Transformative infrastructures: Second energy vulnerabilities and pathways symposium

DAY 1 – Thursday 1 February

9.30-9.50: Delegates arrive, registration, coffee

9.50-10.00: Tour de table

10.00-11.20: Transformative perspectives on infrastructural inequality: insights from the EVALUATE project and beyond (Chair/Discussant: Nora Mzavanadze, University of Manchester)

Stefan Bouzarovski, University of Manchester: 'Energy Vulnerability and Urban Transitions: (Re)defining Research Agendas'
Harriet Thomson, University of Birmingham: TBC
Neil Simcock, University of Manchester: 'Rendered invisible: misrecognition and the production of energy vulnerability'

11.20-11.40: Coffee

11.40-13.00: Spatialities of energy justice and vulnerability (Chair/Discussant: Caitlin Robinson, University of Manchester)

Diana Hernandez, Columbia University: 'Energy Insecurity: Dimensions, Locations and Consequences on the Path to Energy Justice'
Victoria Pellicer, Universitat Politècnica de València: 'Exploring Energy Vulnerability from the bottom-up: an understanding using the Capability Approach'
Tony Reames, University of Michigan: 'Visualizing Energy Injustice at the Intersection of Class, Race and Place'

13.00-14.00: Lunch

14.00-15.20: Urban infrastructural transformations as a systemic challenge (Chair/Discussant: Deana Jovanovic, Keele University and University of Manchester)

Håvard Haarstad, University of Bergen: 'Carbonscapes disassembled: abandonment, loss and catalysts for change'

Tauri Tuvikene, Tallinn University: 'Post-socialist urban infrastructures: promises of socialism and material obduracies'

Slavka Ferenhuchova, Czech Academy of Science: 'Municipal responses to climate change in the Czech Republic: analysing the barriers in the socio-political context'

15.20-15.40: Coffee

15.40-17.00: Governing urban infrastructures and transformations (Chair/Discussant: Aurora Fredriksen, University of Manchester)

Mike Hodson, University of Manchester: 'Governing Urban Reconfiguration: building urban sustainability or strategic segregation in the post-industrial city?'

Jenni Cauvain, University of Nottingham: 'Social landlords in urban low carbon transitions: a bittersweet story'

Jonathan Rutherford, Paris Est University: 'Active infrastructures and tensions over energy futures in Paris'

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DAY 2 – Friday 2 February

9.30-10.00: Delegates arrive, registration, coffee

10.00-11.20: Global energy and infrastructural transformations (Chair/Discussant: Long Seng To, Loughborough University)

Jamie Cross, University of Edinburgh: TBC

Scott Kennedy, Energy Action Partners: 'Participatory Design of Community-based Renewable Energy Microgrids'

Kathryn Furlong, Université de Montréal: 'Big Infrastructure, Negative Value: Implications for service access and sustainability'

11.20-11.40: Coffee

11.40-13.00: Connecting energy and climate justice (Chair/Discussant: Neil Simcock, University of Manchester)

Shonali Pachauri, International Institute for Applied Systems Analysis: 'Achieving universal energy access goals in the SDG era'

Siddharth Sareen, University of Bergen: 'Just infrastructure? Socio-political dynamics of solar energy uptake'

Sara Fuller, Macquarie University: 'Towards a politics of urban climate responsibility: justice and low carbon transitions in the Asia-Pacific'

13.00-14.00: Lunch

14.00-15.20: New perspectives on inequality and vulnerability (Chair/Discussant: TBC)

Lucie Middlemiss, University of Leeds: 'Energy poverty and social relations: using a capabilities approach to understand the social dimension of energy vulnerability'

Dean Curran, University of Calgary: 'From Environmental Justice to Risk Injustice: The opportunities and risks in redressing environmental injustice in the context of multiple inequalities of risk'

Victoria Lawson, University of Washington: 'Politicizing Inequality and Vulnerability'

15.20-15.40: Coffee

15.40-17.00 Politicizing energy and infrastructural inequalities (Chair/Discussant: Majd Jayyousi, University of Manchester)

Joy Clancy, University of Twente: 'Gender Justice and Energy Justice in Europe: You can't have one without the other'

Saska Petrova, University of Manchester: 'The political ecology of energy poverty: energy precarity and the home'

Evangelia Athanassiou, Aristotle University of Thessaloniki: 'Global partnerships/Local disconnections: Politicising Thessaloniki's strategy towards resilience'

Abstracts

Global partnerships/Local disconnections: Politicising Thessaloniki's strategy towards resilience

Evangelia Athanassiou, Aristotle University of Thessaloniki

Launched in 2013, the Rockefeller Foundation's "100 Resilient Cities" initiative has played a key role in disseminating resilience as the new buzzword of urban planning but also in infusing it into local authorities' operational plans and administrative structures, in cities as diverse as Pittsburg, Ramallah and Thessaloniki. Thessaloniki, a city experiencing multiple repercussions of the financial crisis since 2010, was included in the initiative's global network and has drafted a strategy towards resilience within its framework. The talk discusses the way resilience is conceptualised and promoted in Thessaloniki's strategy and examines its transformative potential. Part of the central Municipality's effort to connecti to the world and internationalise a green image of the city and depicted as the outcome of broad participation, the strategy remains disconnected from the city's vulnerable realities, its institutional framework and its multiple communities.

Energy Vulnerability and Urban Transitions: (Re)defining Research Agendas

Stefan Bouzarovski, University of Manchester

This presentation charts the main intellectual challenges encountered, and trajectories developed, by the European Research Council-funded Energy Vulnerability and Urban Transitions project. Focusing on the intersections between energy equity and socio-technical change, the project has sought to highlight the systemic mechanisms and spatial locations associated with the rise of energy vulnerability. In addition to formulating novel theoretical framings, the project has developed an extensive evidence base focusing on four Central and Eastern European countries, as well as other related contexts. Key conceptual pathways opened by the project include the materialities of energy inequality, the socio-political challenges associated with just urban transitions, as well as the institutional practices that render energy subjects visible and measurable.

Social landlords in urban low carbon transitions: a bittersweet story

Jenni Cauvain, University of Nottingham

Social landlords have emerged as "unlikely innovators" and influential agents in low carbon transitions. Their role is central to urban carbon governance; a process closely linked to the restructuring of the eco state (While et al 2010), the rise of carbon geographies (Bridge et al 2013), and the targeted practices of the big six utility providers under the UK Government's energy and carbon obligations. This presentation investigates how social landlords fit into the carbon governance landscape, and makes the case that their agentic role in low carbon transitions exceeds that of an "intermediary"; we describe their influence through the "middle out" theory (Janda and Paraig 2014). However, despite the successes, social housing stock condition has been used as a political pawn to further demunicipalise social housing, and the sector is facing huge uncertainty under a hostile regulatory and policy environment.

Gender Justice and Energy Justice in Europe: You can't have one without the other

Joy Clancy, Professor of Energy and Gender, University of Twente

There is only limited recognition that energy poverty exists within Europe. There is even less recognition that energy poverty is gendered and that the gendered experiences of energy poverty are mediated by geography and social characteristics such as age. This presentation describes the finding from recent research for the Gender Committee of the European Parliament on gender and energy poverty within the EU. It will be argued that energy justice has to address gender injustices and that

these gender injustices are more than related to women and men as consumers – otherwise we run the risk of seeing women as passive victims.

From Environmental Justice to Risk Injustice: The opportunities and risks in redressing environmental injustice in the context of multiple inequalities of risk

Dean Curran, University of Calgary

This paper argues that there is an urgent need for the analytical tools and knowledge of environmental justice be used to study *risk injustice*. Bringing together the study of environmental justice, risk-class analysis, and the multiple crises of capitalism this paper argues that from the perspective of justice, core elements of environmental injustice can be seen, despite their importance and distinctive qualities, as particular cases of the more general phenomena of risk injustice. One benefit of this integrated framework of risk injustice is that it identifies the potential for certain transition strategies, such as a 'financialized green economy', or the 'smart', efficiency city, to reduce environmental injustices, but at the cost of further intensifying other risk injustices associated with contemporary socially produced risks.

Municipal responses to climate change in the Czech Republic: analysing the barriers in the socio-political context

Slavka Ferenhuchova, Czech Academy of Science

This presentation is based on the first findings of the ongoing research project focusing on local responses to climate change developed on the level of municipalities in the Czech Republic. The first phase of the research aims to understand, especially through document and media analysis, as well as with the help of expert interviews, the existing barriers or, to the contrary, opportunities to develop locally specific mitigation or adaptation responses. My presentation will concentrate on two types of barriers or complications that have appeared in this process in the past years and that illustrate the role of the wider socio-political context in a post-socialist European country as shaping local responses to climate change. First is the post-political and populist framing of the climate change debate (as represented in the national newspapers) that appeared around the year 2006, and the role of the discourse introduced by the climate change scepticism (as represented, for example, by the position of the former president Václav Klaus (2003-2013)). Second is the conflict between the value of the private property (especially land ownership) and public interest of the mitigation/adaptation projects. Both climate-sceptical presentations of responses to climate change as endangering individual freedom and the free market of the post-1989 era, and of alternative energy futures as 'risky' for energy consumers, and the issue of private versus public interest, have a strong political and ideological dimension in the post-socialist context.

Towards a politics of urban climate responsibility: justice and low carbon transitions in the Asia-Pacific

Sara Fuller, Macquarie University

Climate justice is fundamentally underpinned by the creation and enactment of climate responsibility. To date however, there is limited theoretical and empirical understanding about how the discourses and practices of responsibility associated with climate change might be enacted across multiple sites and scales and how this might come to matter for energy system transformations. These issues of responsibility come to the forefront in the Asia Pacific region which encompasses some of the world's most significant polluting cities while also hosting populations that are most vulnerable to the impacts of climate change. This paper draws on empirical research in Hong Kong and Singapore to explore the emerging geographies and networks of climate responsibility across the Asia Pacific region and to develop a theoretical understanding of how responsibility is conceptualised, experienced and enacted within and across cities. By drawing out the contested and contingent geographies of responsibility,

the paper demonstrates the importance of the urban politics of climate responsibility and how space and place come to matter in enabling just low carbon urban transitions.

Big Infrastructure, Negative Value: Implications for service access and sustainability
Kathryn Furlong, Université de Montréal
In many southern cities, infrastructure development has depended on international borrowing since at least the mid 20th century. Such lending tends to favour large infrastructure projects over simpler solutions, that might be more economically and environmentally sustainable in terms of extending services to excluded neighbourhoods. At the same time, exacerbated by cyclical debt crises and currency devaluations, utilities become holders of significant levels of "negative value". For David Harvey such "negative value" is the hallmark of contemporary capitalism whereby one must produce, not for profit, but to retire debt. For utilities, in the South, debt "repayment" is connected to: increased tariffs (transferring the burden of repayment to users), new loans for more large-infrastructure (and new debt), decreasing levels of service quality, limited service extension and service cut-offs. This paper examines these issues through a case study of urban infrastructure financing in Medellín, Colombia. This work may be of interest in terms of innovations such as green infrastructure or alternative water supply in cities, which require a rethinking of traditional large centralized infrastructure towards more decentralized and small-scale arrangements.

Carbonscapes disassembled: abandonment, loss and catalysts for change
Håvard Haarstad, University of Bergen
Work on energy transitions has largely focused on innovation and the diffusion of new socio-economic innovations across space and time. Transitions are largely understood as the proliferation and upscaling of new technologies and policy frameworks (Bridge, 2017). Building on previous work where we highlight the disassembly, instability and rupture involved in energy transition and transformation (Haarstad and Wanvik 2017), we aim to shift focus of conceptualizations energy transformations towards their darker sides: abandonment, loss and disempowerment. We argue, firstly, that a story of energy transformation that takes account of dark sides is more 'real' and comprehensive, and secondly, that acknowledging these aspects opens for reframing the cultural artefacts and practices of carbon society – turning perceptions of loss into positive experiences and empowerment. As illustration, we trace a transformations process from the Norwegian electric vehicle 'success story' in major cities to the wider consequences of a transformation of the oil-addicted economy, and reflect on the socio-cultural reconstruction of turning loss into empowerment.

Energy Insecurity: Dimensions, Locations and Consequences on the Path to Energy Justice
Diana Hernandez, Columbia University
Energy insecurity is a multi-dimensional conceptual framework that describes the interplay between structural conditions of housing, household energy expenditures and energy-related coping strategies. This presentation will focus on quantitative and qualitative sources of data from various projects to explore key questions pertaining to: a) the *dimensions* of energy insecurity (social, economic and behavioral), b) its *location* (i.e. social and geographic) particularly in the US context and c) the disparate *consequences* of this phenomenon for health and socio-economic well-being. This comprehensive look at energy insecurity as a social and public health problem presents an opportunity to broadly situate this ongoing hardship and, by way of this recognition, it opens a path to energy justice in the United States and beyond.

Governing Urban Reconfiguration: building urban sustainability or strategic segregation in the post-industrial city?
Mike Hodson, University of Manchester
This paper draws on work in progress with colleagues in the Alliance Manchester Business School. It focuses on attempts to tangibly re-organise the built environment and transport infrastructure of a single city-region, Greater Manchester. It takes this focus as a way of re-thinking how we conceive of urban transitions and the implications that follow. The paper develops the idea of urban transition as reconfiguration. Drawing on examples from the built environment and transport in Greater Manchester, efforts to reconfigure Greater Manchester through three strategies of re-organising urban space are developed (enhanced infill spaces; edge spaces; spaces of infrastructural marginalisation). Implications of this are set out.

Participatory Design of Community-based Renewable Energy Microgrids
Scott Kennedy, Energy Action Partners
Renewable energy microgrids for off-grid and remote electricity provision, while promising from a technical and financial perspective, frequently face socio-technical challenges that lead to disrepair and abandonment. Engagement of local actors and institutions in energy planning and management is critical, but often superficial or neglected in conventional microgrid development. We present a novel, game-based participatory approach to rural microgrid planning that both educates local actors in microgrid operation and economics, and enables them to participate in design decisions around system sizing, pricing, load management and maintenance. We describe outcomes from a case study for three rural villages in Malaysia where the Minigrid Game was used to address management challenges for two existing microhydro systems and one village with no electricity supply.

Politicizing Inequality and Vulnerability
Victoria Lawson, Professor of Geography, University of Washington
I lay out a relational poverty research framework and think through how this might be in conversation with energy vulnerabilities research. In particular, I explore three ideas: i) that poverty is overdetermined, ii) that poverty is reproduced through systems of social (de)valuation and iii) that poverty must be re-politicized - beyond thinkable poverty politics. I first explore thinkable poverty politics that currently frame subjects and policies and that limit imagination and action. I then turn to unthinkable poverty politics to consider rebellious subjects and cultural forms that crack open hegemonic claims. I argue that unthinkable poverty politics create openings and possibilities as they are part of struggles over 'common sense' that can reshape values, identities and action. I conclude by inviting a discussion of unthinkable energy vulnerability politics.

Achieving universal energy access goals in the SDG era
Shonali Pachauri, International Institute for Applied Systems Analysis
The post-2015 sustainable development agenda adopted by UN Member States in September 2015 include 17 aspirational goals to be achieved by 2030. Achieving these goals will require reducing existing inequalities and deprivations while simultaneously addressing the growing environmental footprints of rising prosperity. SDG#7 - "ensure access to affordable, reliable, sustainable, and modern energy for all" aims to reduce energy poverty and inequalities globally, while SDG #13 - "take urgent action to combat climate change and its impacts" calls for decarbonizing our societies and adapting to unavoidable climate change. While achieving both goals will encourage transformations towards sustainability, little is understood about the interlinkages, complementarities, and tensions between the goals. What are the emissions consequences of providing universal access to modern energy services? Do climate mitigation policies retard the transition to modern energy

services? This talk will discuss potential synergies and tradeoffs between these goals and implications for some of the other SDGs.

Exploring Energy Vulnerability from the bottom-up: an understanding using the Capability Approach
Victoria Pellicer, Universitat Politècnica de València
Fuel poverty has traditionally been seen as the result of low income, poor energy efficiency and high energy costs. These three causes have rarely been discussed explicitly on academia debates, until Bouzarovsky and Petrovas's recently proposal of Energy Vulnerability framework arrived, where they propose six factors as driving forces that contribute to energy poverty: access, affordability, flexibility, energy efficiency, needs and practices. Departing from these energy vulnerability lenses, and combining them with elements from Capability Approach, this paper seeks to pursue the debate opened by testing this approach on an empirical case study based in Spain. Through the operationalisation of the new energy vulnerability framework, we develop further these six factors and illustrate their specific meaning in the case of Spain. We conclude that main factors are structural and systemic. Finally, regarding theoretical contribution, we remark some reflections about building theory around empirical work, and about the opportunities and boundaries of combining Capability Approach and Energy Vulnerability framework.

The political ecology of energy poverty: energy precarity and the home
Saska Petrova, University of Manchester
Energy poverty is often addressed as a domestic issue that tends to be tackle via politics of household responsibilisation, which includes predominantly measures of improving energy efficiency and reduced energy consumption through behaviour engineering. Energy poverty has rarely been analysed in a broader spatial and political context that situates a household within socio-environmental systems in which materials and energy are transferred and interchanged. I use the concept of energy precarity to transcend the domesticity of energy poverty and link it with the process of struggles to democratise energy flows and flows of power. The arguments in this presentation are based on evidence collected in Greece, South Africa, the UK and China.

Visualizing Energy Injustice at the Intersection of Class, Race and Place
Tony Reames, University of Michigan
The inability of households to afford adequate energy services, such as heating, is a major energy justice concern. Temporary utility bill assistance or improving residential energy efficiency remains the primary strategic interventions. However, program implementation often occurs in piecemeal, individual-based approaches, with little attention to the importance of place. This presentation focuses on the spatiality of residential energy consumption dynamics and illustrates how disparities intersect with pervasive residential segregation by race/ethnicity and class common in many U.S. urban areas.

Active infrastructures and tensions over energy futures in Paris
Jonathan Rutherford, Université Paris Est
It is widely argued that the urban is a vital nexus for energy transitions for a variety of reasons, not least as a site of infrastructure provision and access. Interplays of distinctive actions, capacities, resources and politics have been analysed across different urban contexts as actors seek to govern and shape infrastructures in transformation. This presentation queries though whether transformative change is actually being implemented and delivered, and the extent to which the contribution of infrastructures to such change is fully addressed. Drawing on vignettes from the Paris region, it explores the propensity of the material world to escape full control, as the entities, flows and objects of energy systems circulate, stabilise, mutate and resist within distributed networks of relations which

collectively effect change. While aware of the limits of decentering human intentionality, it is argued that this forges another view of urban vitality in/of socio-technical change processes which may help to account for implementation gaps and to sketch distinctive material political possibilities for transforming energy futures.

Just infrastructure? Socio-political dynamics of solar energy uptake
Siddarth Sareen, University of Bergen
Infrastructural development related to solar energy uptake has global relevance. Its political economic modulation has varied implications for energy justice. This talk contrasts two regional cases - states in western India and Portugal in Europe - to problematise the drivers of these trajectories and their consequences. It situates renewable energy policy within socio-political dynamics, and highlights how regional particularities and path dependence shape the emergence and extent of solar energy. I argue for combining a political economy of renewable energy with the normative analyses embedded in scholarship on energy and climate justice at the intersection of solar power and development.

Rendered invisible: misrecognition and the (re)production of energy vulnerability
Neil Simcock, University of Manchester
This paper examines the role of misrecognition, as a dimension of injustice, in constituting and reproducing energy vulnerability. I particularly utilise Fraser's (1995) distinction between two forms of misrecognition – 'non-recognition' and 'disrespect' – to examine how energy poverty is framed and represented by governing institutions and households experiencing the condition. The findings show that energy poverty is simultaneously stigmatised and rendered invisible by both policy-makers and households, with profound implications for the persistence of insufficient domestic energy services. As well as providing empirical insights into the constitution of energy vulnerability, the paper contributes to theoretical understandings of the relations between different forms of misrecognition and distributional injustice.

Post-socialist urban infrastructures: promises of socialism and material obduracies
Tauri Tuvikene, Tallinn University
My presentation departs from the soon to be finished edited book *Post-Socialist Urban Infrastructures* (Routledge) that I co-edit with Wladimir Sgibnev and Carola S. Neugebauer. Giving credit to the many contributors of the book, I would like to draw out a couple of preliminary general conclusions from the book regarding links between "post-socialism" and urban infrastructures, which are generally neglected in global south and north focused infrastructure analyses. Highlighting the societal transformation through hybridities of housing, green and transport infrastructures, the book stresses, firstly, the often-perceived failures of infrastructures in the contemporary cities of Central and Eastern Europe and former Soviet Union, as existing realities rub against the promises of socialism. Secondly, the various challenges that the infrastructures pose rest significantly on the obduracy of the socialist materialities. Thirdly, the transformation is not simply moving forward but in some ways also looking back to the ways in which infrastructures were organised under socialism.