case studies

Grid Independence Study

Energy | Manchester, UK

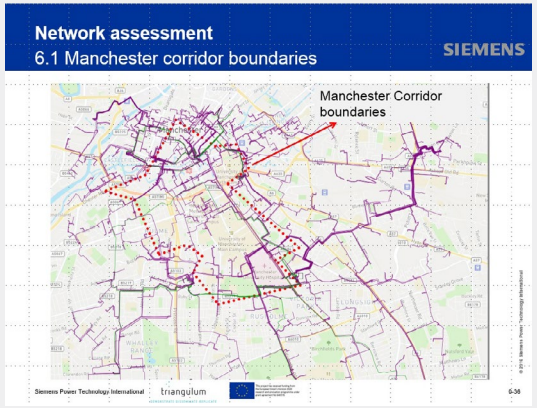

Photo source: Siemens

With the ambition to develop the Oxford Road Corridor into a 'Smart Corridor', Siemens carried out a study to emulate conditions for partial or full 'Corridor' energy independence from the grid using unconstrained and constrained network analysis. With ambitions for the future of 20-25% of energy being delivered by local, low carbon resources, the study investigated how renewable technologies could be integrated into the existing electrical network.

The current electrical system in the UK has been designed for energy to flow one way from the point of centralised generation like power stations to the point of use. With the increase of local and onsite energy generation and traditional energy consumers being producers and trading their energy, the energy system now needs to be bidirectional so energy can flow both ways. The system has not been designed to have many points of local generation so it needs careful analysis about where new generation can be put in with the right infrastructure sitting around it to enable it to balance with the existing grid.

Measured Impacts

N/A

project scale **Individual site**

development type **Retrofit**

Benefits

- ☑ Additional energy generation
- ☑ Carbon savings
- ☑ Enhance grid stability
- ☑ Reducing use of fossil fuel
- ☑ Reducing operational costs
- ☑ Reducing GHG emissions
- ☑ Decreasing energy consumption
- ☑ Decreasing energy costs
- ☑ Improving energy efficiency

Lessons learned

- Including the District Network Operator as a project partner could have enhanced the work

Challenges

Engagement with the District Network Operator

Supporting factors

infrastructural — Existing grid

financial — Demonstrates the potential for financial savings

geographical — Oxford Road Corridor

social — Contributing to MMU being one of the top sustainable campus' in the UK
Contribution to carbon reduction targets for the city

partners — Siemens, Manchester Metropolitan University, Manchester City Council

Contacts

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