Mayor's Electricity Summit – Background Paper

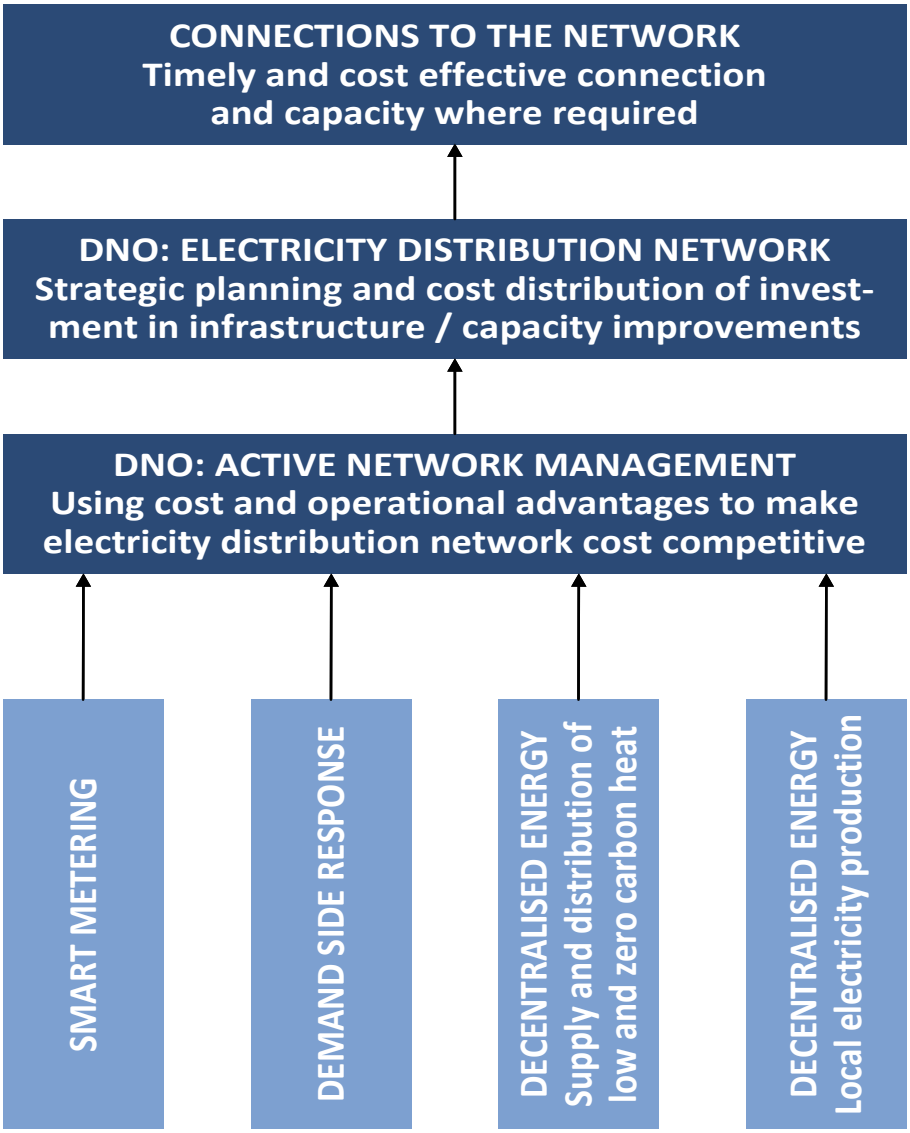
Delivering an Accessible and Competitive Electricity Network for London

The Aim

With this Summit and the establishment of a high-level working group the Mayor wants to secure a resilient electricity network in London able to deliver connections and capacity timely and cost-effectively to ensure that London can compete with other world cities in terms of access to electricity supply and support for development and business growth where and when it is required. This will be delivered by timely and strategically-planned investment in the electricity network, with an effective distribution of risks and responsibilities between developers and DNOs, and by economic and environmental innovation, including the delivery of the Mayor's agenda for decentralised energy, demand side response measures and active network management. He wants to establish a close relationship between local and national government, the regulator and the industry, particularly to understand the relevant issues each of us face and we can work together on to make improvements.

A cost-effective electricity network is at the centre of this approach, with the following two key interconnected components to achieve this. The approach is illustrated in Figure 1 below.

Figure 1



Accessible network

New developments and businesses must be able to take power from London's electricity network through connections made and capacity provided in a timely and cost effective manner when and where it is required.

- Slippage in connection times can be acutely damaging to the progress of new developments and can have cost implications out of proportion to the cost of the connection itself. Evidence obtained by 'Delivering Power: The Future of Electricity Regulation in London's Central Business District' commissioned by London First, the Corporation of London and the City Property Association illustrates some urgent concerns around the timeliness of connections and the scope for improved service delivery.
- Disproportionate connection costs can arise as a result of a single connection request triggering major reinforcement of the network.
- A fundamental factor is network constraint. The more pressure that is placed on the network through demand for new connections and increased power loads, the more reinforcement is needed, often at increasing distances from the point of connection and at increasing cost.
- Strategic planning for reinforcement and capacity improvements to the electricity network in anticipation of new network connections and loads, in anticipation of firmly committed and planned development and business growth, is cost-effective and benefits from economies of scale compared with responding separately to individual connection requests.
- It is a significant challenge to share the investment risk for additional connections and capacity between developers, the distribution network operator and others in a way that keeps risk and cost overall to a minimum.

Competitive Network

As well as being accessible, London's electricity network must be smart and sustainable in terms its network development to be competitive with other cities, which compete with London for investment. The key to this is to harness the investment made in London's wider sustainable energy agenda, which can reduce the need for expensive investment in the electricity distribution network and increase its resilience and reliability. All the following measures stand to reduce stress on the electricity system or, in particular during periods of peak demand, reduce the need for further re-enforcement and therefore avoid cost.

- The Mayor's decentralised energy programme means that at least 25 per cent of London's energy supply will be met through decentralised energy production. This is despite the Government's 2050 scenarios for the United Kingdom's future energy sources involve a strategic shift towards electrification of heat supply.
- More locally produced electricity will help to spread peaks of demand or offset it with locally produced energy.
- Through district heating systems, heat will be produced in combination with electricity or gathered from local sources of waste heat, offsetting the need for more electricity distribution capacity to deliver more electricity for heating. The heat may also be stored, flattening peak electricity demand.
- Smart meters in homes and work places will introduce additional scope for reducing electricity consumption and shifting peaks.
- Demand-side management aggregators, already active in some areas of industrial and commercial electricity production, will be able to operate in an expanded market. They help to mitigate peak stresses by shifting or abating many individual sources of electricity and heat demand collectively.

Questions to facilitate the Panel Discussion (Item 5 on the Agenda)

There are the following two key components we want to discuss separately. *Please let us know if we have missed out an important question in this context.*

Accessible Network

- What processes need to be established to enable planning authorities, developers and the DNOs to determine what level of investment in the network is needed when and at which locations?
- What steps need to be taken to ensure appropriate recognition of growth hotspots and areas of existing network stress in the business plans of the electricity DNOs?
- How do we get the right cost-effective balance between risk taken by the DNO and risk taken by developers and others requiring new connections or more capacity considering that developers' plans may always be subject to change?
- How far does the above involve changes to the current regulatory framework and is Ofgem's RIIO programme flexible enough to address it?
- How is responsiveness to requests for connections and the timeliness of connection delivered on a reliable basis and what are the cost implications?

Competitive Network

- How are connections for decentralised energy systems facilitated by planning requirements for developments and by economic costs at the required locations?
- What initiatives should the Mayor take to promote the development of demand side management and response systems in London that reduce demand and shift peaks and therefore save costs?
- How can it be ensured that the full potential for reducing network stress and costs through delivery of the Mayor's energy strategy is embedded in the distribution network operators' business plans?
- What are the potential impacts of Government proposals for Electricity Market Reform and the delivery of low/zero carbon heat on the envisaged sustainable and cost-effective electricity network for London and vice versa?