

Report to:	Climate and Environment Advisory Committee 13 July 2021
Lead Cabinet Member:	Cllr Tumi Hawkins
Lead Officer:	Joint Planning Director

Update on grid capacity issues facing Greater Cambridge

Executive Summary

1. This paper provides members with an update on progress with work to address grid infrastructure capacity issues across South Cambridgeshire. It provides details of the work being carried out by the Greater Cambridge Partnership to provide new infrastructure in the south of the district, as well as an update on how infrastructure is being considered as part of work on the Greater Cambridge Local Plan.

Key Decision

2. No this is not a key decision. The purpose of this paper is to provide members with an update on progress with work to address grid infrastructure capacity issues across South Cambridgeshire.

Recommendations

3. The committee is invited to review and comment on the update provided and agree the recommendation that officers from the Greater Cambridge Shared Planning Service continue to work with colleagues at the Greater Cambridge Partnership and other partner organisations to address grid capacity issues in so far as these are relevant to the work of the planning service.

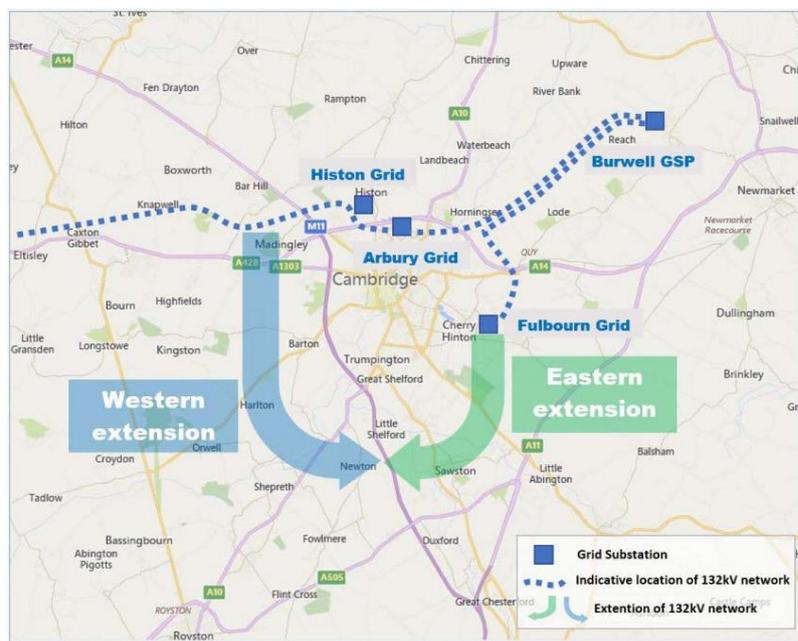
Details

4. Electricity grid capacity constraints in Greater Cambridge have the potential to represent a significant barrier to growth as well as schemes including clean/renewable energy projects. Utility providers are constrained to operate reactively to confirmed demand and are unable to provide infrastructure ahead of need. As a result, those delivering new housing and commercial developments are often unaware of additional costs to reinforce grid infrastructure to support

their development proposals until after planning permission has been granted. This can then impact on the viability of projects that help to achieve net zero carbon objectives such as the electrification of transport and renewable energy projects.

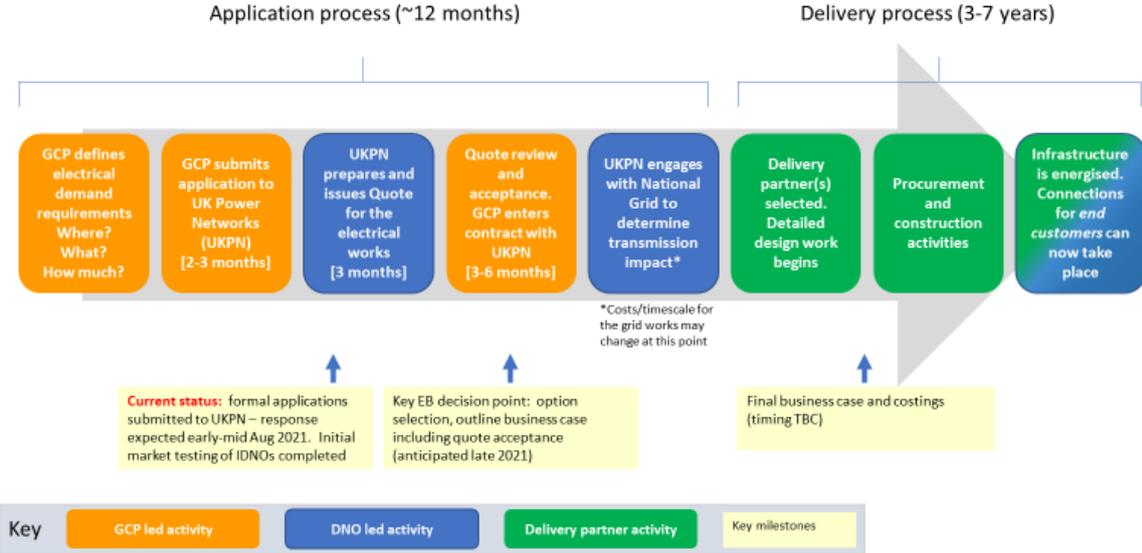
5. Previous work carried out for the Greater Cambridge Partnership (GCP) has highlighted the need to triple grid capacity to support the current growth agenda and the electrification of transport. In particular, development to the West and South of Cambridge is currently limited by the absence of 132 kV and 33 kV network infrastructure. GCP are therefore progressing work to support growth via the extension of grid infrastructure in this area, as shown in Figure 1 below. An Eastern extension will allow further growth to the East and South of Cambridge by bringing capacity closer to developments allocated in the current Cambridge and South Cambridgeshire 2018 local plans. The Western extension will provide capacity to West Cambridge, including development at Bourn Airfield and Cambourne and relieve existing grid substations so further growth can be accommodated in the north and central areas of Cambridge. The Western and Eastern extensions will interconnect to form a loop, thereby establishing the necessary resilience to sustain the expected demand growth.

Figure 1: Existing 132 kV network in the Greater Cambridge area and proposed extension corridors



6. The GCP Executive Board has agreed the principle of investing in grid reinforcement and has allocated funding for the project. In October 2020, approval was given to start the scoping stage to develop proposals for these specific electricity grid reinforcements. Specialist external consultants have been engaged and have provided a clear programme framework, decision points and options for progressing this work. This programme is illustrated in Figure 2 below.

Figure 2: GCP Grid substations project - grid connection programme



GCP Grid Substations Project: grid connection process

7. Analysis carried out for GCP indicates that this new infrastructure will provide the capacity to support:
 - a. Around 17,000 new homes
 - b. Thousands of new jobs, including those at Babraham Research Campus, Granta Park, the Wellcome Genus Campus and Cambridge Biomedical Campus.
 - c. The electrification of transport and renewable energy projects.

8. The GCP Executive Board has now approved submission of a formal application for the works to UK Power Networks. For further detail, please see [agenda item 9](#) from the March 2021 GCP Executive Board meeting. Officers from the Shared Planning Service are involved in this project and sit on the Project Board for the scheme.

9. The work described above will provide additional capacity to support the current levels of development set out in the adopted South Cambridgeshire and Cambridge Local Plans. As work progresses on the Joint Greater Cambridge Local Plan, there will also be a need to consider additional infrastructure that may be required to support future development needs, as well as the achievement of net zero carbon. An initial high level assessment of infrastructure requirements has been carried out by Stantec as part of work to inform the choice of spatial strategy for the plan that was published on the Greater Cambridge Planning website in November 2020. It notes that capacity on the electricity network in the area is a key issue with the CPIER report also identifying challenges in meeting the anticipated growth figures. This is due to capacity constraints on UKPN’s electricity network up to 132kV which require grid reinforcement. It is likely that all growth options, particularly the maximum growth option, will lead to considerable additional demand for electricity that poses a significant challenge to provide with associated risks to delivery and viability, although this is likely to be one of timing and financing of solutions rather than acting as an absolute constraint.

10. The Greater Cambridge Shared Planning Service is currently investigating options to carry out further detailed work to assess the level of grid reinforcement that will inform the Greater Cambridge Local Plan as it moves through the preferred options to the draft plan stage. Consideration is being given to working with partners including GCP, as well as other partners including the Combined Authority as well as linking to wider work being undertaken as part of the OxCam Arc. This will build on work already undertaken for the North East Cambridge development, which has seen the development of a grid infrastructure capacity study and energy masterplan to support the development of the Area Action Plan for the site.

Options

11. Climate and Environment Advisory Committee could:
- a) Note the progress of work on grid infrastructure as outlined in this report and/or
 - b) Highlight any concerns or comments

Implications

12. In the writing of this report, taking into account financial, legal, staffing, risk, equality and diversity, climate change, and any other key issues, the following implications have been considered:-

Climate Change

13. Works to reinforce the electricity grid will help to facilitate the connection of new renewable energy generation equipment as well as helping to facilitate the electrification of heat and transport.

Alignment with Council Priority Areas

Growing local businesses and economies

14. Proposals to reinforce the electricity grid will help to support the expansion of existing local businesses as well as enabling new companies to set up in the area.

Being green to our core

15. Works to reinforce the electricity grid will help to facilitate the connection of new renewable energy generation equipment as well as helping to facilitate the electrification of heat and transport. This will help to support South Cambridgeshire's transition to net zero carbon.

Background Papers

Greater Cambridge Partnership Executive Board, Thursday 18 March 2021. [Agenda Item 9: Electricity Grid Reinforcement: Update and next steps](#)

[Greater Cambridge Local Plan strategic spatial options assessment: Infrastructure Delivery Plan \(Stantec\) November 2020](#)

Report Author:

Emma Davies – Principal Sustainability Officer
Telephone: 07935 518986