

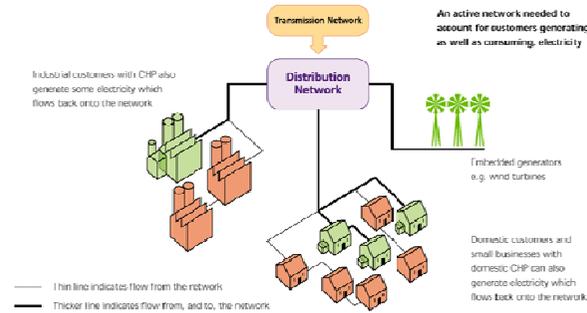
## Urban development

The development of cities to facilitate economic growth and lifestyle aspirations has led to increasing rates of consumption of resources and production of waste and carbon emissions. The global population living in urban areas is predicted to double by 2050 according to the United Nations.

ReVISIONS will research the sustainability of urban areas within their regional contexts. There will be in-depth regional case studies of the Greater South East regions and the North East of England. The effectiveness of combinations of infrastructure measures for both existing urban areas and new developments will be systematically tested. In partnership with planning authorities and other stakeholders.



Distribution network – with distributed generation



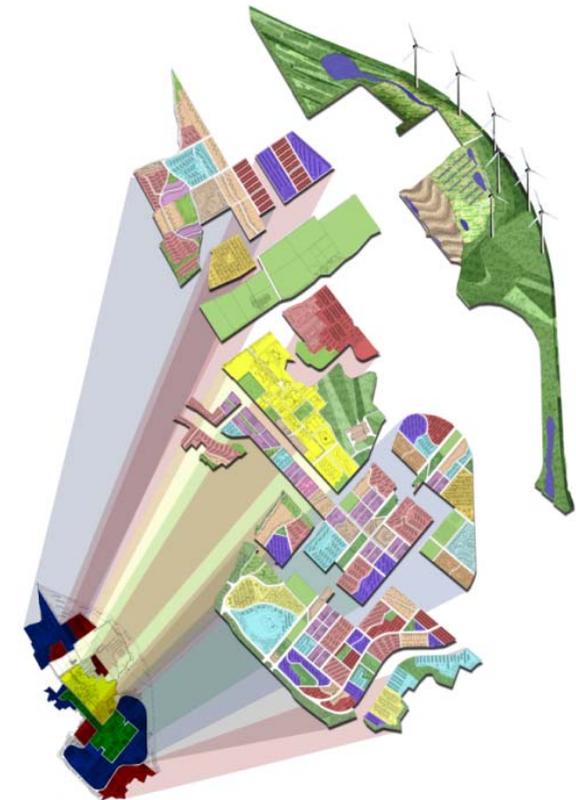
## Testing sustainability

Computer modelling will be used to test how regional spatial development policies affecting the size, pattern and density of settlements could be used to achieve sustainability targets. The relationships will be explored between urban spatial form and sustainable technologies such as decentralised energy generation and supply, joint fuelling of buildings and transport, orientation of buildings for best solar gain, local water collection, reuse and treatment, and recycling and incineration of waste. The sustainability of the different development patterns that emerge at the sub-regional and regional scales will be tested and there will be a full sustainable assessment across a wide range of social, economic, environmental, health and resources criteria.

## Development planning and strategy

The research will have direct value to public and private decision-makers in the form of a set of recommendations for national and regional agencies and utility companies together with detailed policy and design guidelines tested for their practicality and efficiency.

There will be an assessment of the effectiveness of alternative design and development strategies for the year 2031, and beyond. ReVISIONS will compare findings from the Greater South East region of England with those from case studies by collaborators in Beijing, Sao Paulo and Los Angeles.



### Eco-town

**Energy micro-generation:** Solar, wind, geothermal, waste processing  
**Water:** Harvesting, reuse, grey ware recycling  
**Waste:** Processed on site, use for energy, recycling  
**Transport:** Local (cycling, walking), long distance (public transport, car)  
**Materials:** Renewable (e.g. timber), self-built or kit assemblage

## ReVISIONS outputs

Pathways will be found for reorienting the city-region from its 'linear' input-use-dispose metabolism, to a more efficient 'circular' or 'ecological' metabolism. At regional, sub-regional and neighbourhood scales, the research findings will inform spatial development, transport, and economic strategies.

The guidance produced will inform regional and local authorities, utility companies, developers, consultants and stakeholders how to achieve greater overall sustainability by more integration between spatial development and infrastructure across the different sectors and spatial scales.

## ReVISIONS support

ReVISIONS is funded by the Engineering and Physical Sciences Research Council (EPSRC), as part of the Sustainable Urban Environment (SUE) programme, with additional support from non-academic partners.

## ReVISIONS consortium

The ReVISIONS consortium comprises a strong interdisciplinary team drawn from six universities with a proven track record of research in the built environment. The consortium is supported by many non-academic partners including central government departments and local authorities.

# ReVISIONS

## Academic partners

University of Cambridge  
University of Leeds  
University of Exeter  
University of Surrey  
Newcastle University  
University of Aberystwyth

## Non-academic partners

East of England Regional Development Agency  
ONE Northeast Regional Development Agency  
East of England Regional Assembly  
North East Assembly  
South East of England Regional Assembly  
Department for Transport  
Department for Communities and Local Government  
Arup  
Biffa Water Services  
Environment Agency  
Northumbrian Water Ltd  
Yorkshire Water Services Ltd

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Funded by



# ReVISIONS

## Regional Visions of Integrated Sustainable Infrastructure Optimised for NeighbourhoodS



The ReVISIONS project will investigate how to plan urban areas to be more sustainable. It will provide a directly useful knowledge and evidence base for public agencies and private companies to allow coordinated and integrated planning of regional spatial development and infrastructure for transport, water, waste and energy. The aim is to reduce the impact on the environment and resources, improve economic competitiveness, and allow households to live more sustainably, with better health and an enhanced quality of life.