ENERGY POLICY

The landscape of energy initiatives in sub-Saharan Africa: Going for systemic change or reinforcing the status quo?

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ABSTRACT

This article examines recent interventions by major players in sub-Saharan Africa's energy sector and asks whether they acknowledge or seek to address energy as a complex problem and energy systems as socio-technical systems. Several scholars have begun advocating the socio-technical approach to energy by noting that the mainstream conceptualization of energy challenges in strictly technological or economic terms does not capture the complexity and inertia inherent to energy systems. Moreover, the article also seeks to examine how well have recent interventions integrated pro-poor and low-carbon concerns, two of the major tenets of UN's Sustainable Development Goal 7. Findings suggest that initiatives studied take only partial consideration of key aspects of a socio-technical approach to the energy problem. Nonetheless, the initiatives have taken on board pro-poor and low-carbon concerns to a certain extent. Two main policy implications are drawn from this study: a continued focus on status quo approaches has the potential to generate investment inefficiencies; and an effective low-carbon transition will require a broader discussions about the types of lifestyles people in sub-Saharan Africa aspire to.

1. Introduction

Limited access to modern energy services in sub-Saharan Africa is now widely recognized as one of the key hurdles to the economic and social development of its population (Africa Progress Panel, 2015; Brew-Hammond and Kemausuor, 2009; Karekezi, 2002). According to the latest estimates of the International Energy Agency, 65% of the population of sub-Saharan Africa lacks access to electricity and 81% uses harmful and inefficient traditional forms of energy (e.g. biomass) for cooking and heating (IEA, 2016). In other words, the co-existence of traditional and modern energy systems and practices remains largely the norm in many sub-Saharan African countries (Sokona et al., 2012). Development actors have stepped up their support for improved access to modern energy services in the sub-continent since the UN declared 2012 the International Year of Sustainable Energy for All (SE4ALL). Official development assistance (ODA) is expected to continue to grow after the launch in 2015 of the UN Sustainable Development Goal 7, the commitments on climate change made at the COP21, and the aims outlined in paragraph 49 of the Addis Ababa Action Agenda to finance energy infrastructure.

The expected rise in initiatives to deliver universal access to

efficient and sustainable modern energy services in the sub-continent faces two broad challenges, however. First, the cost of meeting the target of universal access by 2030 is high compared to the ability of most countries to finance the required energy projects. The Africa Progress Panel (2015) estimated an annual spend of USD$55bn was needed to that end. National governments alone cannot afford it and so development actors will play a crucial part in many initiatives (Eberhard and Shkaratan, 2012; Quitzow et al., 2016a). Private sector involvement is also becoming a staple in Africa's energy development future, as private actors search for new sectors and markets around the globe (Quitzow et al., 2016b; Eberhard et al., 2017). While some view private sector involvement not just as inevitable but also necessary (UNEP Finance Initiative, 2012), others seem to find evidence that it leads to the 'financialization' of energy projects, with a concomitant loss of focus on issues around energy poverty, equality, and sustainability (Baker, 2015).

The second challenge is that of governance. Here the issues are diverse and variable from country to country, but a few trends are noticeable: the absence of appropriate regulatory regimes, be it for the regulation of energy markets, investment and finance, contractual arrangements, or the governance of corporate activity; distortions

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introduced by national government interventions in the energy sector (e.g. artificially low electricity tariffs, subsidies to national utilities); or the lack of adequate technical capacity to manage energy resources and infrastructures (Bazilian et al., 2014). With a growing variety of actors involved in energy initiatives in sub-Saharan Africa, various authors suggest this is leading to diffuse, fragmented and uncoordinated action with limited effectiveness (Bazilian et al., 2014; Cherp et al., 2011; Florini and Dubash, 2011; Florini and Sovacool, 2009).

A recent exercise mapping major ODA programs and initiatives in Africa by Quitzow et al. (2016a) confirmed the proliferation of investment initiatives and actors. It noted various governance challenges, particularly as connected to achieving improved coordination and knowledge sharing across initiatives (Ibid.). The authors also highlighted some concerning tendencies across the initiatives (Quitzow et al., 2016a): a considerable neglect of Central Africa across initiatives, which raises concerns over asymmetrical energy development for the continent; a continued preference for engaging national actors, even though local actors are deemed fundamental to developing new low-carbon energy pathways (Bulkeley et al., 2011; Dubash and Florini, 2011); a lack of attention to clean cooking solutions, despite its impact on the environment and households health and income (Sovacool, 2012); or a tendency for technical assistance to miss out on much needed skills development in recipient countries (Eberhard and Shkaratan, 2012). While providing an overview of high-level ODA initiatives alone, this mapping exercise is rather helpful in capturing the current dynamics of interventions in the energy sector in sub-Saharan Africa.

However, this mapping exercise leaves unanswered a pressing question: will these efforts effectively contribute to a systemic change of Africa's energy sector? More prosaically, is investment being used to treat the symptoms (e.g. energy poverty) or the problem? This is a legitimate concern, since mounting evidence seems to suggest that, so far, energy sector reforms have defined the problem in too narrow terms. For instance, Dubash (2003) questioned long ago whether electricity reforms conducted in the 1990s, which typically focused in technical and economic reforms, were missing the social and environmental dimensions of the energy problem (see also Turkson and Wohlgemuth, 2001). As a result, the push for market liberalization and utility unbundling did not materialize as policymakers expected, neither did legal, regulatory and institutional obstacles to investment disappear (Eberhard and Shkaratan, 2012; Gujba et al., 2012). Some authors have argued that these failures are a consequence of limited attention to the political economy of the energy sector in Africa and its dynamics at various scales – global, regional, national, or local (Bazilian et al., 2014; Sovacool, 2012; Verrastro et al., 2010). Initiatives tend to overlook the importance the energy sector plays in the control of political power, elite formation, or economic gate-keeping so characteristic of African economies dependent on mineral-based exports (Africa Progress Panel, 2015; Auriol and Blanc, 2009; Cooper, 2002). The diversification of ODA actors mentioned above may exacerbate this lack of attention to the local politics of energy, since ODA actors may steer projects to serve their own interests and agendas at the expense of improving recipient countries' institutional environment (Barnett and Finnemore, 1999; Gibson et al., 2005; Mosse, 2005; Roodman, 2009). Overall, what recent energy initiatives seem to continue to miss is that energy is a complex problem and energy systems are not just technical in nature; they are instead socio-technical systems deeply embedded in local, national, regional and global institutions, practices and politics (Silver and Marvin, 2017). As such, there is a risk that current initiatives may contribute to reinforce the status quo instead of promoting the systemic change needed.

This article examines recent interventions by major players in sub-Saharan Africa's energy sector and asks whether they acknowledge or seek to address energy as a complex problem and energy systems as socio-technical systems. Several scholars have begun advocating the socio-technical approach to energy by noting that the mainstream conceptualization of energy challenges as strictly technological or economic matters does not capture the complexity and inertia inherent to energy systems (Geels, 2004; Goldthau, 2014; Goldthau and Sovacool, 2012). Despite their various approaches, there is now a collective understanding among these scholars that a move towards sustainable energy transitions that addresses both energy poverty and climate change (i.e. pro-poor and low-carbon) requires systemic change that challenges status quo solutions focusing largely on technological fixes and energy markets. If recent and upcoming initiatives by major players continue to miss the underlying dynamics of sustainable energy transitions, then we may be investing in reinforcing existing inertia and path-dependencies, instead of chartering new sustainable energy futures.

The article is organized as follows. Section 2 introduces the socio-technical approach, outlining some of the key aspects to take into account when analyzing energy initiatives that seek to promote systemic change towards sustainable energy futures. Section 3 outlines the methodology underlying the selection and analysis of major actors and their initiatives. Section 4 presents and discusses the results. The main finding is that a socio-technical conceptualization of the energy problem is largely absent, with some initiatives showing concerns with developing pro-poor and low-carbon solutions, but with only limited consideration of a broader low-carbon socio-technical transition. Section 5 concludes with a discussion of the policy implications for future energy initiatives in sub-Saharan Africa and elsewhere in the global South.

2. Literature review and analytical framework

Providing access to sustainable energy for all in sub-Saharan Africa will require significant innovation, not just through technological solutions or the right economic incentives and investments, but also through social, institutional, and geographical innovation (Goldthau, 2014). Several scholars concerned with sustainable energy transitions advocate this socio-technical approach to the problem of energy, in Africa and elsewhere, as the best approach to capture the challenges ahead (e.g. Bulkeley et al., 2011; Byrne et al., 2011; Geels, 2004; Goldthau, 2014; Rutherford and Coutard, 2014; Turnheim et al., 2015). A detailed review of this now extensive literature on the socio-technical approach is beyond the scope of this article. However, for the current purpose, there are two broad concerns of a socio-technical approach to sustainable energy transitions to consider: how the actors proposing an initiative conceptualize the energy problem they intend to address; and what is the underlying agenda they seek to promote with their energy initiative.

As for the first concern, a socio-technical approach conceptualizes the problem of energy as a complex one, involving multiple actors, scales, geographical locations and timeframes (Goldthau and Sovacool, 2012; Turnheim et al., 2015; Urry, 2014). Energy is a global public good that influences various spheres of social and economic life in various places across the globe (Florini and Sovacool, 2009; Turnheim et al., 2015). Its infrastructure is physically embedded in concrete places making space and geography a critical dimension of energy systems (Bridge et al., 2013). For these reasons, energy systems are rather context-specific, path-dependent, with specific lock-ins, and resistant to change (i.e. system inertia); they have stabilized over time as the result of the historical co-evolution of social, technical, institutional and ecological systems (Goldthau and Sovacool, 2012; Turnheim et al., 2015). Resistance to change can be widespread and system-wide: it can come from the most powerful key players within the energy industry or from the most common individuals and their set habits of energy consumption. Attention to the historical dimensions of path-dependency and inertia is crucial, yet seldom addressed by energy initiatives (Baptista, In press). Moreover, energy production and consumption systems raise complex problems of externalities, the most obvious of which are now climate change and energy security (Goldthau and