2nd Energy & Society Conference

Book of abstracts

Midterm conference of ESA RN 12, ISA RC 24 in cooperation with Polish Sociological Association (PTS)

4th – 6th June 2014

Institute of Sociology, Jagiellonian University

Krakow, Poland

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Welcome

Dear conference participants,

we are very happy to welcome you to the 2nd Energy & Society Conference.

Since the European Sociological Association conference in Turin last year, when the Institute of Sociology of the Jagiellonian University was commissioned to host the conference, we have been trying to organize a meeting that may foster debate on cutting edge issues of social science research on energy, and also to provide participants opportunities to connect with other researchers and develop cooperation in this research field. We hope that the conference may also contribute to extending familiar approaches by forging interdisciplinary links.

This is the second conference of the Energy & Society Network. The first conference was held in Lisbon two years ago and gathered a high number of participants from 23 countries. This second conference has drawn of an even larger number of abstracts submitted from around the world. Both conferences were supported by the European Sociological Association as Midterm Conferences of ESA's Research Network 12 on Environment and Society and the International Sociological Association Research Committee 24 on Environment and Society, which shows the growing interest of sociologists doing research on energy issues.

The conference presents two prominent keynote speakers, one in the sociology of energy, and the other in sustainable development, 105 oral presentations in 24 thematic sessions, three workshops and a poster session, as well as space for informal sessions proposed by participants ("Hyde Park"), the second general meeting of the Energy & Society Network, and, also, a welcome reception, a dinner (optional) and a visit to the Guido coal mine (optional).

We are very grateful to all participants and to all those who contributed to organizing this conference, and hope this can be a most enjoyable and stimulating meeting.

The organizers

Local organizing committee

Aleksandra Wagner, Institute of Sociology - Jagiellonian University (Poland)
Maria Swiatkiewicz-Mosny, Institute of Sociology - Jagiellonian University (Poland)
Marian Niezgoda, Institute of Sociology - Jagiellonian University (Poland)

Scientific committee

Ana Horta, Universidade de Lisboa - Instituto de Ciências Sociais (Portugal)
André Schaffrin, Europäische Akademie (Germany)
Catherine Butler, Exeter University (United Kingdom)
Çigdem Adem, the Public Administration Institute for Turkey and the Middle East (Turkey)
Françoise Bartiaux, Université Catholique de Louvain (Belgium)
Giorgio Osti, Università degli Studi di Trieste - Dipartimento di Scienze Politiche e Sociali (Italy)
Luísa Schmidt, Universidade de Lisboa - Instituto de Ciências Sociais (Portugal)
Matthias Gross, Helmholtz Centre for Environmental Research and University of Jena (Germany)
Pia Laborgne, University of Freiburg and European Institute for Energy Research/KIT (Germany)

About the Energy & Society Network

The Energy and Society Network was created in 2010 by academics active in the European Sociological Association (ESA) Research Network 12 on Environment and Society and in the International Sociological Association (ISA) Research Committee 24 on Environment and Society.

The network aims at bringing together researchers interested in social aspects of energy issues to provide them a platform for information exchange, discussion and development of collaborations across countries, including on international collaborative research projects in this field. The group has also been aiming at strengthening a network of those interested in extending familiar approaches to environmental sociology by forging links with other social science fields such as science and technology studies, the sociology of risk, material culture, innovation studies etc. as well as the natural and engineering sciences.

During the 10th Conference of the European Sociological Association in Geneva the group decided to organize its first meeting in Lisbon. Initially thought as a workshop, the event was very well received, and ended up gathering over 140 researchers from Europe and elsewhere. The first conference of the Energy and Society Network was hosted by the Institute of Social Sciences of the University of Lisbon between March 22nd and 24th, 2012, as a Midterm Conference of the ESA RN12, in collaboration with ISA RC24. The conference included the first general meeting of the network and all participants in the conference were invited to become members. Further information about this conference, including short bios of all speakers, some presentations and the conference sum up, can be found at http://www.energyandsociety.ics.ul.pt/.

In Lisbon it was decided that this conference would be the first of a series of meetings held every two years between the ESA conferences.

A selection of papers from the first Energy & Society Conference will be published in a special issue of the journal *Nature and Culture* due for release in the summer of 2014. This special issue will focus on "Energy cultures and practices".

How to become a member

The network welcomes all researchers within the social sciences interested in becoming members. There are no membership fees.

Those interested in joining may send an email to Pia Laborgne (energysociety@email.de), who is in charge of the communication through the network's mailing list. All queries should be addressed to her.

Further information on ESA RN12 Environment and Society:

http://www.europeansociology.org/research-networks/rn12-environment-and-society.html

Further information on ISA RC24 Environment and Society:

http://www.isa-sociology.org/rc24.htm

Schedule

Wednesday, 4th June

Venue: Auditorium Maximum

13:00	**Welcome and opening** | Exhibition room A, 1st floor
13:30	**Keynotes** **Elizabeth Shove**, Lancaster University: "Energy and society: resources and practices" **Krzysztof Gorlach**, Jagiellonian University: "Development as movement: the road to sustainable society"
15:50	Coffee break
16:20	Session 1: **Energy transitions – challenges for modern societies** | Exhibition room A, 1st floor
18:00	**Welcome drink** | Hall, 1st floor

Thursday, 5th June

Venue: Institute of Sociology

9:00	Session 2: **Materiality, energy and social change** Room 79	Session 3: **Energy transition, communities and householders** Room 81	Session 4: **Energy demand, markets and innovation** Room 61	
10:40	Coffee break | Hall, 2nd floor			
11:00	Session 5: **Innovations in practice, technology and change** Room 79	Session 6: **Public acceptability** Room 81	Session 7: **Energy transition: unravelling the buzzword** Room 61	Session 8: **Energy demand, markets and innovation** Room 60
12:40	**Poster session** | Hall, 2nd floor			
14:30	Session 9: **Public acceptability** Room 79	Session 10: **Future visions** Room 81	Session 11: **Conceptual approaches to energy transition research** Room 61	Session 12: **The shaping of domestic energy demand** Room 60
16:10	Coffee break | Hall, 2nd floor			
16:30	Session 13: **Energy poverty and environmental justice** Room 79	Session 14: **Approaches to understanding acceptability** Room 81	Session 15: **Energy transitions in context: challenges ahead** Room 61	Session 16: **Energy demand, markets and innovation** Room 60
18:10	**"Hyde Park": informal sessions/open discussions** | Rooms 79, 80, 61 and 60			
20:00	Conference dinner (optional) | Restaurant: Cafe Oranzeria			

Friday, 6th June

Venue: Institute of Sociology

9:00	Session 17: **Interlinking socio-technical systems: energy-water, energy-waste, energy-food** Room 79	Session 18: **Energy transitions as local project** Room 81	Session 19: **Approaches to understanding acceptability** Room 61	Session 20: **Energy transitions and changing actors** Room 60
10:40	Coffee break | Hall, 2nd floor			
11:00	Session 21: **Energy transition: local strategies and the interplay of governance levels** Room 79	Session 22: **Energy transition in context: national and regional conditions** Room 81	Session 23: **Challenges and implications of energy innovation** Room 61	Session 24: **Energy transition at the local level** Room 60
12:40	Lunch			
14:30	Workshop 1: **Energy and Metabolism** Room 61	Workshop 2: **Politics of Fracking** Room 60	Workshop 3: **Wicked games - tricked into fake participation** Rooms 81 and 79	
16:10	Coffee break | Hall, 2nd floor			
16:30	**Energy & Society Network general meeting and closing session** | Room 79			
17:00	ESA RN12 business meeting			

Opening ceremony

Welcome and opening

Wednesday, 4th June, 13:00-13:30 | Auditorium Maximum, Exhibition Room A

Maria Flis, Vice rector of the Jagiellonian University

Jarosław Górniak, Dean of the Philosophy Faculty, Jagiellonian University

Ewa Kopczyńska, Vice director of the Institute of Sociology, Jagiellonian University

Matthias Gross, Head of the European Sociological Association Research Network 12 Environment and Society

Welcome drink

Wednesday, 4th June, 18:00 | Auditorium Maximum, Hall, 1st floor

Closing session

Energy & Society Network general meeting and closing session

Friday, 6th June, 16:30-17:00 | Institute of Sociology, room 79

Chair: Matthias Gross, Head of of the European Sociological Association Research Network 12 Environment and Society

Keynote lectures

Wednesday, 4th June, 13:30-15:40 | Auditorium Maximum, Exhibition Room A

Chair: Matthias Gross

Energy and society: resources and practices
Elizabeth Shove

This presentation compares different ways of conceptualising the energy-society relation. In the description of this conference, and in much existing work, energy is treated as a resource, the management and use of which impacts on society in many different ways. Different questions arise if we view energy not as a singular resource, but as one amongst other 'ingredients' of specific social practices, each of which have trajectories and dynamics of their own. In this talk I distinguish between these positions and consider the implications of a more comprehensive focus on the question of 'what is energy for?' As I show, this has important consequences for thinking about transitions and change.

Elizabeth Shove is professor of sociology and co-director of the DEMAND research centre (Dynamics of Energy, Mobility and Demand) at Lancaster University, UK – www.demand.ac.uk. Recent books include *Sustainable Practices: Social theory and climate change* Routledge, 2012, edited with Nicola Spurling, and *The Dynamics of Social Practice,* Sage, 2012, with Mika Pantzar and Matt Watson.

Development as movement: the road to sustainable society
Krzysztof Gorlach

The lecture will be divided into two parts. In the first one the issue of sustainable development will be discussed starting from the idea of eco-modernisation (two-fold concept) to the idea of the so-called simple sustainable development (three-fold concept) to the idea of the developed sustainable development (the "Decalogue" of the sustainable society). In the second part of the lecture the issue of human development will be discussed starting from the idea of linear and purposeful changes to the idea of development as freedom (with a special stress on Amartya Sen`s framework) to the idea of development as movement (with a special stress on the role of procedures and social movements in the processes of social change).

Krzysztof Gorlach is a professor in sociology at Jagiellonian University, Krakow, Poland. His main areas of research are class analysis, social movements and rural developments in Europe and United States. His publications include books:"Świat na progu domu rodzinne gospodarstwa rolne w Polsce w obliczu globalizacji", "Socjologia obszarów wiejskich: problemy i perspektywy", "W poszukiwaniu równowagi. Polskie rodzinne gospodarstwa rolne w Unii Europejskiej","Dynamika życia społecznego. Współczesne koncepcje ruchów społecznych" (co-editor Patrick H. Mooney).

Thematic sessions

Session 1 - Energy transitions – challenges for modern societies

Wednesday, 4th June, 16:00-18:00 | Auditorium Maximum, Exhibition Room A

Chair: Luísa Schmidt

Energy-resource synergies from eco-efficient innovation: what sustainability?
Les Levidow

Policy frameworks have been taking up holistic perspectives on energy-resource synergies, e.g. the energy-water-food nexus. According to a high-profile report, 'A nexus approach is needed to help climate-mitigation measures… There is a large potential to increase overall resource-use efficiency and benefits in production and consumption', to 'support a transition to sustainability' (Stockholm Environment Institute, 2011). The nexus concept is meant to inform eco-innovation design and adoption. In practice a key driver has been cost savings – by reducing energy consumption, as well as by minimising or recycling waste, e.g. to generate renewable energy.

Exploring those concepts, the FP7 Ecowater project has studied prospects for improvements at the meso level, i.e. through interactions and interdependencies among heterogeneous actors. Assessments follow resource and emission flows across a product's value chain. The project has several aims – to compare improvement options, to identify their drivers & barriers, and thus to inform policy frameworks.

The project focuses on companies which already have invested in eco-innovation and have strong prospects for improvement, relative to their overall sector (industrial, urban, agricultural). Energy costs are a major driver for adopting resource-efficient innovations within a holistic perspective on demand for energy, water and materials. But institutional commitments limit the capacity to lower resource burdens. Companies have fragmented responsibilities, focusing on internal processes. In one case study, moreover, a dairy will greatly expand milk powder-production for global export, thus needing more energy for water-extraction; innovations can moderate extra resource demands but not avoid them. Thus a transition to environmental sustainability remains elusive.

Acknowledgements. This paper arises from 'EcoWater: Meso-level eco-efficiency indicators to assess technologies & their uptake in water use sectors', a collaborative research project of the 7th Framework Programme during 2011-14, grant agreement no. 282882, coordinated by the National Technical University of Athens (NTUA), http://environ.chemeng.ntua.gr/ecoWater/

Transitions and necessary energy: the need for electricity - electricity as a need
Neil Simcock, Rosie Day, Gordon Walker

The pursuit of energy and carbon transitions has to grapple with understandings and discourses of 'need', at individual or societal scales, which may in some contexts bound or limit the possibilities of change from present conditions. Electrical power is often thought about and spoken of as a fundamental need, necessary for any 'civilised' and just society, for economic development and for individuals to have a minimally decent quality of life. Assumptions about levels of 'needed' current and future electricity demand and the associated 'needed' capacities of supply infrastructures can also be embedded in a variety of ways within systems of provision, institutional arrangements and regulatory provisions. In this paper we draw on an exploration and review of academic analysis and media discourse to outline a series of ways of framing the relation between need and electricity. We argue that the way in which this relation is understood has significant implications for transition objectives and processes, as well as for questions of social justice.

Potentials and limitations of participatory technology assessment in Poland. The case of local dialogue programm on shale gas exploration.
Piotr Stankiewicz, Joanna Suchomska, Agata Stasik

Participatory approach to technology assessment (TA) has become in the last decades a generally promoted option and almost the flagship of TA exercises. Its value is especially stressed with regard to risky and controversial technological innovations, such as shale gas exploration. Although participatory TA (pTA) has already quite a long tradition in Western Europe, it's only now when pTA is spreading in new member states. It is thus interesting to ask what are the potentials and limitations for institutionalization of pTA in those countries. The proposed presentation is based on an evaluation of one of the first pTA initiatives on shale gas conducted in Poland within a programme "Together about shale gas". The project took place in 2013 in a community of Mikołajki Pomorskie and was based on a half-year-long deliberations of a Local Dialogue Committee, consisting of local stakeholders (inhabitants of the community, its authorities and the company representatives). We are going to present the results of the evaluation of the project, conducted using participatory observations during meetings and in-depth interviews with participants. The research questions were focused on following issues:
- the role of participation in decision-making processes
-impact on the strategies of dealing with controversy
- impact on the perception of shale gas in local community
The presentation aims at contributing to answer one of the leading questions of the conference, namely the one of impact of non/changing societies on enabling or blocking wider technological transformations.

Informing energy policy from practice theoretical studies
Kirsten Gram-Hanssen

This article report on Danish experiments with influencing home owners to renovate their detached home to a higher energy efficiency standard. Based on a literature review it starts by highlighting the potential for energy renovation in detached owner occupied housing, though, also explaining the different challenges related to this potential. Several relevant actors are identified, including municipalities, energy companies, financing institutes and craftsmen. Initiatives from these different actors towards encouraging the home owners to energy renovate are described and analyzed. Findings suggest that direct communication and tailored advice towards the house owner are the most effect full, however, also the most expensive way of approaching the house owner. If more house owners can be targeted as the same time, through local village-initiatives, this may be more cost-effective. Other approaches include meeting the house owners at the right time, meaning when they are already about to decide to do renovations. Financing institutes could be influential actors in this approach, but may lack the relevant knowledge to help the home owner. The paper thus suggests different relevant approaches for how to influence house owners to energy renovate their home, based on previous Danish experiences.

Fostering less energy intensive routines in everyday life: strengthening a consumer perspective through social practice theory
Immanuel Stieß, Christian Dehmel

Cities and urban agglomerations contribute significantly to the overall energy consumption in Germany. While many cities have set up ambitious targets and schemes for a "greening" of urban infrastructure, the transformation of energy provision still needs to be connected more closely to behavioural adaptations towards low carbon and less energy intensive practices of city dwellers.
The contribution takes up the role of less energy intensive everyday routines and links these issues to the transition of urban energy systems. The focus is on practicing

behavioural change in a group of 80 households in cologne. After a six month field test, they were interviewed (around 40 semi-structured interviews) about their problems and achievements in changing their energy related routines. The analysis applies insights from social practice theory promising a shift from individual and rationalistic approaches to behaviour change towards collective and routine aspects of consumption (eg. Reckwitz 2002, Schatzki 2002, Shove/Pantzar 2005, Warde 2005). Particular emphasis is given to the elements concerning "what holds a practice together" (products/technology, know-how/embodied habits, knowledge /rules and engagement/meanings) and how stability and change of routines and the adoption and non-adoption of practices can be understood (Gram-Hansen 2011). The goal of the study is to find out which conditions are ac-cepted by different social groups to permanently change behaviour, which barriers exist to adapt less energy intensive practices, how single practices influence each other and what can be learned from a consumer perspective towards the transition of urban energy systems.
The contribution is based on the joint project "KlimaAlltag – low carbon lifestyles in a zero emissions city" (www.klima-alltag.de) funded by the German Ministry for Research and Educa-tion), and coordinated by ISOE.

Session 2 - Materiality, energy and social change

Thursday, 5th June, 9:00-10.40 | Institute of Sociology, room 79

Chair: Luigi Pellizzoni

The Polish draft law on corridors of transmission
Michal Wdowiak

The article takes the issue of easements of transmission in respect of other constitutional rights and freedoms, notably the right of ownership. The Ministry of Economy has drawn up a draft law on corridors of transmission. The third version of the draft law on corridors of transmission was the subject of the opinion prepared on behalf of the Legislative Council, in which expressed the number of comments on the proposed regulation of non-compliance with the Constitution of the RP. In the fourth and the fifth version of the draft law only partially reflects the comments, in its opinion, however, some of them were omitted, especially those that concerned the interactions of easements of transmission - limited property right and ownership of real estate. In the event of a collision in the scope of protection of easements of transmission and the protection of ownership of real estate, it cannot be given absolute priority to any of them, but it should be studied the "necessity" of protection easements of transmission in relation to restrictions on the right of ownership and the scope of the "necessary" restriction of ownership rights based on the principles and rules of constitutional order. In the further course of the work on the draft law it should be taken into account the axiology of principles and rules of constitutional order.

Sequence of transition pathways in energy transitions: the need for understanding technology acceptance, and developing common visions
Claudia Binder, Christof Koneri

A transition of the energy system towards renewable energies and higher energy-efficiency necessitates visions, strategies, and measures from an international to a regional level. At regional level, the transition towards an energy self-sufficient region can be seen as a sequence of several transition pathways. Scholars have found that in such transitions the first pathway, a transformation, often starts with an initial vision germinating within the regional management or industry and becoming visible in form of e.g., new infrastructure, show cases, and is linked to an institutionalization process. However, to have a successful transition, the energy region has to enter into a reconfiguration transition pathway, requiring a broad societal consensus and adaptation of multiple

energy technologies. We need therefore to understand (i) how well which energy technologies are accepted by the population and why, and (ii) how to involve stakeholders from different societal spheres and the population in the next transition step. We present results from the analysis of the energy region of Weiz-Gleisdorf, Austria. There, the first efforts to become an energy region were formally institutionalized in 1996. We found that housing technologies were much better accepted than mobility technologies, mirroring the way in which the regional management board has been realizing their initial vision. Furthermore, the population and the management board agreed on the renewed vision, i.e., they both considered the scenario "the region flourishes" aiming at a regional development based on green jobs and achieving a high degree of self-sufficiency as being the most desirable one.

Beyond the technical: making the case for incorporating responsible innovation in energy system transformations
Karen Parkhill, Catherine, Butler, Christina Demski

Conventionally, energy system development has been dominated by concerns regarding the complex technical dimensions; social aspects have either been overlooked, or only superficially included. Yet the changes to energy systems being considered across Europe (and beyond) have multiple social implications including, but not limited to, public acceptability and governance issues. As such, there is a need for those involved in the development of energy systems to think through the full range of social implications of what is being proposed. In the UK recent debate around emergent technologies (e.g. geoengineering), has seen engagement with the concept of responsible innovation; a set of ideas designed to help guide the trajectory and pace of research. Whilst energy system change does not necessarily include emergent technologies (examples of notable exceptions being Carbon Capture and Storage, smart grids/meters), many of the energy system pathways being considered encompass a profound reconfiguration of energy systems and societal relationships with energy. The aim of this paper is to explore, through a conceptual synthesis, whether or not the responsible innovation concept could potentially facilitate greater consideration of the social dimensions of energy system change, by those involved in energy system development. This will include critical engagement with recent literature and concepts, such as the four dimensions of responsible innovation as proposed by Owen et al. (2013) i.e. anticipatory, reflective, deliberative and responsive. We will, by way of conclusion, outline how the framework of responsible innovation may need to be adapted for thinking through energy system change.

Future of nuclear energy: always questioned? The evidences from the countries developing nuclear energy
Ekaterina Tarasova

Despite the global decline of nuclear energy share by 2 percent a number of countries announced the plans to develop national nuclear programs. The seeming divide between the countries developing their nuclear energy programs and the ones abandoning nuclear energy brings attention to both groups. It becomes crucial to investigate on what basis these political decisions are made and what role is assigned for nuclear energy in energy policies and strategies for development.

What energy for the Italian television? New languages for new audiences
Martina Ferrucci, Sonia Brondi

This contribution explores the matches between contents of television programs on environmental and energy issues and the expectations and perceptions of the audience to the messages received by the Italian TV. The problem related to communication and representation of environment and energy in Italy issues lies, first of all, in the way these are presented to the audience. In the narratives frames of Italian media, the energy thema is mainly treated in connection with critical episodes. Environmental communi-

cation thus often assumes complaint, alarmist and catastrophism forms in Italy. This may result in the crystallization of concepts and may generate confusion in citizens. Yet, mainstream media could also playing an educational role to non-experts, stimulating social learning processes. In this scenario, main aim of this research is to outline the relationship existing between information needs on energy issues and public perception of authoritativeness of the media. In particular, we focus on the role played by television. A sample of 150 participants answered an online survey on perceived importance for the self and for the society of environmental and energy issues, practices of media consumption, expectations about the packaging of environmental and energy issue and need for information on the issues at stake. Preliminary results suggest that TV remains the most important source of information about environmental and energy issues. The language used by TV programs on energy issues is perceived mainly as alarmist (30.8% of respondents). Catastrophic language is linked with the perception that the issue has been discussed in a poor and uncompleted way.

Session 3 - Energy transition, communities and householders

Thursday, 5th June, Thematic, 9:00-10.40 | Institute of Sociology, room 81

Chair: Giorgio Osti

Sustainable energy communities: developing new representations and practices for the Italian context
Mauro Sarrica, Paolo Cottone, Alessandra Armenti, Sonia Brondi

Public discourses on sustainable energy ideally fall within the area of a triangle defined by social representations of energy, energy governance and users. Therefore, full sustainability requires consumers to become citizens actively involved in participatory decision-making processes, renewable and diffused energy production and management (Devine-Wright, 2007).
Drawing on these premises, ACCESI project aims to identify psychosocial factors that foster or hinder the development of proper sustainable energy communities in Italy. In the first phase of the project we explored how sustainable energy is socially constructed in Italian parliamentary debates and national press (years 2009-2012) (Sarrica, Brondi & Cottone, in press). The second phase of the project - that is the focus of this contribution - aims to deepen positive case studies in the management of energy issues. A qualitative mixed-method approach was adopted: texts from local political debates and newspapers, semi-structured interviews with key informants, visual and ethnographic data were collected and analysed.
Results show that the proposed 'triangular interpretative model' of sustainable energy fits also local discourses on the issue: representations of energy, governance and users almost exclusively cover the contents of the discourses on sustainable energy. Production technologies enter these discourses crosswise and in unexpected ways. However, different interpretations of active cooperation between policy makers, stakeholders and citizens change the way in which representations of energy, management and citizens are put in relation one with the others: structural and cultural changes towards sustainability are enacted mainly when participation moves directly from the citizens.

Rethinking energy consumption feedback
Kevin Burchell, Ruth Rettie

The provision of energy consumption feedback to householders has emerged as an important energy consumption reduction strategy, and smart meter roll-outs with in-home displays (IHDs) are planned in a number of countries. The rationale behind this approach is supported by theory in a range of disciplines and the largest meta-review to date suggests that reductions in consumption of 9% are feasible (Ehrhardt-

Martinez 2010). However, recent ethnographic work – including our own – focuses on the ways in which everyday life constrains the effectiveness of current forms of consumption feedback. In this paper we build on this work to suggest four ways in which energy consumption feedback might prompt greater reductions in consumption. 1. Since energy *per se* is often not meaningful or salient to householders, we propose that consumption feedback should be oriented around the practices that are recognisable and meaningful in people's everyday lives. 2. Current forms of feedback often fail to challenge practices that are treated as normal or immutable; for this reason, we propose that feedback should be designed to disrupt current practices (for instance, by the inclusion of normative messages about waste). 3. Since long-term engagement with IHDs is identified as challenging, we propose that feedback should be accompanied by on-going communications designed to prolong engagement. 4. Engagement with IHDs is often limited to one household member and this can lead to household conflict; to tackle this issue, we suggest that feedback devices are designed to facilitate text and graphic communication to prompt household discussion.

Investigating the influence of digital feedback technologies and the provision of long-term consumption data on everyday life
Chris Foulds, Rosie Robison

The aim of this study is to explore how digital feedback technologies generally, and long-term energy data specifically, are incorporated into the performance of everyday practices. Research has to date focused more on the technologies providing real-time feedback (e.g. In-Home Displays), with less attention given to the potential role of the longer-term datasets that will be generated from the smart meter roll-out (all UK homes set to have smart meters by 2020). The broader everyday influences of such Government-led initiatives are especially important to unpick given that technologies are appropriated in a variety of ways as everyday practices are performed differently across different contexts.
This study focuses on a single case – the iMeasure tool – which is an online monitoring tool that feeds back longitudinal energy consumption trends to households in-depth. Netnography is employed to investigate how people interact within the iMeasure community and how that virtual interaction influences their everyday life. In conjunction with semistructured household interviews, these methods explore how iMeasure was appropriated, brought about changes to everyday practices (and their associated meanings/skills), and influenced household dynamics. Furthermore, given that iMeasure users are required to input the data themselves, the processes underlying this commitment (and how they have evolved and become embedded in their domestic practices) are also investigated.
This study provides an enhanced understanding of the ground-level experiences of digital feedback technologies that attempt to intervene in energy demand, but actually intervene in everyday life and its practices.

Getting ready for a change?
Magdalena Głogowska

Cities are the key-actors when it comes to implementing energy action and reaching the EU 20-20-20 targets. They are closest to the citizens, that need to be taken along, they are more flexible and quicker in implementing concrete energy projects. The number of cities which committed to even outperforming the EU 20-20-20 targets by joining the Covenant of Mayors in the last years is rapidly increasing. More than 4.500 cities signed the Covenant of Mayors already committing themselves to energy action even beyond the EU climate targets. About 2.600 of these signatories have submitted their sustainable energy action plan and entered the implementation phase.

Thematic session 4 - Energy demand, markets and innovation: the shaping of demand, implications of energy market innovation for demand

Thursday, 5th June, , 9:00-10.40 | Institute of Sociology, room 61

Chair: Françoise Bartiaux

Notions of 'house' and notions of 'home' – their importance for interventions to reduce domestic electricity consumption
Tim Harries, Maria das Graças S.L. Brightwell, Enrico Costanza

In this paper, we argue that the discourse of domestic energy efficiency conflicts with established notions of home as a place of care, comfort and safety. Evidence from our trial of a prototype digital-feedback system, FigureEnergy, suggests that this might undermine the effectiveness of some energy saving initiatives. Drawing on in-depth interviews conducted after the three-week trial with 12 UK householders, we examine the discourses they used when discussing their response to the system and the possible implications of these rationalities for behaviour change. Uniquely, the system allowed users to interact with their feedback and this feature, we think, enhanced engagement, facilitated the rematerialization (Burgess and Nye, 2008) of domestic energy consumption and helped promoted some behaviour change. However, the extent of these phenomena seemed to be limited by the dominance, for some household practices, of what Silverstone et al. (1992) term the 'moral economies' of home and of discourses that draw on notions of 'home' as a place of comfort, care and safety. Focussing on the phenomenological difference between a 'house' and a 'home', we argue that this notion of home prevented participants in the trial from applying energy-consumption and energy-saving rationalities to those habits, routines and social practices that were core to its construction. This, we argue, limited the range of practices to which the feedback was considered salient and, therefore, restricted the range of domains in which behaviour change was able to occur.

Energy burdens of households, energy efficiency policies and residential segregation
Katrin Großmann

With the debate on social consequences of the German energy transition after Fukushima, attention has risen to energy cost burdens of low-income households in Germany. Despite an on average high quality and well-maintained housing stock, it has become clear that with rising fuel and electricity prizes, a growing number of households struggles with the burden of energy costs. In contrast to the UK context, the housing situation of energy-poor German households is underexplored. What is more, the relation of energy costs and residential segregation remains peripheral in both research and policies. The talk will provide insight into how energy deprivation in Germany is nested in the socio-spatial segregation of cities. First, it addresses the question how energy vulnerability is related to socio-spatial structures and types of housing. Second, it addresses the impact of residential mobility in household's adaptation to energy cost burdens. Given that the German housing market in cities is predominantly rental, the talk discusses what secondary effects might occur. Finally, the talk discusses how energy policies are part of this picture and what crucial points need more attention.

Changes in household energy consumption: discussion of a form of intervention
Luísa Schmidt, Ana Horta, Augusta Correia, Susana Fonseca, Henrique Pombeiro

In the last decade, energy became a central element of European policy, leading to a conjoint effort to establish an European strategy where energy efficiency is a central element. If for renewable energy production and GHG emissions Portugal is on track with

the European objectives, energy efficiency prospects are less clear. Some of the measures taken at the end of last decade were either interrupted or, at least, lost priority among political decision makers, mainly due to the financial crises, but also due to a clear change on the political guidance on this subject since 2011.
To all this we must add some profound changes that occurred in the energy sector. Some big utilities working on this area (energy production and distribution) have been privatized, the tax on electricity consumption increased significantly (from 6% to 23%) and market liberalization has started and is currently underway. These changes bring difficulties to many Portuguese families, not only related to the economic crisis, but also to the complexity of energy issues.
This paper aims at discussing the role that the introduction of smart meters in a sample of dwellings, together with the interaction between researchers and members of these households, can play in changing behaviors towards energy efficiency. To what extent can information bring about change? Is technology mediation necessary or even decisive? Or is direct interaction with each family context that can have a greater impact? Why strategies work better on some families than in others?

One collaborative consumption or many? On the potential spread of community-based consumption practices
Andreas Huber

Energy is not used for its own sake but is an "inconspicuous" outcome of mainly routinized, every day doings. Most current research is done on energy intensive practices and intervention strategies to change them. Instead, one might put more emphasis on the spread of bottom-up innovation that, reversely, holds the potential of bringing about *inconspicuous positive sustainability effects*. "Collaborative Consumption" (CC), that is forms of sharing, bartering, lending, renting, and gifting goods and spaces between citizens, is one such alternative consumption pattern which *not necessarily, but potentially* may lead to resource and energy savings. Recently, major daily newspapers have reported, sometimes euphorically, on community-based consumption practices such as clothes bartering, peer-to-peer car renting, community gardening, peer-to-peer tools lending or hospitality exchange. The Time magazine (2011) even claimed that CC is one out of 10 ideas that "will change the world". However, from a science point of view there is good reason to be sceptical about the rise of a new transversal collaborative consumer trend across different sectors and social milieus. One can expect very different elements, which hold different practices together and affect their potential spread. In particular, CC practices vary regarding their *community-intensity*. While some practices involve temporally extended community interaction with full ownership sharing of common assets (e.g. co-housing), others do not require any direct contact between peers (e.g. B2C car sharing). In my contribution I will further elaborate such conceptual reflections about the spread of CC forms, with a special emphasis on residential space sharing.

Session 5 - Innovations in practice, technology and change

Thursday, 5th June11:00-12:40 | Institute of Sociology, room 79

Chair: Çigdem Adem

The sociotechnical imaginaries of solar energy
Dagmar Lorenz-Meyer

While solar energy has been aptly described as a 'repressed technology' (Etzkowitz) whose potentials have been long relayed to an indefinite future, it has become an auspicious component of contemporary energy transitions. This paper explores the sociotechnical imaginaries (Jasanoff) of solar energy amongst policy makers, the

renewable energy industry, art-science collaborations, and civil society organisations in Germany and the Czech Republic. What dominant and alternative practices of nature and society, of energy self-sufficiency and interdependence, of users and transmission lines are currently articulated? What genderings and geopolitical positionalities are inscribed in these technoscientific imaginaries? And what technologies and bodies are relationally materialised in the ocular, auditory and haptic engagements of artists and other activists that contest energy's invisibility and might inform public engagement? In addressing these questions the paper contributes to making tangible the multi-sitedness and multiple speeds of the energy transformation in Europe. It also poses questions of responsibility that may get obfuscated when Europe is considered a global pioneer in energy transformation.

In the name of energy security: the struggle over the exportation of Israeli natural gas
Itay Fishhendler

Renewable energy technology (RET) is currently facing a multitude of barriers that hinders its effective integration into established energy systems. As a result, various advocacy mechanisms are often needed to market RET effectively, including the expression of geopolitical benefits associated with RET development, a tactic that is said to elevate the strategic power position of RET within the energy politics game. And yet, no studies exist that examine how, when and by whom geopolitical argumentation is constructed for marketing RET. This study addresses this research gap by way of publicized planning and parliamentarian protocols regarding the promotion of solar energy in the Israeli Negev Desert from 2001 – 2012. The study finds that RET is marketed through geopolitics as an enhancement of energy independency and as a platform for regional cooperation. Geopolitics was found to be voiced mostly in political venues by politicians following external and internal contextual events that hindered RET development. Many linguistic devices –such as narratives and simple binaries– are found to be used to justify the potential benefits of RET to decision makers, often through rhetoric grounded in power, ideology and geography.

Energy storage: hints of passage from the experimental to the application level
Giorgio Osti

According to a previous report (Energy storage: first socio-technical experiments in Italy and abroad, ESA Conference, Turin, August 2013), some important points emerged: a) the diffusion of energy storage (ES) is seen as a deus-ex-machina of energy transition and of renewable energy sources (RES), b) there is a great industrial ferment among companies involved on producing ES devices (accumulators, invertors, monitors and so on), c) indeed, we are still at level of ES experimental projects along four lines: c1) big batteries or condensers for high voltage grid, c2) about 50% are hydropower plants, especially pumped water systems, c3) community and single home storage systems are very few, c4) small attention is given to thermal energy storage; the business is seen on power storage also because of electric car. In this situation my research moves in the following directions 1) to verify if and how the energy final users are involved; the background approach is network and governance analysis 2) to verify if and how new cleavages or interest blocks of companies, experts, constituencies and regions have condensed around the ES/RES combination (energy regimes); 3) identification of the most promising experiments (institutional isomorphism). The case studies, conditioned by limited access to data, concern a big experiment of electric ES in Sardinia, a certain number of micro-hydropower plants in marginal areas, the raise of district heating system in contraposition with single house/building thermal storage boilers (the last field of research is developed with G. Carrosio, see abstract).

Production of renewable energy as a stimulator of social activity and entrepreneurship
Urszula Kurczewska

The paper presents analysis of renewable energy development in the European Union and in Poland and its impact on social activity, the job market and entrepreneurship. The data analysis shows the dynamic development of this sector despite the economic crisis in Europe. The steady increase of sales turnover and employment is evident. Germany is the leader in the renewable energy market. The increase in renewable energy production will enable the EU to cut greenhouse emissions, increase the security of energy supply, make it less dependent on imported energy and will encourage technological innovation.
A number of the EU member-states have struggle to achieve their ambitious targets of renewable energy share (25-50%) in the energy mix by 2020, some – try to achieve the minimum threshold (10-15%). In Poland the renewable energy share in final energy consumption is low (10,5%), the development of this sector meets a number law, administrative and political barriers and the production of renewable energy is based on the least effective technology of biomass co-firing. Even though Poland has a huge potential of renewable energy sector, there is a lack of instruments that can stimulate its development. The new regulations and other instruments in Poland can cause the development of green prosumer energy production, establishing local sustainable energy networks that will stimulate entrepreneurship, job market and development of small and medium enterprises.

Session 6 - Energy Participatory Citizenship – chances and barriers

Thursday, 5th June, Thematic, 11:00-12:40 | Institute of Sociology, room 81

Chair: Aleksandra Wagner

Shale gas in Poland: changing rules and composition of the collective
Agata Stasik

Technological innovation, to be successful, has to accompanied by various changes in social and institutional settings, which in turn influence what technology finally becomes in given time and place. This way, technologies and societies co-product each other (Jasanoff 2004). Starting from this point of departure, I am going to analyse most important changes in the Polish institutional and social landscape connected to the project of shale gas prospecting and possible future exploration we could observed so far: e.g. emergence of new citizens' groups (formal and informal), taking of new responsibilities by traditional institutions (e.g. regional authorities – Urzędy Marszałkowskie), and experiments with new forms of dialog / public engagement (Razem o łupkach participatory project, Porozmawiajmy o łupkach project), finally – changes in most relevant bills of law.
I will also address the question of how these changes may be evaluated from different perspective. On the one hand, we have strong normative arguments to support more broad and participatory mode of decision-making, often celebrated as a way to re-invent democracy (Callon at all 2009) in the era of growing significance of technologies transforming collectives. On the other hand, in the eyes of decision-makers efficiency is often highest criterion – new settings and arrangements are expected to ensure that the process will go smoothly. The two may be perceived as contradict or complementary. How to judge changes introduced in Poland from this two perspectives?

Critical dialogue: participatory policy modeling to promote collaborative learning in sociotechnical system thinking
Lai Fong Chiu, Alexandra Macmillan

There is increasing interest in participatory policy modelling using the system dynamics technique in areas such as transport, housing, health, and environment. The assumption is that a participatory approach can support stakeholder inputs into policy-making, contributing to policy problem identification and decision-making. There is also an implicit belief that this approach can promote public acceptance of polices that are intended to lead to societal change in habits and lifestyles e.g. around recycling and transportation. A review of literature suggests that while the concept of participation in policy modelling is gaining traction, much of the emphasis is on constructing models. There is little evidence that the dynamics of participation and modelling are themselves well understood. This paper presents the experience of a research team in carrying out a participatory system dynamic modelling project (HEW) that aimed to broaden the scope of UK energy efficiency policies by including Housing and Well-being. Using a critical reflection theoretical framework, and data from observations, informal feedback, and a formal collective reflective session, the participatory processes associated with each stage of the project were explored. This reveals that a participatory process may represent an opportunity to shed light on the complexity of sociotechnical systems. It suggests that meanings and purpose of participatory policy modelling were often in a process of negotiation. Careful attention paid to participatory design, procedure, and facilitation in policy modelling might all be of value to improving the quality of models constructed. The practical implications for co-learning, knowledge creation and/or transformation are discussed.

To debate, or to ignore and distort (and take a dire risk)?
Marcin Harembski, Tiffany Grobelski

Public participation and the Polish government's pursuit of nuclear power in 2008, Poland re-embarked on the idea of building its first nuclear power plant. The Polish government claims it has consulted major legal documents and that it is open to debating the introduction of this type of power into the national energy mix with the larger public, including with nuclear energy opponents. But has this been the case? This paper takes stock of activities undertaken by the Polish public authorities (and responsible entities) in this realm to date. It examines the extent to which such activities have contributed to a fair public debate on nuclear power. It also assesses the degree to which such activities have furthered citizens' indepth understanding of the versatile consequences associated with implementing a nuclear power program, in a country with high potential for alternatives to it. The authors showcase how the debate about nuclear power in Poland has been antithetical to the concept of participative democracy. They explore the ways in which the discourse emitted by Poland's powers-that-be distorts notions of public participation and how it is used for an already-fixed agenda. The two official information-education campaigns (run by the Ministry of Economy and by Polska Grupa Energetyczna, the appointed investor, state-controlled company) are analyzed. Furthermore, the Polish case is concisely compared with public participation processes in some OECD countries. In the final section, the authors brieflyconsider the possibilities, room, and likelihood for holding a nation-wide, veritable debate about anuclear-free and society-driven energy system for the future.

Perspectives on energy citizenships – understanding attitudes on renewable energy
Iiro Grönberg, Sari Janhunen, Kristiina Korjonen-Kuusipuro

The size and type of renewable energy project affect on public acceptance. Often, the lack of acceptance rises from landscape effects; disturbances to amenity or property values or unwanted land use. Transition to renewable energy technologies may change the traditional role of a customer. In microgeneration a consumer can also be a producer, which may affect on everyday lives and acceptance.

Decentralized renewable energy technologies have the potential to engage people with energy both economically and psychologically. Microgeneration can integrate energy with people's everyday lives, leading to more sustainable and more aware consumer behaviour, state known as energy citizenship (Devine-Wright, 2007).
In this paper the development of energy citizenship is studied by comparing three renewable energy cases in southeast Finland: two wind power plans and one non-commercial PV-project (photovoltaic). We look how local micro-scale PV-project and industrial sized wind power plans are accepted and treated in an area where renewable energy projects are still new. The ruling motives and underlying attitudes are analysed. How do people see energy efficiency and economics in different scales of renewables? How is economics connected to energy citizenship? The paper is based on qualitative analysis of interview material.
References: Devine-Wright, P. (2007). Energy citizenship: psychological aspects of evolution in sus-tainable energy technologies. In Murphy, J. (ed.) Framing The Present, Shaping The Future: Contemporary Governance Of Sustai-nable Technologies. Earthscan, London, pp. 63-86.

Session 7 - Energy transition: unravelling the buzzword

Thursday, 5th June, Thematic, 11:00-12:40 | Institute of Sociology, room 61

Chair: Ana Horta

What is energy transition? Implications for developing countries
Xavier Lemaire

This paper deals with the energy transition concept and its current realisation in the context of developing countries. It will focus on the transition in the electricity sector where an acceleration of the number of measures to promote the use of clean sources of electricity is taking place in most countries. This paper deals with the issue of what are the societal implications for developing countries of orientations which find their origins in industrial countries. Is energy transition understood and implemented in the same way as in industrial countries? Is energy transition really at the top of the political agenda of policy-makers, knowing that low-income countries may have other priorities than the reduction of carbon emissions? Or is it just another buzzword imposed by international aid organisations, which like most fashion in the international aid arena will vanish after a while? The question of environmental justice is central as clean energy transition measures like feed-in tariff could reinforce inequalities by benefiting mainly to the middle class leaving aside the poorest who do not have access to modern energy services at all. What are the mechanisms of inclusiveness to prevent the marginalisation of the poorest, knowing that clean energy technologies can be more expensive than conventional ones? Can new clean technologies reach massively the poorest? This paper tries to understand what is at stake under the concept of energy transition in the context of societies where corruption and poor governance are widespread.

Transition in crisis? Multi-level perspective theory and cultural political economy
Larry Reynolds

The impact of the 2008 financial crisis and its aftermath on the progress towards low carbon energy transition has become the focus of debate amongst theorists of socio-technical transitions (cf. van den Bergh, 2013). These debates consider the question of whether the economic-financial crisis might facilitate low-carbon transition - or derail it. For some, major systemic crises mark a period of transition between both techno-economic paradigms and regimes of accumulation. Furthermore, these pivotal points also mark a shift in from market to state coordinated agencies of technoeconomic development (Perez 2013). Indeed, the 2008 crisis came soon after the Stern Report

with its powerful framings of low-carbon transition in economistic terms and was soon followed by an Obama adminis-tration in the US entering office amidst talk of a Green New Deal. However the post-2008 techno-economic landscape bears witness to two key features. First, rather than the supersession of neoliberal financialisation, instead with we witness its apparent intensification. Secondly, the rapid growth of new technologies of unconven-tional fossil-fuel extraction have raised the prospect of an 'energy mix' that enables the retrenchment of incumbent fossil-fuel based sociotechnical regimes (Geels 2013). How can we understand the relationship between these factors? This paper brings together concepts from the regulation school of political economy, including regimes of accumulation, modes of regulation, plus more recent literatures around 'varieties of capitalism,' to rethink some of the categories of Multi-Level Perspective (MLP) theory in relation to the current period of economic and energy crises and transitions.

Energy transitions as societal transitions: where does modernity fit in?
Mattijs Smits

This paper reviews social science literature on energy transitions through the lens of 'modernity', based on the theory chapter of my recently finished PhD thesis on energy transitions in Thailand and Laos. It focuses specifically on four bodies of literature: socio-technical transitions, Ecological Modernisation Theory, (energy) practice theory, and political ecology. The review shows that assumptions and conceptualisations of modernity play an important role in the understanding of how energy transitions shape society and vice versa. While there are some important differences within and between these bodies of literature, a closer look reveals that some of the differences may be overcome by looking at the underlying concepts, assumptions and social theory.

Shaping of energy transition: examples of individual energy practices towards sustainability
Petra Waechter

Energy as the basis for daily activities on an individual level and for economic activities on a societal level gives fundamental importance to our lives. Therefore, individual decisions on the consumption of goods and services not only determine the energy use but also have impacts on the overall performance of economic structures. As economists point out that energy use and economic growth are mutually connected any change in energy consumption patterns influences the economic system of a society. The paper wants to draw the attention on individual innovations in the daily energy practice. More concrete, two examples of the field are further explored: one deals with practices related to space by analyzing possibilities that multifunctional settlements offer in the organisation of less energy intensive practices such as food cooperatives etc. The other example focuses on the demand side of energy by analyzing do-it-yourself examples of individual energy production such as self-made windmills. These two examples show that daily organisation of lives as well as the indepen-dence of a large energy infrastructure has large potentials for the shaping of energy transitions. The paper concludes that changes in behaviour towards a more sustainable energy use could be in opposition to the overall economic goal of economic growth and that they could be an incentive for continuative societal changes.

Session 8 - Energy demand, markets and innovation

Thursday, 5th June, Thematic, 11:00-12:40 | Institute of Sociology, room 60

Chair: Françoise Bartiaux

Another economy: towards a dialectics of energy and society
Thomas Seguin, Aleksandru Balasescu

The looming oil crisis, pollution, and climate change have pushed governments, corporations, and individuals to think of new policies, new objects/products and new manners to market them – usually under the label of "green economy" (or the shifting towards a sustainable economy).
The changes that are on the way as a result of the envisaged "green revolution" need a new broad vision that couples the economy of energetic techniques with the related socio-cultural economy that is induced by, and at the same time reciprocally influences, the mere technical transformations.
Based on previous analysis of theories of socio-technological change and putting at its center the concept of subjectivation in social sciences, this paper discusses a theoretical understanding of cultural changes and their relationship with changes in the practices of production, transfer and use of energy.
First part of the paper proposes a schema of subjectivation in triangulation, that links the biological level with the material culture and with the representational realm of normativities in our society. It will be developed through the example of electric vehicle. Through this understanding, second part deals with the modelisation of the three items as a processive energetic system by using the concept of expenditure of surplus. Within this frame, we show how disruptions in one of the poles of this model influences the others and bring about changes in the entire Anthropo-Social level. Third part proposes possible types of emerging subjectivities and advances the idea of extending the realm of consciousness to the energetical transfers and their potentiality.

Are financial markets a driver of energy transitions?
Jonas Grauel

The contribution discusses the role of financial markets in energy transitions. In the last decade, the idea has risen that institutional investors may push firms toward more ecological production processes and several NGOs with this aim have been founded (e.g. Ceres, CDP, GRI). The assumption is that there is a "business case" for firm environmentalism, since strong polluters run risks of being confronted with higher costs (e.g. through carbon pricing) in the future, and investors might add to this by asking risk bonuses or by shifting to 'cleaner' firms.
The paper discusses the extant literature on the links between firms and capital markets and argues for a need of a sociological framing. In the empirical part, answers of 34 firms in the energy sector (Oil & Gas recovery, Utilities) to CDP information requests are analyzed, in which risks stemming from carbon dependencies are discussed. These firms are multinational corporations involved in large scale, centralized, fossil-fuel based energy production. The analysis shows that 1) these firms present a wide array of measures (shifts in energy-mix, investing in renewables enhancing energy efficiency, political activity) to convince investors of their good risk-handling and 2) that answers show a high level of uncertainty regarding how to deal with future developments.
Two arguments are derived from the analysis: First, the deep irritation of incumbent energy firms about possible changes in the organizational environment shows that current energy systems are at a crossroads. Second, financial markets can only be a second-order driver for energy transitions, because the "business case" for clean investment depends on strict political regulation and high carbon prices.

Social aspects for the successful implementation of energy efficiency measures in the context of the CONCERTO initiative
Markus Winkelmann, Andrea Immendörfer, Volker Stelzer

The Europe-wide CONCERTO initiative aims at the improvement of energy efficiency and the increased use of renewable energy sources at neighbourhood scale. Since the start of the initiative organised by the European Commission in 2005, 58 pilot projects in 23 European countries are realized until 2015.The paper summarizes and structures the experiences reported by the projects to the accompanying research group CONCERTO premium. The focus is on non-technical aspects like barriers and success factors gathered by a survey among CONCERTO project coordinators and concerned stakeholders. The experiences made in the context of the numerous energy related interventions regarding stakeholder acceptance, involvement and participatory

approaches are analysed to identify social factors relevant for the successful implementation of energy related measures. The varying regulatory framework conditions as well as differences across Europe e.g. in climate, infrastructure, cultural habits, local discourses hinder direct comparisons but at the same time offer a variation of contextual variables that help to identify more general success factors. The consideration of these factors can help future interventions to bring forward a sustainable energy transition.

Electricity overloads and the 'last-mile' transformation
Isabel Shaw, Ritsuko Ozaki

We use more and more electricity these days: our daily lives are increasingly supported by consumer and domestic electronics, such as mobile phones, tablets and Internet hubs. Similarly, our societies are expecting radical changes in heat and transport services: long-run scenarios of low carbon futures often envisage a large role for domestic electric heat-pumps and vehicles. As a result, the local electrical distribution could become heavily loaded. Remedying this physically, however, by measures such as digging up the roads and laying new cables, will be disruptive and expensive. The challenge is to re-engineer the way in which the 'last mile' assets (wiring into customers' premises) are used without changing the most expensive part: the cables and pipes in the ground. One possible solution is to relax voltage quality, as cables in the last mile tend to be overloaded *not* thermally, but by voltage dropping outside the permitted range. Our UK-wide research project investigates new approaches to voltage regulation and studies social acceptance of changes in service and energy provision. Using the first phase of this research, this paper discusses how the problem of electricity overloads and high carbon emissions is conceived of by engineers. We will present our findings from interviews with engineers who are involved in the project, exploring their assumptions about socio-technological provision and usage. This includes an analysis of how transformation processes in energy systems are understood and configured.

Interrogating the World Bank's Energy Policies in Developing Countries – Case studies of Energy Development in South Asia
Sam Wong

The World Bank is one of key global players in shaping climate strategies. Its influence is measured, not simply by its massive annual investments in climate policies, but also by the substantial numbers of developing country partners involved in the decision-making process, as well as the intricate politics it has been engaging at the global, national and local levels. The Bank has constantly been wrestling with the mitigation and adaptation policies around its core poverty reduction agenda. The tension, caused by the 'controlled' participatory approaches, is also a strong driving force for the Bank to innovate its climate change strategies in order to accommodate the expectations of external donors and the needs of poor local communities.

This paper aims to offer a conceptual understanding of how the Bank comes up with climate policy innovations by juggling competing agenda of sustainable development, poverty reduction and social empowerment. It draws on the Bank's rural renewable energy development in India and Bangladesh as case studies and examines how the Bank's 'Design Principles' for renewable energy in South Asia achieve innovative dynamics, while facing tremendous obstacles in ensuring pro-poor outcomes.

The Bank's 'Design Principles' for renewable energy in South Asia include: using localised renewable energy supplies, applying sustainnable technology to provide renewable energy, promoting decentralisation policies in governing energy services, and building partnership with the private sectors and NGOs in service provision.

Drawing on interviews and participant observations, this paper argues that the underlying economic assumptions of 'Design Principles' place too much emphasis on the strategic choice for renewable energy investment. They, however, pay inadequate attention to the cultural norms that shape people's preferences for energy sharing and complex politics that mediate local energy consumption. A lack of participation of NGOs and local communities in shaping the Bank's investment strategies also undermines the effectiveness of its renewable energy policies in the long term. This paper urges the Bank to

re-examine the intricate relationships between energy, poverty and climate change, and to understand how climate policy innovation requires a more robust design that takes local contexts and politics into account.

Session 9 - Public acceptability: implications for energy system transitions

Thursday, 5th June, 14:30-16:10 | Institute of Sociology, room 79

Chair: Luísa Schmidt

Citizen's perception of the German energy transition – the aspects of acceptance and participation
Marco Sonnberger, Michael Ruddat

Infrastructure projects in the energy sector (e.g. wind power plants, power lines) are often accompanied by public protest by local residents. Key to the success of such projects is the involvement of citizens at the offset. Participation of citizens is therefore often seen as a prerequisite for acceptance of these infrastructure projects. This becomes especially relevant in the face of the German energy transition, which poses an enormous challenge to all parts of society (researchers, policy-makers, citizens, companies) in the next 50 to 100 years. This therefore raises a number of questions: What are adequate means of participation in the energy sector? What are citizen's demands on opportunities for participation during the German energy transition? What is the relationship between acceptance and participation? Is participation always followed by acceptance? In this paper, we present results exploring such questions, which aim at the nexus between participation and acceptance of the German energy transition. The results are derived from six focus groups with people affected by the German energy transition in different ways (homeowners, tenants, energy poor households).

Factors explaining Czech public (un)acceptability of energy policies
Iva Zvěřinová, Eva Kysela

The current development in energy sector raises several safety and environmental risks. Implementation of effective policies could contribute to reduce these risks. However, to achieve the policy goals, such as provision of environmentally friendly, reliable and safe power for reasonable price, the policy instruments should be social acceptable.The objective of this paper is to analyse the public acceptability of proposed energy policies and policy instruments in the Czech Republic. The particular objective is to examine the effects of socioeconomic status and social structures and to identify attitudes (including perceived fairness, effectiveness and consequences of policies), knowledge, and norms related to different energy policies. This paper begins with literature review on acceptability of policies. Further, it presents a new theoretical framework that draws on the structuration theory and the Value-Belief-Norm theory. Concerning the methodological approach, a mixed method design is used. The quantitative analysis of data representtative for the Czech Republic is carried out. The understanding of the issue is deepened based on results of a qualitative survey conducted in the Czech Republic. Finally, quantitative and qualitative data are jointly analysed and interpreted.

Geothermal energy and its social acceptance in Turkey
Çigdem Adem

The use of geothermal energy increases in recent years as a source of renewable energy. Geothermal energy is one of the safest and most sustainable renewable energy sources available; it has no seasonal variation immune from weather effects and climate change impacts. It produces negligible or no greenhouse gases and it is compatible with

both centralized and distributed energy generation. It is a domestic source independent from external markets. Barriers to deployment include high capital cost, resource development risk and lack of awareness on geothermal energy.
Turkey ranks 4th in geothermal direct use worldwide following China, US and Sweden and it ranks 12th in geothermal electricity production (IEA, 2010). Further, Turkey is among the six European countries owning geothermal steam resources, along with Iceland, Italy, Greece, Portugal (Azores), Spain (the Canary Islands).
The implementation of renewable energies and the transformation of the energy system are influenced by different factors, one of which is assumed to be public acceptance (Ekins, 2004). Public or social acceptance is defined (Wüstenhagen, Wolsink and Bürer, 2007) as a combination of three categories, socio-political acceptance, market acceptance and community acceptance. The attitude towards renewable energies is shaped on the one hand by deep-rooted cultural and ideological identities and on the other hand by changing forms of information. As a source of information on renewable energies the role of mass media is significant. First of all, mass media sets emphasis on certain stories; hence structures the public debate with perspectives and viewpoints. Secondly the way mass media presents information influences the public perception (Heras-Saizarbitoria, Cilleruelo and Zamanillo, 2011). After briefly setting the scene of the past, current and future use of geothermal energy in Turkey, the study will focus on the social acceptance of geothermal energy in Turkey via media analyses on regional and national media. Positive and negative social acceptance factors will be analyzed in depth. The study will depict the main factors that influence the social acceptance of geothermal energy in Turkey.

Explaining public attitudes, protests and acceptance towards renewable energy sites
Ulf Liebe, Geesche Marie Merkle

Based on data from a large-scale web survey (N=3,400) carried out in Germany in 2013, we investigate citizens' attitudes, protest intentions and acceptance regarding the construction of new power plants using renewable energy sources. We differentiate between wind energy, solar energy, and biomass; natural gas is used as a comparison category. Public attitudes refer to perceived costs, landscape and environmental effects and the overall usefulness of the energy sources. Protest intentions and acceptance are measured regarding the construction of new power plants within 10 kilometres of respondents' place of residence. Attitudes, protest and acceptance are explained by several determinants such as perceived exposure to power plants, attitudes towards climate change, social norms, not-in-my-backyard, conditional cooperation, and free riding. As a novelty, we use geo-coded data on respondents' place of residence which we link to respondents' exposure to renewable energy sites using a geographic information system. Our results show more positive attitudes, less protest intentions and a stronger acceptance toward solar energy, followed by wind energy, biomass and natural gas. Yet solar and wind energy are valued much more positively than biomass and natural gas. The attitudes are strong predictors for protest intentions and acceptance. We also find significant effects for perceived exposure to power plants, attitudes toward climate change as well as not-in-my-backyard beliefs and mixed evidence for social norms, conditional cooperation, free riding as well as objective exposure to power plants. It is noteworthy that some determinants are more useful in explaining protest intentions and others in explaining acceptance.

Session 10 - Future visions

Thursday, 5th June, 14:30-16:10 | Institute of Sociology, room 80

Chair: André Schaffrin

Nuclear power and the public: what do we know now, what might we know in the future?

Caroline McCalman

There have been various international studies examining the issue of public acceptance of nuclear installations (civil, military, power plant, waste reprocessing, geological disposal facilities etc.). A critical review of current literature will be presented, with the aim of understanding international and cross-cultural discursive trends in public acceptance of nuclear power, as well as those discourses which are more context-specific. A specific focus is to understand how the various discourses surrounding nuclear power, and its reframing into a sustainable energy option, have influenced public acceptance of the technology in the UK.

Key themes to be presented will be:

The failure of traditional methods employed by government and the nuclear industry for raising understanding and acceptance of nuclear power; the 'information deficit model' (Owens & Driffill, 2008) has been questioned for many years by social scientists but simplistic forms of it still seem to be the accepted modus operandi;

The conflict between expert/lay understanddings of risk, expert/lay descriptive languages and the resultant distrust and suspicion felt by lay-people towards 'experts' in this field.

I will conclude with a brief outline of my continuing research into these topics and a discussion of suitable methods for this type of study. The uniquely interdisciplinary nature of this project, involving both social sciences and engineering faculties, will bring a well-rounded approach to the extremely topical issue of public acceptance of nuclear power.

Owens, S., & Driffill, L. (2008). How to change attitudes and behaviours in the context of energy. Energy Policy, 36(12), 4412–4418.

Community energy transitions: we are ready to go but who are we and where are we off to

Anna Krzywoszynska, Jose Mawyin

The term 'community' plays an increasingly important role in energy transitions policies and discourses in the United Kingdom and elsewhere. On the one hand the interpretative flexibility (Walker et al 2007) and moral weight (Mason 2000) of the term 'community' allow diverse groups to pursue their strategic interests under a shared banner. On the other, the spatial and political consequences of linking 'energy' with 'community' can be disabling rather then enabling of distributed energy schemes (Bridge et al 2013). In this paper we explore the tension between the 'process' and 'outcome' dimension of community energy schemes (Walker and Devine Wright 2008) through the case study of Stocksbridge, a town in the North of England. An analysis of the debates around the desirability and legitimacy of diverse local energy schemes shows the pulling power of 'community' as a political motivator, but also the way in which it can limit options for the exploitation of available renewable energy resources.

Converging visions – converging systems? The electric vehicle and its role in the transition towards sustainable energy systems.

Alexander Wentland

Is the electric vehicle inspiring the imagination of engineers and policy-makers again? After its brief success in the early history of the automobile and various failed attempts to bring it back throughout the late 20th century, the electric car has re-emerged as a main concern in recent national innovation policies. Using empirical material from Germany and the United States, I will argue that the future of electric mobility will not be decided on the basis retail prices or driving ranges, but instead on the convergence between mobility and energy. Energy systems in transition increasingly rely on storage capacity as well as intelligent grid management. Recent pilot projects show that electric vehicles could be used as part of the energy grid, buffering high and low peaks in the supply from renewable sources (Vehicle-to-Grid). The vision of the electric car has shifted from a mere substitute for conventional vehicles to a much broader concept in which it plays a key role in the transition towards sustainable, decentra-

lized, and more autonomous energy infrastructures. As a consequence, new players such as energy and electronics companies have entered the field, trying to bypass the technological lock-in that has stabilized the auto industry for decades. But even in their boldest scenarios, societal aspects of this convergence, although they are often implied, are mostly being neglected. In my analysis, I will examine the proposed types of imagined futures, their social implications, how they are being negotiated, and how some of them might pave the way for an interlinked transition of mobility and energy systems.

Energy transition based on a virtual power plant of 42 Hungarian settlements
Béla Munkácsy, Gábor Csüllög

Discussion of future energy technologies and socio-technical systems typically happens at some remove from the messy local places in which the changes constituting a transition have to occur. The sociology of expectations literature, which has considered the role of existing discourses and practices in informing future visions, can be used to illuminate present discussions of future energy transitions and the role of particular technologies in them. Yet this literature too operates away from the places where transitions have to be materialised, focusing upon institutional and policy environments. In this paper, we engage critically with both discussions of energy transitions and with the literature of the sociology of expectations, in exploring what happens when future energy transitions are envisaged, articulated and materialised in a specific place. For a year and a half a group of academics and a group of residents from the neighbourhood of Steel Vale have been jointly constructing energy futures of the town. In analysing their work we draw on the sociology of expectations to understand the ways in which the past of the place – as discourses, practices and material surroundings – are manifested in their shaping of visions of energy futures in the neighbourhood. From the water power in the valley that once powered the beginnings of Steel Vale's place in the industrial revolution to the new wind turbines, the past inflects and shapes discussion of energy futures in ways which are at once specific to the locality, and which cross-cut more abstracted visions and scenarios of energy futures, and the sociology of the expectations underpinning them.

Session 11 - Conceptual approaches to energy transition research

Thursday, 5th June, 14:30-16:10 | Institute of Sociology, room 61

Chair: Giorgio Osti

Energy transition and democracy: Is there an empirical relation?
Jens Marquardt

Energy transitions towards renewable energy in Europe and elsewhere are often associated with bottom-up processes, environmental movements and democratization. Contemporary social science literature draws a line between an energy transition towards small-scale renewable energy applications and democratic factors such as people participation, civil society activities and public pressure from local initiatives. Yet, the relation between the democratic constitution of a country and the development of its energy regime towards renewables is still unclear. Therefore, this paper raises the following question: What is the empirical relation between efforts for renewable energy support and the level of democratization of a country? This paper argues that there is a significant relation between both variables, because a strong democratic framework works as an enabler for shifting the energy regime and is a prerequisite for promoting decentralized energy supply. However, energy transitions are complex societal changes that cannot be explained solely with democratic factors. The paper provides a global empirical overview on the relation between various indices of

democratization (Bertelsmann Transformation Index, Economist Democracy Index, Freedomhouse Freedom in the World) and a set of indicators that are widespread used for describing a transition towards renewable energy systems (policies in place promoting renewables, increase in renewable energy share in primary energy/electricity, long-term targets for renewables), although renewable energy reflect only one part of an energy transition. This paper aims to foster a discussion on the democratic function of an energy transition and their relation.

Understanding household energy transitions in developing countries. Review of existent approaches and potential contribution of a quasi-evolutionary socio-technical perspective

Willington Ortiz, Julia Terrapon-Pfaff, Carmen Dienst

Energy transitions at household level are central issues for advancing towards sustainnable energy systems in developing countries. Promoting the diffusion of convenient technical innovations has been the key strategy of several initiatives and programs since more than four decades. Although advances are noticeable, they hardly compensate the pace at which the challenge is growing. According to IEA [1] 38% of the world population relied on traditional combustion of biomass for cooking and 18% did not have access to electricity in 2011.

Scholars from different disciplines have been addressing the problem and proposing analytical models to understand the drivers and dynamics of household energy transitions. What can these analytical approaches contribute to the endeavour of reaching universal access to 'modern' energies? And what can be learned from recent advances in understanding socio-technical transitions as a quasi-evolutionary process?

The present study addresses these questions by reviewing scientific literature devoted to household energy transitions in developing countries. Central hypothesis, main drivers and mechanism considered to explain the transition process are identified. The practical consequences (e.g. in form of advice for policy making or program design) that emerge from each of these analytical approaches are investigated, while concurrently, critics and limitations of the analytical frameworks are identified. Finally, the study explores how a quasi-evolutionary perspective can be applied to household energy transitions and which options can emerge from such an analysis.

[1] International Energy Agency (IEA), 2013: World Energy Outlook 2013. International Energy Agency, Paris, France.

Exploring the personal and organisational influences on workplace energy use: preliminary results from a mixed methods survey conducted within an industrial work environment

Llinos Brown

In the coming decades, the way we produce, distribute and use energy will need to change if we are to meet future energy challenges. Approaches aimed at changing lifestyles and creating new technologies are being developped which include both social science and technological approaches, such as investing in renewable and low-carbon energy sources and improving energy efficiency.

Focusing specifically on the way energy is used, there is an established body of literature on domestic energy use while work environment energy use has received less attention. Within the literature on work environments, the main focus has been on the more technical side of energy use, such as efficiency of equipment and energy management systems rather than taking a more user-centred approach. This paper will contribute to this gap in the literature by highlighting the need to focus on both the social and technical aspects of energy use within work environments.

This paper takes a view that to change how we use energy and sustain any behavioural change, an understanding of current energy practices is needed. Established research has found that tailoring information has greater success in sustaining behavioural change when compared to other intervention techniques. This paper will detail research conducted in the context of an industrial work environment case study. It will take an energy cultures approach to gain an understanding of how and why employees use energy and discuss preliminary findings highlighting the different organisational and personal influences on energy use.

Challenges and opportunities of action research approaches for an emerging energy paradigm
Andrea Capaccioli, Giacomo Poderi, Matteo Bonifacio

For centuries energy has been a driver of social change and changes in energy paradigms have always had influences over several social and political dimensions. With the development of smart energy grids, we are now facing a shift from a centralized one-way distribution model to a decentralized and bidirectional one. This trend, linked to the integration with renewable energy resources, is just emerging. Here, ICT is a tool for the optimization of energy allocation, in a broader model where end-users are driven by economic motivations. This transactional approach hinders the potential encased in social systems. The empowerment of local communities, new social groups and the transition to a distributed energy production, can foster a shift to systemic approach, where the economic motivations of the end-user are just one among many others. We suggest that understanding and supporting this transition is possible by working with an action research based approach, built on an iterative feedback loop. This presentation will provide an overview of the needs, the challenges and the potentialities of this approach, by reflecting on CIVIS research design: an early stage EU/FP7 funded project that aims at CO2 emissions reduction through the development of a complex socio-technical system which envisages citizens' active participation in the energy value chain. CIVIS will adopt a participatory action research approach in two test sites (Italy and Sweden). The local communities and the energy stakeholders will be involved in this method, to achieve a more sustainable society and to enhance smart(er) cities.

Infrastructural change and the dynamics of practices and energy demand
Elizabeth Shove, Matt Watson

This paper will explore how urban infrastructures intersect with the patterns of demand which they enable and on which they depend; and to argue that patterns of demand for energy are, in turn, related to the demand for services (heat, light, mobility, etc) required in order to accomplish the practices through which people accomplish their daily lives. Those practices – for example of showering, laundering or commuting – are enabled and shaped by the existence of interleaved infrastructures of supply. In short, infrastructures of supply constitute, as well as serve, demand. Our discussion will draw on research into the co-evolution of the place-specific patterns of infrastructural provision with changing practices that have implications for energy use, in two case study urban locations in the UK. This research links historical material and expertise with more contemporary sociological and geographical analyses, doing so as a means of tackling fundamental questions about how identifying and exploring possible openings and pathways for future adaptation and configuration, both of infrastructures and practices.

Session 12 - The shaping of domestic energy demand

Thursday, 5th June, Thematic, 14:30-16:10 | Institute of Sociology, room 60

Chair: Matthias Gross

How does home ownership status and the type of property occupied, affect domestic energy consumption practices? In the UK, domestic energy
Thomas Roberts, Tina Balke, Maria Xenitidou, Nigel Gilber

In the UK, domestic energy consumption accounts for over a quarter of total CO2 emissions (Energy Saving Trust, 2012). However, energy use differs significantly between different types of household. For instance, on average people living in a flat use 1,324 kWh less of electricity per year than those living in a detached house. Furthermore, people who

own their own homes have far more control over the energy efficiency of their homes compared to people in rented accommodation. For example, homeowners can install insulation or microgeneration technology and chose more efficient appliances, whereas tenants generally have to accept the appliances provided by their landlords, and are unable to make physical improvements to their homes. This paper uses data collected through a series of interviews around people's homes to identify energy intensive existing and emerging practices, compare how they differ according to type of property lived in and ownership status and discuss them in light of the challenges presented by domestic energy consumption levels. As a second step, these identified energy practices and the household carriers performing them will then be translated to a computational model. In the model, the households as carriers of practices and the practices themselves will be presented as agents that have the properties (e.g. property type) identified by the interviews. The computational model will be used to gain a better understanding of the dynamics of social energy practices and to analyse different practice and policy scenarios. This paper will discuss conceptual ideas about the model.

Change in domestic heating practices-different representations already exists
Johanna Matzat

The german "Energiewende" is an ambitious project involving transformations at all societal levels. Almost 30% of final energy is consumed by private households, of which nearly two thirds are used for space heating. Hence, the question arises: how can everyday heating be transformed into a less energy-consuming activity?
To learn more about such transition processses in household settings, a practice approach is deployed (Reckwitz 2003) as theoretical framework.
Social practices are knowledge-based performances each of which can be described as a specific configuration of three elements: materials, skills and images/meanings. Change of practices reflects modifications in the composition and/or integration of these elements in practice-performances. Hence, this gives rise to various means for transitions in practices.
To gain a better understanding of mutability, adaptability and stability of everyday heating practices two cases were examined: heating in so-called smart homes and in passive houses. The database consists of: 1. extensive interviews with residents of these two dwelling types (in Hamburg), 2. interviews with experts from the building and energy Industry, and 3. observations in smart homes, passive houses and during information events.
It became apparent that despite fundamental alteration in technology and knowledge, previous heating habits are often still retained because action-guiding ideas/meanings change more slowly than the other elements of practice do. If practices are to be changed more wholesale and with a long-lasting effect, then conscious co-intervention to all three components is required; above all new stories of warming and heating have to be told and spread, and also new images and conventions around coziness, warmth and comfort have to be created.

Differences in household's possessions in electrical appliances
Mette Hove Jacobsen

In the article, I quantitatively examine consumption clusters based on systematic differences in households' possession of electrical appliances, which is of major interest when understanding households' electricity consumption. In order to do this, I introduce a methodology to analyse the development of different types of consumption patterns, followed by analysing cross-time changes in these patterns over the last 20 years. I model the likelihood of belonging to each of the consumption profiles as a function of households' demographic and socioeconomic characteristic and offering a systematic cross-time analysis of socio-economic correlates of consumptions profiles by mapping the relations among different consumptions profiles.
Sociological research has repeatedly demonstrated how consumption patterns in general reflects dimensions of inequality and how hierarchies of (life)style and taste reconstruct and challenge social cleavages as e.g. gender, class and education. Overall this article adds to empirical studies that analyses consumptions profiles and inequality (as the

capacity of a household to maintain a particular standard of living). It provides knowledge about how technologies are used and how these cohere with differences in households' demographic and socioeconomic characteristics. As a result this article provides a social hierarchy of electrical appliance ownership based on 2,000 households answering questions about possession and use of electrical appliances at home, conducted every second year over the last 20 years.

Out of control, out of the question? Views on perceived control in domestic demand side response

Michael J. Fell, David Shipworth, Cliff Elwell, Gesche M. Huebner

Domestic demand side response (DSR) programmes aim to influence electricity consumption patterns in homes. They are expected to become more common in the UK as they allow existing infrastructure to be used more efficiently and permit higher penetration of variable renewable generation. Research into the public acceptability of such programmes has highlighted loss of personal control as an area of concern for some people, especially in DSR programmes that involve direct load control by a third party (such as a utility).

This presentation is based on the findings from four focus groups set up to explore in depth the issue of people's perceived control in DSR. Participants were selected from sectors with characteristics expected to be relevant to perceived control over energy use. These included tenants/owners; people with district heating; people with time-of-use tariffs; and people with gas/electric storage heating. In each group a range of DSR scenarios were discussed. Preliminary analysis indicated that people differ substantially in the existing level of control they perceive they have over energy use; in what they most want control over (e.g. money, flexibility, time, their autonomy); and in what affects whether they feel in control (e.g. levels of choice, information, predictability, trust). Reasons for these differences and their implications are considered.

Future work aims to provide insights and guidance for the development and targeting of DSR programmes that increases their acceptability to people, thus maximising the likelihood of participation and therefore value to networks.

Comfort as an everyday practice

Line Valdorf Madsen

Comfort is a much discussed perspective within research on energy consumption in buildings. The notion of comfort has to a high degree been standardized within engineering research and the building industry. Comfort has been perceived as an attribute of the build environment and as such as something not affected by human practice. A newer perspective in building and energy research approaches comfort as something that can be achieved in a relationship between the building features and human practices, and within socio-technical research elements of cultural and social practices has been underlined. However, the question of what comfort is, in a social understanding, still remains.

How do users perceive comfort in their dwellings and what does the notion of comfort actually mean to people? Can comfort be 'practised' and if so, what are such 'comfort-practices'? This research reflects on these questions by analysing data from a qualitative study in Danish dwellings within a practice theory framework. The qualitative data are furthermore compared to measured data on the actual heat consumption in the dwellings, to explore how users' perceptions of comfort are related to their actual consumption of energy. The point of departure for the study is that our comfort in dwellings must be approached as a part of our practising of home and everyday life. But what kind of everyday activities are related to comfort – and how does such practices and perceptions differ within housing typologies and different users.

Session 13 - Energy poverty and environmental justice

Thursday, 5th June, 16:30-18:10 | Institute of Sociology, room 79

Chair: Çigdem Adem

The emergence of energy poverty as a policy issue: a French-German perspective
Ute Dubois, Ines Mayer

Throughout Europe, energy costs are a concern for many households who are faced with increasing energy budgets in a context of economic stagnation. The most vulnerable populations and particularly those people who live in badly insulated homes are increasingly exposed to problems related to energy, ranging from difficulties to pay for their basic energy needs to situations of severe energy deprivation where they live in cold homes. These various difficulties are generally qualified as situations of fuel poverty or energy poverty. But whereas the UK has been using an official definition of fuel poverty for over a decade, in other countries, there is still a lack of consensus on the existence of energy poverty and/or on what energy poverty really is. France has adopted an official definition of "energy precariousness" in 2010, but there is still much debate on how to measure it. And in Germany, there is still no official recognition of the phenomenon, despite symptoms of energy poverty that are more and more visible.
To understand the diversity of approaches concerning a same question, we propose to analyse the emergence of the topic of "energy poverty" form the point of view of the social construction of policy issues. We discuss the context of emergence of energy poverty as a topic of public debates in France and in Germany and in particular the relations of the concept with larger debates including energy market liberalisation and the energy transitions of both countries.

Different constellations of fuel poverty – the combined effects of physical infrastructure and patterns of behavior
Anna Wolff, Johannes Schubert, Michael Schneider, Bernhard Gill

Our paper concentrates on potential trade-offs between environmental- and climate protection on the one hand side and social policy matters on the other, especially in the realms of housing and ecological modernization. While rising energy prices and the modernization of buildings pursue ecological preferable goals, unintended side effects like increasing utilities or rents primarily affect low-income households. This becomes especially visible in the case of fuel poor households which are examined in more detail in our analysis. Thereby, the question of how physical infrastructure (e.g. building type or heating system) and household-specific socioeconomic peculiarities (e.g. household size, education, health, or income) interact occupies center stage. In a first step, and using self conducted data (N = 2160) from Munich (Germany) and Bolzano (Italy), structural constellations fostering fuel poverty are identified, e.g. large living space per capita combined with low income. In a second step, and based on qualitative interviews conducted with fuel poor households as well as experts (e.g. working at specific advice centers for (fuel-)poor households) in Munich, it is tried to gain deeper insights into daily routines and coping strategies of fuel poor households. Special focus is given to the interaction between building characteristics (e.g. age, heating system) on the one hand side and the socioeconomic status and conduct of the household on the other. We conclude with a typology of fuel poor households, taking both factors into account.

The energy-justice paradigm: a conceptual approach to energy poverty in Belgium Charlotte Luyckx, Nathalie Frogneux, Rosie Day, Christophe Vandeschrick, Françoise Bartiaux

Discussions of who is "fuel poor" in the UK are often centred on older age groups due to their distinctive health, social and financial situations. The policy definition and dominant representations of fuel poverty can obscure the range of experiences of older people and the complex and dynamic ways in which a situation of fuel poverty may be more or less visible in their everyday lives. Current programmes of support, it is argued are struggling with the diversity and complexity of the situations in which older people are living, particularly at a time of rapidly changing housing, welfare and energy policy. This paper draws on ethnographic work with community organisations working to tackling fuel poverty in England and interviews with residents who have been engaged with these organisations. This paper seeks to make visible the lives of older people trying to keep warm at an affordable cost.

Multidimensional nature of energy poverty in Slovakia: access to energy, vulnerability and impacts
Richard Filcak, Daniel Gerbery

Although generally missing in the mainstream definitions of poverty, access to energy has become its increasingly important aspect, representing one of its constituent elements, and significantly influencing a full-pledge functioning in the society. It is both cause and effect of poverty. Finacial and social barriers in access to electricity and other fuels may result in deep deprivation accompanied by damaging impacts on health, work ability or social participation. In our presentation we start with the brief overview of concepts of energy poverty, problems of definitions and indicators, and we discuss results of empirical analysis indicating the scope of the problem, vulnerable groups and impacts of the problem in the Slovak Republic. As we illustrate with statistical data, expenditure on energy represents a significant proportion of the total net expenditure of Slovak households resulting into significant incidence of the inability to pay for electricity and other fuels. Our aim is to identify key factors which determine whether household face problems with access to energy or not and evaluate size of its impacts and regional variation. Attention is also paid to the context (i.e., asymmetry of distribution of resources, changes in energy market) within which energy poverty comes to the play. In conclusion we discuss data gaps, methodological problems with the conceptualization of energy poverty and possible definitions, and outline analytical and public policy challenges and further research needs.

Double vulnerability: A case study of households' energy burden in the residential and mobility sector at the city level
Marie Sevenet, Patrice Nogues, Elise Nimal, Ines Mayer

This paper proposes an innovative methodology for the analysis of households' double vulnerability by applying a novel indicator – the Low-Income-High-Costs indicator [3, 4]. In its original version, this indicator only deals with residential energy expenses. We propose to adapt the indicator in order to include mobility energy expenses. Based on this methodology, we carry out a case study of double vulnerability in a French agglomeration. In this case study, energy demand and expenses for dwelling and transport are modeled at the household level, taking into account technical and localization aspects. Then, data on households' income are included in order to determine the number of vulnerable households at the urban district level.

Session 14 - Approaches to understanding acceptability

Thursday, 5th June, 16:30-18:10 | Institute of Sociology, room 81

Chair: Luísa Schmidt

'Monsters' in the quiet landscape: Perceptions of wind farms in rural settings
Filipa Soares, Ana Delicado, Elisabete Figueiredo

Over the last decade, wind energy has grown impressively in Portugal, mainly due to strong political support and economic incentives. It is the second most important source for producing renewable energy in the country, with more than 250 wind farms currently installed. To maximize wind potential, most of them are located in mountain areas and remote rural regions, with impacts over both the landscape and the socio-economic fabric of communities, which have undergone several (sometimes dramatic) changes since the middle of the twentieth century. This presentation aims to analyse the perceptions of wind energy's impacts at the local level, based on a particular case study: Terras Altas de Fafe Wind Farm (Fafe and Celorico de Basto municipalities). It will be focused on the discourses of institutional agents and local residents through the analysis of a wide range of sources (interviews, official documents, newspaper articles, and websites). Results suggest that while turbines are perceived as symbols of "the 21st century" in eminently rural settings, some disadvantages are frequently mentioned, namely the disfigurement of the landscape (they are often called "monsters", recalling Douglas' concept of anomaly), injustices regarding profit sharing, impacts on local communities' wellbeing and perceived health issues. This work is part of the research project "Socio-technical consensus and controversies about renewable energies", funded by the Portuguese Foundation for Science and Technology (PTDC/CS-ECS/118877/2010), and carried out at the Institute of Social Sciences (University of Lisbon), in collaboration with the University of Aveiro and the Centre for Research in Anthropology.

Bioenergy conflicts and solution– a global review
Marika Makkonen, Suvi Huttunen, Mikael Hildén

The use of bioenergy has been seen as one of the ways out of a society dependent on fossil fuels. Bioenergy projects are, however, increasingly facing conflict situations around the globe showing that this energy transition is far from easy. In this paper we review bioenergy conflict cases reported in scientific literature in order to identify salient features of the conflicts. Our particular focus is on collecting information about factors that have induced or escalated conflicts associated with biofuels and bioenergy and on possible solutions to these conflicts. We compare the findings to the conflict literature concerning the use of other natural resources with the purpose of discussing what distinguishes bioenergy conflicts and what can be learned from general approaches to conflict management and resolution. Based on the findings we provide a typology of the numerous challenges that bioenergy is facing today both in developing and developed countries. We use this typology to examine in particular the role of private companies in the conflicts that emerge in different parts of the bioenergy value chains and also their role in managing the conflicts. Finally we discuss critically the potential role and usefulness of social sustainability criteria in avoiding or managing bioenergy conflicts that can emerge in efforts to achieve energy transitions towards bioenergy.

Understanding public perspectives on energy system transformations: the importance of what lies beneath
Christina Demski, Catherine Butler, Karrin Parkhill, Alexa Spence, Nick Pidgeon

In this paper we assert the importance of reframing debates around public acceptance and energy transitions in terms of values and a 'whole-system' lens. This assertion is based on findings arising from a major research project examining public values, attitudes

and acceptability with regards to whole energy system change using a mixed-method, interdisciplinary approach. Through the research we explicate a 'social' value system associated with desirable energy futures in the UK, where the value system represents identifiable cultural resources people draw on to guide their preference formation about particular aspects of change. The identified 'value system' provides a basis for understanding core reasons for public acceptance or rejection of different energy system aspects and processes. We stipulate that acceptability of any particular aspect of energy system transformations will, in part, be conditional upon how well it fits with the value system. Critical to this argument is the notion that public perspectives are not about technology alone, they are about what the technology symbolises and represents. Furthermore, public perspectives must be understood not only in terms of their views on technologies, but also in terms of views on actors and processes embedded in system change. We argue that a focus on values that underpin more specific preferences for energy system change brings an important set of insights that could provide a basis for improved dialogue, more robust decision-making, and for anticipating possible points of conflict in coming transition processes.

Young Poles' beliefs about climate change
Adrian Wójcik, Janina Pietrzak

The aim of this research was to investigate the state of knowledge about and attitudes toward climate change among Poles aged 20-24, who will bear the long-term consequences of climate change. Respondents were a representative sample of 800 internet users. A large majority of young Poles believes that climate change is occurring, and that it is a serious problem for the world today. Young Poles also agree that the scientific evidence points to the existence of climate change; however, they find the evidence concerning the causes of climate change to be more equivocal. Moreover, climate change does not appear to be particularly threatening for the respondents personally and their families. This, despite the fact that most Polish youths believe that we are already experiencing the consequences of climate change. When it comes to the question of what should be done to prevent or slow climate change, results seem to reflect a conflict within young Poles between empathy for victims of climate change and a diffusion of responsibility for preventing or slowing it—due to Poland's relative poverty as well as low perceived efficacy of potential solutions. However, when we asked directly about government subsidies to various energy sources, respondents gave strong support to renewable energy sources, and to rationalizing and limiting energy use. The only source of energy that respondents do not think should be subsidized is coal. Results are contrasted with similar opinion polls from previous years, as well as with official government policy concerning energy strategy.

Public Values for Energy System Change: Public Acceptability, Indeterminacy and Policy Making
Catherine Butler

In the UK there are strong policy imperatives to transition toward low carbon energy systems. The Carbon Plan (DECC, 2011) represents the current key policy document that sets out the UK Government's proposals for energy system change necessary to meet the carbon budgets enshrined in the Climate Change Act (2008). Within this document public attitudes and acceptability are identified as key uncertainties with regard to the development of future energy systems. In particular, it is highlighted that there is little agreement over *how* to transform the energy system in order to meet climate change targets. In this paper, public acceptability is identified as an indeterminate form of uncertainty that presents particular challenges for policy making. We build on our existing research into public values for energy system change (see Parkhill et al. 2013) to explore how the outcomes of the project can be applied in thinking through the uncertainties associated with public perspectives. To inform our analysis, we draw on concepts of uncertainty and framing arising from the work of Leach et al. (2010) whereby they argue for the importance of engaging with a wide range of different framings in order to better anticipate inevitable shocks that arise from systemic

uncertainties. We highlight how the range of public values identified through our research bring into view alternative and quite different problem and solution framings to those currently evident within UK policy. In concluding, we argue that incorporating insights into public values within policy framings can offer a basis for better understanding and anticipating public responses to energy system change, ultimately aiding in managing the complex set of uncertainties associated with public acceptability.

Session 15 - Energy transitions in context: challenges ahead

Thursday, 5th June, 16:30-18:10 | Institute of Sociology, room 61

Chair: Pia Laborgne

Obduracy in action: how Dutch local communities transform centralized energy systems
Tineke van der Schoor, Alexander Peine, Harro van Lente, Bert Scholtens

Arguably, the transition to a decentralized renewable energy system requires the transformation of communities. Increasingly, citizens take energy production in their own hands, at household and community level, and in this way turn into 'prosumers'. More and more, citizens pool their resources to start an local energy initiative. In the Netherlands, for instance, more than 500 such local initiatives seek to reshape the energy system in the face of constraints such as cultural and political traditions, legislation, economic and fiscal (dis)incentives, market access, technological constraints, and grid access.
In this paper we reconstruct the activities of 12 local communities in the north of the Netherlands over a period of two years and analyse their approaches to transform the energy system. Our starting point is Actor-Network Theory, which considers technological artefacts as networks of heterogeneous actors and which allows a dynamic analysis of collective strategies. The local socio-technical network we study thus consists of human actors as well as buildings, energy technologies and infrastructures. More specifically, we investigate the obduracy and scripts of the local environment, and clarify how the local environment resists change and invites specific forms of energy use and production.
A combination of methods is used, such as fieldwork, qualitative interviews, surveys, and analysis of social media. We compare and contrast the approaches of local energy initiatives to transform the energy system. We conclude that local initiatives have to balance actions to open up the energy system, to create new viable scripts; and actions that solidify the local community, to create continuity.

The exploration of new offshore petroleum reserves and the debate on energy transition in Brazil
José Eduardo Viglio, Lúcia da Costa Ferreira

The discovery of offshore petroleum reserves in Brazil, located in a depth between 5000 and 7000 meters known as the pre-salt area, generated an arena of public debate about the potential environmental risks and about the role and meaning of this exploration in a political context in which the themes of climate change and energy transition are on the agenda of politicians and scientists. Estimates for these reserves range from 50 and 70 billion barrels, and estimated investments to make the exploration viable are projected to total US$1.7 trillion. If such estimates are confirmed, Brazil may figure among the world's largest oil producers. Besides reigniting the discussions on peak oil, the discovery of these reserves in inaccessible areas can be problematized as a point of tension in political, economic and scientific agendas directed towards fossil fuels and a national and international environmental agenda that is anchored in principles and practices of a green economy. In this context, this paper analyzes the public debate arena constituted around the Brazilian pre-salt, looking at the main social actors involved, their positions in the debate and the meaning of this new oil exploration frontier in a context of energy transition. As results, the paper presents and systematizes: a) the main stakeholders, especially universities, governments, NGOs and industry; b)

different perspectives on the pre-salt that vary from critical positions on exploration, seen as a setback and a wrong decision that will strengthen material and institutional structures based on petroleum, to positions that see the pre-salt as a political and economic window of opportunity for an energy transition in Brazil.

Current challenges of Germany's energy transition project: when renewable energy sources (RES) are leaving the niches
Sandra Wassermann

One main pillar of Germany's energy transition project is the transformation of its electricity system. This transformation process is characterised by an already high (and still increasing) share of intermittent RES in the electricity mix and by challenger actors who built up new decentralised structures.
The relation between challengers and incumbents in the electricity field has always been contentious. But with the German government's very ambitious RES development targets and the ultimate nuclear phase-out, traditional conflicts between incumbents and challengers have developed a new strength and have reached a new dimension.
The more the RES development targets for Germany seem to be irreversible, the more incumbents try to legitimize their future existence. On the other hand challengers find themselves in a position where they have to demonstrate and prove that decentralized structures of electricity generation mainly of intermittent RES do not endanger electricity security. Hence, originally more general conflicts are becoming very concrete for various questions of future electricity infrastructures and markets. The focus of those new challenging tasks and conflicting fields is on the question of the compatibility of intermittent RES with the existing electricity system and on how to adjust or re-design electricity markets (and related questions of direct marketing of RES or the introduction of capacity mechanisms).
The paper will present those conflicting fields and will explain what kind of strategies incumbents and challengers chose in order to cope with those challenges and how they try to influence the actual shape and direction of Germany's energy transition project.

The role of socio-environmental justice in addressing climate policy
Carmit Lubanov

Climate change set challenge for environmental justice paradigm in two levels of respects:
1) Procedural, as the fair participation of potentially affected parties or adequate access to decision making processes and courts, are crucial constituents in achieving environmental justice.
2) Political, the endured debate on national climate policy and achieving global agreement, point to injustice context as a major obstacle for progress.
Considering the socioeconomic aspects of climate policy, AEJI initiated analysis focusing on the centrality of the inequalities in consumption patterns, by comparisons of GHG emissions levels across different socioeconomic groups of population and socioeconomic clusters of settlements. This methodology provides wide platform for discussing main topics of climate policy:
1) Societal profile of climate change, as reflected by disparities among individuals belonging to the top/bottom income deciles in 4 researched areas of consumption (transportation, electricity, food, waste).
2) The relevancy of the societal data in addressing policy, by considering the gaps between groups in their respective patterns of energy and food consumption.
The article presents the results and discusses the policy implications, indicating that individuals belonging to the top income decile emit on average 8- 25 times more greenhouse gases than those belonging to bottom decile. This gap, which is approximately 2- 4 times bigger than the monetized consumption gap between the two said groups, illustrates the extent to which GHG functions as a multiplier of inequality. Therefore, formulating policy tools, especially in energy taxation, should apply the gaps between groups in their respective patterns of energy consumption.

Organized green consumers in Italy's energy transition: challenges and strategies
Natalia Magnani

My paper will contribute to the analysis of social challenges to traditional centralized energy systems by exploring attempts by green and responsible consumers in Italy to re-organize energy consumption and production in more socially and environmentally sustainable ways. In particular, in my presentation the main associations and networks of green energy consumers, which have recently developed in Italy, will be considered with regard to their nature (cooperatives of prosumers or buying clubs) and the way they attempt to translate environmental and solidarity concerns into existing relationships between energy consumers, producers and providers. The emergence of these energy networks, strongly overlapping with existing alternative food networks, marks a new reflexivity of Italian civil society concerning energy issues. However, the number of their members is still modest and well below the potential of green consumers at the national level. Accordingly, my contribution will also investigate the obstacles faced by the diffusion of decentralized and environmentally sensitive approaches to energy consumption. These obstacles are of different kinds, namely institutional - concerning in particular European and national regulations obstructing the shortening of the energy supply chain and the reassembling of energy production, consumption and distribution – socio-cultural - linked to cognitive frames concerning the technical and neutral nature of energy and to well entrenched habits concerning its consumption mode – and organizational - linked to the lack of fully trustable renewable energy providers. Eventually emerging strategies to partially address these problems will be highlighted.

Session 16 - Energy demand, markets and innovation

Thursday, 5th June, Thematic, 16:30-18:10 | Institute of Sociology, room 60

Chair: Maria Świątkiewicz-Mośny

Traversing the unknown: shedding light on rural household energy use
Erin Roberts

Rural areas are the site and subject of fierce debate in the energy arena, with conflict erupting around the installation of nuclear power plants and renewable power generation alike. However, while there has been extensive academic exploration of public attitudes toward landscapes of energy production, there is a woeful lack of inquiry into the everyday lives of rural people; how rural communities and localities define and shape the lifestyles and energy consumption of those who choose to dwell there. Households are a crucial unit in governmental mitigation and adaptation strategies as, noted in the Climate Change Act 2008, every household in the UK will need to contribute to achieving the UK Government's ambitious national carbon reduction targets. Efforts thus need to focus on low carbon forms of energy production, coupled with engaging people to actively reduce their energy use in everyday life.
This paper will present initial findings of an on-going ESRC funded doctoral project, exploring the role of socio-spatial practices in shaping rural domestic energy consumption in North Wales. Biographical interviews were conducted with each member of participating households separately, followed by a household group interview to explore an awareness of and reflection on their personal and collective energy consumption spanning the life-course.By employing practice theory, embedding it in rural place, and combining it with biographical research traditions; this research produces rich, socio-spatial and temporal accounts of how households' energy use have been shaped, and perhaps, how it may be transformed in the future.

Technology in transition: exploring domestic retrofit practice from a sociotechnical perspective
Lai Fong Chiu, Robert Lowe

The ambition to achieve significant cuts in carbon emissions from existing UK housing stock by 2050 has stimulated programmes of action to radically improve retrofit capacity. The Retrofit for the Future (RftF) programme is one such initiative. This paper uses a sociotechnical approach to understand the challenges facing the UK in realising domestic retrofit by examining ten selected cases from the RftF programme. A mutli-disciplinary team involving building scientists, architects, engineers and social scientists were involved. Attention was paid both to the materiality and social practices within retrofit. Thus data collection included quantitative (monitoring data), visual (photographic) and qualitative (semi-structured interview and focus-group data with occupants and project teams) for each case. These datasets provided the raw materials for the analysis of retrofit practice in action. The different configurations of the sociotechnical entities for each case are outlined, and constraints and enablement for the application of physical elements of retrofit, and the impact of networks of inter-relationships between the project teams, occupants and other stakeholders are examined. Each case is a micro-situation and yields lessons from the practical application of different sociotechnical elements of retrofit. The picture that emerges is one of transition. The embedded and co-evolving nature of both physical and social elements remind us that capacity for action is temporally and situationally contingent. However, those cases characterised by integration of practice and 'learning by doing and communicating' achieved better social and technical results. More fragmented practices had the most difficulty in achieving successful retrofit and occupant satisfactions.

Domestic energy consumption, technology and the home
Aimee Ambrose

As has been widely recognised, understand-ding domestic energy use involves more than an understanding of technology and the physical characteristics of a property. It also involves an understanding of patterns of use in terms of routines and expectations. Moreover, the process of understanding domestic energy consumption involves more than the use of short questionnaires and statistical analysis. It involves detailed and often lengthy qualitative methods, including visual methods that reveal the sensory experience of place as somewhere tangible rather than simply as 'space'. This presen-tation is about the relation between visual methods, specifically of videos, and what might be called 'visuality' and the design and use of eco-homes. The presentation is partly about methodology. It will summarise the strengths, weaknesses and implications of visual methods and especially of video. It is, however, mostly about theory and the meaning of the home and about how this meaning interacts with innovative techno-logies and design. In relation to domestic energy consumptions, qualitative research methods have, in the past few years, typically been used in conjunction with practice theory. The meaning of the home, especially if understood in sensory and sensual, as opposed to merely functional terms, offers a challenge for practice theory to encompass the lessons of studies undertaken within environmental psychology that stress the significance of appearance. The study has involved the preparation of three edited videos of the experience of residents living in low energy homes in three different localities in the UK.

Social and demographic factor as explanation for variation in residential energy consumption
Anders Rhiger Hansen

Several studies have shown how residential energy consumption correlates with social and demographic characteristics of the households. The objective of this paper is to contribute to this research by building a model to explain variation in energy consum-ption for heating that is based on a larger sample than previous studies. The focus will mainly be on two types of determinants; first, demographical characterristics and second,

social characteristics. In other words, this paper investigates the social and demographic structure of residential energy consumption in Denmark.
The theoretical idea is that households' energy use is formed by the social practices that the occupants carry out, and that these practices are structured in latent patterns that reflects the households' social status and composition.
Thus, this paper identifies how different types of households display differences in energy consumption for heating. Questions of interest include to what extent recent developpment in European societies towards more single person households and towards an ageing population might have negative influence on energy consumption. The analysis is based on an extensive data material from the Danish Civil Registration System and The Danish Building and Dwelling Register in combination with information on end-use energy consumption for heating for households in Denmark. The combined dataset is extensive in regard of information about buildings, moreover it contain information on households regarding educational level, occupation, income, demo-graphics and family composition. The paper employs an OLS regression model, which makes it possible to control for the effect of building related characteristics.

The ambivalent spread of district heating in Italy: restructuring device of urban regimes and strategy for the autonomy of the local communities
Giovanni Carrosio

In recent years, Italy has seen an increase in district heating networks, which have spread both in Northern cities and in rural areas. In the big cities, the district heating represents a restructuring device of urban regimes that ecologically modernises the carbon-based system of energy production. In this respect, literature speaks about carbon lock-in devices.

Session 17 - Interlinking sociotechnical systems: energy – water, energy – waste, energy-food

Friday, 6th June, 9:000-10:40 | Institute of Sociology, room 79

Chair: Catherine Butler

Municipal waste as an energy resource
Filip Piotrowski

The purpose of the paper is to explore the concept of 'transition theory' and its relevance in the implementation of 'sustainable city' strategies. In doing this it is necessary to answer two questions. The first is on the definitions: what is Transition Theory and what is the Sustainable City. The second is on the relevance: how transition theory can be applied in the implementation of the sustainable city.
Sustainable transition theory is a body of knowledge focused in the understanding of the transformations of sociotechnical systems. One of the aims of the theory is the search of innovations in the implementation of processes toward sustainable ways of production and consumption. This theory has been mainly used to explain sociotechnical shifts while the relation to the sustainable city as scenario to enhance the relations between energy and society is rather new. In regards to the sustainable city, many of the efforts have been devoted to the elucidation of a sustainable urban form. The compact city has been adopted as the model of urban sustainability, expecting that densification strategies such as the promotion of mixed-use developments, urban renewal and densification, restrictions to urban expansion and strengthening of public transport can reduce transport needs and consumption of fuels.
Cites have much in common with socio-technical systems but there are also differences. This paper has the aim of explore the two concepts and fining ways of how transition could be used in the implementtation of sustainable city strategies.

From waste to energy source. Food, waste and energy: the case study of Piana's Farm in Calabria
Debora Cilio

This intervention analyzes energy scenarios in West German expertise as sociotechnical objects contributing to define boundaries between scientific and political questions and policy instruments structuring energy policy and its underlying actor-coalitions. We follow the emergence of transition scenarios (Energiewendeszenarien) in German energy discourse in the 1980s, and their claim to hegemony since 1998. Initially based on abandonment of nuclear energy and its replacement by energy savings and decentralized renewables, transition scenarios themselves changed in the process of institutionnalization, losing some of their more radical implications. By retracing this history, we aim at showing that scenarios, despite their origin in technocratic and planning circles, can lead to a pluralization of visions of energy futures. We also show that such phenomena are closely tied to the general scial and political context. To illustrate this further, we will present a case study on the energy scenarios of the German parliamentary commission on ozone depletion and climate change (1987-1990). Organized in a "moment of unsettlement" after Chernobyl and the first public alerts concerning climate change in Germany, the commission presented a window of opportunity for the inclusion of alternative energy futures into official expertise. In this context, the method of scenarios helped the commission to foster consensual recommendations without precluding the controversy on which energy sources to use, while at the same time redrawing the boundaries between what should be considered as "scientific" – and delegated to experts – and what should be regarded as open for political discussion in the energy discourse.

Thrift, temporality and lunchtime clouds: ambiguous enactments of microgeneration photovoltaics in the UK
Britta Rosenlund Turner

This paper considers everyday enactments of microgeneration solar PV, based on repeat in-depth interviews with PV households in the north of England. It focuses firstly on daily efforts of monitoring and keeping track of electricity generation and secondly on efforts to make use of or use up solar electricity in the home. As these daily efforts to make the most of the home-generated solar electricity unfold, they reveal how activities like using the tumble drier on sunny days or charging the electric toothbrush at lunchtime, become meaningful ways of engaging with an elusive source of energy, as well as political sites of acting on the environment (Marres 2010). They also reveal ambiguous socio-material assemblages (Bennett 2010), involving Feed-in Tariffs, backwards winding electricity meters and spreadsheets with lunchtime clouds, which call for thrift and temporal shifts rather than frugality in energy consumption (Evans 2011), and enables everyday cost-benefit calculations where pro-environmental changes to energy habits might come out as 'bad maths' and where engaging with energy flows 'made visible' does not result in increased knowledge but rather in added complexity.

The research thus questions whether attempts at mobilizing changes to energy behaviours by rendering micro generated energy calculative or making it the same as money (MacKenzie 2009) becomes compromised as the social meaning of money (Zelizer 1997) and the material agency of PV technology and electricity flows come together in everyday life.

Bennett, J. (2010). Vibrant Matter: a political ecology of things, Duke.
Evans, D. (2011). "Thrifty, green or frugal: Reflections on sustainable consumption in a changing economic climate." Geoforum 42(5): 555-557.
MacKenzie, D. (2009). "Making things the same: Gases, emission rights and the politics of carbon markets." Accounting, Organizations and Society 34: 440-455.
Marres, N. (2010). Front-staging Nonhumans: Publicity as a Constraint on the Political Activity of Things, in Political Matter: Technoscience, Democracy, and Public Life. B. Braun and S. Whatmore, Minesota.
Zelizer, V. A. (1997). The social meaning of money: pin money, paychecks, poor relief

and other currencies, Princeton University Press.

Session 18 - Energy transitions as local project

Friday, 6th June, 9:000-10:40 | Institute of Sociology, room 81

Chair: Pia Laborgne

Germany's energy transition as local project and the role of Change Agents
Sophia Alcantara

In Germany the energy transition is on everyone's lips. However, the public debate mainly focuses on socio-technological aspects, such as the expansion of renewable energy sources (RES), increasing energy prices, or the acceptance of the energy transition in general. Even if energy related behavior is an important topic, there is no focus on it. The question how to get the energy transition more tangible for private households is one of the current challenges.
As part of the SEE ("Stuttgart City with Energy Efficiency") project, so called Change Agents in selected city districts and suburbs were identified. In cooperation with these actors several workshops were designed, in order to bring together engaged citizens and local opinion leaders to discuss local energy-related challenges and to initiate activities in order to tackle those challenges.
Involving local actors for developing local actions allowed for taking into account specific local issues and perspectives. These local perspectives were crucial in order to make sure that the locally planned actions to save energy would explicitly suit to the specific situation and "Lebenswelt" of people in very different socio-economic settings. In a first step this paper will present the main important energy-related activities which were developed in the local workshops. Then secondly, the paper will address the following questions:
- "Which types of change agents are successful in the distribution of energy related topics and actions"?
- "Which type of actor constellations or networks are important pre-requisites for a successful distribution of actions"?
Using a specific Change Agent typology (Kristof 2010) first recommendations for the future successful design of local energy transition strategies will be derived.
Literature:
Kristof, Kora 2010: Wege zum Wandel – Wie wir gesellschaftliche Veränderungen erfolgreich gestalten können. München: Oekom Verlag.

Finding fuel poverty in the lives of older people
Rose Chard

Discussions of who is "fuel poor" in the UK are often centred on older age groups due to their distinctive health, social and financial situations. The policy definition and dominant representations of fuel poverty can obscure the range of experiences of older people and the complex and dynamic ways in which a situation of fuel poverty may be more or less visible in their everyday lives. Current programmes of support, it is argued are struggling with the diversity and complexity of the situations in which older people are living, particularly at a time of rapidly changing housing, welfare and energy policy. This paper draws on ethnographic work with community organisations working to tackling fuel poverty in England and interviews with residents who have been engaged with these organisations. This paper seeks to make visible the lives of older people trying to keep warm at an affordable cost.

Situating community renewable energy: A case study of Udny community turbine Laurie Lee Robertson

In July 2011, Udny Community Turbine became the first on the Scottish mainland to be wholly owned by a community. The electricity generated by the turbine is sold to the national grid, raising money to support community events, organisations, and environmental projects. The Trust, which oversees the distribution of this money, is also committed to addressing fuel poverty within the community. The community benefits of renewable energy projects are taken seriously by social scientists; however, these benefits are often regarded as the end point of analysis, as a desired outcome that does not require further reflection. I take Udny Community Turbine as my case study and document the emerging relations between the community, the turbine and their situated environment. I proceed with this enquiry by opening up a dialogue between environmental sociology and science and technology studies in an attempt to reveal the ways in which this community benefits from the emergence of new environmental and energy practices. I also discuss the extent to which environmental sociology and STS can be used as a tool for understanding the practices that are emerging between the social, the technical and the natural worlds.

The "right" place for wind power?
Karin Edberg

Regardless if seen as symbols of modernity, environmental friendliness and independence, as disturbing obstacles in the natural landscape or as threatening personal interest, establishments of wind power facilities leave few unaffected. Economic, social, cultural and political factors influence negative as well as positive attitudes towards wind power projects. Efficiency, alternatives and design, just as belief in climate change and need for energy transformation, affect the general attitude towards wind power. But are other aspects involved in the localization act? Are wind power attitudes influenced by the perception of the landscape where it is intended to be localized? As a place can serve the purpose of leisure or subsistence, be perceived as a living space for rare species of animals, birds and plants or as a source for raw material and energy extraction, it is filled with meaning by the actors in direct or indirect contact with it. The aim of the paper is thus to analyze the relation between place understanding and wind power attitudes. The empirical material, mainly interviews, is collected in a rural area in Sweden that assembles industrial mining sites, agriculture, nature reserves and beaches. The industrial identity is strong among the permanent population, while outsiders seek the place for its natural scenery and tourist facilities. As the place is assigned "national interest for wind power" and a small-scale wind power park is planned in the area, the contradictive understandings of the place and its heterogenic character makes it an interesting case.

Session 18 - Approaches to understanding acceptability

Friday, 6th June, 9:000-10:40 | Institute of Sociology, room 61

Chair: Aleksandra Wagner

Energy market change: studying reception of media news and electricity consumption with practice theory and positioning analysis
Triin Vihalemm, Margit Keller

Domestic consumers' readiness to process information, change their everyday habits and learn new skills are crucial in the energy-related innovation processes. We both theoretically and empirically doubt the assumption that people behave rationally and can replace existing habits when sufficiently informed. We propose that electricity con-

sumption has ambivalent social significance making it resistant to changes. Applying practice theory and positioning analysis, we ask how consumers become re-skilled, when conditions of electricity purchase alter, how mass media contributes to this and how electricity consumption habits are shaped.
Data were gathered in Estonia in 2012-2013, when the country opened the electricity market. We draw on media diaries and interviews with domestic clients before the switchover, immediately after and and a year later. We focus on new tools (electricity packages and stock prices); skills (compareson of prices) and budget management facing a remarkable price-rise and information overload, identifying patterns of performance positionings pertaining to electricity related (media) discourse.
During the time of switchover new short-term media-intensive practices emerged focusing attention on electricity consumption. Yet, in the longer term a performance positioning emerges, which distances consumers from the tiresome monitoring of electricity prices and packages. Attempts to make smart electricity deals yield little benefit for the family budget control. This in its turn fosters no changes in energy consumption habits intertwined with numerous daily practices (cooking, washing, entertainning). Electricity is signified as an important mediator of daily comfort, but too complicated to handle as a separate commo-dity. Thus communication campaigns that focus on electricity consumption reduction may have questionnable value.

The ethics of care and coalitions of anxiety in gas fracking debates in Lithuania
Diana Mincyte, Aiste Bartkiene, Leonardas Rinkevicius

This presentation focuses on the case of community resistance against hydraulic fracturing (fracking) in Zygaiciai in western Lithuania to examine the ways in which various groups have been mobilized against and in support of shale gas explorations by Chevron, a global leader. Using discourse analysis of popular press and governmental documents, we focus on how community leaders and movement participants justified their actions by drawing on the narratives emphasizing risks to land, nature, community, and national sovereignty. Our research tracks competing definitions of sovereignty and citizenship that link care for the local environment and geopolitical instabilities as primary justifications for political action. Combining the scholarship on the ethics of care, particularly as articulated by N. Noddings, and the arguments about the formation of coalitions of anxiety as developed by J. Zinn and M. Hajer, we argue that despite their opposing political orien-tations, different groups anchored their claims in the presumed values of rationality, economic benefits, and energy independence. We also find that the groups resisting fracking offered an inclusive vision of the future that encompassed land, its geological features, people, animals, and vegetation into an inseparable whole, while critiquing individualism and autonomy as promoted by their counterparts, an approach that borrows heavily on the discursive repertoire of western European and North American environmental movements and that resonates with the premises of relational ethics.

The role of competing social representations in socio-technical transitions: the case of shale gas in Poland, Germany and the UK
Paul Upham, Hauke Riesch, Aleksandra Lis, Piotr Stankiewicz

While sociologists of science and technology have long understood technological diffusion and adoption as processes of social embedding, the psycho-social processes involved have received relatively little attention in the socio-technical transitions literature. Here we consider the value of social representtations theory in terms of its contribution to enhancing the multi-level perspective of socio-technical change. Using fracking-derived shale gas as a case study and newspaper representations of the technology in Poland, Germany and the UK, we theorise connections between the processes of anchoring and objectification that are central to social representations theory and the differing socio-technical dynamics experienced by the technology in the three countries. We suggest that media representations of technology both reflect and indicate the dynamics involved, helping to shape these dynamics

through their constitution of socially shared understandings.

Domestic energy generation from the sun in Italy: a survey on attitudes and practices of sustainability
Mara Maretti, Alfredo Agustoni, Sara Fontanella

While renewable sources are widely emerging in energy policies and in public debate, we need to answer some questions concerning their cultural and sociological potential, also considering vicissitudes concerning public incentives, victims of the crisis and of economic policies. This contribution is pays a particular attention to domestic microgeneration from the sun. It investigates, by the means of a web survey involving a sample of 1100 subjects between July and November 2013, the attitudes and motivations explainning the choice to invest on this kind of household technology.
From a wider point of view, by processing data with the Lisrel technique, we try to check motivations for investment (dimension of desirability of the technology), in order to understand these motivations in the broader frame of attitudes towards sustainability and of other environmental practices. Results are discussed.

Session 20 - Energy transitions and changing actors

Friday, 6th June, 9:000-10:40 | Institute of Sociology, room 60

Chair: André Schaffrin

Energy cultures: how solar energy is envisaged by a local community
Ana Delicado, Luís Junqueira, Elisabete Figueiredo

Portugal has an outstanding position in terms of renewable energies: the latest figures show that they support close to 60% of electricity consumption. However, renewable energy generation in Portugal is highly centralised and dominated by big companies, rather than local community initiatives or distributed domestic production.
Photovoltaic energy still accounts for only 2% of the renewable energy generated in Portugal and comes mostly from solar power plants in the south of the country. The largest is situated in the municipality of Moura and has about 2,500 solar trackers, generating 46MW of electricity. Additionally, part of the income received by the local authority (paid by the company that owns the power plant) has been applied in setting up an incentive programme to solar microgeneration.
Thus, this local community has grown accustomed to the sight of solar panels, on the roofs tops and in the fields. How is then solar energy perceived, conceptualised, descrybed by local agents? What differences can be found between different stakeholders? What impact does it have on local identities?
This presentation is based on fieldwork carried out in Moura, comprising interviews, document analysis and ethnography. It stems from the research project "Socio-technical consensus and controversies about renewable energies", funded by the Portuguese Foundation for Science and Technology (PTDC/CS-ECS/118877/2010), and carried out at the Institute of Social Sciences (University of Lisbon), in collaboration with the University of Aveiro and the Centre for Research in Anthropology.

The leading German energy providers and the transformation of the German energy system
Gregor Kungl

In my talk I will analyze the role of the big four German power companies (E.ON AG, RWE AG, EnBW AG, and Vattenfall AB) for the German energy transition. Since they are powerful actors they play an important role for the transformation of the system which so far has not been sufficiently researched from a sociological perspective. I will provide a comparing reconstruction of the actions of the companies in the time period from 1998 to 2013 based on a large-scale content analysis applying concepts from organizational

sociology. These actions will be presented alongside with the most important changes in the political, economical and societal environment of the companies to give answers to their capability to adapt to a changing environment as well as their influences on the transformation process – which is important since incumbent players represent a potential obstacle towards a systems transition. A main focus will be put on the conflicts arising from the paradigmatic shift from large centralized structures towards decentralized production, from few big players to a broad scope of actors and the strategies of the established players to deal with these developments.

The challenges of sustainable energy future
Elgars Felcis

This paper presents a critical assessment of the overall framework of future energy perspectives. As various authors suggest in literature, many of the future energy forecasts are overly optimistic and it is unlikely that energy supplies will meet the demand until the end of this century. Furthermore, attempts to keep up the supplies will only increase the environmental damage whose effects are already measu-reable and trigger further unpredictability of climate change.
Exploration and production of any non-renewable resource typically follows the principle that the best is discovered and used up first. Oil, many of the metals and other minerals are likely to have passed their peak rates of production and "perhaps it is not too much of an exaggeration to say that humanity is in the process of achieving Peak Everything" (Heinberg, 2011: 265). Extrac-tion and processing methods of difficult to access, lower quality or non-conventional sources are slow, expensive and energy-intensive. Therefore this paper argues that measures of "net energy" (for example, EROEI) and the long-term environmental impacts should be taken into account in assessing any energy sources. Renewable energy resources are desirable and need to be expanded, but these prospects should not mislead us to think they will continue growth, but instead a world primarily based on renewable energy resources will inevitably require lower living standards in comparison to what we are used to now.

Session 21 - Energy transition: local strategies and the interplay of governance levels

Friday, 6th June, 11:00-12:40 | Institute of Sociology, room 79

Chair: Alfredo Agustoni

Community benefits packages and shale gas extraction
Jonathan C. Cooper

The transformation of the energy system from fossil-nuclear resources to renewable energies in Germany – the so-called Energy Transition – is a political strategy based on a broad consensus in the German society. Although it is politically steered, the Energy Transition is an open process with many possible paths, actors, instruments, and outcomes which not only refer to an economic-technological change, but also have crucial implications for the political, cultural, and social life of the citizens. Thus, it is particularly interesting to examine those transformative initiatives put into action by citizens themselves. In the light of the recent surge of energy cooperatives in Germany, the paper discusses the question "In what sense are energy coops an expression of society-oriented entrepreneurship?". With regard to the hypothesis of energy coops as promoters of the energy transition, first, it is necessary to map the emerging phenomenon by providing some empirical data from provious studies. In order to illustrate the societal dimension of these new energy coops, then, a particular case is introduced in more detail. This will be done through the example of two energy coops which are trying to operate the energy grid in different German cities. The strongly political efforts and situations of these cases demonstrate the need for a specific approach to entrepreneurship capable of grasping the

societal aspects of interest: the factors that make energy cooperatives a type of enterprise competent to deal with the challenges of establishing more civic forms of business and creating a decentralized sustainable energy system.

The diffusion of citizen power plants in Austria and Germany: A process of empowerment?
Anna Schreuer

Energy systems have come under pressure and various efforts have been made aiming to transform them to more sustainable forms. At the grassroots level this has included the establishment of citizen power plants – wind farms or PV plants jointly owned and operated by groups of – often local – citizens. This paper looks at the emergence and diffusion of citizen power plants in Austria and Germany and asks to what extent this process can be interpreted as a process of empowerment. To this end I draw on resource mobilization theory, a strand of social movement theory, and argue that the establishment of citizen power plants can be interpreted as a process by which bottom-up actors mobilized a variety of different resources to successfully develop their projects (e.g. material resources, knowledge resources, symbolic resources etc.). Furthermore, drawing on resource based conceptualisations of power, I understand empowerment as increasing a disadvantaged actor's capacity to access and use resources for a particular goal. This conceptualization already suggests that the establishment of citizen power plants in Austria and Germany can indeed be interpreted as a process of empowerment. However, I also want to discuss three critical issues in this context: First of all, continued dependency on actors with partly conflicting goals for resource access; secondly a partial redefinition of the concept of citizen power plants during their diffusion; and thirdly the question whether actors that developed citizen power plants in fact constituted disadvantaged actors in the first place.

Local energy transition and local governance
André Schaffrin

Over the last decades the governing of energy transition, i.e. realization of a sustainable energy provision by the means of renewable energy sources, has witnessed significant changes with an increasing focus on the local rather the national level. On this level, a number of studies indicate the usefulness and potential of local energy production for the creation of value and its contribution to meet ambitious national goals for the mitigation of greenhouse gases. Best-practices of municipalities or counties en route sustainable development toward low carbon and sustainable communities are described en masse in the literature. However, as research indicates, there are a number of examples where this process got stuck. This is due to more serious obstacles and conflicts for renewable energy over land-properties and different traditional forms of land-use such as nature conservation, agriculture, tourism, etc. This paper discusses the potential of the newly established concept of an innovation group to provide conflict resolution and to elaborate and apply a concept of sustainable land use with the focus on energy supply. This method will launch a process of cooperation between scientists (experts from the fields of sustainable land management, distributed energy systems, governance, and participation) and practitioners from administration, regional politics, and regional energy suppliers. The project aims to develop a more general model of participatory and scenario-based decision making as a new system solution to meet major challenges of sustainable land-use for the real-life experiment of a local energy transition.

Grassroots energy transformation: drivers and abstacles for community energy in Germany and Poland
Andrzej Ancygier, Kacper Szulecki

In his book „Soft Energy Paths" published in 1977 Amory B. Lovins questioned the predominant approach, according to which economic development and increased stan-

dard of life requires a significant increase in the consumption of energy generated in large, centralized units. He pointed out, that other paths of development were possible, that would not only have a much smaller negative impact on the environment, but would also contribute to involvement of local communities in the power system.
Almost four decades later Lovins' predictions came true: Increasingly dispersed (or "soft") sources of energy replace centralized structures and local communities are deciding whether to invest in local, renewable sources of energy, or continue to rely on the existing energy infrastructure. Despite the availability of a number of possibilities to increase the share of distributed sources of energy the choices in different countries were different.
In our paper we are going to compare the situation in Germany and in Poland and define the importance of the main factors that strengthen or discourage local communities from taking over responsibility for their own power supply. Using concepts from the field of policy analysis we first try tu establish the way energy policy can be conceptualized as a core public policy with the welfare of citizens as the main reference point. We thus propose a social perspective on energy generation. Further, we analyse the different aspects of the energy systems in both countries, such as spatial distribution of generation, political economy of the energy sector as well as the structure of energy governance. We then look at the actual evidence of local energy initiatives, using both available statistical data and case studies of some selected communities. The choices made at the local level are then analysed from social and economic perspectives to provide some more general statements about the willingness of local communities to unite and take action for their own wellbeing.

Struggle over Berlin energy transition: How can grassroots initiatives affect local energy policy?
Thomas Blanchet

This study aims to investigate the growing influence played by grassroots initiatives on the governance of urban energy transitions in Germany. In the dual context of national energetic turn (Energiewende) and a renewal of municipal energy concession contracts, Germany experiences an upsurge of local actors in local energy governance (local authorities, municipal utilities). Among them, grassroots initiatives increasingly strive to take part in designing the future energy system. Up to now however, little is known about the emergence and impact of energy grassroots initiatives on urban energy governance. Why do citizen initiatives get involved in energy governance and how can they influence the local energy policy in an urban context? This paper focuses on Berlin electricity governance, where two grassroots initiatives have attempted to influence the local electricity policy. While the first initiative, Berliner Energietisch, aims to force Berlin local authorities to remunicipalize the energy grid and to create a public corporation for the electricity distribution, the second initiative, a citizens' cooperative called Bürger Energie Berlin, strives to directly buy the electricity grid. Relying on a strategic analysis approach (Crozier and Friedberg, 1977; Fligstein and McAdam, 2012), this paper analyzes the specific strategies and interests of these two initiatives, and their interactions with other local actors, such as the municipal authorities or the current network operator Vattenfall. Furthermore, this paper enlightens the central role played by the energy distribution grids in the debates on contrasting local energy transitions.

Session 22 - Energy transition in context: national and regional conditions

Friday, 6th June, 11:00-12:40 | Institute of Sociology, room 81

Chair: Maria Świątkiewicz-Mośny

Energy transitions in Brazil: three cases for hydroelectricity
Lucia Burtnik

During the end of the XXth Century, Brazil tried to industrialize himself to achieve development, but that dreamed economy, strongly dependent on fossil fuels, was seriously damaged with the ´70 energetic crisis. This context allowed the progressive transformation on the electricity matrix to a new kind of energy: hydroelectricity. This is how Brazil becomes one of the first countries in successfully accomplishing the energetic transition from a highly dependent on fossil fuel, to an electricity matrix mainly based on renewable resources. In order to understand this process, we examine three episodes of recent Brazilian history determined by the construction of large scale dams Itaipu, Paulo Alfonso e Belo Monte; analyzing the process and decisions within the socio-technical systems behind the transition. The main objecttive of this exploratory research is to identify which elements help innovation and which are more connected with path dependence. Using the narrative structure as a methodological tool, we present an exploratory analysis that shows the determinant elements and the opportunities behind the process of an effective energetic transition in a fast developing country.

Comparative study of sustainable business models in biogas and wind energy in the European Union. Case study – Romania and Germany
Adrian Dumitru Tanţău, Roxana Clodnițchi, Maria Alexandra Nichifor

Practice theory helps us understand patterns of actions in everyday life and how technological and material infrastructures, social discourses, embodied knowledge and regulatory frameworks are at work in everyday practices. This approach is very useful for understanding household energy consumption and 'prosumption' as habits of everyday life. But how can practice theory be applied in our understanding of the active decision making and the long term changes and ensuing investments that are essential in socio-technical transition towards a sustainnable energy system? This paper reflects on the merits and blind spots of practice theory for understanding processes of major change in household installations, corresponding changes in household practices and the decision processes that lead to these changes. The paper reports from recently initiated study about involvement of households in micro generation of energy.

Devil's work or progressive alternative energy – a cross regional analysis of geothermal energy framings
Christina Benighaus, Alena Bleicher

Deep geothermal energy is widely used in countries as Italy, Island or New Zealand with geological disturbances. However it is seen as a promising source of renewable energy and as a part of the energy transition in Germany and Switzerland as well. To date an openly public attitude towards this energy technology can be stated for Switzerland and Germany.

The rise of energetic democracy. The communication on move in the Italian case
Davide Borrelli, Mihaela Gavrila

In this paper we will expose our research about the referendum on nuclearpower held in Italy in 2011. In particular, we were interested to understand how the grassroots communication by social movements and the narratives of professional media (press, tv)

have affected the public debate and the referendum result.
The controversy on the energy matter is emblematic of two phenomena. In contemporary democracies, we find plans of emptying some of the democratic institutions, clashing with attempts of re-appropriation of spaces of democracy from below: on the one hand, the deficit of social and cultural legitimacy suffered by political institutions, on the other hand, the design of "confiscation of democracy" in which the policy maker tries to counteract prior instances of deliberative participation advanced by the public opinion.
Virtually ignored by mainstream media, the debate on nuclear power has been in the middle of a dense network of everyday conversations. The success of the referendum on the nuclear issue enshrines the internet as an alternative political engine and, at the same time, a tool of "self-summoning" for the citizens, beyond the traditional forms of political mediation and communication media.
By comparing data on old and new media, it is shown how networked conversations have ended up conditioning the media agenda and affecting the public opinion by the conveying of values and interests once alien to the interpretive framework in which the case was politically orchestrated.
The still unresolved issue concerns the affinities and semantic break between old and new movements in terms of communication strategies used to achieve consensus and to overturn the status quo. It remains to understand how the media platforms will transform themselves to meet the challenge of energy emitted by these social forms of civic engagement.

Session 23 - Challenges and implications of energy innovation

Friday, 6th June, 11:00-12:40 | Institute of Sociology, room 61

Chair: Matthias Gross

Do energy-efficient issues matter in educational facilities? First results from post-occupancy evaluation in the context of the German project "Energy-efficient schools"
Karin Schakib-Ekbatan, Annette Roser, Edelgard Gruber

Educational facilities are of strategic importance in the context of sustainability. In order to foster energy-efficiency efforts, the research initiative EnOB (funded by the German Federal Ministry of Economics and Technology, BMWi) supports flagship projects. The programme "Energy-efficient retrofitting of schools" aims at a nearly zero energy level by using innovative technologies for glazing, ventilation or lighting in retrofitted or new school buildings. The social-science-based accompanying research focuses on the evaluation of the intended improved learning conditions through a better indoor climate for students and teachers. Another question is whether energy-related issues of the building can be integrated in school lessons in order to raise energy awareness and to incite the students to a corresponding behaviour at school and at home.

Qualification of energy service companies (ESCo): the kin of energy efficiency
Mikko Jalas, Markku Anttonen

Energy efficiency is an important policy goal across nations. Notions such as 'Energy paradox' and 'Energy efficiency gap' refer to commercially available but underutilized technical options to reduce energy demand. Moreover, 'Energy service company', ESCo, signals a business model of brokering technical solutions in the form of a service for end users who lack knowledge or resources to carry out energy efficiency improvements. Yet, the viability of the concept has little solid evidence.We present a study of the Finnish field of ESCo activities and conceptualize Energy paradox with the tools of economic sociology and particularly with the notion of qualification of products introduced by Callon and Rabeharisoa. Accordingly, ESCos need to establish links in order to enter the

market. Moreover, market offerings need to be both comparable to and different from other offerings at the market. Qualification of the ESCo-product involves among other things, a shift from products to services and differentiation between sectors of finance, insurance, facility management and energy provisioning. This far ESCos have been conceptualized with reference to a power plant as if producing 'negawatts'. Our results suggest much more versatile efforts of qualification in terms of the backgrounds, the market offerings by ESCo's and the appraisals by their customers. Furthermore, we suggest that the relatively modest success of the ESCos depends not only on contextual factors but also on the difficulties in qualifying and creating an understandable offering with established dimensions of quality.

Key challenges and chances of energy transition in hospitals
Marcin Kautsch, Mateusz Lichoń

One of today's key benchmarks of energy transition in Europe are the European Union's energy 2020 targets concerning renewable energy sources, energy efficiency and CO2 emissions. Hospitals have the potential of becoming frontrunners in that transition. Not only are they responsible for 5% of EU's carbon emission and accordingly big energy consumption but also – despite differences in size, location, annual turnover – are rather comparable since they represent very similar needs and face analogues challenges. Hence energy solutions can be to some extent transferable.
Following that logic, RES Hospitals project cofounded by European Commission was lunched and aimed to increase usage of renewable energy sources in European hospitals, rise their energy efficiency and reduce CO2 emissions. The project lasted 2.5 years during which national partners gathered political, economical and legal information concerning feasibility of using RES options in their countries, conducted international survey concerning hospitals' energetic situation and prepared case studies of reaching 50% of RES until 2020 and becoming zero-carbon units in the future.
Limitations to increasing usage of efficient energy masseurs are various and they include technical or financial barriers. Key challenges go beyond those limitations though. Experience in running RES Hospitals project in Poland combined with the result of the survey amongst Polish hospitals indicate that the fundamental challenges are sociological ones including awareness issues (of hospitals' managers, hospitals' personnel, local authorities), social priorities and little incentives for taking actions. The paper seeks to identify those challenges and – based on project's experience – propose chances of facing them.

Session 24 - Energy transition at the local level

Friday, 6th June, 11:00-12:40 | Institute of Sociology, room 60

Chair: Ana Horta

Local authorities and the control over energy transition steering in France: actors, interests, institutional conflicts
François-Mathieu Poupeau

In France, as in many other countries, local authorities have been taking an increasing place in the field of energy for the two last decades. Although France still belongs to centralized countries, their role never stopped growing from the 1990's and the beginning of the markets liberalization. It has found a new momentum with the so-called energy transition process. As many observers stress, this process may imply a new place for local authorities, considering their advantages in terms of proximity (to consumers and citizens), knowledge of territory (for developing renewable energy), capacity to coordinate many different fields (urbanism, transportation, public housing, etc.) or to experiment new technologies.

Energy transition from "bottom-up" – success factors and obstacles
Rüdiger Mautz

Despite the since long continuing professionalization of the renewable energy sector bottom-up initiatives from civil society still play an important role in several countries (e.g. in Germany, Austria or the UK). What can be observed here is the emergence of a wide range of innovative social practices in the field of energy transition – or to put it another way: the spreading of a cooperative model of power generation and power supply.
With regard to the further dissemination of bottom-up initiatives the proposed contribution discusses key success factors as well as obstacles on several analytical levels: On the level of national framework conditions (e.g. supportive vs. restrictive regulative measures), on the level of local/regional actors constellations (e.g. cooperative vs. conflict laden constellations), on the organizational level of the bottom-up initiatives concerned (structure and availability of inner-organizational resources, e.g. money, time, knowledge; structure of inner-organizational democracy and decision making etc.), and on the individual level of participants (motivating factors, commitment to organizational targets, readiness to act on a voluntary basis etc.).
The analysis of success factors and obstacles will be discussed with reference to research on "third sector" organizations, emphasizing the "hybrid" structure these organizations can benefit from. A second theoretical point of reference will be transition theory, whereby the proposed paper will put an emphasis on the issue of niche-regime interaction and discuss the conditions under which bottom-up initiatives could contribute to a regime change towards a novel energy system structure based on technological decentralization, economic diversity, societal pluralism and environmental sustainability.

Intermediaries as change agents in local energy transitions
Pia Laborgne

The urban socio-technical energy system is a key field for coping with environmental changes and for a sustainable development of cities. Its forms and usages are decisive for resource consumption, but it also has important impacts on social and economic development. Cities are major context for the consumption of resources as well as centers for innovation and privileged level for experimentation and implementation of new approaches. They are thus important starting points for sustainability transitions.
The presentation builds on findings from the work on a PhD thesis realized in the framework of an interdisciplinary researcher group on urban infrastructures (2010-2014) at the Technical University of Darmstadt. It is applying the multilevel perspective which analyses transformations as interplay of three different levels: landscape, regime and niches. The thesis intends to enhance the empirical basis on local transformations and analyses what kind of and how local niche-experiments are created locally. Following Konrad et al (2004) such niches are defined here as new configurations of structural elements. The focus is on the change of institutional structures. An important part of this is the creation of local intermediaries, defined by their function and position in-between other actors. The presentation will focus on this aspect.
Case studies in major urban regions have been realized (Berlin, Frankfurt/Main and Ruhr Metropolis). The results are based on the analysis of semi-structured qualitative interviews with local actors and experts, a literature study, official documents and a media analysis. For each city/metropolitan region, two local approaches are analyzed in detail.

Collective ownership in renewable energy
Conrad Kunze, Sören Becker

Collective forms of ownership in renewable energy emerge in nearly all nations of western Europe. Despite the Berlin Energy-Roundtable´s failed referendum, the concept is promising to move from its breeding ground, the countryside, to the cities in the coming years. Based on an empirical research in Europe in 2013, we argue that collective forms of ownership in renewable energy (CRE) can pursue political goals that go

beyond the possibilities of the status quo in energy production. Some projects have also proven an ability to pursue a degrowth policy and follow a logic of satisfaction rather than maximisation.

We critically assess the present situation in Europe and discuss the potential for a democratisation and re-politisation of economy by CRE.

Workshops

Workshop 1 - Energy and Metabolism

Friday, 6th June, 14:30-16:10 | Institute of Sociology, room 61

Organizers: Alfredo Agustoni, Dario Padovan, Luigi Pellizzoni, Agostino Petrillo

Each living system, being an human body, a forest or a town, can be seen as an energy convertor, such as an engine. However, social systems not only convert energy for their purposes but consume it releasing in the environment unusable energy and harmful waste.
The idea of metabolism as a frame in understanding relations between Societies and their Environments, that means describing social, spatial and economic phenomena in terms of flows of matter and energy, inspired several authors in the field of the Natural such as of the Social Sciences (from Justus von Liebig to Marx, Vladimir Vernadskij and, up to our days, to authors as John B. Foster, Joan Martinez-Alier, Erik Swingedow, Marina Fischer-Kowalski etc.).
This perspective goes beyond any huge contrast between Nature and Society, due to the mutual deep links in the dynamics of transformation - concerning, for example, the so called "energy shifts", in all their social and environmental meaning, well explained, from different perspectives, by authors such as Mumford, Cottrell, Crosby, Podobnik, Hugill, Mitchell, Nye etc.
The aim of this workshop is, first of all, to discuss this theoretical point of view, stressing its potentialities in understanding energy and ecological issues (for what concerns, for example, the problem of ecologically uneven patterns of development); its second purpose is that of showing some application to social research, in its metodological implications; the third is to discuss new forms of metabolism regulation at societal level.

Workshop 2 - Politics of Fracking

Friday, 6th June, 14:30-16:10 | Institute of Sociology, room 60

Organizers: Michiel Köhne, Elisabet Rasch, Dik Roth, Jeroen Warner

The objective of this workshop is to 1) constitute an international network of researchers of social (political) dynamics and mobilisation related to shale gas and 2) come to a joint research agenda in the domain of social dynamics and politics of (plans for) fracking for shale gas in the context of broader debates on energy transition, energy strategies and politics, and democracy.
In many countries in Europe (and the world) governments together with industrial partners promote fracking as a way of extracting shale gas. Fracking operations are ongoing or under consideration in several countries all over the world, including The Netherlands. As the use of fracking has increased, so have environmentalist concerns over dangers of pollution, groundwater contamination, and the postponement of energy transition. In many countries (The Netherlands, England, Romania, to name a few) citizens have organised against fracking. They build up their arguments around environmental issues, as well as issues of citizenship. Proponents of fracking consider shale gas a safe and profitable energy source. Both proponents and opponents make extensive use of different sources and forms of information and knowledge to build up their argument.
In the workshop we will take the politics of shale gas as a point of departure to explore its links with economic policies, energy battles, social movements and citizenship, framing and legitimating discourses, property rights issues and the “disasterisation” of fracking. We invite participants to give a very brief presentation on her/his research on the topic. After that we will discuss possible research agenda’s, research questions, research methodology and the possibilities of creating an international (academic) shale gas research network.

Workshop 3 - Wicked games - tricked into faked participation. Workshop on energy-related conflicts resolution

Friday, 6th June, 14:30-16:10 | Institute of Sociology, room s 81 and 79

Organizers: Magdalena Głogowska, Pia Laborgne, André Schaffrin Aleksandra Wagner

During the last years we noticed an increasing popularity of the concept of public participation in the social sciences and the public discourse. Normative or critical theoretical approaches to participation are the most frequent predominantly based on case study analyses with the focus on single technologies or domains. On the one end of a larger range of studies and applications, the organized processes of public participation refer to highly formalized public consultations (which are the law obligation). On the other end, public participation is understood as an informal process of citizens' engagement of consultation rather than actual participation in decision-making. Due to this variety of understandings and applications, the concept of public participation remains vague because no common conceptual and empirical framework of public participation exists. As a result, the practical applications of such theories are elaborated rarely.

Our workshop aims to shed light on the "elephant in the room" of public participation. In a first step, going beyond the normative ideas or critical descriptions of public participation, we discuss different understandings and definitions of public participation as applied in the theoretical and empirical literature.

In a second step, the participants of the workshop will draw conclusions on what are major commonalities or obstacles when comparing case studies on public participation. How do characteristics of the specific setting (rural vs. urban; siting vs. policy issues vs. goal setting etc.), technologies (wind vs. solar etc.), and citizens (socio-economic status, networks, values and beliefs, etc.) interact with the form of governance (regulative, informative, etc.) and the tools or methods applied in the process of public participation (round tables, referenda, etc.)? Furthermore, we discuss applied experiences on the determinants of success and failure of public participation. We will focus on the point of time in the planning process where participation ideally should take place.

We invite participants doing research on public participation, with hands-on experiences, or just being interested in the subject to join the discussion on approaches, frameworks, methods and tools in the workshop. As a result of the workshop, we would like to create a common framework of public participation and a model of conflict resolution by analyzing typical cases of public participation.

Posters

Poster session

Thurday, 5th June, 12:40-13:40 | Institute of Sociology, hall, 2nd floor

Understanding the issues faced by wind farms developers - a comparative analysis of France and Germany
Florian Abraham

This empirical study aims to compare the emergence and uptake of onshore wind technology in France and Germany. The French government based its regulations on the German legislation, as it showed proof of success. However, the development rate in France is much lower than in Germany. The main objective of this research was then to understand this trend by analysing the issues faced by wind farm developers in France, focusing on the socio-political and regulatory aspects of wind energy planning and development, reporting on qualitative data collected from wind energy developers in France.
Emergent themes concerned blame for regulatory authorities for slowing development processes, and how complex regulatory instruments reveal political preferences for energy generation choices (nuclear power being most noteworthy in this regard). Such regulations were also criticised as failing to foster social acceptance amongst affected wind site communities, and for giving political voice to protests during legal procedures.
The research concludes by addressing potential legal and regulatory changes that could improve the prospects of French commitments to meeting renewable energy development targets.

Cyborg youth: transition to energy-intensive routines of media use
Ana Horta, Susana Fonseca, Mónica Truninger, Augusta Correia

Young people have a growing relevance as consumers. As they reproduce in their daily lives society's dominant values, such as those of consumer culture, as well as cutting-edge social and cultural transformations (Miles, 2000), the analysis of their practices may give valuable insights into the emergence of changes in energy consumption. Due to the centrality of electronic media in the daily lives of young people, and the significant increase of energy consumption related to the use of these technologies, this paper aims at analyzing young people's everyday practices related to these technologies.
Drawing on theories of practice (Gram-Hanssen, 2011), energy consumption is examined through the combination of individuals' skills and knowledge, socio-cultural norms and conventions, and materials and technologies involved. The analysis aims at (1) identifying young peoples' daily routines of information and communication technologies use; (2) examining young peoples' competences on these technologies' energy consumption; (3) identi-fying young peoples' engagements with electronic media; (4) characterizing everyday life configurations and arrangements of young peoples' energy consuming technologies; and (5) identifying young peoples' social interactions related to these technologies. The paper is based on in-depth interviews conducted in Portugal in the spring of 2014 with young people. Results will give insights to understanding electricity consumption resultant from practices of electronic media use in a historical context of severe economic crisis.
This paper presents the first results of a research project funded by the Portuguese Foundation for Science and Technology (EXPL/IVC-SOC/2340/2013).

Building a platform for enhanced societal research related to nuclear energy in Central and Eastern Europe

Agnieszka Miśkiewicz, Grażyna Zakrzewska-Kołtuniewicz, Katarzyna Iwińska

General objective of the project is to enhance the capabilities of research institutions in Central and Eastern European countries to take part in EU research with respect to governance, social and societal aspects of nuclear energy.

In Europe, there is potential for researching and enhancing governance, as there are still gaps and weaknesses in the "governance field" related to nuclear energy. Firstly, awareness of the need for new approaches to participation and openness and corresponding advancement of research in the nuclear waste management area has only limited correspondence in other parts of the nuclear fuel cycle. There is room for more comprehensive approaches and strategies. Secondly, research programmes, networking forums and comparisons between countries have been undertaken extensively as part of European projects or national initiatives. However, the impact that these initiatives have had in terms of new ways of implementation in nuclear programmes is doubtful. Even if cultural and institutional differences are factors that to some extent can explain the limited transfer of new governance approaches, there should be potential for progress. Networking at both national and European levels between research organizations and stakeholders in these countries may develop new synergies and collaboration and ultimately improve their participation in Euratom FP projects.

The primary purpose of PLATENSO is to provide a proposal towards establishing a legal entity for a European Platform on Socio-Economic matters linked to nuclear technology and to develop recommendations for research strategies in PLATENSO countries.

The project of the European Union under the 7th Framework Programme, Euratom, Grant agreement no: 605140.

The electricity sector susceptibility of European countries to climate change

Daniel R. Klein, Mady Olonscheck, Carsten Walther, Jürgen P. Kropp

Due to the close relationship between electricity consumption, production and temperature, the electricity systems of countries are particularly susceptible to climate change. Based on a number of quantitative influencing factors, we provide a relative index for 21 European countries. This allows relevant stakeholders to identify the main influencing factors that determine the electricity system susceptibility of their country.

The index was determined using 14 influencing factors that include those that increase or decrease susceptibility. This includes information on monthly mean temperature, electricity consumption, import, export and production by energy source for the period 2000-2011. Moreover, we consider the results of nine global climate models regarding future temperature changes as well as data on air conditioners per country.

A quantitative relative ranked index describing the susceptibility of each country's electricity system is provided. In both Luxembourg and Greece, which top the list, the inability to meet electricity demand with inland production as well as a heavy reliance on combustible fuel electricity production explain part of the high relative susceptibility.

Comparatively, Norway was the least susceptible country based on our index. Norway is expected to benefit from rising projected temperatures which will decrease winter electricity consumption and limit susceptibility. Furthermore, Norway's current electricity production exceeds consumption demand and is largely based on hydro which also decreases susceptibility.

The relative nature of the susceptibility index allows policy makers, scientists and energy managers to use less susceptible country electricity systems as a guide to decreasing their own susceptibility.

Enemies or friends? Analysis of the relationship between the local community and representatives of the corporation during the extraction of shale gas in Poland
Sabina Pająk

Trust, conflicts and crises occurring between the market, society and local communities is a dynamically changing processes. Their role, especially in recent decades, in which the development of global communications, social networks and forms of social interaction has changed considerably, their role is not yet fully explored, so that it becomes the interesting and often unpre-dictable field analysis.
Large corporations are actively working in the field of exploration and exploitation of shale gas in Poland, moving around the socially very sensitive area employ to aid agencies, committed to creating and maintaining the image and the decree in crisis situations. Their task is also to convince the local community about the potential benefits of shale gas. Through its activities, often based on opinion surveys of key community agencies, PR significantly affect the shape of public discourse on the exploration and potential exploitation of shale gas in Poland.

School textbook as a key element supporting activities in raising awareness of energy issues. Analysis of selected Polish textbooks
Katarzyna Rabiej

Educational initiatives are a key element of the activities aimed at raising public awareness on issues about energy. The Polish school textbook plays a pivotal role. It is the most important and constantly used didactic tool. Its content and layout determine what case and in what order are discussed. Teachers, students and parents trust textbooks. They assume, that there are no mistakes, tells the truth and reflects the current state of knowledge. If a school textbook contains harmful statements, reproduce stereotypes and prejudices, then the explosive power is huge and long-lasting.
Energy education must begin in kindergarten and primary school. Children are well oriented in the topics of energy and very open to new ideas. They could have an influence on the vision and activity of their parents and other people surrounding them.
Understanding the capabilities, costs and impacts of the wide variety of energy sources (both renewable and non-renewable) which are, or will be, available, and the consequences of choosing between them, can develop valuable life skills for school children. This research should cover all aspects (sociocultural, economic, environmental, etc.) it should also reflect local availability of energy and requirements for it, together with local climatic and cultural characteristics.
The aim of the project is to show the available information about participation of school institutions in energy education. I used for this analysis of selected school textbooks. At the content of textbooks I was looking for issues such as energy generation sources, the role of energy in everyday, information about energy based on the renewable energy sources, power saving, energy efficiency and climate changes. I was interested also in which school subjects you can find topics related to energy and ways of presenting them to students.

Polish media discourse about wind energy
Maria Świątkiewicz-Mośny

The first wind farm was created in Poland in 1991. The 90s saw a scarce interest in the subject. The interest in wind energy grew only in 2007. The quantitative difference is not only one. Analysis of the media discourse on wind energy is needed to recreate and analyze the role of the media in the process of deliberation (on the subject of energy). Asking the question: What functions does the press fulfil by publishing texts on wind energy? I am showing also how the media discourse evolves. Material analysis consists of two stages: stage I – quantitative analysis of polish biggest newspapers' in 90s; stage II - quantitative analysis of polish biggest newspapers' and magazines' 2007-2012. The first period I named building the discourse because there were only few text and the second - contextualization. While the discourse was built the main topic concerning wind energy was ecology issue, than in 2007-2012

press discourse about wind energy is rooted in economical and political context.

Narrative frames of energy discourse: nuclear power plant and shale gas in press discourse
Aleksandra Wagner

The main purpose of the empricial study was to compare the narrative frames of discourse on nuclear energy and shale gas used in the Polish press discourse. Poster presents choosen results of a content analysis of articles on nuclear energy and shale gas published in the opinion-forming press (national daily newspapers and weekly magazines) in the period 2009-2012. Analysis of the material took place in two phases:
In the first phase, a frequency list method was used, and an analysis of the frequency of occurrence of given code categories and their mutual relations was carried out. As a first step in the data mining process, this method served exploratory goals and contributed to the construction of the code categories.
In the second phase of research, the qualitative analysis of relations between elements of the discourse was inspired by the methodology of situational analysis according to Adele Clarke– the categories selected in the first phase were used to construct illustrative maps of the connections between them. The results illustrated by a poster present main actors (individual and institutional), resources, risks and threats, perspectives and evaluation of the objects. It serves to reconstruction of discoursive representation of nuclear energy and shale gas in Polish press.

List of participants

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