Energy Policy 63 (2013) 738–746

Contents lists available at ScienceDirect

Energy Policy

journal homepage: www.elsevier.com/locate/enpol

Let there be light: A multi-actor approach to alleviating energy poverty in Asia

Belinda Spagnoletti [a,b,*], Terry O'Callaghan [a]

[a] Centre for International Risk, School of Communication, International Studies and Languages, University of South Australia, Australia
[b] The Nossal Institute for Global Health, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne, Australia

ARTICLE INFO

Article history:
Received 28 March 2013
Accepted 31 July 2013
Available online 17 September 2013

Keywords:
Energy poverty
Corporate social responsibility
Multilateralism

ABSTRACT

Energy poverty is the primary energy security issue impacting almost 800 million people, particularly women and children, in the developing countries of Asia. Current trends indicate that should there be no change to existing policies, and the governance systems and institutions underpinning them, the absolute number of energy poor will barely shift. Most significantly, addressing energy poverty is critical to absolute poverty reduction, enhanced gender equality and political stability in the Asian region. We offer a solution to progress the energy poverty alleviation effort focused on encouraging sustainable, development-centred investment. This will involve multi-actor partnerships between developed and developing country governments, investors, and multilateral institutions. We propose that there may be spill over effects for investing firms, in the form of strengthened corporate reputation. Consequently, energy poverty alleviation efforts can create new opportunities for commerce, multilateral institutions, NGOs, and developing and developed countries. It is envisaged that the multi-actor approach put forward by this paper will facilitate the partnerships, programs and provisions needed to alleviate energy poverty in Asia. However, critical to the success of this collaborative approach is a genuine shift in sentiment from the key stakeholders involved in the effort.

1. Introduction

This article is conceptual in its form, and contributes to the energy poverty literature by proposing a multi-actor approach to the Asian energy poverty alleviation effort. The approach we propose is ideologically aligned with the Asian Development Bank's (2011a) drive to 'maximise energy access for economic and social development'.[1] The persistence of energy poverty in the region, which has grown economically at a remarkably rapid rate, is indicative of the difficulties and complexities associated with solving the problem. This paper is centred on the notion that effective multi-actor partnerships are ultimately critical to addressing energy poverty in Asia. Such partnerships would likely include firms, governments and their agents, multilateral institutions and non-governmental organisations (NGOs). However, a business-as-usual approach from these parties will not ensure efficacy, and there are important ideological transformations that will need to be pursued to enable successful outcomes.

The next section provides a background to the problem, highlighting the prevalence of energy poverty in Asia. We examine the vast inequalities stemming from energy poverty, including the extent to which it disproportionately impacts women and children. Underpinned by the premise that developing countries will commit to improving their institutional capacity, the third section considers the capacity building role that developed countries with regional interests can play, including foreign aid agencies, public servants working in infrastructure sectors, and higher education providers. We propose bilateral partnerships between developing countries and developed countries that can help to advance institutional capacity building, through sharing knowledge and technical skills. The fourth section considers a fresh take on traditional public–private partnerships (PPPs). Assuming host governments will commit to capacity building that contributes to effective institutions, it challenges multinational corporations (MNCs) to reconsider their investment motivations. The growing importance of a strong corporate reputation should motivate firms to engage, and we highlight the likely reputational benefits. However this effort must be shared among the other key stakeholders, including governments and their agents, multilateral institutions and NGOs. The fifth section discusses the coordination, surveillance and reporting role that key multilateral institutions need to have to encourage participation and contribution from MNCs and developed and developing country actors. Engaging these stakeholders through formalised mediums helps to mobilise the energy poverty alleviation effort beyond the realm of national

* Correspondence to: The Nossal Institute for Global Health, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne, Australia.
E-mail address: bspagnoletti@student.unimelb.edu.au (B. Spagnoletti).

[1] As part of the ADB's *Energy for All* initiative. See ADB (2011a).

0301-4215/$ - see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.enpol.2013.07.115

borders, culminating in regional and international collaboration. The final section discusses the potential for cooperation between firms and NGOs to augment energy poverty alleviation efforts. We envisage opportunities for NGOs to enhance MNC collaboration with host governments, while still assuming an advocacy role for those who are marginalised by energy poverty, in particular women and children. We conclude by summarising the framework for multi-actor cooperation to alleviate energy poverty in Asia put forward by this paper. We also discuss potential areas for future investigation, in particular robust country-level analyses that highlight the extent to which energy poverty impacts each country in the region and the political, cultural, economic and geographical factors at play. By undertaking such analyses, specific NGO expertise and existing community-level responses will come to the fore, something that we could not consider in a paper of this nature. We envisage this intelligence will facilitate our proposed multi-actor approach to alleviate energy poverty in Asia.

2. Background

Energy is an integral part of modern society. It is central to productivity and development, underpinning the expansion of infrastructure, the production of goods and services, and the provision of healthcare. At the most basic level energy enables households to be maintained, meals to be prepared and children to study in the evenings; tasks which predominantly impact women and children in the developing world.[2] Reddy et al. (2000, p. 44) define energy poverty as 'the absence of sufficient choice in accessing adequate, affordable, reliable, high-quality, safe, and environmentally benign energy services to support economic and human development'. Despite its centrality to modern life, access to energy is not universal. In many developing countries energy poverty impacts the capacity of communities to escape from poverty, and women and children are disproportionately burdened. Households lacking access to adequate energy services typically rely on the traditional use of biomass fuels for everyday needs such as cooking and heating, posing considerable respiratory health risks.[3] The problem of energy poverty is therefore two-pronged, namely: (i) access to modern and reliable electricity services, and (ii) access to clean cooking equipment. Currently 1.4 billion people, approximately one-fifth of the world's population, lack access to electricity while 2.7 billion people, more than one-third of the global population, rely on the traditional use of biomass fuels (IEA, 2011a and IEA, 2010b). Recent projections indicate that by 2030, in the absence of targeted policies, the number of people relying on traditional biomass will increase to 2.8 billion, while those lacking electricity access will decrease by only 200 million, to 1.2 billion people (IEA, 2011a, p. 9).

The persistent use of traditional, solid fuels to meet energy needs, as illustrated by Table 1, has significant implications for human health and wellbeing in Asia, contributing to mortality rates and disease burden. While the use of solid fuels is on the decline in urban areas of most Asian countries, it is startling to note that in 14 of the 16 countries listed in Table 1 between 70 and 90 per cent of rural populations rely on the use of solid fuels. According to the World Health Organization (WHO), the use of biomass is the cause of over 400,000 premature deaths per year in India, and most of these are women and children (in IEA, 2007, p. 582). Moreover, acute respiratory infections (ARIs), caused by exposure to indoor air pollution from the inefficient use of biomass, contribute approximately one-ninth towards India's national disease burden, and are one of the main causes of death in children under five years of age (IEA, 2007, p. 582). ARIs in India represent the largest single disease category in the world. In China, where coal use is widespread, cooking on open fires or simple stoves can lead to lung cancer in women (WHO, 2005). According to UN DESA (2010, p. 147) the level of smoke pollution varies depending on the energy source. It is virtually non-existent with electricity, while it is medium for gaseous and liquid fuels. Solid fuel combustion emits high levels of harmful pollutants, including carbon monoxide, nitrogen oxide, sulphur oxide and benzene. Adequate ventilation assisted by chimneys or hoods is critical to preventing the release of these pollutants into the home (UN DESA, 2010, p. 147).

Table 1
Solid fuel use in Asia by urban and rural populations (2007).
Source: WHO (2010).

Country	Urban (%)	Rural (%)	Total (%)
Laos	91.3	> 95	> 95
Myanmar	88.0	> 95	> 95
Cambodia	63.9	95.6	91.0
Bangladesh	59.9	99.0	89.6
Afghanistan	36.1	97.1	87.4
Nepal	36.3	91.4	81.6
Mongolia	60.9	> 95	76.8
Sri Lanka	31.7	81.3	72.1
Pakistan	30.8	90.6	66.0
Vietnam	20.2	72.1	60.6
India	24.6	88.1	59.6
Indonesia	22.9	79.6	58.4
China	22.8	71.3	48.2
Philippines	26.5	70.5	47.1
Thailand	11.3	47.3	24.5
Malaysia	< 5	< 5	< 5

Women and children are more adversely impacted by energy poverty than men are. Women are primarily responsible for preparing meals in most cultures and they can spend from 3 to 7 h near the stove each day, depending on the complexity of the local cuisine (WHO, 2005). In Laos, wherein 84 per cent of households use an open fire or stove without a chimney or hood and rely on solid fuels to meet their energy needs, a woman will spend 54 min per day cooking, on average, while a man spends just 6 min cooking daily (UN DESA, 2010, p. 150). In Bangladesh, a teenage girl spends two and a half hours in the cooking area daily and a woman spends almost 4 h in the area. At the same time, a teenage boy spends less than 20 min in the cooking area daily and a man spends less than 15 min in the area (UN DESA, 2010, p. 150). As a consequence girls and women are more susceptible to the health threats outlined above, and they represent 59 per cent of annual air pollution-attributable fatalities (WHO, 2005). Infants and young children of both sexes typically accompany their mother while meals are being prepared and, as a result, children under the age of five years represent 56 per cent of indoor air pollution-attributable deaths each year (WHO, 2005).

Access to electricity has a significant impact on the ability of children to study at night time, and this impact on literacy reverberates throughout the family. Saghir (2005, p. 7) found that the probability that a woman from rural India will read is strongly correlated to electricity access. In households that lacked electricity, he found that little or no reading took place while households with electricity had higher levels of literacy, regardless of income level (Saghir, 2005, p. 8). Energy poverty also represents a massive

[2] Recent statistics on gender and work indicate that there is a substantial disparity between women and men in terms of time spent completing domestic duties in the developing world. This disparity also exists in the developed world, but the gap is less pronounced. In Asia women spend almost five hours per day doing domestic work, while men spend less than 1.5 h per day on domestic work (UN DESA, 2010, pp. 100–101).

[3] In the context of energy poverty, the term 'traditional use of biomass' refers to the technologically archaic equipment being used, such as unventilated or inefficient stoves, rather than the actual fuels being consumed.