable-energy-in-buildings-unleashing-the-potential-of-thermal-mass-for-electricity-grid-flexibility>

<sup>ii</sup> DECC, Electricity Demand Reduction Pilot Scheme Phase II, June 2015 - <https://www.gov.uk/government/publications/electricity-demand-reduction-pilot-phase-ii-participant-handbook-and-additional-guidance>