

BLOG: How the electrical grid can derail a local authority's ZERO carbon strategy

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Here is the scenario:

A local authority makes a climate emergency declaration with a commitment to achieve net zero carbon or similar by 2030. The authority then explores different avenues to achieve carbon reductions and creates a strategy.

The areas considered could include:

- electrification of transport and the volume of EVs;
- the electrification of heat;
- residential and business developments;
- battery storage; and
- export capacity for new renewable generation

The strategy is then endorsed by the authority and becomes a public document. The sustainability/energy team then take responsibility for delivering the carbon reduction projects, which will in most cases include a grid connection to the DNO/DSO for each project.

It is worth pointing out that there is an application fee for each formal grid application, which can amount to thousands of pounds.

External support is engaged to submit the application at an additional cost and the authority then receives their formal offer after approximately three months. The DNO/DSO is obliged to always provide a connection solution and a formal grid offer. However, if there is a shortage of capacity in the network, the DNO/DSO will find the next best connection point to the grid. History has shown that this often results in an expensive grid offer making the project financially unviable.

Here is the position with the grid:

Much of the UK is constrained in terms of being able to provide grid connections for either import capacity (to charge a project) or export capacity for the likes of renewable or battery shortage projects exporting back to the grid.

This is because the electrical grid network was never designed to accommodate the large amount of import and export demand for new technologies, which commenced with solar

PV farms, then battery storage and now EV charging. The network was also originally designed for a one-way flow and amount of export capacity requirement created a different set of technical issues.

On the basis that an authority is in a constrained area, the authority who has taken many months consulting, finalising and publishing their strategy, employing consultants to make grid applications, paying grid application fees, waiting three months for a grid offer, then discovers that some or many of the projects are financially unviable.

The above process may have taken over a year and at considerable cost for the authority to discover that due to the financial unviability of each project's grid connection, that the carbon reduction strategy is now undeliverable.

Undertaking due diligence

This situation could have been avoided if sufficient due diligence was taken to explore the capacity within the network prior to the development of the carbon reduction strategy. This due diligence would then allow a structured approach working with the DNO/DSO to plan when capacity either would become available or what infrastructure investment was required from the authority to make capacity become available.

This structured approach would then dictate and provide the authority with confidence as to which carbon reduction projects would be able to commence and when.

In Summary

This approach would also save the authority possibly tens of thousands of pounds, many man hours and a year or more in lost time and planning.

Time is running out to achieve your net ZERO carbon ambitions and you need to act now if you are going to stand any chance of meeting your targets.