



UNIVERSITY OF
BIRMINGHAM

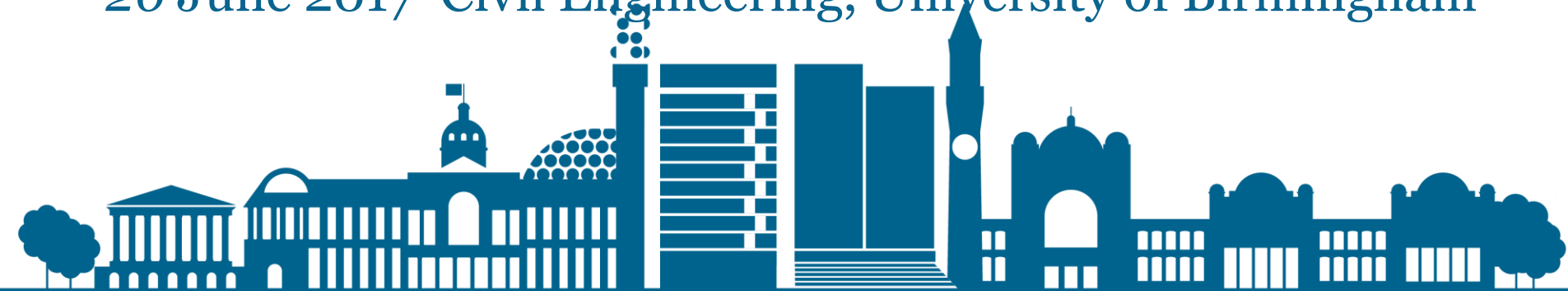


Transforming Birmingham –
a city system approach

Assessing the future of whole energy systems: priorities for decarbonisation, resilience and efficiency

Susan Lee

26 June 2017 Civil Engineering, University of Birmingham

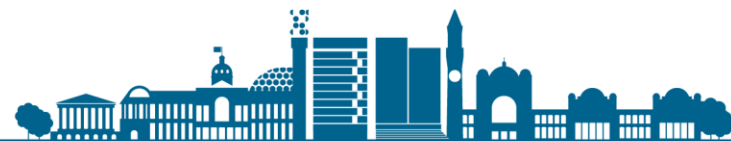


Plan for the Day



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- Introductions to team
- Presentation
- Table Introductions
- Tea/coffee as required
- 3 Breakout sessions in total
- Lunch at 12.30
- Final Discussion and future plans



Introductions



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- Transforming Birmingham Team
- Energy Systems Catapult
- Energy Technologies Institute
- Liveable Cities
- iBuild



Housekeeping

- Fire procedure and exits
- Toilets
- Lunch and refreshments



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Our Team



- Dr. Andrew Quinn (Senior Lecturer, Civil Engineering)
- Prof. John Bryson (Professor of Enterprise and Competitiveness, City-Region Economic Development Institute (City-REDI), Birmingham Business School)
- Dr. Jonathan Radcliffe (Policy Director for the Birmingham Energy Institute and co-Director of the Birmingham Centre for Energy Storage).
- Dr. Susan E. Lee Senior Research Fellow, Civil Engineering)



EPSRC/Energy Systems Catapult Whole Energy Systems Scoping Study

Two components

i) Evaluate the implications of bringing together energy system transformation models with waste, air quality, legacy housing stock, new build and transport issues to de-carbonise at a city scale



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Vision

Our vision is to transform the energy system in the UK to ensure that the country is able to function in a low carbon world without compromising the well-being of its people.



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Ambition

Our ambition is to create a holistic, integrated, energy system that is flexible and resilient enough to deal with future challenges of a changing climate, a growing and ageing population, new technologies and renewable energy sources to decarbonise at a city-scale

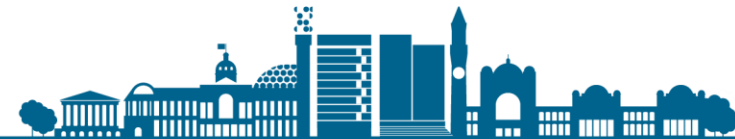


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Aims

- To bring together all the energy system modelling approaches across the UK to be critically assessed as to their suitability for the inclusion of waste and transport systems within an urban environment.
- To develop a much larger study that will be able to build on this knowledge.



Plans



- Workshop. Mon 26th June – representatives from transport, housing, energy, business, community groups, academics
- Assess feedback
- Literature review
- Another workshop (February 2018) to discuss new approaches and potential modification of existing models



Scoping Study Outcomes



- A critical review of whole energy systems modelling
- An academic proof of concept paper on a conceptual model and potential modification
- Proposal for further work to develop a full model with applications to be tested between sectors
- Mailing list
- Website



Team profiles



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Andrew Quinn

<http://www.birmingham.ac.uk/staff/profiles/civil/quinn-andrew.aspx>

Jonathan Radcliffe

<http://www.birmingham.ac.uk/staff/profiles/eps/radcliffe-jonathan.aspx>

John Bryson

<http://www.birmingham.ac.uk/schools/business/staff/profile.aspx?Referenceld=3970>

Susan Lee

<http://www.birmingham.ac.uk/staff/profiles/civil/lee-susan.aspx>



Links



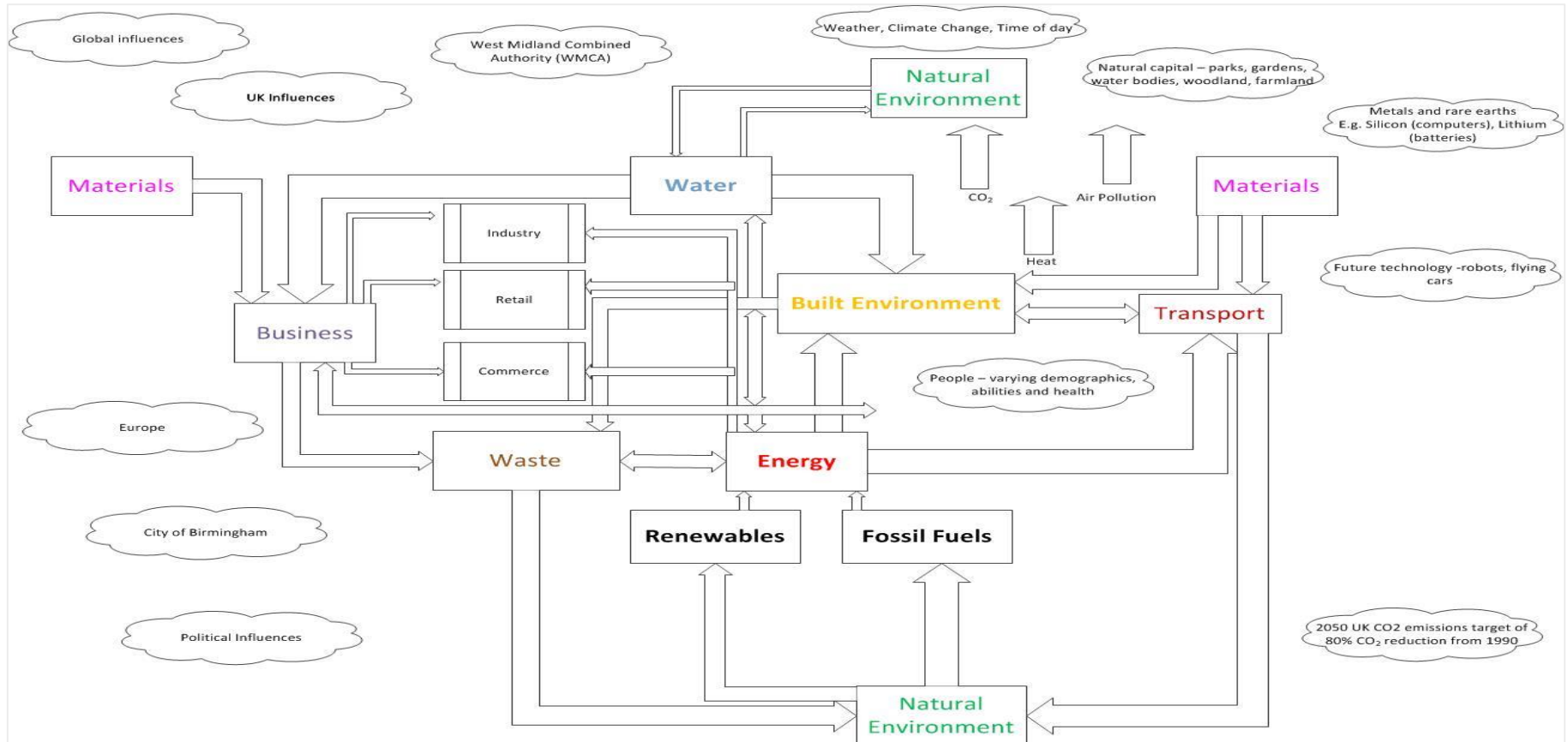
- Birmingham Energy Institute
<http://www.birmingham.ac.uk/research/activity/energy/index.aspx>
- Liveable Cities Program
www.liveablecities.org.uk
- City REDI Programme
<http://www.birmingham.ac.uk/schools/business/research/city-redi/about.aspx>



Conceptual Model



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Questions?



Break



Session 1: How energy use is represented within different sectors

- Table introductions.
- What are the limitations and why?
- Identification of three main issues within each group.
- 5 min presentation



Session 2: Potential integration across different sectors

- What model outputs would be required from a whole energy-systems model at the city and city-region-scale to address deployment challenges e.g. business models, policy barriers, technological limitations?



Session 3: Future research directions in whole energy system modelling

Accounting for resilience, efficiency and the low carbon agenda at different scales

How do we allow for transformative change?

What are the key research questions?



Future research + Next Steps

- Analysis of workshop feedback
- Conference paper on conceptual model framework
- Analysis of literature informed by workshop feedback
- Webpage
- Email list
- Interviews
- Further workshop at end of scoping study



Thank -you

Name tags!

Keep in touch!

s.e.lee@bham.ac.uk

