



Centre for Urban Resilience and Energy

Annual Report

August 2014

cure 

Table of contents

1. The Centre’s objectives and history.....	2
Theme A: Energy, society and space.....	3
Theme B: climate change adaptation and resilience	3
Theme C: spatial systems, complexity and transition.....	3
2. The CURE approach	4
3. Current academic & research staff	5
4. Review of activity 2013-2014.....	6
5. Ongoing research projects.....	8
6. Main publications and other outputs	11
6.1 Peer reviewed papers, books, book chapters and reports	11
6.2 Blog posts.....	14
6.3 Video clips.....	15
7. Knowledge-transfer and outreach activities.....	17
7.1 European Union and international bodies.....	17
7.2 National decision-making	17
7.3 Local government	18
7.4. Business and charitable organizations.....	18
8. Future development and strategy	19

1. The Centre's objectives and history

The Centre for Urban Resilience and Energy brings together a diverse group of researchers based in the School of Environment, Education and Development. CURE focuses on the relationships between sustainability transitions in the energy, urban and environment domains. We build on the intellectual strengths and traditions of the Centre for Urban and Regional Ecology, which was active at Manchester between 2000 and 2013.

In response to the policy challenges posed by climate change in particular, our activities aim to:

- Formulate and advance a new global research and policy agenda in the domain of social-ecological resilience and vulnerability, by addressing the key scientific and policy challenges associated with the movement towards a low carbon economy and society;
- Affirm the 'urban' as a central site for scholarship and action with respect to issues of energy and resilience;
- Investigate the manner in which sustainability transitions in the urban domain are embedded in broader governance practices at the urban and regional scale.

In doing this we work in three broad themes, as outlined below:

1. Energy, society and space;
2. Climate change adaptation and resilience;
3. Spatial systems, complexity and transition.

Theme A: Energy, society and space

With more than 70 per cent of the world's population projected to live in urban areas by 2050, cities are not only key sites of energy production and consumption, but also represent the main global agents of social, economic and technological change. At Manchester, we have developed multiple strands of research that employ the 'urban' as a starting point for scholarship and policy on the question of energy use. We aim to demonstrate that current challenges surrounding energy – involving issues of climate change, decarbonization, sustainability, security, and equity – are deeply implicated in the functioning of cities. At the same time, future urban development is predicated on networks of energy supply and demand.

Theme B: climate change adaptation and resilience

Cities and urban areas are key sites of social, environmental and economic progress and innovation. However, they are often at high risk from extreme weather and climate change hazards, such as flooding, sea level rise and heat stress. This is due to combinations of many factors: location and geography, investment and growth, infrastructure and communications: and many social communities, cultures, networks with many kinds of vulnerabilities. In addition, urbanization can act to intensify weather and climate hazards locally, via development processes such as hard surfacing and loss of green space. Given the projections for rapid climate change over the 21st century, there is an overwhelming case for cities and urban areas to be more 'climate-proof'.

Theme C: spatial systems, complexity and transition

This theme explores issues of resilience and vulnerability in urban and rural locations: via the lens of land use change, landscape impacts, spatial planning, resource flows, and socio-technical transitions.

In all this the overarching theme is about interconnections. We see the reality of cities and spatial development structures, not as boxes labelled 'economics' or 'environment', but as whole inter-connected systems which interact and evolve. To respond to this we need new kinds of whole-system thinking.

The 'interconnections of things' – urban systems, resource flows, climate change, land use and landscape – have been a major component of CURE's work since the founding of our predecessor, the Centre for Urban and Regional Ecology, in 2000. This is now evolving towards a research perspective on the '**interconnections of thinking**'. This raises more cross-cutting approaches: complexity and emergence, transition and innovation studies, futures and foresight methods: and the applications to resilience/vulnerability, social learning and collaboration, values and valuation, and so on.

2. The CURE approach

We live in a precarious world of global challenges – climate change, economic crisis, social inequality – to name but a few. ‘Resilience’, which some see as the ‘new sustainability’, sums up the idea of a city or a society which can ride out such challenges: one which is robust and long-lived, adaptable and resourceful, with integrity and purpose.

CURE’s research agenda focuses on the ‘resilience’ of social and ecological systems in general: and energy flows and urban structures in particular. This comes into sharp focus by looking at the counter-case of ‘vulnerability’. Where the excluded, deprived or marginalized cannot access even the basics of housing, energy, food or other essentials, this is extreme vulnerability – unacceptable in a civilized society, but it seems to be everywhere we look.

However few things are simple: and ironically, some responses to building resilience can create further vulnerability. As we move towards a low carbon economy, energy may be more scarce in some ways: or moving towards a climate proof city, some locations may be more risky.

All these issues and more, raise the questions of inter-connections between different sectors, different scientific fields, and different social groups. In the ordered and atomized society we live in, such inter-connections seem to go against the grain. This points to the wider agenda of the CURE research mission: to understand these inter-connections, and to explore ways to use that knowledge in a progressive manner: in planning for cities, communities, energy systems, economic systems and ecological resources.

3. Current academic & research staff

Director

Professor Stefan Bouzarovski

Co-directors

Dr Jeremy Carter

Dr Andrew Karvonen

Joe Ravetz

Research co-ordinator

Dr Saska Petrova

Researchers and academics

Dr Alison Browne

Dr Angela Connelly

Dr Federico Cugurullo

Dr James Evans

Dr Aleksandra Kazmierczak

Dr Angelica Ospina Parada

Dr Sarah Marie Hall

Dr Joanne Tippett

Dr Sergio Tirado-Herrero

Dr Jenni Cauvain

Emeritus professors, honorary and visiting fellows

Professor Ian Douglas

Professor John Handley OBE

Nigel Lawson

Dr Alexander Wochnik

Postgraduate researchers

Michal Mikulewicz

Alastair Moore

Mohdtarmizi Mohdamin

Craig Thomas

Joseph Williams

Caitlin Robinson

Gabriele Schliwa

CURE researchers also supervised a further 9 PhD students who have not been directly involved in the work of the Centre.

4. Review of activity 2013-2014

Even though CURE developed its activities using the legacy of existing staff and projects in the Centre for Urban and Regional Ecology, we effectively had to create a new Centre with a distinct set of research and dissemination activities. Therefore, our main efforts during the past 10 months were focused on establishing the necessary infrastructure for a functioning organization. This entailed, in the main, putting in place a programme of regular meetings so as to create a space for discussing ongoing and intended work, and outlining more general strategic plans. CURE activities and members involved researchers from across SEED, opening the space for genuine interdisciplinary co-operation.

We also ensured that the new identity and framework of the Centre became known to cognate bodies within the University, such as *energy@manchester* (where we became represented on the Management Board, and developed a number of joint activities – see below), *cities@manchester* (where we actively participated in discussions to form a new Urban Institute and also took part in a number of joint events and funding bids – see below), *policy@manchester* (a number of joint activities were organized here as well, and plans are underway for further work), *the Tyndall Centre* (via a joint project application) and the *Centre for Research on Socio-Cultural Change* (via participation in their Annual Conference). Of particular relevance is our co-operation with the *Sustainable Consumption Institute*, which aside from joint project applications, has involved the running of a regular monthly coffee event attended by researchers of both organizations. These ‘coffee sessions’ have allowed for the exchange of ideas and knowledge while breaking down institutional and disciplinary boundaries within the University.

Aside from building these internal links, CURE focused on developing an external profile and engaging a variety of stakeholders. This was principally achieved via four large events with different formats:

- An evening **launch of the Centre**, with a guest lecture by Professor Harriet Bulkeley from the University in Durham – opened by Simon Guy and attended by around 100 people; 18th November 2013;
- An **urban forum** on 4th of February, hosted by *cities@manchester* together with the Institute of Population Health, on ‘Austerity, Warmth, and Well-being: Connecting Fuel Poverty and Urban Health’;
- An interactive seminar on 18th February, on the ‘self-organizing city’: presented by David Rudlin of URBED and facilitated by Joe Ravetz;
- An evening **seminar** on the 19th March 2014, by Professor Susan Christopherson from the University of Cornell, and attended by more than 50 people. The event was part supported by *energy@manchester*.
- An **international workshop** on *Energy, Informality and Austerity*; 20 participants – 21st of May 2014. The event was part supported by the Urban champion at SEED, and organized under the auspices of *cities@manchester* and the Royal Geographical Society.

More information about these activities can be found on the CURE member blog feed at <http://urban-energy.org/category/cure-member-activities/>. The <http://urban-energy.org> website became the focal point for presenting CURE work to the outside world in a dynamic and interactive manner (due to hosting a blog and various comments sections). The website counter has recorded approximately 18k views since September 2013. This is in addition to the establishment of a new dedicated and more static 'official' website for the Centre, at <http://www.seed.manchester.ac.uk/cure/> and a twitter feed with more than 110 followers at <https://twitter.com/curemanchester>.

With the aid of the University's listserv facility we established an 'external' distribution list with approximately 350 subscribers, and an internal list for sharing internal communications among Centre members.

In addition to their individual presence at a number of public events, conferences and fora (see below), CURE researchers organized a number of joint sessions at the Annual Conference of the Royal Geographical Society in August 2013 (see Saska Petrova's post at <http://urban-energy.org/2014/04/21/energyaag2014/>), and the Annual Meeting of the Association of American Geographers in April 2014. CURE also issued a press release and policy report together with Future Climate and EAGA (<http://futureclimate.org.uk/wp-content/uploads/2014/07/HOME-Policy-Report-FINAL.pdf>) as well as a policy brief (see <https://energyvulnerability.files.wordpress.com/2014/06/1brief.pdf>).

5. Ongoing and recently completed research projects

Successful CURE-branded project activities during the last year have included the following:

1. ***Advancing Urban Innovation: Living Labs for Sustainable Building and Planning.*** Formas. £126,566 total. 2014-2017. This project funds a visiting position at the International Institute for Industrial Environmental Economics to conduct collaborative work on urban living labs in Europe. PI: **James Evans**.
2. ***CASI: Common Assessment for Sustainability Innovation.*** European Commission, DG Research, FP7. £48k net to University of Manchester. 2014-2017. Partner to MBS lead: **Joe Ravetz**.
3. ***Climate Resilient Gibraltar.*** Funded by the Government of Gibraltar. £82,000 total. 2015-2016. This project is focused on developing a strategy to increase Gibraltar's resilience to extreme weather and climate change. PI: **Jeremy Carter**.
4. ***Community Approaches to Retrofit in Manchester (CHARISMA).*** Faculty of Humanities Strategic Investment Research Fund. £25k total. 2013-2014. PI: **Andrew Karvonen**; Co-I: **Saska Petrova**; Research associate: **Jenni Viitanen**.
5. ***Energy Vulnerability and Alternative Economies in Northern Greece (EVENT).*** Funded by the Royal Geographical Society. £5k total. 2013-2014. PI: **Saska Petrova**.
6. ***Flooding of Transport Infrastructure Networks and Assets.*** Funded by the Association of Greater Manchester Authorities (AGMA). £29,966 total. 2014-2015. This project aims to enhance Greater Manchester's knowledge of and response to the flooding of transport infrastructure networks and assets. PI: **Jeremy Carter**.
7. ***Future of Cities Foresight: commissioned report on 'Urban Ecosystems'.*** UK BIS Foresight Unit 2014. £15k net to University of Manchester. 2014. Expert: **Joe Ravetz**.
8. ***Housing in Multiple Occupancy: Energy Issues and Policy (HOME).*** Eaga Charitable Trust. £28,580 total, with Future Climate. 2013-2014. Principal Investigator at Manchester: **Stefan Bouzarovski**. Research Associate: **Jenni Viitanen**.
9. ***Impact: Tracing impact and maintaining relevance: Six steps to flood resilience.*** Humanities HSIF funding Social Responsibility. £9,717. 2013-2014. PI: **Joanne Tippett**.
10. ***Inter-disciplinary Demand forecasting for Energy and Water (InterDEW).*** The University of Manchester Research Institute (UMRI). £33,123 total. 2014. PIs:

Dana Abi-Ghanem, Ruth Wood (Tyndall Centre), Alison Browne (Sustainable Consumption Institute). Co-Is: **Sarah Marie Hall** (SEED), John Moriarty (Mathematics), Josephine Mylan (MBS), **Saska Petrova** (SEED). Research Assistant: Maria Sharmina (Tyndall Centre).

11. **Manchester Cycling Lab.** ESRC Impact Acceleration Account and Manchester City Council. £32,999. 2014. This project applies research findings on living labs and sustainable urban development to the Future Cities initiative being coordinated by Manchester City Council. PI: **James Evans**. Research associate: **Gabriele Schliwa**.
12. **Mapping Community Engagement in the Great Manchester Wetlands Partnership (GMWP).** Great Manchester Wetlands Partnership (through Lancashire Wildlife Trust and English Nature). £5000. 2013-2014. PI: **Joanne Tippett**.
13. **Politicising the nexus: Nexus technologies, urban circulation, and the coproduction of water-energy.** The Nexus Network. £5000. PI: **Joseph Williams**. Co-Is: **Stefan Bouzarovski** and Erik Swyngedouw.
14. **Smart Cities & Communities Stakeholder Platform.** European Commission, DG Energy (CEPS / GOPA). £12k to University of Manchester. 2013. Partner: **Joe Ravetz**.
15. **Solving Business Problems with Environmental Data.** Funded by the UK Government's Technology Strategy Board. £104,224 total, with £29,465.73 to the University of Manchester. 2014-2015. The project is based on prototyping an innovative 'Adaptation Planning Service', which is a business-focused decision support tool for understanding and reducing extreme weather and climate change risks. PIs: **Jeremy Carter** and Richard Kingston.
16. **Strategic foresight.** £5k net to CURE. 2014-2015. Construction Industries Training Board (coord.SAMI). Graphic facilitator: **Joe Ravetz**.
17. **University of Manchester Climate Change Adaptation Strategy.** Funded by University of Manchester Estates. £15k total. 2014-2015. PIs: **Jeremy Carter** and **Angela Connelly**.

In addition to these project grants, it is worth noting that post-graduate student **Craig Thomas** and **Stefan Bouzarovski** were awarded £420 funding from the North West Doctoral Training Centre for a roundtable titled 'Beyond the "fracking" polemic: Energy futures and vulnerability', to be held in October 2014. **Saska Petrova** received £1000 from the SEED Urban Champion towards the international workshop on 'Energy, Informality and Austerity' and co-ordinated approximately £500 in support from energy@manchester towards Susan Christopherson's visit. **Stefan Bouzarovski** was awarded a full studentship on 'Mapping energy vulnerability' from the new EPSRC Doctoral Centre on Power Networks.

A central component of CURE's work was the ERC-funded **EVALUATE** project (<http://urban-energy.org>), which is the only source of funding that provides limited administrative support towards the work of the Centre's Research Co-ordinator.

CURE played a crucial role in the success of the above project applications, in terms of providing the research environment for developing and peer-reviewing project ideas, and offering a 'brand' recognizable by external partners and funders.

6. Main publications and other outputs

6.1 Peer reviewed papers, books, book chapters and reports

Bouzarovski S (in print) *Retrofitting the City: Flexibility, Informality and the Home*. London: IB Tauris.

Bouzarovski S (2013) Energy poverty in the European Union: Landscapes of vulnerability. *Wiley Interdisciplinary Reviews: Energy and Environment*.

Bouzarovski S and **Petrova S** (in print) The EU energy poverty and vulnerability agenda: An emergent domain of transnational action. In Tosun J, Biesenbender S and Schulze K (eds) *Energy Policy Making in the EU: Building the Agenda*. Berlin: Springer.

Bouzarovski S, Petrova S, Kitching M and **Baldwick J** (2013) Precarious domesticities: Energy vulnerability among urban young adults. In Bickerstaff K, Walker G and Bulkeley H (eds) *Energy Justice in a Changing Climate: Social Equity and Low-Carbon Energy*. London: Zed Books, 30-45.

Carter JG, Cavan G, Connelly A, Guy S, Handley J, and Kazmierczak A (2014) Climate Change and the City: Building Capacity for Urban Adaptation. *Progress in Planning*. Available online via open access at: <http://authors.elsevier.com/sd/article/S0305900614000397>.

Catney P, MacGregor S, Dobson A, **Hall SM**, Hards S, Robinson Z, Ormerod M, Ross S (available online) Big Society, little justice? Community renewable energy and the politics of localism. *Local Environment*.

Crotty J and **Hall SM** (2013) Environmental Responsibility in a Transition Context: Russian NGO Perception and Response. *Environment and Planning C: Government and Policy* 31: 667-681.

Douglas I (2013) Climate change and the ground we build on. *Town and Country Planning* 82: 414-417.

Douglas I (2013) Indigenous knowledge, farming, market pressures and food security in S.E. Asia, In Dasgupta D. (ed.) *Food and Environmental Security – Imperatives of indigenous knowledge systems*. Jodhpur, India: M/S AGROBIOS(INDIA), 390-399.

Douglas I (2013) Indigenous knowledge, food supplies, soils and modernisation. *Human Ecology: Journal of the Commonwealth Human Ecology Council* 25: 15-17.

Douglas I (2013) Responsibilities for adaptation to different types of flood hazard at various scales. *Territorium (Essays in Honour of Professor Fernando Rebelo, Universidade do Comibra)*, 89-102.

Douglas I (2013) Water: an essential element in food security. *Human Ecology: Journal of the Commonwealth Human Ecology Council* 25: 8-10.

Douglas I (2014) The political filter in the local implementation of initiatives relating to urban ecology. *Landscape and Urban Planning* 125: 312-319.

Douglas I, Lawson N and **Ravetz J** (2013) Urban metabolism – changing flows and planning agendas. *Town and Country Planning* 82: 426-430.

Evans J (in press) Learning to retrofit in living laboratories. In: Hodson M and Marvin S (eds.) *Retrofitting Cities: Priorities, Governance and Experimentation*. Routledge, London.

Evans J and **Karvonen A** (2014) Give me a laboratory and I will lower your carbon footprint! – Urban Laboratories and the Pursuit of Low Carbon Futures. *International Journal of Urban and Regional Research* 38: 413-430.

Heeks R and **Ospina AV** 2013 Understanding Urban Climate Change and Digital Infrastructure Interventions from a Resilience Perspective, IDPM Working Paper no.54, Centre for Development Informatics, University of Manchester, UK.

Furlong C and **Tippett J** (2013) Returning knowledge to the community: an innovative approach to sharing knowledge about drinking water practices in a peri-urban community. *Journal of Water, Sanitation and Hygiene for Development* 3: 629-637.

Karvonen A and Brand A (2013) Expertise: Specialised Knowledge in Environmental Politics and Sustainability. In Harris P.G. (ed.) *Routledge Handbook of Global Environmental Politics*. London: Routledge, 215-230.

Karvonen A and van Heur B (2014) Urban Laboratories: Experiments in Reworking Cities' *International Journal of Urban and Regional Research* 38: 379-392.

Karvonen A, **Evans J**, and van Heur B (2014) The politics of Urban Experiments: Radical Change or Business as Usual? In: Marvin, S. And Hodson, M. (eds.) *After Sustainable Cities*. Routledge, London. pp. 105-114.

König A and **Evans J** (2013) Experimenting for sustainable development? Living laboratories, social learning, and the role of the university, In: König, A. (ed.) *Regenerative sustainable development of universities and cities: the role of living laboratories*, Edward Elgar. 1-24.

Nilsson K, Nielsen TS, Aalbers C, Bell S, Boitier B, Chery JP, Fertner C, Groschowski M, Haase D, Loibl W, Pauleit P, Pintar M, Piorr A, **Ravetz J**, Ristimäki M, Rounsevell M, Tosics I, Westerink J and Zasada I (2014) Strategies for Sustainable Urban Development and Urban-Rural Linkages. *European Journal of Spatial Development*.
[http://www.nordregio.se/Global/EJSD/Research briefings/article4.pdf](http://www.nordregio.se/Global/EJSD/Research%20briefings/article4.pdf).

Petrova S and **Bouzarovski S** (forthcoming in 2014) 'The depoliticization of poverty: Multi- scalar governance of energy vulnerability in Europe' in Frantzeskaki N, Coenen L, Castan Broto V, Loorbach D. (eds) *Urban Sustainability Transitions*. London: Routledge.

Petrova S. (2014) Contesting forest neoliberalisation: recombinant geographies of 'illegal' logging in the Balkans. *Geoforum* 55: 13-21.

Petrova, S. (2014) *Communities in Transition: Protected Nature and Local People in Eastern and Central Europe*. Aldershot: Ashgate.

Preston I, Banks N, Hargreaves K, **Kazmierczak A**, Lucas K, Mayne R, Downing C and Street R (2014) Climate change and social justice: an evidence review. Joseph Rowntree Foundation, York. Available at: <http://www.jrf.org.uk/publications/climate-change-and-social-justice-evidence-review>.

Ravetz J (2013) Beyond the linear: the role of visual thinking and visualization, In: O'Riordan T and Lenton T, (Eds): *Addressing Tipping Points for a Precarious Future*. Oxford University Press for the British Academy: 289-299.

Ravetz J (2013) Introduction: from 'sustainable' city-regions to synergistic, *Town & Country Planning* 8: 402-407.

Ravetz J (2013) New Futures for Older Ports: Synergistic Development in a Global Urban System. *Sustainability* 5: 5100-5118. <http://www.mdpi.com/2071-1050/5/12/5100>.

Ravetz J (2013) Urban futures – what will we need to know? *Town & Country Planning* 8: 443-408.

Ravetz J (forthcoming) *Urban 3.0: Creative synergy and shared intelligence for a One Planet century*. London: Routledge/Earthscan: <http://www.routledge.com/books/details/9780415628976/>.

Ravetz J (2014) Inter-connected responses for inter-connected problems: synergistic thinking for local urban development in a global urban system. *International Journal of Global Environmental Issues*, special issue on local economic development. Vol. 13(2-4):362-388

Ravetz J and Warhurst P (2013) Towards the new local-global: the emerging peri-urban of the Manchester city-region: In: Pauleit, S., Bell, S., and Aalbers, C., (eds), *Peri-Urban Futures: Land Use and Sustainability*, Berlin: Springer. Available on <http://link.springer.com/book/10.1007/978-3-642-30529-0/page/1>.

Ravetz J, Fertner C and Nielsen TS (2013) The dynamics of peri-urbanization: In: Pauleit S, Bell S., and Aalbers C, (eds), *Peri-Urban Futures: Land Use and Sustainability*,

Berlin: Springer. Available on http://link.springer.com/chapter/10.1007%2F978-3-642-30529-0_2.

Simcock N, MacGregor S, Catney P, Dobson A, Ormerod M, Robinson Z, Ross S, Royston S, **Hall SM** (2014) Factors influencing perceptions of domestic energy information: Content, source and process. *Energy Policy* 65: 455-464.

Tippett J (2013) Creativity and learning – participatory planning and the co-production of local knowledge. *Town and Country Planning, TCPA*, October, 2013: Special Issue: Urban and Regional Ecology and Resilience, pp 439-442.

Trencher G, Bai X, **Evans J**, McCormick K and Yarime M (in press) University partnerships for co-designing and co-producing urban sustainability: a global survey. *Global Environmental Change*.

Viitanen J and Kingston R (2014) Smart city strategies and green growth – outsourcing democratic and environmental resilience to the global technology sector. *Environment and Planning A* 46: 803-819.

Viitanen J, Connell P and Tommis M (in press) Smart technologies for energy efficient neighbourhoods: insights from two low carbon communities in Sheffield and Leeds, UK. *Journal of Urban Technology*.

Wendler J and **Evans J** (in press) Retrofit? The creative and social dynamics of 'squat tech'. In: Hodson M and Marvin S (eds.) *Retrofitting Cities: Priorities, Governance and Experimentation*. Routledge, London.

6.2 Blog posts

Bouzarovski S 2014. Collectivities matter. *Cities@manchester*.
<http://citiesmcr.wordpress.com/2014/03/03/collectivities-matter-the-hidden-geographies-of-urban-energy-deprivation/>

Bouzarovski S 2013 Maps, stories, lines: a multiple-lane highway. *Hestia*.
<http://hestia.open.ac.uk/maps-stories-lines-a-multiple-lane-highway/>.

Bouzarovski S 2013 We need an ambitious and comprehensive fuel poverty policy. UKERC blog. <http://ukerc.wordpress.com/2013/05/21/we-need-an-ambitious-and-comprehensive-fuel-poverty-policy-by-stefan-bouzarovski/>

Bouzarovski S 2013 Energy poverty in Eastern and Central Europe: Announcing the EVALUATE project. EU Fuel Poverty Network.
<http://fuelpoverty.eu/2013/10/08/energy-poverty-in-eastern-and-central-europe-announcing-the-evaluate-project/>

Carter J 2014 Expanding the web of flood risk management. Cities@manchester Blog. <http://citiesmcr.wordpress.com/2014/03/17/expanding-the-web-of-flood-risk-management/>

Evans J 2013 Boda-Boda! Rethinking Unregulated Urban Transport in the Global South. Cities@Manchester Blog. <http://citiesmcr.wordpress.com/2013/11/11/boda-boda-rethinking-unregulated-urban-transport-in-the-global-south/>

Evans J and **Schliwa G** 2014 Can Manchester become a cycling city? Policy@Manchester Blog. <http://blog.policy.manchester.ac.uk/tag/manchester-cycling-lab/>

Ravetz J 2014 Housing crisis, what crisis, what next? Samiconsulting. <http://samiconsulting.wordpress.com/2014/01/24/housing-crisis-what-crisis-what-next/>

Tippett J 2014 200 people, one great mission, and 30 Ketso felts to capture creativity. Social Reporting from See Me Now Event, 3/4 April 2014. <http://seemescotland.wordpress.com/2014/04/03/200-people-one-great-mission-and-30-ketso-felts-to-capture-creativity/>

Tirado Herrero S 2013. Fuel poverty in Hungary. EU Fuel Poverty Network. <http://fuelpoverty.eu/2013/07/09/fuel-poverty-in-hungary/>

6.3 Video clips

2014 Belfast Fuel Poverty Symposium video <<https://www.youtube.com/watch?v=5h-YU5phWeo&feature=youtu.be>> by Sergio Tirado Herrero. Presentation of the paper 'Energy vulnerability in the EU: A multi-scalar assessment of domestic energy deprivation patterns' (Sergio Tirado Herrero, Stefan Bouzarovski and Saska Petrova).

Pre-recorded presentation <<https://www.youtube.com/watch?v=bleWUv0ldKs>> for the conference on 'Hydropower projects vs protection', 10th April 2014 by Stefan Bouzarovski.

Reference of RoundView <<https://www.youtube.com/watch?v=VLeNmxXlaqw>> in UWC Atlantic College Sustainability Conference 2014 video.

Presentation by Joe Ravetz on Social Transport Intelligence <<https://www.youtube.com/watch?v=CqbuHsmGf6s>>. Sustainable Society Network, Northumbria University, March 2014.

The infrastructural precariat <http://www.youtube.com/watch?v=g43_ANIJHxc> Keynote lecture by Stefan Bouzarovski at the 'Post crash cities: Environments and Ecologies' seminar in York, December 2013.

Presentation by Joe Ravetz and Stefan Bouzarovski
<<http://www.youtube.com/watch?v=W-Pu30Wqggk>> at the opening of the Centre for Urban Resilience and Energy, University of Manchester, November 2013.

Conceptualizing energy vulnerability: Why home matters
<<http://www.youtube.com/watch?v=mZR6wl5KoDk>>. A custom-made video presentation by Stefan Bouzarovski and Saska Petrova for the Annual Conference of the Canadian Association of Geographers, August 2013.

7. Knowledge-transfer and outreach activities

CURE members gave more than 50 invited presentations to external organizations during the past 10 months. These have included the University of York, German biennial geography conference, LATTs and the UK Energy Research Centre (**Stefan Bouzarovski**); King's College London (**Federico Cugurullo**); 2013 Shanghai Sustainable Urban Development Forum and European Human Ecology Conference (**Ian Douglas**); Eindhoven University of Technology (**James Evans**); Universities of Lund, LATTs, and the Urban Sustainability Transitions to 2050 Conference (**Andrew Karvonen**), Durham University (**Sarah Marie Hall**); City University Thessaloniki (**Saska Petrova**); World Urban Forum 2014 and UN Habitat Global Parliamentarians (**Jo Ravetz**); as well as the Universities of Bilbao and Belfast (**Sergio Tirado-Herrero**).

The results of CURE's work helped inform public policy-making in a range of governmental and non-governmental organizations, by bringing to light the complexities that underpin urban, environmental and energy policies, and highlighting the decisions, measures and strategies that can provide for inclusive and comprehensive future pathways. In the energy domain, our research challenged conventional understandings of fuel poverty and demand-side energy efficiency, prompting decision makers within several national and international jurisdictions to transform the scope and reach of their policies on these issues.

7.1 European Union and international bodies

Engagement at the EU level has allowed us to contribute to a range of policies in the energy poverty domain. We participated in proposals to define a common EU energy policy towards the measurement and definition of this problem at the European scale. Our work has been considered in proposals to include energy poverty indicators at the local scale. We have also participated in debates on the social justice implication of environmental tax reform, by talking at a plenary session organized by the European Parliament's Committee on Employment and Social Affairs in December 2013. We actively influenced

We also collaborated with the Focus Group on Smart Sustainable Cities (FG-SSC) of the International Telecommunication Union (ITU) in the production of a Toolkit for Smart Sustainable Cities, and on the revision of several technical reports in this field, ultimately aimed at helping to inform the design of international standards.

7.2 National decision-making

At the national scale, most of our impact has been effectuated via **Joanne Tippett's** work on Ketso, which was, *inter alia*, awarded a commendation by the Royal Town Planning Institute RTPI (NW) for contribution to positive community engagement. November 2013, Ketso was a finalist in the prestigious Praxis Unico Awards - Business Impact Aspiring Category, June 2014. The Scottish Government, Scottish Refugee Council and COSLA used Ketso as the key engagement tool for the 'Refugees in Scotland's Communities' project (2012-13) that brought together groups of experts to

consider refugee integration. **Joanne Tippett** trained the team that delivered the engagement, and Ketso was cited as the main engagement tool in the national strategy document. Moreover, Joanne led a series of workshops on Stakeholder Engagement as part of a three 2-day training sessions offered by the RiversTrust to launch DEFRA's Catchment Based Approach (CaBA). These workshops roughly 168 participants from across the UK and were held at London Wetland Centre (Feb. 19, 2014), Martin Mere Wetland Centre (Feb. 25, 2014) and Slimbridge Wetland Centre (March 18, 2014). In the River Wandle, a pilot for CaBA, Ketso was used as a key engagement tool. Ketso is included as a case study in the report following the CaBA Pilots, 'Guide to Collaborative Catchment Management'. Ketso was also the key engagement tool for 200 participants in a 2-day conference to develop Scotland's anti-stigma campaign for mental health (SEEME with the Scottish Mental Health Foundation). Moreover, Joanne's RoundView tool is cited in 'Ahead of the Curve' report by the Ellen MacArthur Foundation. Among other activities, **Jo Ravetz** provided a keynote lecture at for the Royal Town Planning Institute conference on Urban Design titled 'Urban design 3.0: creative synergy & shared intelligence'.

In July, **Jeremy Carter** organized an event with Climate UK, to stream a live feed from the release of the Adaptation Sub-Committee's annual report, which took place in London. This was held in the Cordingley lecture theatre. It was attended by around 30 people, the majority of whom were policy makers and practitioners from Greater Manchester and Northwest England.

7.3 Local government

Our group maintained an active relationship with local government (AGMA) as well as wider policy organizations (such as the GM low carbon hub, GM Energy Group) working in the area. For example, **Jeremy Carter** was appointed to the board of Greater Manchester's Natural Capital Group (NCG) and became chair of the Manchester A Certain Future (MACF) Adaptation Group. **Joanne Tippett** is on the Technical Working Group of the Great Manchester Wetlands Partnership, and her 'Mapping community engagement' project formed a key component of the Interpretation Report which was submitted to the Heritage Lottery Fund for a Landscape Partnership bid.

7.4. Business and charitable organizations

Centre members already have strong working relationships with charitable organisations and third sector bodies (such as NEA and GM climate stakeholder group). In late 2013, the results of **Stefan Bouzarovski** and **Saska Petrova**'s research were extensively cited in a motion raised within the National Union of Students (see http://www.nusconnect.org.uk/pageassets/about/minutes/necminutes/NEC_131120_Minutes_Draft_v3.pdf). Links with business organizations such as Arup and the National Grid were also developed and deepened in the past 10 months, as evidenced by their integration in recent project bids.

8. Future development and strategy

Over the medium- to long-term CURE aims to fulfil its potential as a global research hub at the intersection of energy, resilience and cities.

This implies both the development of a distinct intellectual agenda, and the establishment of clear impact pathways to effectuate our work in the worlds of policy and politics. Developing links with business organizations working in this domain will be a crucial precondition for success.

We also envisage working closely with *cities@manchester* towards the establishment of a new Manchester-wide Urban Institute that will help consolidate our urban work into a wider research focus.