



TRIANGULUM

MANCHESTER • EINDHOVEN • STAVANGER

At a Glance

- Worth around £4.5million (EUR 6 million)
- Transforms the 'Manchester Corridor' into a 'smart quarter'
- Learnings will be used to develop smart quarters in other European cities
- Employs latest energy management technologies
- Autonomous energy grid demonstrates how the entire district could be supplied with heat and electricity
- Greater use of electric vehicles

Triangulum by Numbers



1 Manchester Oxford Road Corridor



Horizon 2020: €80bn of EU funding over 7 years



19 bids across EU for Smart Cities funding May 2014



3 Lighthouse Project winners



€28m Triangulum project funding



3 Lead Cities: Manchester, Eindhoven and Stavanger



3 Follower Cities: Prague, Sabadell and Leipzig



3 Manchester Workstreams: Energy, Mobility, ICT



1 Manchester City Council and 2 universities



1 Smart City Platform: MCR-I Open Data Platform

Siemens Technology & Triangulum

- Decentralized Energy Management Systems (DEMS)
- Virtual Power Plant (VPP) management using various Siemens solutions
- Siemens SieStorage Lithium Ion Batteries
- Network Topology Analysis
- Distributed Generation Asset Modelling Software
- Building Management System integration

Partners

- Led by:** Fraunhofer IAO
- With:**
- Manchester City Council
 - The University of Manchester
 - Manchester Metropolitan University
 - IT Solutions provider 'Clicks and Links' www.clicksandlinks.com
 - Siemens Plc

Project Timeline

