

**Bohumil FRANTÁL, Martin J. PASQUALETTI, Dan VAN DER HORST
NEW TRENDS AND CHALLENGES FOR ENERGY GEOGRAPHIES: INTRODUCTION TO THE
SPECIAL ISSUE**

Charles WARREN

**SCALES OF DISCONNECTION: MISMATCHES SHAPING THE GEOGRAPHIES OF EMERGING
ENERGY LANDSCAPES**

The networked nature of energy systems produces geographies of connection, but the focus of this paper is on geographies of disconnection, exploring the multi-scalar processes which shape the context in which energy landscapes emerge. It does so, first, by presenting a case study of farmers' attitudes to perennial energy crops in south-west Scotland. Their strong antipathy to converting farmland to short-rotation coppice, and the reasons for their negative attitudes, exemplify some of the wider mismatches and disconnects which the paper goes on to discuss. These include socio-political and socio-cultural mismatches, and a range of essentially geographical disconnects which are scalar in nature, such as the familiar local-global tension and the mismatch between the scales (both temporal and spatial) at which environmental and human systems organise and function. The discussion shows how these disjunctions not only affect energy geographies but also raise far-reaching questions about the ability of current governance structures and liberal democratic systems to respond swiftly and effectively to global challenges. The way that these mismatches are negotiated will mould both the character of future energy landscapes and the speed at which they take shape.

**Gerd LUPP, Olaf BASTIAN, Reimund STEINHÄÜBER, Ralf-Uwe SYRBE
PERCEPTION OF ENERGY CROP PRODUCTION BY LAY PEOPLE AND FARMERS, USING THE
ECOSYSTEM SERVICES APPROACH**

Perceptions of energy crop production are assessed in this paper. The Görlitz district (Germany) serves as a case study area for this purpose. Semi-structured interviews with farmers and standardized surveys among lay persons were conducted. Many farmers perceive themselves being responsible for providing many ecosystem services. Farmers prefer a regional scale of energy crop cultivation based on conventional crops. Improved legal frameworks and incentives would safeguard equal competition and ecosystem services. Laypersons think that drinking water, food production, biodiversity and pollination are the most important ecosystem services of agricultural landscapes. Providing biomass for renewable energy production is not considered to be an important ecosystem service. Laypersons believe that biomass production should be restricted to fields that are not needed for food production, and the use of residues or landscape management materials. According to laypersons, more money should be spent to halt the decline of ecosystem services.

**Jaroslav HOFIERKA, Ján KAŇUK, Michal GALLAY
SPATIAL DISTRIBUTION OF PHOTOVOLTAIC POWER PLANTS IN RELATION TO A SOLAR
RESOURCE POTENTIAL: A CASE STUDY OF THE CZECH REPUBLIC AND SLOVAKIA**

Over the last few years, many European countries experienced a rapid growth of photovoltaic (PV) power plants. For example, more than 20,000 new PV power plants were built in the Czech Republic. The high spatial and temporal variability of the solar resource and subsequent PV power plant production, poses new challenges for the reliability and predictability of the power grid system. In this paper, we analyse the most recent data on PV power plants built in the Czech Republic and Slovakia, with a focus on the spatial distribution of these installations. We have found that these power plants scarcely follow the solar resource potential and, apparently, other factors affect decisions for their location. Recent changes in the support schemes for solar applications also influence these patterns, with new installations mostly confined to built-up areas. These changes will require new tools to assess the appropriate locations of PV systems.

Justyna CHODKOWSKA-MISZCZUK

**SMALL-SCALE RENEWABLE ENERGY SYSTEMS IN THE DEVELOPMENT OF DISTRIBUTED
GENERATION IN POLAND**

Small-scale renewable energy systems in the context of the development of distributed generation, are discussed for the case of Poland. A distributed energy system is efficient, reliable and environmentally friendly, and is one of the most recent trends in the development of the energy sector in Poland. One of the important dimensions of this process is the creation of micro- and small-power producers based on renewable, locally-available energy sources. It is clear that the development of small-scale renewable energy producers takes place in two ways. One of these is through small hydropower plants, which are the aftermath of hydropower development in areas traditionally associated with water use for energy purposes (northern and western Poland). The second is through other renewable energy sources, mainly biogas and solar energy and located primarily in southern Poland, in highly urbanized areas (e.g. Śląskie Voivodship). In conclusion, the development of small-scale renewable energy systems in Poland is regarded as a good option with respect to sustainable development.

Markus SEIWALD

(UP)SCALING OF RENEWABLE ENERGY TECHNOLOGIES – EXPERIENCES FROM THE AUSTRIAN BIOMASS DISTRICT HEATING NICHE

The successful diffusion of sustainable technologies is termed “upscaling” in the transition studies literature. This paper maintains that upscaling is an ambiguous notion that suggests that technology diffusion processes follow a linear trend from small-scale pilot plants to industrial-scale facilities. On the ground, however, socio-technical configurations are implemented at a variety of scales, simultaneously. These issues are demonstrated in this paper by analysing the historical development of the Austrian biomass district heating niche. Drawing on secondary statistical data and primary qualitative semi-structured interviews, it is possible to identify four generic socio-technical configurations or dominant designs that, in conjunction, shape the diffusion dynamics of this technology in Austria.

Bohumil FRANTÁL, Eva NOVÁKOVÁ

A CURSE OF COAL? EXPLORING UNINTENDED REGIONAL CONSEQUENCES OF COAL ENERGY IN THE CZECH REPUBLIC

Focusing on coal energy from a geographical perspective, the unintended regional consequences of coal mining and combustion in the Czech Republic are discussed and analysed in terms of the environmental injustice and resource curse theories. The explorative case study attempts to identify significant associations between the spatially uneven distribution of coal power plants and the environmental and socioeconomic characteristics and development trends of affected areas. The findings indicate that the coal industries have contributed to slightly above average incomes and pensions, and have provided households with some technical services such as district heating. However, these positive effects have come at high environmental and health costs paid by the local populations. Above average rates of unemployment, homelessness and crime indicate that the benefits have been unevenly distributed economically. A higher proportion of uneducated people and ethnic minorities in affected districts suggest that coal energy is environmentally unjust.

Dan VAN DER HORST

LANDSCAPES OF LOST ENERGY: COUNTERFACTUAL GEOGRAPHICAL IMAGINARY FOR A MORE SUSTAINABLE SOCIETY

The quest for sustainable energy, one of the greatest challenges of the 21st century, calls for more input from academics than ‘simply’ producing good science. Geographical imaginations are as old as storytelling and mapmaking, but this essay is neither about ‘long ago and far away’, nor about utopian energy futures. This is a call to geographers to engage with ‘alternative present’ energy scenarios, using the full range of analytical and discursive tools at our disposal. Drawing on a diverse tradition of imagined spaces and the awareness of absences (material, relational or otherwise), geographers should be able to contribute to the quest for a more sustainable society by assessing, envisaging, and communicating a counterfactual ‘here and now’, based on good practices existing right now, but not (yet) right here. We need to understand how much more sustainable our bit of the planet would be if we could just, environmentally speaking, ‘keep up’ with the best of our neighbours. This counterfactual present should be seen as neither radical nor utopian, because it only assumes the historic adoption of best practices which we now know to be feasible and successful. And if this alternative current scenario looks radically different from the ‘real’ state we are in, then this goes to show how radically unsustainable our business-as-usual approach has been.