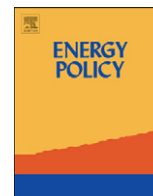




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Understanding household energy consumption patterns: When “West Is Best” in Metro Manila

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ABSTRACT

This paper addresses the topic of energy and development through a multi-disciplinary and systemic approach that combines environmental considerations with a social understanding of consumption. The focus is on electricity usage in the home and specifically lighting and cooling. Set in the urban mega-polis of Metro Manila, the Philippines, energy consumption is first placed in its biophysical perspective: the energy sources and electricity grid are presented, in relation to the Philippines as well as the region. The research findings then explore the social and cultural drivers behind household electricity consumption, revealing in several examples the strong influence of globalization—understood here as the flow of people, remittances, images and ideas. Policy recommendations are provided, based on the research results, with concluding remarks relevant to other similar contexts.

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1. Introduction

In 2010, over half the world's population is estimated to live in urban centers. Urban population growth is expected to be concentrated in less developed regions, particularly in Asia—home to eleven mega cities, or cities with a population of at least 10 million (UNDESA, 2010). Policy makers will increasingly be faced with the challenge of anticipating the energy requirements of urban populations, particularly as increases in affluence often translate to a moving-up on the energy ladder from biomass to fossil fuels.

According to the 2009 *World Energy Outlook* report issued by the International Energy Agency (IEA) and under a Reference Scenario that assumes no changes in current public policy, Asia is poised to be the main driver of a 40 percent expansion in global energy demand over the next two decades. Southeast Asia's energy demand is expected to expand by 76 percent in 2007–2030, or at an average growth rate of 2.5 percent—much faster than the world average rate (WEO, 2009). Despite media and political attention around renewable energies, fossil fuels will account for approximately 77 percent of the increase in global energy use by 2030, with coal expected to remain the dominant fuel of the power sector earning itself the title of 'king coal' (Fernando et al., 2008). Energy-related CO₂ emissions will therefore also increase, according to the WEO 2009, having already grown from around 360 Mt in 1990 to just over 1000 Mt in 2007, and expected to reach 1990 Mt in 2030. The report calls for “radical and coordinated policy action across all regions”, which could include a push for increased sources of renewable energy (Thavasi and Ramakrishna, 2009).

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How to meet a growing energy demand in Southeast Asia, while recognizing the negative effects of regional fossil fuel combustion on the global atmosphere will remain a central issue in the years to come. Central to this is the question of access to energy, with inequalities existing within countries, and between regions. Current policy measures, however, often fail to take under consideration both biophysical criteria for determining environmental priority areas in regards to energy consumption, and a social understanding of energy consumption among different socio-economic households to better apprehend its drivers. This paper analyzes household electricity consumption in Metropolitan Manila, the Philippines, in order to determine how a deeper understanding of energy consumption patterns among different consumers can lead to more effective policy measures for curbing energy consumption in the home, with a focus on cooling and lighting. A multi-disciplinary and systemic approach combines environmental considerations of energy usage from a life-cycle perspective with a social understanding of consumption grounded in economic anthropology.

The next section provides a brief introduction to the theoretical concepts used in this paper, followed by an overview of the methodology. Section 4 introduces the research context, including the environmental and social significance of studying electricity consumption in Metro Manila. The main research results will then be outlined and discussed, with related policy recommendations. The conclusion will summarize the research findings.

2. Conceptual framework

This paper is related to a field of research and policy-making termed sustainable consumption and production (SCP). The focus on consumption is relatively new in environmental policy,

as historically the emphasis was placed on the production side in addressing end-of-pipe pollution and eco-efficiency in products and production processes. As attention now shifts to consumption patterns and consumers, approaches tend to be limited to information campaigns based on environmental and moral persuasion, with the associated message of energy and cost savings. The individual-choice approach to consumption is often assumed in public policy and advocacy campaigns, where individuals make decisions based on so-called rational choice and the meeting of needs. The “price and information” approach in public policy has been found limited in its ability to curb consumption among households (Cohen and Murphy, 2001). A broader understanding of consumption drivers is necessary, taking into account the social embeddedness of all economic activities, as explored by Karl Polanyi (1957).

The proposed conceptual framework is based on a social and cultural understanding of consumption, in order to understand the drivers behind consumption patterns and how these could inform policy makers. Various authors have demonstrated the need to understand the social and cultural aspect of energy consumption, which places a focus on people, power structures and the symbolic (Wilhite et al., 1996; Bank, 1997; Mehlwana, 1997; Lee, 2006). Because of the vast amount of research that has been proposed around the theme of consumption in social theory, Richard Wilk's three categories are helpful (2002): for Wilk, a social approach to consumption builds on the work of Veblen (1994/1899) and Bourdieu (1979), among others, and considers consumption as involving relations among people (and power structures) as well as forms of social belonging (including status); a cultural approach to consumption sees goods as coded for communication, or as symbols that bear meaning (Baudrillard, 1968; Douglas and Isherwood, 1979; Appadurai, 1986). Finally, Wilk does not exclude individual choice, and thus proposes a ‘multigenic’ approach to consumption that combines all of three perspectives. Indeed, there is no single theoretical approach to understanding all forms of household consumption.

Consumption can also be understood in its biophysical aspect, as a using up of resources with a consideration for throughput, growth, scale, and patterns of resource use (Princen et al., 2002). From this perspective, the question is how to reduce energy and material usage in a way that avoids resource depletion as well as local and global pollution, while also allowing for higher standards of living for more people and a more equitable sharing of the global resource pie. For this, life cycle thinking is relevant: a concept derived from the Life Cycle Assessment (LCA) analytical tool that evaluates all material and energy used by a product or service throughout its life cycle, “from cradle to grave”. This holistic approach considers inputs and outputs from the extraction of raw materials and production processes upstream, to usage and final disposal downstream. A biophysical understanding of consumption based on life cycle thinking can help establish priority areas for sustainable consumption, or what areas are most environmentally significant in terms of resource depletion and pollution, for example.

This paper also considers the influence of globalization on consumption, including the global flow of images, people, remittances and brands. Metro Manila, much like many urban centers, is a space where moving images meet mobile audiences, to use Appadurai's (1996) language, and therefore global flows have an influence on local consumption patterns. While flows of people, currencies and trade have existed in Southeast Asia for centuries, it is the scale and rate of these flows that are particular to our contemporary era. Furthermore, migration represents an important livelihood strategy in the Philippines, with remittances contributing to over 14 percent of GDP. Known as Overseas Filipino Workers (OFWs) by the government, millions of Filipinos work abroad in a given year and many more have become part of a large diaspora of approximately 8 million (Republic of the Philippines, 2008). The impact of migration on consumption is

little understood to date (Wilhite, 2008), however. The role of ‘transnational’ actors—defined by Kearney (1995) as not detached from the local but rather building transnational spaces de-centered from specific national territories—is relevant when it comes to understanding energy consumption, as we will see later in this paper.

3. Methodology

The methodological approach used in this paper combines environmental science with social science. The quantitative data presented in the Context section below speaks to the scientific and environmental relevance of addressing energy consumption in general, and electricity usage specifically. These data were derived from international, national and regional statistics. The lack of data specific to Metro Manila did not present a significant challenge. Qualitative data, based on semi-structured interviews with and observations among households in Metro Manila of different socio-economic groups, provides insights into what meanings people give to electricity usage.

The interview sample was gathered from among three neighborhoods of different socio-economic standing: low-rise apartments in a former squatter community in Tondo; middle-income single-unit houses and apartments in Malate; and single unit houses and apartments in the affluent-gated communities in Makati. Thirty-four semi-structured interviews were conducted in 2008 then transcribed in detail. Generally, the sample was devised so as to include people of different age groups, educational background, household income, and type of house (single-unit home, high-rise apartment, etc.). In Tondo, the sample skewed towards women who were more open to being interviewed by a woman. Observations place between 2005 and 2008 in both private homes on social occasions and in public spaces.

4. Context: the Philippines, Metro Manila and energy consumption

The Philippines is an archipelago of 7107 islands in the Western Pacific. Spanning approximately 300,000 square kilometers and located just above the equator, the Philippines sits between the Philippine Sea to the east and the South China Sea to the west and is home to approximately 92 million people. Given its name by Spanish explorers who claimed the islands for King Philip II in 1521, the Philippines became an United States colony in 1898 with the Spanish–American War. The country gained its independence in 1946 after a brief Japanese occupation during World War II. Also known as the National Capital Region (NCR), Metro Manila is home to approximately 12 million people and is composed of 17 cities and districts in different stages of urban development. High-wealth coexists with absolute poverty, as shown in the example of the three areas in which research was conducted: Tondo is one of the most densely populated areas of the Philippines, home to the city's squatter shacks and illegal dumpsites; on the Manila Bay, Malate is known for its restaurants and bars, with middle-class families living besides lower-income families who often sleep on the sidewalks at night; Makati, on the other hand, boasts shiny skyscrapers as well as the leafy gated communities of the country's wealthiest families.

Temperatures range from 30 to 37 °C throughout the year, and are higher than surrounding areas due to the urban heat island phenomenon (Estoque and Maria, 2000). Air-conditioning and private car transport are the norm among the affluent; the less affluent “go malling” to experience cool air and travel by jeepney or pedi-cab. Despite religious and political barriers to birth control and family planning in the country, the population growth rates fell from 3 percent a year in 1950 to 1.9 percent in 2005. The country is considered to be just below the threshold for “high human development” according to the HDI, growing from 0.66 in 1975

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