



Modern Energy Cooking Services: An Urban Perspective

M Price

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Cover Images – Nairobi (Left: [Pigels](#); Right: [GRID-Arendal](#))

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Executive Summary

The Urban Imperative

By 2050, it is projected that there will be 2.5 billion more people living in cities compared to today, and 90% of this growth will take place across Asia (1.2 billion) and Africa (1 billion). **The challenge of providing universal energy access in urban areas is only increasing**, due to the pace of urban growth, limits to distribution networks, and numerous policy and technical challenges. Urbanisation in the global South is said to have revealed “a new face of poverty, one in which urban communities cannot access or afford basic modern energy services for their development and empowerment” (Singh et al 2014, p.339). Furthermore, the COVID-19 pandemic and subsequent lockdowns have increased rates of poverty, exclusion, and vulnerability, and **it is expected that as many as 150 million people will fall into ‘extreme poverty’**, which has become less of a rural phenomenon in recent times.

Despite having greater access to a wider range of modern energy fuels, **a significant proportion of urban populations in the global South continue to cook with biomass**. And while in some instances this may be due to consumer preferences, affordable and reliable modern energy cooking services remain out of the reach of the ‘urban majority’, defined broadly here as low-income and precarious middle-class households residing in towns and cities. For the clean cooking sector, this means that – despite significant gains related to electrification in urban areas, and rising incomes for urban populations at an aggregate level – rising urban inequalities are slowing and perhaps even reversing the transition to cleaner, more modern cooking practices.

In many respects, it is inequality that defines the contemporary city, whether in the global North or the global South. While many cities are experiencing an increase in urban elite populations, conservative estimates put the global ‘slum’ population total at 1 billion people. It has been argued that such estimations significantly under-report the level of deprivation in cities today. The urban poor are not confined to areas typically classified as ‘slums’, and the research methods and tools used to understand the scale and severity of urban poverty are outdated and inadequate, initially designed with rural poverty in mind.

The relationship between urbanisation and energy consumption can be radically different, depending on a) the stage of urbanisation in a given country, b) whether energy infrastructures can keep pace with the rate of urbanisation, and c) the household incomes of the urbanising populations. For much of sub-Saharan Africa, rapid urbanisation, low incomes, and poor energy infrastructures leads to a *reduction* in household energy consumption, whereas in many Asian countries, energy consumption *increases* with urbanisation due to higher household incomes and a greater willingness to pay for more accessible and more varied fuels. From an urban planning perspective, energy consumption and efficiency (including cooking) are strongly linked to the nature and extent of land-use planning and infrastructural investment in a given area.

An urban perspective helps us understand how cooking technologies and services integrate into the patterns and routines of everyday life, and how they respond to individual and collective needs that change over time, depending on context. Such a perspective is also important in understanding how these technologies circulate in a

given city, examining networks of supply, distribution and knowledge sharing, and what comes of these technologies amid processes of repair, maintenance, adaptation, appropriation, and reuse. Municipalities and regional governments are likely to play an extensive role in energy transitions and climate adaptation, and perhaps even more so than national governments. In cities, the priorities of modern energy interventions are likely to be different to national strategies, with different implications for these cities and their inhabitants.

Urban Studies

Critical urban scholarship points to how economic growth has been largely unequal in cities of the SSEA regions, leaving some ‘behind’ while others are more directly excluded to make way for the city of the future to emerge. At the same time, others have shown how “emergent urbanisms” in Asia have “progressive potential”, where privatised urban development may be less about the eradication of public space and more about increased autonomy and liveability – and not just for urban elites. Pieterse (2015) in fact provides a range of scenarios for urban futures in Africa and Asia and, while insisting that the ‘status quo’ holds little hope for the urban majority, **the right investments (mini grids, localised economies, appropriate technologies, ecosystem renewal) can lead to more affordable and inclusive cities.** What these competing perspectives suggest is that we need to understand the nature and implications of emergent urban processes in priority countries, particularly in relation to energy, clean cooking, and related sectors such as employment opportunities, food system changes, and investment priorities.

Critical urban scholarship has moved beyond definitions of the urban that distinguishes it from the rural, and instead scholars tend to conceive of contemporary processes of urbanisation as they relate to the experiences of low- and middle-income countries. **Southern urbanism**, for instance, distinguishes many of the cities in the global South from cities in ‘the West’ that developed through empire and industrial and financial capitalism. Schindler argues that Southern cities are more likely to function in “discontinuous, dynamic and contested” ways, in part due to the fact that urbanisation is (in relative terms) a more recent phenomenon, intersecting in complex ways with colonial rule, globalisation, and substantial changes to the global economic system. A range of other concepts such as **informal urbanism, occupancy urbanism, bypass urbanism, and climate urbanism** are all distinct from one another and yet they all emphasise the ways in which history, multi-layered agency, and local political economies are all transforming urban environments across the global South. Each of these concepts have implications for how we perceive of a modern energy cooking transition taking place from city to city.

If **socio-technical approaches** emphasise the stability and rigidity of energy systems, an **assemblage approach** emphasises the temporariness of these ‘systems’. In other words, a range of actors, networks, policies, social forces and economic structures ‘assemble’ in different times, in different contexts, and in different compositions, making the notion of a ‘regime’ too static and removed from reality. Assemblage recognises that any snapshot of energy infrastructures and related activities will be incomplete, due to continuous change and dynamism within the system. This shift in approach has the potential to identify new ways for a modern energy cooking transition to take hold in any given place, and the potential for a wider range of stakeholders and environmental factors to continually shape such a transition.

Urban studies also teaches us that cooking and other aspects of everyday life in the city are bound up with “flows, exchanges, chains of events and decisions that seem to occur more widely [than within] immediate energy-fuelled livelihoods” (Rutherford and Coutard 2014, p.1355). It is not enough to concentrate on national innovation systems and policy frameworks. After all, everyday life for the urban majority can often be defined in terms of circumnavigating rules and systems, gaining access to whatever is valuable, affordable, practical. **An urban agenda for the MECS programme must attend to the different social practices and consumption behaviours of urban communities at large, and account for a wide range of urban political economies and power structures, urban trajectories and urban change.**

MECS Urban Research Agenda

The workstream plans to provide renewed impetus to engage with a wider range of city governments and community leaders, to ensure theories of transition and implementation strategies are tailored to local environments. The workstream focuses on a diversity of urban contexts – both in terms of urban political economies and urban population groups – as recognition that ‘urban’ and ‘rural’ classifications are limited in their ability to capture the realities of transition. Furthermore, the urban workstream will engage new areas of enquiry, and commission much-needed research on matters of repair, maintenance and waste, as they relate to modern energy cooking transitions. This will help the MECS programme achieve its goal not only in facilitating the transition of modern energy cooking services across sub-Saharan Africa and South/South-East Asia, but to do so in ways that are environmentally responsible and sensitive to local demands, perceptions, and contexts.

Work Package 1 (WP1) – Urban Lives consists of desk-based data analysis and urban studies research, which will provide MECS country research teams with contextualised and disaggregated insights into the urban dynamics of modern energy cooking transitions. This will help to identify the geographical and energy-related gaps in the programme, in relation to urban areas, and this will guide the internal, desk-based research that will supplement ongoing activities in the priority countries. WP2: Cities in Transition [External]

Case Studies: Bangladesh, Ghana, Nepal, Uganda, Zambia

Work package 2 (WP2) – Cities in Transition is an exploratory study of the cooking fuel landscape in different cities. This study is designed to focus on population segments and urban contexts that may challenge or help to qualify our understanding of modern energy cooking transitions at the macro level. Therefore, it is expected that research projects will explore the cooking fuel landscape in/among i) low-income households, ii) rapidly urbanising peri-urban areas, iii) recently upgraded urban areas, iv) migrant communities, and/or v) displaced/refugee communities.

Work package 3 (WP3) – Circular Economies is an in-depth exploration of the current state of urban circular economies, with respect to modern energy cooking devices. This work package consists of two separate themes, which relate to different stages of the product life cycle and circular economy model. These themes centre on electrical repair economies (Theme 1) and e-Waste economies (Theme 2) in urban environments.