

Energy, poverty and the Sustainable Development Goals¹

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The seventh goal of the Sustainable Development Goals (SDGs) is dedicated to ensuring access to affordable, reliable, sustainable and modern energy for all by 2030. While energy was only implicit in the Millennium Development Goals (MDGs), the SDGs emphasise the direct linkage between household energy access and consumption and poverty and development. This attention is closely related to the expanded understanding of poverty, as it moves beyond a monetary definition, to be seen as a holistic measure of overall quality of life. The SDGs clearly recognise the centrality of energy to economic and social well-being, as well as to issues such as health and climate change, and reflect United Nations Secretary-General Ban Ki-moon's statement at the Rio+20 conference that "energy is the golden thread that connects economic growth, social equity and sustainable development".

In tandem with its increased recognition in international development policy, the relationship between energy consumption and poverty has been addressed in a variety of academic literature, from development studies to economics. However, far from demonstrating a simple relationship, the energy–development nexus is multifaceted and highly contested. Understanding the broad spectrum of literature concerning this nexus is vital to the development of effective and efficient policy. A detailed review of the literature concerning the relationship between energy—in particular electricity—and development can highlight the future opportunities and challenges in reducing poverty in line with the SDGs. In particular, it demonstrates the monopoly of studies by male, Western-oriented authors, and thus the need for more multicultural approaches to address the challenge of energy and poverty.

Of critical significance to the understanding of the energy–development nexus is the relationship between energy consumption and economic growth. There is wide consensus on the correlation between the two; however, the literature is significantly divided on the matter of causality. From the seminal work published by Kraft and Kraft (1978), studies have produced mixed and often contradictory results. More consistent results have been demonstrated by recent work linking the relationship between income and energy consumption to the developmental status of the country. However, these studies are clear to emphasise the context-specific trend of the relationship. Importantly, this literature demonstrates that there is no universal causality between income and energy consumption but, rather, that there is substantial variation.

Given the interaction between energy, economic growth and development, scholarship has increasingly recognised the prevalence and significance of energy poverty; defined 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" (Reddy 2000). A plethora of

studies have identified a range of developmental criteria directly affected by energy poverty, including maternal and infant mortality, gender inequality, environmental sustainability and productivity. The SDGs reflect the consensus of these studies that energy has a role to play in alleviating poverty around the globe.

The cultural and context specificity of the relationship between energy consumption and poverty challenges the conventional knowledge of energy transition: the household transition from one type of fuel to another. The traditional hypothesis, and still highly influential in both academic and policy, is the concept of the 'energy ladder' which denotes the energy transition from biomass up to the most efficient carriers of liquefied petroleum gas (LPG) and electricity, coinciding with an increase in income. The energy ladder hypothesis, however, has been challenged by a number of empirical case studies. By advocating for more culturally specific processes and attention, these empirical cases have significant ramifications for the SDG energy goals.

The complexity of the relationship between energy consumption and poverty suggests the limitations of universal policies. A recent working paper by Hannah Goozee (2017) serves to challenge the traditional approaches to assessing the energy–poverty nexus, highlighting the need for greater attention to cultural context to produce accurate assessments. Thus, it calls for the development of a micro analysis of the energy consumption–poverty nexus to realistically assess the future ramifications of poverty alleviation. Modelling techniques from engineering studies provide a possible method for assessing the ways in which developmental criteria will directly impact future energy usage. The more recent modelling techniques which have integrated development-related variables show promise for being applied to SDG analysis.

Goozee concludes that while the literature recognises the present relationship between poverty and energy consumption, there is a lack of attention paid to how poverty alleviation in the future will affect global consumption. This directly relates to the SDGs due to its environmental implications. There is potential for a micro model to forecast future household consumption in relation to poverty levels. This will have important implications for the realisation of the SDGs.

References:

- Goozee, H. 2017. "Energy Poverty: The Hidden Key to the Sustainable Development Goals". IPC-IG Working Paper 156. Brasília: International Policy Centre for Inclusive Growth.
- Kraft, J., and A. Kraft. 1978. "Relationship between energy and GNP." *Journal of Energy Finance and Development* 3(2).
- Reddy, A.K.N. 2000. "Energy and Social Issues." In *World Energy Assessment: Energy and the Challenge of Sustainability*, edited by J. Goldemberg. New York: United Nations Development Programme.

Note:

1. This One Pager presents a snapshot of the findings of Working Paper 156, by Hannah Goozee (2017). All of the literature mentioned in this One Pager is thoroughly referenced in the broader work.