

Appendix 1 - Energy

1. The Commission is seeking evidence on how changes to existing market frameworks, increased interconnection and new technologies in demand-side management and energy storage can better balance supply and demand.
2. The NIC have asked for responses to address the following specific questions:

(1) What changes may need to be made to the electricity market to ensure that supply and demand are balanced, whilst minimising cost to consumers, over the long-term?

3. The electricity market needs to be further liberalised in two areas. Firstly to allow small decentralised generators to more easily access the retail electricity market to realise the full value of their electricity. They currently receive lower wholesale prices. Secondly to allow SMEs and domestic consumers to participate in the demand side market and be paid for being flexible in their electricity use. The Mayor is active in both these fields:
4. Licence Lite: the Mayor is working towards being the first public body to operate a junior electricity supply licence buying electricity from local generators and selling it to local consumers. Licence Lite is about making the electricity market more open and therefore providing more choice for consumers. Further market reforms should address simplifying market operation for suppliers (particularly smaller suppliers) and making the provision of basic market services for licence lite by large scale suppliers mandatory.
5. Demand side response: the Mayor has supported two DSR (demand side response) SMEs to develop new market products. It would be highly beneficial to afford the same access to National Grid's ancillary services market for domestic consumers and SMEs as commercial and industrial consumers, assuming 'smart' technology is more widely available in the home (smart meter, home area network, smart appliances). Government and Ofgem need to do more to stimulate the availability of aggregation services for smaller consumers to enable them to benefit from their own DSR activities. The market currently incentivises aggregators to focus on larger electricity consumers.

(2) What are the barriers to the deployment of energy storage capacity?

6. Heat storage, in contrast to electricity storage, is a well-established, simple and cheaper way of storing excess energy, whether this originates from excess heat or electricity. Heat storage at scale requires the use of heat networks to connect heat production and storage to consumers. Heat networks are unregulated, unlike other utilities, and the Government should make more progress towards securing more public confidence and reduce the barriers to the installation of new heat networks. Particular issues include access by consumers to connect to heat networks, the interconnections between networks, and giving heat consumers more confidence in heat networks by introducing some regulation of heat price, recourse in the event of unsatisfactory service and making provision for heat suppliers of last resort to take over a network if a heat network operator fails.

(3) What level of electricity interconnection is likely to be in the best interests of consumers?

7. Electricity interconnectors are the physical links which allow the transfer of electricity across national borders. In the short-term, the GLA would support interconnections where this leads to a reduction in Londoners' electricity bills and its carbon content. More interconnections should:
8. Increase access to low carbon/zero carbon electricity and lead to a reduction in the carbon intensity of the grid mix, provided the electricity is affordable.
9. Reduce the peak demand on GB power stations (particularly given the timing differences between continental European peaks and our own), so reducing the level of capital investment required in peaking plant which is costly to consumers.
10. Decrease the need for back-up plant that needs to accompany the growth in intermittent renewables such as wind which is both expensive (thus undermining the economics of such renewables) and as peak plant usually carbon intensive.

(4) What can the UK learn from international best practice in terms of dealing with changes in energy technology when planning to balance supply and demand?

11. In terms of energy planning, the GLA is working on the London Energy Plan that will provide a spatial map of London's energy supply and demand to 2050, identifying the locations and options for the required supporting infrastructure. It will include projections of heat and electricity infrastructure, retrofitting of the built environment to reduce demand, and electricity for transport. It will also identify the potential of 'smart' energy demand shifting. The London Energy Plan will identify the fraction of peak demand that is potentially 'shiftable' due to different types of demand side response and enabling technologies. Enabling technologies considered include smart meters, smart thermostats and additional thermal storage. Types of demand side response considered include static time of use tariffs, dynamic time of use tariffs and direct load control. The uptake of DSR (low to high) will be varied across different scenarios in order to demonstrate the potential effect of DSR in London.