

This is the seventh newsletter from the steering group of the Sustainability Transitions Research Network. The newsletter is divided into the following sections:

- Words from the Chairman
- Network news
- Event announcement
- Event reviews
- New research projects
- Publications

We welcome all members to submit news items for the next newsletter. You can use the website www.transitionsnetwork.org (submit projects, output or news), or send a message to sustainabilitytransitions@gmail.com. The advantage of using the website for submission is that the information also becomes available online.

The STRN steering group

Words from the Chairman

Dear transition research colleagues,

The publications section in this newsletter shows that publication activities of STRN-members remain very high. It also shows that 'transitions thinking' is rapidly diffusing into mainstream disciplines and journals. While initial transitions papers tended to appear in innovation journals (e.g. *Research Policy*; *Technology Analysis and Strategic Management*; *Technological Forecasting and Social Change*), recent work is increasingly published in:

- 1) Energy-related journals (*Energy Policy*; *Renewable and Sustainable Energy Reviews*)
- 2) Transport-related journals (e.g. *Journal of Transport Geography*)
- 3) Environment and sustainability journals (*Sustainability Science*; *Environment and Planning A*; *Environment and Natural Resources Journal*; *Journal of Cleaner Production*)
- 4) Geography journals (e.g. *European Planning Studies*)
- 5) Organization/business journals (*Organization Studies*).
- 6) Future-oriented journals (e.g. *Futures*).

This mainstreaming dynamic is not only healthy for the transitions community (getting out of our initial 'niche'), but also shows that we can productively engage with debates in wider disciplines, and possibly even shape agendas. Although the 'network news' section shows that STRN-membership has now grown to more than 600 members, we are still a relatively small community in the wider scholarship. Nevertheless, we are punching above our weight in terms of shaping academic debates, agendas from funding agencies (e.g. FP-7 programs), and policy discussions (OECD, UNEP), which is a great achievement!

Intellectually, the publications section also shows that the transitions community is broadening its scope. For example, while practice theory and the multi-level perspective are sometimes seen as competing approaches, scholars are increasingly exploring possible crossovers and complementarities (Hargreaves et al, 2013; Cohen et al, 2013). Two PhD theses also take conceptual thinking in new directions. Baker (2012) combines political

economy insights with the multi-level perspective to make sense of coal in South Africa. Hannon (2012) discusses the role of new business models in sustainability transitions, and applies this to energy service companies in the UK. Furthermore, there is a special issue in our EIST-journal, which deals with the role of the economic crisis in transitions. This widens the debate from environmental sustainability to also include issue such as green growth, unemployment, restructuring of the financial sector. Another special issue (in Energy Policy) moves the debate on transition pathways forward, introducing new concepts such as 'branching points' which may be able to mediate between quantitative modeling approaches and socio-technical transition approaches. So, while there were some concerns in the fifth STRN-newsletter and calls for widening the theoretical basis and nurturing diversity, it seems that the transitions community is moving in these directions, addressing new topics and mobilizing broader insights.

With regard to the FP-7 call (ENV.2013.6.2-3) on 'Transition to sustainable, low-carbon societies', it seems that 11 proposals (out of 22) have been selected to submit full proposals for the second round (deadline 28 Feb). Various consortia with STRN-members have made it to this second round. It would be great for the community if some of these consortia would be amongst the winners. I wish you all the very best in this competition (and will report on the outcome in a future newsletter).

Last but not least, I want to thank all contributors to this newsletter for sharing their news, which I hope you will find interesting and stimulating.

Frank Geels, Chairman of STRN (frank.geels@mbs.ac.uk)

Network News

Any news related to ongoing activities of STRN

STRN now has more than 600 members!

Since the launch of the Sustainability Transitions Research Network in the summer of 2010 the number of members has been increasing rapidly. In October 2010 STRN had accepted its 200th member, in March 2011 its 300th member, in October 2011 its 400th member and in May 2012 its 500th member. At the moment of writing (February 2013) STRN has more than 600 members.

About three quarter of the members originate from Europe. Almost half of the members originate from the UK (20%), the Netherlands (17%) and Germany (10%), which is slightly less compared to May 2012. Another quarter comes from the USA (7%), Sweden (6%), Belgium (5%), Denmark (4%) and Australia (3%). An increasing number of STRN members originate from Asia (6%) and in particular India, Japan and Thailand.

The energy domain is ranked highest with 469 members indicating an interest in this area. The most popular theme is 'Governance, power & politics' with 473 members indicating an interest.

Rob Raven (R.P.J.M.Raven@tue.nl)

New academic centre for transitions research

On January 11 2013, the University of Aalborg has officially inaugurated a new research centre for **Design and Innovation for Sustainable Transitions (DIST)** in its Copenhagen campus. The head of the centre is Professor Ulrik Jørgensen, who leads a team of 30 researchers from the humanities, the technical and social sciences engaged with transition issues. Grounded within the tradition of science and technology studies (STS), the centre is dedicated to conducting research on the socio-technical and economic dynamics of moving towards more sustainable societies and to developing modes of intervention that engage a broad array of actors. This dual approach provides a unique setting for collaboration. The DIST ambition is to work closely together with external partners to change existing development paths while continuing to advance new research agendas. The centre is a core part of Aalborg University's strategy for building a strong, research-based campus in Copenhagen that is nationally and internationally recognized within the fields of design,

innovation and sustainable transitions. The centre is involved in a number of different educational programs – at the undergraduate and graduate levels as well as within continued and executive education. They focus on sustainable design, sustainable cities, sustainable transitions and anthropology of technology. The programs are deliberately cross-disciplinary, combining competences from engineering, design, sociology and humanities. The centre is also involved in PhD training at national and international level within its core research fields. This year DIST offers the following three PhD courses: Practice Theory and Beyond; Theories of Sustainable Transitions; and Planning transitions in an urban context. For more information please contact: Ulrik Jørgensen uljo@plan.aau.dk or Andrés Valderrama afvp@plan.aau.dk

Making Transitions Happen: A new European challenge platform in Climate-KIC

Climate-KIC, which was established in 2010 as one of three Knowledge and Innovation Communities of the EIT (European Institute of Innovation & Technology), has recently created the **Making Transitions Happen** challenge platform which will integrate innovation, education and entrepreneurship activities for sociotechnical transition. It is a cross-disciplinary platform acting as enabler and accelerator of the transition to a low carbon economy. With a focus on policy interventions and challenge led, broad based models of innovation it will engage citizens, communities and companies. Facilitated by Climate KIC's regional network it will prioritise place based transitions through systems innovation in the arenas of built environment, mobility, energy networks, and area development. The aim is to transform European regional innovation policy and practice on climate change

Climate-KIC's new business plan for 2013 was recently approved by EIT with a major expansion of its budget to €44 million. EIT is proposed to grow as a major innovation funding delivery body in the EU Horizon 2020 strategy. The vision for the next 5 years is to build a set of complementary activities around the **Making Transitions Happen** platform including innovation projects, doctoral students, masters' internships, professional development programmes and entrepreneurial incubators. These will include the successful Pioneers into Practice programme mentored by colleagues from the Dutch KSI programme through SHT Eindhoven, and the Pioneer Cities project in which Fred Steward leads transitions research via the Institute for Sustainability, London.

Climate-KIC comprises 5 colocation centres in UK (London), France (Paris), Netherlands (Randstad), Germany (Berlin) & Switzerland (Zurich); and a regional network (RIC) of 6 regions: West Midlands, UK; Hessen, Germany; Emilia Romagna, Italy; Valencia, Spain, Lower Silesia, Poland; & Central Hungary. The centres and regions involve a diversity of business, academic and public partners. Contact: Aled Thomas, RIC Director, Climate-KIC, Avenue d'Auderghem 22-28 B-1040 Brussels, Belgium. aled.thomas@climate-KIC.org. **Fred Steward (F.Steward@psi.org.uk)**

Fellowship regarding sustainable transition of cities

International Social Science Fellowships for Interdisciplinary work on sustainable transition of cities go to Dr. Dominik Reusser and 19 more early career scientists. This is the first year of World Social Science Fellows, a new program of the International Social Science Council ISSC. The twenty talented fellows will meet in March in Quito, Ecuador to work on creative, interdisciplinary perspectives on sustainable urbanization as a start of a fruitful year of discussions and collaborative research (<http://www.worldsocialscience.org/?p=3191>).

Journal: Environmental Innovation and Societal Transitions (EIST)

The new issue of EIST (Volume 6) includes a special issue on "Economic-financial crisis and sustainability transition". The issue contains 6 long articles and 4 short viewpoints. Some of the papers issue were first presented at the third International Sustainability Transitions conference in Copenhagen (August 2012); others are responses to the call for papers. The titles of the papers are:

Perez, C. (2013). Unleashing a golden age after the financial collapse: drawing lessons from history.

O’Riordan, T. (2013). Sustainability for wellbeing.
 Loorbach, D., and R. Lijnis Huffenreuter (2013). Exploring the economic crisis from a transition management perspective.
 Antal, M., and J.C.J.M. van den Bergh (2013). Macroeconomics, financial crisis and the environment: Strategies for a sustainability transition.
 Geels F. (2013). The impact of the financial-economic crisis on sustainability transitions: Investment, governance and public discourse.
 Swilling, M. (2013). Economic crisis, long waves and the sustainability transition: An African perspective
 van der Ploeg, R., and C. Withagen (2013). Green growth, green paradox and the global economic crisis.
 Witt, U. (2013). The crisis behind the crisis.
 Vergragt, P. (2013). A possible way out of the combined economic-sustainability crisis.
 Foxon, T. (2013). Responding to the financial crisis: Need for a new economics.

Several other special issues are being prepared for EIST on “Global diffusion of environmental innovations”, “Models of innovation, society and complexity”, “Transitions through a lens of urban water” and “Electrification of the car”.

Jeroen van den Bergh, Editor-in-Chief (jeroen.bergh@uab.es)

www.elsevier.com/locate/eist

Event announcements

Calls for upcoming relevant events such as workshops and conferences

4th International Sustainability Transitions (IST) Conference, Zurich, Switzerland

The IST 2013 conference will be held at the premises of ETH in Zurich, June 19-21, 2013. The organization of the conference is in full swing. We received a large number of high quality submissions, of which 150 abstracts were accepted. Our intention is to provide a platform for the presentation of well elaborated research projects, but also early career scholars and unconventional research topics. Therefore, we will offer three presentation formats: Full paper discussion (30 min), abstract presentation (15 min) and a poster exhibition. In so doing we will offer a highly diversified and inspiring conference program. As special highlights, we are happy to announce our three keynote speakers:

- **Arie Rip** is Professor of Philosophy of Science and Technology at the University of Twente. His long-lasting commitment for research on science, technology and society has made him one of the founders of the field of sustainability transitions. His work encompasses more than 50 (co-) authored publications in peer-reviewed journals, 70 chapters in scholarly books and he (co-)authored or (co-)edited 17 books.
- **Juliet Schor** is Professor of Sociology at Boston College. Before joining Boston College, she taught at the Department of Economics at Harvard University for 17 years. Her research focuses on issues of work, consumption and sustainability. Besides her successful academic career, she is a national best-seller author. Her most recent book is called *Plenitude: The New Economics of True Wealth* (The Penguin Press 2010).
- **James T. Murphy** is an Associate Professor of Geography at Clark University in Worcester, MA. Amongst other things, his research examines the socio-spatial dynamics of industrial change with a special focus on sociopolitical processes of technology development and diffusion as well as on sustainable forms of development in the Global South.

We are certain that these three key note speakers will contribute to a highly interesting discussion on sustainability transitions and we are looking forward to welcoming them and all other participants in Zurich this coming June. For further information on the IST 2013 conference please contact our website www.ist13.ch or info@ist.ch.

Organizing committee: Bernhard Truffer, Eawag; Jochen Markard, ETH; Lea Fuenfschilling, Eawag; Christian Binz, Eawag.

Call for papers: ‘Constructing and contesting spaces for low-carbon energy innovation’

On November 26-29, 2013, the School of Innovation Sciences from TU/e (NL) organizes in collaboration with SPRU (UK) and Chalmers University (SE) a workshop on ‘constructing and contesting spaces for low-carbon energy innovation’. The aim of this workshop is to bring together leading scholars who study the construction and disruption of socio-political ‘spaces’ for low-carbon energy innovation from different conceptual and theoretical perspectives. The aim is to critically reflect on the analytical advantages, and limitations, that ‘spaces’ thinking brings to understanding low-carbon innovation. The deadline for abstract submission is April 1st, 2013. More information can be obtained from Rob Raven (r.p.j.m.raven@tue.nl). Download the call for papers here:

<http://www.transitionsnetwork.org/files/CfP%20Constructing%20and%20contesting%20spaces.pdf>

Call for papers: The Sustainable Enterprise in the Ecological Transition’

The *Revue de l'organisation responsable* calls for contribution for its vol 8, no 2 on *The Sustainable Enterprise in the Ecological Transition*. Submission Deadline: 31 March, 2013

The topic of “transition to a green or low-carbon economy” currently springs in the public debate. International organisations (UNEP, OECD, International Energy Agency) stimulate this new discourse, which formulates the possibility for a green interventionism based on incentivising firms to engage in eco-innovation and cleantech. In contrast to this discourse, many actors now propose initiatives for cities, towns and villages ‘in transition’ and formulate a social and ecologist vision of transition. Here, it is the communities, the local organisations and the citizens that are considered as the main drivers of transition. A third source of ideas on transition comes from the field of sustainability transition studies, which aims at analysing deep, long term transformations of social-economic and technological structures, using a multi-level perspective. In each of the three cases, the enterprise thus takes up diverse roles. In this context, the special issue on *The Sustainable Enterprise in the Ecological Transition* aims to address the following (nonexclusive) topics:

- Can the implementation of a green interventionism (that is bound to investment incentives in ecoinnovations) really produce a transition?
- How can social and solidarity economy can trigger transition processes from the local level? How can it participate in collective steering of the economy and of eco-innovations?
- What types of enterprise and organisations are best suited to successfully transform socio-economic structures and sociotechnical regimes? Is the responsible enterprise an element of lock-in, or a real transformation vector?
- Which theoretical approaches would contribute to the understanding of transitions and of the multiple levels that they comprise (global economy, transition communities, socio-technical regimes, etc.)?

Authors that intend to submit a paper are asked to contact René Audet (audet.rene@uqam.ca) to receive the detailed instructions regarding the presentation of a manuscript.

Session on Sustainability Transition at the Conference of the European Geoscience Union EGU 2013. Conveners: Dominik E. Reusser, Juergen P. Kropp, Diego Rybski, Artemi Cerdà, António Ferreira. The European Geoscience Union organizes the most important annual meeting for Geosciences in Europe, bringing together scientists from all over the world into one meeting covering all disciplines of the Earth, Planetary and Space Sciences. EGU increasingly shows interest also in the interactions between human behavior and the earth system. The Potsdam Institute for Climate Impact Research with its working group on Climate Change and Development (Head J. Kropp) is hosting a session on Sustainability transitions of the socio-ecologic system at EGU fostering an exchange of ideas.

Of particular interest are the contributions of geosciences to understand sustainability transitions and how transition questions may inspire geoscientific research.

<http://meetingorganizer.copernicus.org/EGU2013/session/11642>

First International Conference on: 'Innovations for and Transitions to Sustainable Transport Systems', Wroclaw, Poland, 12 April, 2013

Interdisciplinary approach is needed to develop frameworks for transitions to more sustainable transport systems within the context of the increasing importance of multilevel perspectives and multilevel governance. We invite papers dealing with the following issues:

- Decoupling of GDP growth and demand for transport.
- How can different levels of government in the context of multilevel governance support the development of transport systems, while reducing its negative environmental impacts.
- Feasibility of innovations and technological development for triggering transitions to a more sustainable transport system.
- Urban logistics as a tool for supporting the sustainability of urban transport systems.
- The importance of property rights and transaction costs for greening of transport systems.
- The role of finance and banking in transitions to sustainable transport systems.
- Assessment of positive and negative externalities generated by transport systems.
- Ethical aspects of the continuous expansion of transport systems.

Scholars wishing to give a presentation at the conference are kindly asked to submit an abstract of their paper. For more information, please contact the conference organizer, or visit the website. e-mail: conference@wsb.wroclaw.pl; johannes.platje@wsb.wroclaw.pl
website: www.wsb.conference.pl

Deadline extension and final call for papers for special issue on "Transitions through a Lens of Urban Water"

We invite contributions to a special issue in *Environmental Innovation and Societal Transitions* on transitions from an urban water perspective. The urban water sector seems to have ideal characteristics to be a model system for transitions studies. Urban water systems combine ecological, technological and social aspects that independently have the interest of the transitions research community. Moreover, the water sectors in different cities provide rich examples of systems in various phases of transitions. One of the aims of the special issue is to provide a comprehensive overview of the state of the art of the scholarship on urban water transitions. We would like to invite authors to contribute papers that address key questions from transitions studies with insights from urban water research. Specifically, but certainly not exclusively, we are interested in contributions addressing urban water transitions from the perspectives of:

- Actor dynamics and understanding agency
- The role and dynamics of institutional change
- Modelling approaches to understand transition processes

Deadline for full papers: Sunday, 31st of March, 2013

For more information, please send email to fjalar.dehaan@monash.edu. For submission of full papers please use the online submission system at

<http://ees.elsevier.com/eist/default.asp> and select **SI: Urban Water Transitions** when you reach the "Article Type" step to ensure the submission is correctly identified.

WWWforEurope conference on Modelling "Growth and Socio-ecological Transition"

The aim of the WWWforEurope modelling conference in Vienna, March 12-13, is to promote the exchange of ideas among researchers active in the broad field of applied modelling, taking into account smart, sustainable and inclusive growth. The availability of models incorporating the social and the environmental dimension is an important prerequisite to objectively and realistically evaluate the potential consequences of a socio-ecological transition.

For more information: <http://www.uni-klu.ac.at/socec/eng/downloads/wwwforeuropeconference2013.pdf>

Event Reviews

Review of events interesting to the STRN community

New research projects

Information about ongoing research activities such as the start of new research projects

Governance of the Discontinuation of Socio-Technical Systems

SPRU (UK), TU Dortmund (Germany), IFRIS (France) and the University of Twente (Netherlands) have started a new project on the Governance of the Discontinuation of Socio-Technical Systems (DiscGov). The 3-year project is funded by the European Open Research Area, in which national research councils collaborate. The project aims to understand how, and under which conditions, policymakers can actively manage the termination and decline of socio-technical systems. Conceptually, the project aims to combine various ideas and concepts: socio-technical regimes and transition pathways, coordination in socio-technical networks, de-aligning actor networks, legitimation and power strategies. The project will investigate broad governance dynamics and specific policies in four empirical domains: 1) Nuclear power, 2) Automotive drive engineering, 3) Synthetic pesticide DDT, 4) Incandescent light bulb technology. Each case will be investigated in four countries (UK, Germany, Netherlands, France). The project involves various scholars from transition studies and political science: Frank Geels, Andy Stirling, Stefan Kulhman, Peter Stegmaier, Pier-Benoit Joly, Marc Barbier, Johannes Weyer. For more information contact: Frank Geels (frank.geels@mbs.ac.uk).

Role of demonstration projects in innovation: Transition to sustainable energy and transport (InnoDemo)

The project is financed by the Forfi Programme under the [Research Council of Norway](#), and will provide insights on the roles that trial and demonstration projects and programmes can play in improving the development and diffusion of innovations and accelerating transition processes. It concentrates on demonstration projects and trials for sustainable transport and energy solutions in Norway and other Scandinavian countries. The aim of this project is to: (1) to get insights on the role of trial and demonstration projects for innovation and transition processes, (2) do a comparative analysis of demonstration projects and trials for sustainable transport and energy solutions in the Scandinavian countries, (3) develop new and comparative empirical evidence in an inventory of such projects, a survey of participants and in case studies focussing on the outcomes, effects and impacts of such projects, (4) contribute to the development of indicators measuring the outcomes and effects of demonstration and trial projects. The project will run over two years, starting January 2013. The project is coordinated by NIFU, Norway, in collaboration with DTU, Denmark and CIRCLE at Lund University, Sweden. For more information, contact Antje.Klitkou@nifu.no or visit <http://innodemo.nifu.no>.

Publications

Announcement of new publications such as article, PhD theses and books

Special Section: 'Transition Pathways to a Low Carbon Economy', *Energy Policy* Volume 52, Pages 1-158 (January 2013)

Hammond, G.P. and P.J.G. Pearson, 2013, 'Challenges of the transition to a low carbon, more electric future: from here to 2050', *Energy Policy* 52, 1-9.

Foxon, T.J., 2013, 'Transition pathways to a low carbon electricity future', *Energy Policy* 52, 10-24.

- Arapostathis, S., A. Carlsson-Hyslop, P.J.G. Pearson, J. Thornton, M. Gradillas, S. Laczay, and S. Wallis, 2013, 'Governing transitions: cases and insights from two periods in the history of the UK gas industry', *Energy Policy* 52, 25-44.
- Hughes, N., N. Strachan and R. Gross, 2013, 'The structure of uncertainty in future low carbon pathways', *Energy Policy* 52, 45-54.
- Boston, A., 2013, 'Delivering a secure electricity supply on a low carbon pathway', *Energy Policy* 52, 55-59.
- Barnacle, M., E. Robertson, S. Galloway, J. Barton and G. Ault, 2013, 'Modelling generation and infrastructure requirements for transition pathways', *Energy Policy* 52, 60-75.
- Pudjianto, D., P. Djapic, M. Aunedi, C.K. Gan, G. Strbac, S. Huang and D. Infield, 2013, 'Smart control for minimizing distribution network reinforcement cost due to electrification', *Energy Policy* 52, 76-84.
- Barton, J., S. Huang, D. Infield, M. Leach, D. Ogunkunle, J. Torriti, and M. Thomson, 2013, 'The evolution of electricity demand and the role for demand side participation, in buildings and transport', *Energy Policy* 52, 85-102.
- Hammond, G.P., H.R. Howard and C.I. Jones, 2013, 'The energy and environmental implications of UK more electric transition pathways: a whole systems perspective', *Energy Policy* 52, 103-116.
- Verbong, G.P.J., S. Beemsterboer and F. Sengers, 2013, 'Smart grids or smart users? involving users in developing a low carbon electricity economy', *Energy Policy* 52, 117-125.
- Hargreaves, T., M. Nye and J. Burgess, 2013, 'Keeping energy visible? Exploring how householders interact with feedback from smart energy monitors in the longer term', *Energy Policy* 52, 126-134.
- Dijk, M., R.J. Orsato and R. Kemp, 2013, 'The emergence of an electric mobility trajectory', *Energy Policy* 52, 135-145.
- Foxon, T.J., P.J.G. Pearson, S. Arapostathis, A. Carlsson-Hylop and J. Thornton, 2013, 'Branching points for transition pathways: assessing responses of actors to challenges on pathways to a low carbon future', *Energy Policy* 52, 146-158.

Special issue: 'Advancing Sustainable Urban Transformation', Journal of Cleaner Production, forthcoming

- McCormick, K., Anderberg, S., Coenen, L., Neij, L., 2013, Advancing Sustainable Urban Transformation, *Journal of Cleaner Production*
- Ralph Hamann, 2013, On the role and capabilities of collaborative intermediary organisations in urban sustainability transitions, *Journal of Cleaner Production*
- David Hawkey, Janette Webb, Mark Winskel, 2013, Organisation and governance for the transformation of urban energy systems: District heating and cooling in the UK, *Journal of Cleaner Production*
- Hervé Corvellec, María José Zapata Campos, Patrik Zapata, 2013, Infrastructures, Lock-in and Sustainable Urban Development: The Case of Waste Incineration in a Swedish Metropolitan Area, *Journal of Cleaner Production*
- Gregory Trencher, Masaru Yarime, Ali Kharrazi, 2013, Co-creating sustainability: Cross-sector university collaborations for driving sustainable urban transformations, *Journal of Cleaner Production*
- Paul Higgins, 2013, From sustainable development to carbon control: Urban transformation governance in Hong Kong and London, *Journal of Cleaner Production*
- Christine Wamsler, Ebba Brink, Claudia Rivera, 2013, Planning for Climate Change in Urban Areas: A Review of Theoretical and Practical Approaches, *Journal of Cleaner Production*
- Santiago Mejia Dugand, Olof Hjelm, Leenard Baas, Ramiro Ríos, 2013, Lessons from the spread of bus rapid transit in Latin America, *Journal of Cleaner Production*
- Rosalinde Klein Woolthuis, Fransje Hooimeijer, Bart Bossink, Guus Mulder, Jeroen Brouwer, 2013, Institutional entrepreneurship in sustainable urban development: Dutch successes as inspiration for transformation, *Journal of Cleaner Production*

- Elvira Uyarra, Sally Gee, 2013, Transforming urban waste into sustainable material and energy usage: The case of Greater Manchester, *Journal of Cleaner Production*
- Frank Nevens, Niki Frantzeskaki, Leen Gorissen, Derk Loorbach, 2013, Urban transition labs: Co-creative action research for sustainable cities, *Journal of Cleaner Production*
- Atiq Zaman, Steffen Lehmann, 2013, The Zero Waste Index: A Performance Measurement Tool for Waste Management Systems in a Zero Waste City, *Journal of Cleaner Production*
- Jamil Khan, 2013, What role for network governance in urban low carbon transitions?, *Journal of Cleaner Production*
- Maj-Britt Quitzau, Jens Jensen, Morten Elle, Birgitte Hoffmann, 2013, Sustainable urban regime adjustments, *Journal of Cleaner Production*
- Nora Smedby, Lena Neij, 2013, Experiences in Urban Governance for Sustainability: The Constructive Dialogue in Swedish Municipalities, *Journal of Cleaner Production*
- Che Biggs, Natalia Radywyl, 2013, Building social cohesion through small scale urban space redesign, *Journal of Cleaner Production*
- Hans Dieleman, 2013, Resilient cities and organizational learning: Stimulating eco-cultural innovations, *Journal of Cleaner Production*
- Thomas Block, Erik Paredis, 2013, Urban development projects and sustainable urban transformations: The need for entrepreneurial political leadership, *Journal of Cleaner Production*
- Chris Ryan, 2013, Eco-Acupuncture: Designing and facilitating pathways for urban transformation, for a resilient low-carbon future, *Journal of Cleaner Production*
- Ihab Mohamed Shaalan, 2013, Sustainable Urban Transformation in Small Cities in Egypt: A UN-Habitat Perspective, *Journal of Cleaner Production*
- Laasya Bhagavatula, Cristina Garzillo, Richard Simpson, 2013, Bridging the gap between science and practice: An ICLEI Perspective, *Journal of Cleaner Production*

PhD thesis: Matthew Hannon, 2012, Co-evolution of innovative business models and sustainability transitions: The case of the Energy Service Company (ESCO) model and the UK energy system, University of Leeds

There is a growing consensus that the current energy system we rely on is fundamentally unsustainable and that it will have to be transformed if we are to continue to satisfy our energy needs in the future. At present we have a poor understanding of the role that the development and implementation of innovative business models, designed to satisfy our energy needs in a sustainable manner, could play in facilitating a transition to a sustainable energy system. To improve this understanding, this thesis develops an analytical framework that integrates co-evolutionary and business model theories, and applies this framework to analyse the case of the Energy Service Company (ESCO) business model and the wider UK energy system. The thesis begins by presenting the core characteristics of the ESCO business model and its key variants; its strengths and weaknesses; and the factors that have constrained and enabled the uptake of this sustainable business model. It then examines the coevolutionary relationship the ESCO model shares with the UK energy system to explain not only why the model has struggled to gain traction, compared to the incumbent Energy Utility company (EUCo) model, but also the role the ESCO model could play in a transition to a sustainable UK energy system. In light of the empirical investigation, the research finds that the development and adoption of the ESCO business model could play a valuable role in facilitating transitions to sustainable energy systems. However, it is likely to struggle to gain traction due to ESCOs' poor fitness with the prevailing selection environment, which can in part be attributed to the causal influence of the unsustainable, incumbent EUCo model. Conversely, worsening ecosystem crises, the introduction of supportive regulation and positive feedbacks associated with the adoption of this model by new and incumbent system actors could help the ESCO model to proliferate and thus, have an important influence on the transition to a sustainable energy system. For further information: m.hannon@imperial.ac.uk

PhD thesis: Lucy Baker 2012: "The Political Economy of Socio-Technical Transitions in South Africa's Electricity Sector".

On 26 November 2012, Lucy Baker, successfully defended her PhD thesis (supervised by Professor Peter Newell, Professor Katrina Brown and Dr Heike Schroeder) at the University of East Anglia (UK). Lucy's thesis explored processes behind attempts to introduce privately-generated renewable energy into the national coal-fired electricity grid. Lucy's thesis fused a socio-technical transitions framework (Geels and Schot 2007, Smith et al 2005) with political economy perspectives (Fine and Rustonjee 1996, Büscher 2009) in order to generate insights into governance and policy-making in South Africa's electricity sector. Her thesis investigated the extent to which low carbon developments taking place in the country's electricity generation sector constitute a socio-technical transition in the country's 'minerals-energy complex'. It concluded that despite considerable diversification in the electricity mix, for the time-being coal-based vested interests are still set to dominate at the level of supply and demand. For further information: Lucy.H.Baker@uea.ac.uk

Hargreaves, T., Longhurst, N. & Seyfang, G. (2013) Up, down, round and round: connecting regimes and practices in innovation for sustainability. *Environment and Planning A*, 45, 402-420.

The multilevel perspective and social practice theory have emerged as competing approaches for understanding the complexity of sociotechnical change. The relationship between these two different camps has, on occasions, been antagonistic, but we argue that they are not mutually exclusive. Indeed, through empirical analysis of two different case studies of sustainability innovation, we show that analyses that adopt only one of these theoretical lenses risk blindness to critical innovation dynamics. In particular, we identify various points of intersection between regimes and practices that can serve to prevent (or potentially facilitate) sustainability transitions. We conclude by suggesting some possible directions for further research that place these crossovers and intersections at the centre of analyses.

Cohen, M.J., Brown, H.S., and Vergragt, P.J. (eds.), 2013, *Innovations in Sustainable Consumption: New Economics, Socio-technical Transitions, and Social Practices*, Northampton, MA: Edward Elgar

This volume recognizes that traditional policy approaches to reduce human impacts on the environment through technological change – for example, emphasizing resource efficiency and the development of renewable energy sources – are insufficient to meet the most pressing sustainability challenges of the twenty-first century. Instead, the editors and contributors argue that we must fundamentally reconfigure our lifestyles and social institutions if we are to make the transition toward a truly sustainable future. The contributions to the book pinpoint specific areas in which innovation will be required. These include economic policies, socio-technical systems of production and consumption, and dominant social practices. Drawing on these and other diverse areas of scholarship, this fascinating book highlights new conceptual frameworks for achieving the twin sustainability goals of decreased resource use and enhanced individual and societal well-being.

Sangawongse, S., Sengers, F., Raven, R.P.J.M., 2012, 'The multi-level perspective and the scope for sustainable land use planning in Chiang Mai city', *Environment and Natural Resources Journal*, 10 (2), 21-30

This paper examines stability and change in land use and urban planning in Chiang Mai province, northern Thailand. Inappropriate land use zoning, lack of enforcement of city planning, lack of public transportation and many unresolved problems (e.g. frequent floods, traffic congestion) are indicative of how current land use / urban planning practices have failed to lead to sustainable and desirable directions for urban development in Chiang Mai. In response, a heterogeneous coalition of actors representing various elements of strong and vibrant civil society groups have rallied around a series of issues and voice their desire for change. This has contributed to the construction of a protected space (niche) for thinking

about alternative (more participatory) ways of planning with considerable momentum. This collective action has not been in vain and some of their ideas have been incorporated in the modified land use planning. In order to analyze these processes and to „contextualize“ the situation and ongoing land use issues in Chiang Mai, this paper uses a framework called the „Multi-level Perspective“ (MLP). This perspective is relatively new for the field of urban planning, but it proved to be useful for investigating stability and change in Chiang Mai city and it might be a promising framework for analyzing (sustainable) developments in urban planning and land use for other rapidly developing cities.

Raven, R.P.J.M., Schot, J.W., Berkhout, F., 2012. Space and scale in socio-technical transitions. *Environmental Innovation and Societal Transitions*. 4, 63-78

The multi-level perspective (MLP) is a widely adopted framework for analysing stability, change and transitions in socio-technical systems. Key to explanations of change is the interaction between nested levels (niche, regime, landscape) constituting socio-technical systems over time. This paper proposes a second generation, multi-scalar MLP that explicitly incorporates a spatial scale. Recent developments in innovation studies and contributions from regional studies and geography are reviewed. We draw on notions of space as being relational, fluid and contested by institutionally situated actors. Dynamics in socio-technical systems are explained not only by interactions between modes of structuration and developments over time, but also by interactions between actors and institutions situated across different levels of spatial scale. The paper explores the kinds of insights that might emerge from adopting a second generation MLP to socio-technical systems with a case study of biomass gasification in India.

Verhees, B., Raven, R.P.J.M., Veraart, F., Smith, A., Kern, F., 2013. The development of solar PV in the Netherlands: a case of survival in unfriendly contexts. *Renewable and Sustainable Energy Reviews*. 19, 275-289

This paper reviews the developments of solar photovoltaic (PV) technology in The Netherlands. Despite the recent boom in PV industries and its global deployment, The Netherlands has up to now not experienced major growth in the diffusion of PV electricity generation. But this is only part of the story. This paper focuses on the question why PV is still around in The Netherlands at all despite its, at times, harsh policy and socio-economic contexts. It builds upon a recently developed framework from the field of transition studies that distinguishes between shielding, nurturing and empowerment of sustainable innovations. A descriptive historical review is combined with an analysis of niche space that shows how PV advocates have been able to strategically secure and shape protective measures over four decades in the context of harsh regime selection environments. The paper suggests how further analyses using this shielding-nurturing-empowerment framework can benefit from this exploratory study into PV innovation in The Netherlands.

Huijben, J.C.C.M. and Verbong, G.P.J., Breakthrough without subsidies? PV business model experiments in the Netherlands. *Energy Policy* (2013), forthcoming

Despite a lack of steady governmental support for PV in the Netherlands over the last decade, from 2008 onwards an increased number of initiatives started experimenting with new business models for PV. Though absolute numbers of installed capacity are still low, this is a promising sign. In this article we aim to contribute to the understanding of these developments by using insights from both business model and transition studies literature (i.e. Strategic Niche Management). By performing a literature study and a series of interviews we found three main types of business models: Customer-Owned, Community Shares and Third Party. Financial viability of these was found to be heavily dependent on net metering regulations which are surrounded by uncertainty and struggle about its meaning and application. Also, the overall PV niche is maturing. We found several local and national organizations lobbying for expansion of the space for PV business model experiments and enabling knowledge sharing and networking between initiatives. Furthermore, a number of regime players is getting involved in the PV niche. Considering the current economic

turndown and related subsidy cuts in many other countries we believe the Netherlands, with its relatively poor and unstable support system, could serve as an example.

Hoppmann, J., Peters, M., Schneider, M. and Hoffmann, V.H., 2013, The two faces of market support—How deployment policies affect technological exploration and exploitation in the solar photovoltaic industry, *Research Policy*, forthcoming

The recent years have seen a strong rise in policies aiming to increase the diffusion of clean energy technologies. While there is general agreement that such deployment policies have been very effective in bringing technologies to the market, it is less understood how these policies affect technological innovation. To shed more light on this important question, we conducted comparative case studies with a global sample of 9 firms producing solar photovoltaic (PV) modules, complemented by in-depth interviews with 16 leading PV industry experts. We propose that, on the one hand, policy-induced market growth serves as an important catalyst for innovative activity as it raises the absolute level of firm investments in technological exploration. On the other hand, however, deployment policies create an incentive for firms pursuing more mature technologies to shift their balance between exploitation and exploration toward exploitation. Firms focusing on less mature technologies cannot tap the potentials of exploitative learning to the same extent as those with more mature technologies. Therefore, stimulating strong market growth may raise the barrier to market entry for less mature technologies. We conclude that, when designing deployment policies, great care should be taken to avoid adverse effects on technological diversity and a premature lock-in into more established technologies.

Klitkou, Antje, and Lars Coenen. "The Emergence of the Norwegian Solar Photovoltaic Industry in a Regional Perspective." *European Planning Studies* ahead-of-print (2013): 1-24.

Norway has built up a remarkable solar photovoltaic (PV) industry over the last 15 years with central industrial players such as the Renewable Energy Corporation Group and Elkem. Norwegian companies are mainly active in manufacturing materials for solar cells, but also other elements of the value chain for solar PVs, such as manufacturing of solar cells, recycling of silicone and of solar cells have become a business target. Analyses of industry and innovation dynamics in renewable energy technology have been dominated by the technological innovation systems (TISs) approach. This paper seeks to complement existing TIS analyses by drawing explicitly on the regional innovation system approach to analyse the spatially differentiated development of solar PV industry in Norway. The historical account of the Norwegian PV industry and network analyses of its knowledge dynamics display a marked spatial pattern of both intra- and inter-regional industrial development. With its origin in Oslo-based Elkem, an industrial branching process took place which partly reinforced the Oslo region as a localized cluster for the PV industry and partly initiated the built-up of industrial activities in other regions. The latter process illustrates how PV industry emergence drew on knowledge spillovers from incumbent process industries through related variety. In contrast, the former drew to a great extent on urbanization advantages because of the regional knowledge infrastructure in and around Oslo. While this spatial unevenness perhaps has facilitated the built-up of industry, it also poses considerable limitations and challenges in the longer term.

Barbier M., and Elzen B., 2012. (eds). System Innovations, Knowledge Regimes, and Design Practices towards Sustainable Agriculture, Paris: INRA Editions. Downloadable at: http://www4.inra.fr/sad_eng/Publications2/Free-e-books/System-Innovations-for-Sustainable-Agriculture

Over the past decade, the transition towards sustainable agriculture has been a central theme in the work of many organisations, including government bodies, NGOs, professional organisations and research institutions. Various publications, including White Papers by the EU and different national governments, define future targets and objectives to improve

sustainability in various sub-sectors like animal production, arable farming, or glasshouse horticulture.

Ensuring that any transition that might be taking place does lead to more sustainability is a major challenge for societies in general and for agro-food systems in particular. This entails the need for a shift in the governance of research and innovation, which means that the relations between agronomic science, agricultural technologies, and public or private expectations are at stake.

This book is directed at those involved in research activities and decision-making that target sustainable transitions of the agricultural sector, food system and more largely environmental planning and ecosystem services. The contributions provide substantial reflections and case studies, and question the type of relationships and knowledge exchanges that should enhance the delivery of more sustainable system innovation and foster more diversity in the governance of transitions.

Wittneben, B.B.F., Okereke, C., Banerjee, S.B., and Levy, D.L. 2012, Climate change and the emergence of new organizational landscapes, *Organization Studies*, 33(11): 1431-1450

There is general agreement across the world that human-made climate change is a serious global problem, although there are still some sceptics who challenge this view. Research in organization studies on the topic is relatively new. Much of this research, however, is instrumental and managerialist in its focus on 'win-win' opportunities for business or its treatment of climate change as just another corporate social responsibility (CSR) exercise. In this paper, we suggest that climate change is not just an environmental problem requiring technical and managerial solutions; it is a political issue where a variety of organizations – state agencies, firms, industry associations, NGOs and multilateral organizations – engage in contestation as well as collaboration over the issue. We discuss the strategic, institutional and political economy dimensions of climate change and develop a socioeconomic regimes approach as a synthesis of these different theoretical perspectives. Given the urgency of the problem and the need for a rapid transition to a low-carbon economy, there is a pressing need for organization scholars to develop a better understanding of apathy and inertia in the face of the current crisis and to identify paths toward transformative change. The seven papers in this special issue address these areas of research and examine strategies, discourses, identities and practices in relation to climate change at multiple levels.

Audet, R., 2013, Climate justice and bargaining coalitions: a discourse analysis, *International Environmental Agreements*, forthcoming

This article adopts a perspective of climate justice as an object of discourse and takes the bargaining coalitions at the Conference of the Parties as the relevant units to map the heterogeneous discourse on climate justice at the Cancun COP16. Based on the statements of nine coalitions, the analysis identifies three discourses on climate justice. The conflict discourse articulates the North–South duality over issues of historical responsibility for climate change. The transition discourse points to solving the problem of sharing the cost of mitigating climate change through a process of global low-carbon growth. The vulnerability discourse focuses on the urgency of ambitious actions by all parties. These three discourses, and their appropriation by the bargaining coalitions, are inherent of new alignments among developed and developing countries alliances and blocs that simultaneously reproduce and surpass the North–South ideological divide.

Vernay, A-L., Mulder, K., Kamp, L.M. and De Bruijn, H., 2013, Exploring the socio-technical dynamics of systems integration - The case of sewage gas for transport in Stockholm, Sweden, *Journal of Cleaner Production*, forthcoming

Systems integration (the combination of previously independent systems) is one of the solutions proposed by industrial ecology scholars to tackle environmental problems. Systems integration has not yet been analysed as an innovation process, which could bring additional insights to its challenges and barriers. This paper is a first attempt to fill this gap.

Using a conceptual model based on actor-network theory and insights from structuration theory, we analyse the case of developing sewage gas for transport in Stockholm. Results show that the process was very dynamic and that the network grew in such a way that it became risky for actors not to join it. Moreover, pre-existing socio-technical rules had to be re-negotiated during the process. The process through which types of pre-existing rules were modified was unique for each pre-existing network that was involved. Besides, in one instance systems integration required the development of a bridging network allowing interaction between initially independent networks for sewage and private transport. Finally, results also show that systems integration requires a “superstructure” i.e. an organisation that can coordinate activities and take important risks to see to it that systems integration gets realised.

Loorbach, D. and Wijsman, K., 2013, Business transition management: exploring a new role for business in sustainability transitions, *Journal of Cleaner Production*,

This paper explores the co-evolution between societal sustainability transitions and fundamental shifts within individuals businesses. We argue that there is an emergent trend of businesses and industries that move beyond optimizing the organization's individual performance by mitigating negative environmental and social impacts, to fundamentally restructuring and rethinking existing businesses in light of broader societal changes. arguably, the frontrunner businesses that orient themselves towards sustainable market transitions develop a competitive advantage by co-creating these sustainable markets and on the short term develop renewed ambition and enthusiasm. By means of the transition framework, we argue that the fundamental societal changes emerging lead to a new phase in corporate responsibility, implying fundamental transitions within businesses. Based on this perspective and the transition management approach we explore how businesses might proactively engage with sustainability transitions in their direct context and link these to internal business transitions. We illustrate this framework of business transition management in a number of interlinked activities based on an experimental participatory case study of the transition in the Dutch roof sector.

J.C.J.M. van den Bergh (2013). Environmental and climate innovation: Limitations, policies and prices. *Technological Forecasting and Social Change* 80(1):11-23.

There is much hope that environmental innovation and green technologies will remove the threat of climate change. This paper offers a critical perspective on the role of technological innovation to solving environmental problems. To this end it will synthesize empirical insights about structural economic change, energy and environmental rebound, the energy return on energy investment of renewable energy technologies, and potential crowding out effects of climate policy. Distinguishing features of green technologies, and the diversity and motives of green innovators are briefly discussed to examine opportunities for environmental innovation. The desirable combination of environmental and innovation policies to assure effective environmental innovation is assessed. An extended argument is offered in favor of environmental (CO₂) pricing to make sure that innovation effectively contributes to environmental aims. The timing of policy also receives attention.

J.C.J.M. van den Bergh (2013). Policies to enhance economic feasibility of a sustainable energy transition. *PNAS* 110(7): 2436-2437.

This paper presents a framework that aims to completely capture the transition challenge. It consists of a triple externality problem, four escape routes, two reasons for lack of economic logic of a transition, and barriers due to the economic crisis. The paper further critically discusses the policy suggestion by Dangelmann and Schnellhuber (PNAS, 2013) to modify corporate law to make shareholders legally liable for environmental impacts of firms in which they invest.

Lauridsen, E.H. and Jensen, J.S., 2013, 'The strictest energy requirements in the world: An analysis of the path dependencies of a self-proclaimed success', *Energy Policy*, 53, 97-104

50 years of progressively strengthened energy requirements in the Danish building code appear to be a success, as the energy consumption has remained constant despite an increase in the total area in requirement of heating. This article however argues that the building code mechanism is heavily influenced by path dependent regime structuration processes, and that the mechanism constitutes a barrier to more radical developments within low energy housing. Few and poorly organized frontrunner activities within low energy housing have accordingly taken place in a Danish context during the past decades. Finally it is proposed that the current development within the energy system provides opportunities for cultivating an improved transitional awareness and for carrying out experimental activities that may challenge the path dependencies of prevailing regime structuration processes.

Einsiedel, E.F., Boyd, A.D., Medlock, J. and Ashworth, P., 2013, Assessing socio-technical mindsets: Public deliberations on carbon capture and storage in the context of energy sources and climate change, *Energy Policy*, 53, 149-158

The adaptation and transition to new configurations of energy systems brought on by challenges of climate change, energy security, and sustainability have encouraged more integrative approaches that bring together the social and technical dimensions of technology. The perspectives of energy systems and climate change play an important role in the development and implementation of emerging energy technologies and attendant policies on greenhouse gas reduction. This research examines citizens' views on climate change and a number of energy systems, with a specific focus on the use of carbon capture and storage (CCS) as a technology to address greenhouse gas emissions. An all-day workshop with 82 local participants was held in the city of Calgary in Alberta, Canada to explore the views of climate change, energy and CCS. Participants were provided the opportunity to ask experts questions and discuss in small groups their views of climate change policy and energy systems. Results demonstrate that participants' assessments of energy systems are influenced by social-political-institutional-economic contexts such as trust in industry and government, perception of parties benefiting from the technology, and tradeoffs between energy systems. We discuss our findings in the context of understanding social learning processes as part of socio-technical systems change.

Hermans, F., Van Apeldoorn, D., Stuiver, M. and Kok, K., 2013, 'Niches and networks: Explaining network evolution through niche formation processes', *Research Policy*, forthcoming

This paper uses the evolutionary perspective of Strategic Niche Management to investigate and explain the network dynamics of a collaborative innovation network. Building upon the theories of socio-technical transitions, we link macro-level network dynamics to the micro-level niche processes of vision building and experimentation. The paper describes a method to construct longitudinal two-mode affiliation networks and this method is illustrated with an analysis of the network properties of an agricultural niche in the Netherlands over a period of 15 years. Results show how a successful niche grows more connected, even when it grows in size. We found three distinct phases during which the network composition is more or less stable. Powerful actors are able to shape the composition of the network, either through providing the financial resources or through creating "legislative space" for the network to grow.