

Special Issue on Sustainable Supply Chains and Energy Security

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Objective

This proposed special issue of Applied Energy is focussed on the links between energy security and the supply chains/value chains that make up energy systems.

At a macro level, energy systems can be viewed as a supply chain, comprising of multiple and interrelated sub-chains based around different fuels, technologies, infrastructures, and actors. These enable resources to be extracted, transformed and distributed to meet the demand for energy services across heat, power and transport. In industrialised countries, these supply chains are predominantly based upon fossil fuels which are: cheap and easy to access; highly interconnected; complex; and increasingly globally based - making them prone to inertia and lock-in.

Moving to sustainable energy systems will necessitate significant and rapid change in the way that energy is currently supplied and used. This will require the development and expansion of new supply chains based upon existing and new technologies, as well as changes to the wider social, economic and political landscape in which these technologies are embedded.

The drive to reduce emissions also needs to happen whilst maintaining energy security to ensure that the demand for energy services can be balanced with sufficient low carbon supply. Although avoiding discontinuities between supply and demand are central to energy security, this issue is far broader and varies over time and scale; picking up concerns linked to: price volatility; reserves concentration; instability in producing nations; shifting patterns of global supply and demand; changing geopolitical relationships; a strengthening re-politicisation of energy; and resource depletion, including the timing of peak oil.

The need to tackle climate change and ensure energy security are now at the centre of energy policy concerns in many countries and dealing with them effectively will create new risks and opportunities for the supply chains that shape our energy systems. This special edition seeks to examine and conceptualise these relationships in more detail, to better understand the issues involved with developing and expanding low carbon supply chains.

Proposed Topics

We are seeking insightful contributions from researchers and practitioners of lasting value pertaining to the importance of supply chains for a low carbon, sustainable and secure future. This can include supply chains related to power, heat and transport on both the demand side and the supply side, across themes such as, but not limited to:

- The risks and opportunities for supply chains in the transition to low carbon energy systems

- Renewable and other low carbon technologies, such as solar, wind, bioenergy, marine, etc.
- Infrastructure and networks, including smart grids or operational technologies
- The relationship between scale and supply chain resilience
- Skills and training needs
- Energy policy
- Finance and investment
- Materials
- Implications for energy costs and prices of scarcity
- Supply chain analysis, such as the nature by which supply chains develop, expand or fail
- Market structures and competition, and the implications in terms of supply chains ability to respond to dynamic changes and shocks
- Further work to conceptualize the importance of a supply chain analysis to energy security and a low carbon transition.

A working paper on the relationships between supply chains and energy security is available in the publications section of the Energy Security in a Multipolar World (ESWM) research cluster website

<http://www.exeter.ac.uk/energysecurity/index.shtml>. ESWM was a four year UK funded research cluster, supported by the ESRC/EPSRC research councils which brought together practitioners from across the disciplines of energy security, energy policy, international relations and supply chain analysis.

There may be an opportunity for some selected authors from this special issue to participate in a supply chains session at the forthcoming International Conference on Applied Energy ICAE2013 in July in South Africa: www.applied-energy.org

Deadline and Process

Complete manuscripts can be submitted from 28th April 2013, the submission deadline is 31st July 2013.

All manuscripts are to be submitted via the EES (<http://ees.elsevier.com/apen/>) selecting on the menu as special submission type "Sustainable Supply Chains".

Please follow the GUIDE FOR AUTHORS to prepare your manuscript, see <http://www.elsevier.com/journals/applied-energy/0306-2619/guide-for-authors>

You are also encouraged to read relevant articles in Applied Energy to better understand the readership of the Journal, see <http://www.sciencedirect.com/science/journal/03062619>

All papers are subject to the standard peer-review procedure required by Applied Energy. This special issue is scheduled for publication during 2013.

Please do not hesitate to contact Richard Hoggett at the University of Exeter, UK (r.d.hoggett@exeter.ac.uk) if you have any further questions.