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New approach to developing scenarios for future of low carbon cities

A new study has explored how cities can create a low carbon future by presenting an approach to stakeholder engagement that develops scenarios of an ideal city. Rather than projecting towards a low carbon target for the future, the study suggests that 'backcasting' to the present day from these scenarios may provide a useful goal-orientated approach to environmental planning in cities.

Alongside international and national emission reduction targets, many cities and local governments are making pledges and targets to address climate change. However, relatively little guidance exists for carbon management at the city scale and there are challenges in defining city boundaries, multi-scale and cross-sector governance and interests, as well as the need to work with much greater timescales than normally used in local government; for example, EU emission targets are set for 2020 and 2050.

To address these challenges at the city scale and help achieve a desirable low carbon future, the researchers took the city of Bristol, UK, as a case study. Bristol has set itself the target of reducing carbon emissions by 80% in 2050 from a 1990 baseline, one of the most ambitious for cities in Europe.

The study issued stakeholders with an online survey that asked them to explore aspects and qualities of the city and surrounding area in 2050, including energy generation, transport, architecture and lifestyle. The stakeholders included political, managerial, technical and academic experts in the fields of economy, spatial planning, transport, energy and climate change. The study employed 'Delphi techniques', which involve several rounds of questioning, each round asking the respondents to reflect and comment on the responses of the other participants. From the responses, the researchers identified common themes, forming seven working scenarios for a low carbon future to be tested in subsequent rounds of questionnaire.

The working scenarios differed in their emphasis on localism vs. globalism, economic prosperity, technological solutions and decentralisation. For example, the 'Modern Malthusian' scenario is concerned with local interests and prioritises wellbeing over economic prosperity with collective and behavioural approaches to reducing emissions. In comparison, the 'Globalised Success' scenario has a global focus on economic prosperity and a strong emphasis on the role of technology to reduce emissions.

Different themes also emerged depending on the type of stakeholder. For example, responses from business stakeholders were very positive about possible increases in low carbon innovation and initiatives, especially at a local scale. Local government responses were largely neutral, whereas regional government had mixed opinions - many negative - which may have reflected uncertainty in local policymaking as the survey was conducted at the time of national elections.

The differing views of stakeholder groups highlight the need for cross-institutional planning and management. It was also noted that participants (particularly academics) had difficulty breaking away from the present to envisage the future, and it was suggested this could be encouraged through a workshop between stakeholders.

The approach appears an effective and inclusive way to develop scenarios for the future of a low carbon city, which major stakeholders can broadly agree on. The findings reported here are preliminary, but the scenarios will be developed with further surveys to provide more concrete recommendations for the city region on how to work backwards from these scenarios, and develop pathways to the low carbon target. This 'backcasting' provides a goal-orientated approach that 'creates' rather than predicts the future by identifying which elements are needed to create a desirable future.

Source: Bailey, R., Longhurst, J.W.S., Hayes, E.T. *et al.* (2012) Exploring a city's potential low carbon futures using Delphi method: some preliminary findings. *Journal of Environmental Planning and Management.* 1-25.

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