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**From:** British Ceramic Confederation

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**BCC RESPONSE TO BEIS / OFGEM CALL FOR EVIDENCE ON  
“A SMART, FLEXIBLE ENERGY SYSTEM”**

The British Ceramic Confederation (BCC) is the trade association for the UK ceramic manufacturing industry, representing the common and collective interests of all ceramic sectors. Its 100 member companies cover the full spectrum of ceramic products and comprise over 90% of the industry's UK manufacturing capacity. The ceramic sector is diverse, going beyond typical perceptions, spanning foundation industries and advanced manufacturing / materials across the following industry sectors:

- Bricks
- Gift and Tableware
- Refractories
- Clay Roof Tiles
- Floor and Wall Tiles
- Industrial Ceramics
- Clay Pipes
- Sanitaryware
- Material Suppliers

Our sector (including suppliers) employs ~20,000 people, generates £2 billion sales, and is an active exporter, particularly for industrial ceramics, refractories, clay drainage pipes, tableware and giftware. Our membership comprises a range of mostly SMEs operating single manufacturing sites (~75%), through to larger UK-based and multi-national organisations operating multiple manufacturing sites.

Many of our members' manufacturing operations are based on constant high temperature, continuous production processes. They are energy-intensive, with energy costs and taxes make up to 30-35% of total production costs. By virtue of the importance of energy to their overall costs, our members (like energy-intensive industries more generally) actively monitor and manage their energy use and have been driven to maximise the efficiency over several decades of operation.

The industry as a whole is gas-intensive, with an energy mix of ~85% gas (predominantly for high-temperature firing from around 1,000°C to 1,750°C) and 15% electricity. Electricity consumption in the sector accounts for use in even higher firing temperatures (for some technical ceramic and refractory producers using electric arc / induction firing up to 2,750°C) and more generally across all sectors where it plays an essential role in powering kiln control systems, grinding, shaping processes, conveyers, lighting etc. Despite 80% of BCC members being classed as 'small / medium' industrial electricity consumers, ~40% of all energy expenditure in the sector is on electricity.

Of utmost importance to our members is that risks of supply shortages and additional cost burdens are minimised. Physical loss of electricity in an unplanned manner may prevent controlled kiln shutdowns (which typically takes several days) and can have severe consequences to continuous kilns, their refractories / kiln cars; as well as loss of partially fired product and further production being suspended. This would usually require a factory shutdown for repairs, resulting in £ millions of losses. Due to the prevalence of continuous processes, an instantaneous response to energy shortages by many BCC members cannot take place when supplies are low without damage to plant, which can risk jobs and business viability.

Many ceramic products will play a key role in the delivery of a 'smart, flexible' energy market and in the transition to a low carbon economy. Most-notably these include: transducers for smart meters, temperature and flow regulators, critical components for low-carbon energy such as wear-resistant components for heat pumps / wind turbine bearings; heat resistant components for fabrication of solar photovoltaic panels; durable clay construction products with low-carbon lifecycle emissions (used to produce energy-efficient homes) as well as specialist, long-

life refractories used in 'heat-intensive' sectors (which reduce emissions associated with manufacturing many times over). As a highly innovative sector, ceramic products will be crucial for the production of emerging / breakthrough technologies for the future energy market.

The supply of energy to the UK economy is vital and we acknowledge that the energy market faces an ever-more challenging task in balancing the 'energy trilemma' (between supply security, costs and carbon emissions). Whilst moving to lower carbon power generation, as a modern economy, the security of energy supplies must not be compromised (i.e. no blackouts or brownouts) while ensuring the UK has internationally competitive energy prices.

BCC is a member of the Energy Intensive Users Group (EIUG) and actively supports their submission to this call for evidence. Our response focuses specifically on a number of sections in the call for evidence, to supplement or reinforce EIUG's response where appropriate.

### **Other Government policies**

We consider that 'smart / flexible' technologies have the potential to fundamentally transform the energy market. However, in doing so it is essential that the transition is cost effective, that industrial consumers benefit through either reduced costs or load shifting and it allows industrial consumers (such as our members) to compete internationally. At present UK industrial users already pay amongst the highest costs in Europe for electricity. Although ceramics companies are energy-intensive, they are comparatively 'smaller' industrial electricity consumers on a consumption basis compared to other EILs. Therefore ceramics companies face even higher wholesale electricity costs than most other EILs. The evolution of a 'smart' UK energy market must therefore take place cost-effectively, and its deployment to industrial consumers must not follow a 'one size fits all' approach.

Our members continue to face significant cost increases across a range of existing electricity policy charges, and notwithstanding limited compensation measures available to the sector, this is already of great concern. Whilst the development and deployment of 'smart / flexible' technologies is anticipated to grow, the associated costs for EILs must be viewed against the backdrop of existing cumulative electricity policy burdens and high costs. This must not be further added to.

### **Consumer engagement with demand side response**

Opportunities for active participation in electricity demand side response (DSR) in the ceramics industry (through shifting, reducing or increasing consumption patterns at certain times) are both technically and practically limited by the operation of continuous processes and lower overall electricity consumption (relative to other EILs). With a stable, constant electricity baseload profile, DSR uptake in the ceramic sector may come directly into conflict with maintaining manufacturing operations and may only be realised with adverse impacts on productivity and also energy efficiency. Nevertheless, the awareness of DSR within our membership is high, as it is across all EILs. For example, we regularly update our members through briefings / meetings on energy matters.

Across other non-EIL organisations, knowledge of DSR may not currently be as great; targeting further DSR uptake in other areas of the economy may be most practicable and cost-effective.

### **Consumer protection / cyber security**

The current provision of data by our members (e.g. directly to suppliers and other parties) is conducted in strictest confidence. We would have significant concerns about how any future access to smart metering data could be achieved whilst adequately maintaining commercial confidentiality, especially if smart metering resulted in control of operational plant by external parties (e.g. through a mandatory extension of smart appliances to industry). The potential consequences could be very serious e.g. through loss of control of high temperature or hazardous processes if strong levels of security and commercial confidentiality are not maintained.

I trust this is sufficient for your present requirements; however please feel free to contact us if you require any more information.

Yours faithfully,

Mr Lee Brownword  
**Technical & Environmental Manager**

Dr Andrew McDermott  
**Technical Director**