

## **Energy and Development: The Political Economy of Energy Choices**

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## **Editorial: Energy and Development: The Political Economy of Energy Choices**

The impetus for this special edition originated in a three-day symposium held in 2010 at Loughborough University in the UK. Funded under the UK Energy Research Centre (UKERC)'s Meeting Place<sup>1</sup> scheme, this event represented the first step in an attempt to raise the profile of 'energy and development' research across the UK academic community through an attempt to bring together the energy technologies, socio-technical transitions and development studies traditions. Within the context of renewed international interest in energy access issues and the urgent international commitments to climate change adaptation and mitigation the intention was to stimulate interest in the nurturing of a UK research community that could transcend orthodox disciplinary boundaries, create connections between UK researchers and those working on energy themes in Southern institutions and to reach out and engage much more effectively with the range of other stakeholders (government agencies, international institutions, NGO's, community organizations, large and small-scale businesses etc.) operating in the sector. This intent eventually resulted in the establishment of the UK Low Carbon Energy for Development Network in 2012 (<http://www.lcedn.com>) which many of the authors gathered together in this special edition have been part of developing.

Six years after that initial meeting, sustainable energy has now achieved a Sustainable Development Goal of its own (No.7) as one of the successors to the Millennium Development Goals (which, as has frequently been pointed, out failed to directly address energy issues at all) and international interest in energy issues across the Global South has continued to accelerate. As recently as 2009 the WHO had written that only "(a)bout half of developing countries now have targets for improving access to electricity" and "few countries have targets for modern fuels, improved cooking stoves, or mechanical power" (World Health Organization 2009) but since then the situation has been radically transformed as energy access issues have risen steeply up the international development community's agenda, closely correlated with a growing global appreciation of the need for low carbon transitions.

In September 2011, UN Secretary-General Ban Ki-moon launched the Sustainable Energy for All (SE4All) initiative with a shared vision of how access to modern energy services could be made a reality for the whole global population by 2030 (Ki-Moon 2011). The year before at COP in Cancun, the international community announced the creation of the Green Climate Fund, a new multilateral financing institution designed to promote climate-resilient investments (including in renewable energy) in developing countries via concessional finance (launched in December 2013, the fund has secured an initial \$10 billion from 33 countries and through this and other measures the international community have pledged to provide \$100 billion per year by 2020). The negotiations over the newly formulated Sustainable Development Goals (SDGs), thereafter, presented energy as being fundamental to the achievement of wider developmental goals and, as alluded to above, the seventh SDG explicitly commits the international community to ensuring "access to affordable, reliable, sustainable and modern energy for all" by 2030, and for this to be accompanied by a significant increase in the share of renewable energy within the global energy mix over the same period. These ambitious targets are to be achieved via the funding of expanded infrastructure and upgraded technology and through enhancing international cooperation to "facilitate access to clean energy research and technologies" (United Nations Sustainable Development Knowledge Platform website).

There remain, however, significant questions over how (and whether) these intentions will be realised (and with what impacts) – assumptions made about the transformative effect of mere technology in development are not new, after all, and in the energy sphere such views continue to exert a heavy influence on the thinking of the national and international agencies that will presumably be responsible for implementing SDG 7 (Campbell et al, 2016, Ockwell and Byrne, 2016). How will sustainable energy access be achieved in very different countries with different levels of infrastructure, not to mention resource and institutional capacities, and at what scale will governance operate? How realistic are the expectations for the speed of transition with what remains a somewhat sketchy road-map? How are such significant transitions to be managed and, in particular, what are the appropriate roles of public and private sector actors within these transitions? There has been a tendency in some of the advocacy of the targets central to SDG7 and to the SE4All targets to treat energy issues in isolation from the wider social and political contexts within which they are located, with little consideration given to questions of power, governance and inequality in the production of pre-existing geographies of energy marginality (every actor working in the energy and development field could probably make the case for energy to be included as a critical component in all 17 of the SDGs, rather than as a separate one). There is also frequent reference to the pursuit of universal delivery models and technologies that can be 'rolled out' in diverse national and local settings - many initiatives remain focused on energy access as a kind of silver bullet for tackling poverty and marginality, and on technologies as silver bullets-within-a-bullet.

At the same time, however, alongside the considerable expansion in international funding available for initiatives designed to help meet the SE4All targets, there has also been a recent step-up in the finance being made available to support research into the most cost effective and sustainable ways of meeting the international targets, as well as assessing the effectiveness of international efforts towards those ends. For example, the Africa-EU Renewable Energy Cooperation Program recently launched efforts to initiate a stronger scientific platform for renewable energy research cooperation Africa and the European Union. Turning to the UK specifically, in late 2015 the government announced a £1.5 billion five year programme of research under the Global Challenges Research Fund where Renewable energy and materials are included as one of five initial priority themes. Alongside this in 2016 the UK Department for International Development 2016 launched the £65 million Transforming Energy Access programme whose goal is to “deliver new technologies and robust evidence on the critical barriers hampering systemic change and scaling up energy access, working with Southern researchers and entrepreneurs, to drive locally relevant innovation and delivery.” The papers gathered together here speak to several of these key themes and it is intended that, together, they will help inform the direction of this rapidly evolving and dynamic field of development studies.

Much of the existing academic debate surrounding the achievement of the energy access targets discussed above has tended to focus on exploring advances within particular technology areas or the evolution of private sector business models related to the uptake of those technological developments; producing a focus on such themes as 'take up,' investment levels, regulatory frameworks and incentives – with the assumption that energy access and low carbon transition targets are best met by the pursuit of market-led strategies. If there is a focus on the role of the state at all, then it tends to be as a creator of appropriate conditions for the private sector. What has perhaps been missing is an analysis of the broader social, and above all political economy, of this rapidly changing context. The papers gathered together here all attempt to counter this

tendency by taking a step back from the explorations of delivery models in order to explore a theme which has perhaps been underplayed within recent explorations of energy and development issues - wider political economy analyses of the relationship between state and market in energy transitions in the Global South.

Ten to fifteen years ago, there was an extremely lively academic and political debate around the implications of free market reforms within sectors concerned with the provision of infrastructure and key public services (see, for example, the special edition (8:1) of *Progress in Development Studies* on GATS and the Water sector which we edited alongside our colleague Mansoor Ali in 2008). In relation to energy, battle lines were drawn between the proponents of neoliberal globalization who saw the only ways to strengthen delivery and expand energy access as liberalizing markets to allow more efficient international companies to enter Southern energy markets to access private sector investment (Bacon and Besant-Jones, 2001; Kessides, 2012) and those who saw such approaches as ideologically-driven, counter-productive, exclusionary and likely to require massive subsidization from the state to achieve progress within the required time-scales (Ahmed, 2007; Bayliss and Fine, 2007; Haselip and Potter, 2010; McDonald, 2012). Recent years have, however, seen attention shift from debates over the most appropriate forms of grid ownership and management and their implications for cost and access issues to explorations of how best to facilitate the spread of off-grid alternatives for rural communities. Interestingly, these latest debates around low carbon transitions and the rapid expansion of off-grid electricity access are still largely focused around private sector delivery mechanisms which are in their infancy and frequently ill-thought through in terms of their longer-term sustainability and their broader placement within broader energy sector policy evolution (Bhattacharyya, Palit and Sarangi, 2015).

The first paper of the special edition by Dave Hall and Jenny Nguyen tackles these kinds of issues head-on by exploring the record of electricity liberalization impulses across the Global South over recent decades. The case has been made strongly over the past twenty years by organizations such as the World Bank that the state cannot provide the capital or managerial know-how to effectively address the key challenges facing the energy sector across the Global South - that is addressing energy poverty and marginality, improving efficiency and facilitating transitions towards low carbon futures and the development of a renewed green economy. Hall and Nguyen trace the evolution of this approach and then consider how energy sector liberalization has been conducted within the 11 largest developing countries in respect of the depth of reforms, the types of markets created and the levels of investment achieved. Their main observation is that there has, in fact, been a widespread failure to significantly adopt the liberalization agenda within these economies, relating to concerns over perceived fairness, efficiency, the effectiveness of regulation and the implications for meeting climate change commitments and even where unbundling and other reforms have occurred there appears to be little evidence of this producing higher levels of investment for enhancing capacity or accelerating access in comparison to countries where the industry has remained more strongly in state hands. They go on to argue that even those previously most vocal in their support of the liberalization/privatization agenda, are now calling for 'reforms of reform' which in essence seem to revolve around strengthening the role of the state. As they put it, "*the state is now expected to attract private investment by making initial and core investments itself (in electrification and networks), providing tax and other subsidies for companies so that they do not have to rely on full cost recovery from consumers, and commissioning investments through long-term contracts under government guarantees.*" They

conclude their discussion of energy sector investment levels by suggesting that “the unrewarding experience of the ‘reforms’ of the last 20 years points in the same direction as the requirements for the development of renewable energy, that is of active government planning and financing.”

The issues surrounding the roles of state and private sector within the energy sector are also central to the second paper included here. In this case, however, Julia Tomei and Danielle Gent explore the energy governance trajectory of one particular region of the world that has often been over-looked in discussions of energy governance – Central America. Their paper traces historical energy policy transitions within the region through the lens of Goldthau’s (2012) work on shifting global energy paradigms (the successive movement from statism through neoliberalism to the current resurgence of the role of the state, which they depict as interventionist). Essentially their paper considers the local manifestations and impacts of the global energy governance and policy transformations described by Dave Hall and Jenny Nguyen within the specific regional context of Central America. As they demonstrate in their paper, over recent years Central America has provided a fascinating set of examples of the pursuit of contrasting approaches to energy governance within the context of quite similarly structured economies. They highlight both the diversity of experiences within the region (from what remains a strongly state-oriented approach in Costa Rica, through varying levels of unbundling and privatization across the other countries of the region) and the significant commonalities that exist (the gradual transnationalization of the energy sector in the region, the small size of their individual electricity markets and, until very recently, an increasing dependency upon oil imports).

Their paper provides further evidence in support of Hall and Nguyen’s critique of liberalization in that there is a strong case presented that neoliberal reforms in the region’s electricity sector have been counter-productive in terms of meeting the key goals of hastening low carbon energy transitions, enhancing the security of supply and meeting energy access commitments (both in terms of the affordability of price and extending access). They observe that the majority of Central American states have implemented market reforms of some kind within their energy sectors over the last two decades but, as was the case in many of the larger economies reviewed by Hall and Nguyen, several have more recently begun the process of reversing those reforms in search for a means of enhancing the ability of the state to direct energy policy towards the achievement of key goals (with a particular focus on reducing dependence upon imported oil). Once again, however, this enhanced state role should not be read as inferring that this is leading towards a wholesale return to vertically-integrated state ownership of the energy sector.

Joseph Wilde-Ramsing builds on the general discussions over the political economy of energy sector reforms considered in the first two papers by considering the nature of the European and US transnational energy companies that have taken advantage of the energy sector privatizations of recent decades to enter a number of markets across the Global South. In particular he explores how such companies have incorporated “internationally recognized normative standards for *“sustainable electricity provision” (SEP) into their own corporate responsibility (CR) policies.*” Drawing on qualitative interviews with company staff, Wilde-Ramsing argues that *“the record of TNC’s in providing electricity in a manner consistent with sustainable development is, at best, mixed.”* He recognises that TNC investment within Southern contexts has, in some cases, had beneficial impacts upon expanding electricity access, but he argues that *“in many cases a focus on short-term profits has led to investment decisions and pricing policies that exclude those in greatest need and contribute to negative impacts on local economies, workforces and*

*infrastructure.*” He also makes the point (already observed in the previous two papers) that a significant majority of private investment in the electricity sector of Southern countries has been in fossil-fuel based power plants, with a much weaker record in relation to low carbon investments.

His detailed analysis of how each company has incorporated the international SEP norms into their Corporate Responsibility policies (particularly in relation to questions of corruption and transparency but also in reference to other social, environmental and economic issues), reveals that each company has interpreted their responsibility for SEP in quite different ways. There is, thus, considerable variation in the application of SEP principles by TNCs operating in the sector; a variation which Wilde-Ramsing relates to different cultures of CR operating with the business cultures of European, Nordic and US corporations. Recognising the dangers of too deterministic an approach towards the identification of these regional/national cultures, he argues, nonetheless, for the usefulness of such an approach in identifying broad variations in policy. His analysis reveals considerable differences between the approach towards CR adopted by three major players in the electricity sector (one from each identified business culture) reflecting different levels of engagement with the international frameworks governing sustainable business activity and the norms which flow from them. He concludes by recognising the need to go beyond the high level analysis that he presents in the paper to explore in more detail both the practices of specific corporations in specific places and how they interact with local institutions and organizations. To this we would also add the need to explore differences within the modes identified: for example the different cultures of French, British and Spanish energy companies (some interesting work has been done on the close political relationships between EU negotiators, French water companies and private sector lobby groups in the protracted debates over the status of water resources in the GATS negotiations a few years ago: Hilary, 2003). As Wilde-Ramsing notes himself, more consideration is also needed to the question of the role played by firms from the Global South and their inter-connections with northern corporations.

The final two papers shift our focus somewhat to look at a connected but distinct set of issues that are also centred around the political economy of energy transitions. Here, however, we are concerned with, not the attempts to green and extend national grid systems, but rather with the proliferation of household-level low carbon energy technologies being installed across communities throughout the Global South and the growing numbers of international and local businesses and NGOs supplying such products, the innovative new business models they have developed and their socio-cultural impacts. Once again, there has been a very strong emphasis on the role of the private sector in accelerating these developments. As Marshall et al point out in their paper, one of the dominant narratives around the SE4All agenda is that low carbon technology transfer and off-grid energy access is “best achieved by promoting private sector growth and private sector-led development.”

Their paper focuses on some of the less-researched implications of this type of approach through a study which focuses on the World Bank (and other donor) funded Climate Innovation Centres initiative. These centres (now established in the Caribbean, Ethiopia, Ghana, Kenya, Morocco, South Africa and Vietnam), are intended to provide programmes of support for entrepreneurs (via seed funding, policy analysis and advocacy and business training) to nurture the development/transfer and deployment of a range of forms of clean technology. Marshall et al’s analysis, however, is directed at how such initiatives have been conceptualised and administered

and what their social ramifications have been. As they explain, “(l)ow carbon energy technologies will also likely have profound impacts upon society but little is understood about the nature and distribution of those impacts: who might benefit, who might lose, and in what ways..... (b)eyond an inability to claim the potential benefits of a technology, its impact will also differ depending on one’s relation to it, with gender constituting a definitive factor in shaping such relations.”

It is important that the dominant narratives that are being employed in the rapid drive towards the take-up of clean energy technologies are subjected to these kind of more cautious analyses. Too much of the policy literature in this space has tended to revolve around getting new technological innovations to scale as quickly as possible, without considering their wider implications too deeply. One of Marshall et al’s central concerns is to explore the implications of the dominant focus on the entrepreneur as the driver of change (they argue that innovation and entrepreneurship are seen as virtually synonymous) and its status as a ‘neutral meritocratic identity’ – i.e. anyone can become an entrepreneur – they just need ideas, drive and, via international cooperation, training and access to finance. In their detailed analysis of one particular scheme in Kenya they raise some significant questions regarding this framing of the universality of entrepreneurship and explore how, for example, those promoting entrepreneurship “*express less commitment towards supporting women-owned ventures than those run by men.*” The reason behind this, they argue, is the way in which the international development community frames the nature of the entrepreneur in clearly gendered ways; reflected in an ‘antagonism’ between entrepreneurialism and how femininity is constructed. In turn, this socio-cultural lens means that in general terms the development of specific technological initiatives is contingent upon the adoption of individualistic values and traits of masculine identity (a major concern when one consider the critical role played by women in supplying energy in non-electrified communities).

Thinking more generally they use their analysis to call for further research into how the “*negotiation of identity may affect which framings gain influence and, concomitantly, the types of technologies and socio-technical systems that arise.*” This clearly relates not only to gender differences but also to how dominant framings of technological change may affect the access of other groups to entrepreneurial identity (e.g. the disabled and elderly, or poor people more generally”). They conclude by suggesting that there needs to be a serious exploration of the degree to which the dominant entrepreneurial focus of much international support towards energy technology development and deployment can be accessible to a broader range of social sectors together with the proposal that “*where entrepreneurship will fail to meet their needs, support must be provided for appropriate alternative processes of technology innovation.*”

The final paper in this special edition turns our attention away from the over-riding focus on electricity which has been present within the other papers to explore the implications of market-led (and “user-centred”) initiatives in relation to transport and cooking in India. Here the focus lies in how the Indian state has framed its approach to energy policy and in particular how the dominant market-led approach has influenced the evolution of specific initiatives designed to tackle energy poverty at the local level following what is often presented as the failure of interventionist state-led strategies. In the specific case of the promotion of clean cook-stoves, they argue that the shift from national state-led subsidised approaches to more flexible market-based initiatives, whilst able to respond more adequately to questions of local cookstove and fuel preferences, ultimately undermined the ability of poorer sectors to access the stoves as prices increased considerably. At the same time, the market-based approach led to the deepening of

differential levels of access to finance amongst producers and created considerable opportunities for “*diverse brokering activities and corruption.*” They call for further research into the implications of the continued consolidation of market-based approaches within the cookstove sector, not due to any illusions over the limitations of the previously dominant centralised approaches but rather to examine the degree to which adopting a more “user-centred philosophy” automatically translates into the advocacy of enterprise-based solutions.

They also explore the evolution of government policy in support of the development of biofuels, here government policy mandating compulsory 10% blending of bio-ethanol from 2008 (based solely on non-food feedstocks) with diesel and petrol, has given rise to a variety of differential responses reflecting different levels of market development and state intervention. These ranged from the leasing of state land (with no upper limits) to large private biofuel companies in Rajasthan, through the NWDPRAs’ programme of the redistribution of rehabilitated ‘wasteland’ to small farmers, to a mixture of market-based mechanisms and state subsidies in Tamil Nadu. Ultimately, however, each of these approaches have experienced difficulties – for example, the poor performance of jatropha has undermined the success of investors of all sizes (particularly on so called wastelands) and the poor performance has intensified land access conflicts and highlighted the need for participatory planning and strong (but transparent) state intervention in regulating market solutions.

What unites all five of the articles gathered together in this special edition is a call for more careful evaluation of the dominant market-focused approach towards low carbon energy transitions and meeting energy access targets in the Global South and a recognition of the need for nuance in understanding the implications of (and inter-relationships between) private and public actors in addressing global energy challenges. Ultimately, this revolves around the promotion of a better understanding of the contested governance of clean energy transitions and a recognition that sustainable energy access must be seen as an explicitly political problem “with solutions that are themselves political as much as they are financial, technical or social” (Ockwell and Byrne, 2016). Addressing such concerns remains one of the key *raison d’être* of the UK Low Carbon Energy for Development Network.

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<sup>i</sup> See <http://www.ukerc.ac.uk/programmes/meeting-place.html> (accessed October 10th 2016)

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