Urban Studies

Urban Studies
1–3

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Book review

Vanesa Castán Broto, *Urban Energy Landscapes*, Cambridge: Cambridge University Press, 2019; 242 pp.: 978-1-108-41942-0, £75.00 (hbk)

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How can we conceptualise the street vendor's cookstove within the energy infrastructure of a city? And in what ways does an understanding of locally lived energy landscapes enhance our tools for energy transition? These are some of the questions addressed in the book *Urban Energy Landscapes* by Vanesa Castán Broto, where she successfully links the macroscale of energy governance with the microscale of everyday practices in urban settings. The author addresses a wide range of energy-related dimensions, including energy production in power plants (e.g. based on fossil fuel, coal or hydropower) and also energy use in households (e.g. electricity, charcoal, solar energy). After an extremely comprehensive literature review on the interlacement of energy infrastructure, urban governance and material landscape in the first part of the book, Castán Broto takes the reader to four different cities around the globe in the second part. The historical contextualisation and the description of walking experiences ground her concept of collective, heterogeneous urban energy landscapes in concrete places of quotidian realities.

This book improves our understanding of energy transitions being intricately linked to urban processes, practices and urban change. As Rutherford and Coutard (2014) outline, energy transitions are characterised by materialities of energy, relational energy urbanism, a diversity of transition processes, temporalities and rhythms of change, and by urban politics. The interdisciplinary background of Castán Broto enables her to assess urban energy landscapes with such a necessary multifaceted perspective. Departing from the shortcoming where energy and infrastructure studies have focused rather on 'what energy means for landscapes than on explaining what landscapes mean for energy' (pp. 40–41), Castán Broto suggests that by including the dwelling perspective of Heidegger and the notion of 'being-in-the-world', landscapes should receive more attention in urban energy studies. The author weaves the everyday practices of preparing food in outdoor spaces of houses in Maputo (Mozambique), switching on an electric generator in Bangalore (India), cooling rooms through air conditioning in Hong Kong (People's Republic of China) or using firewood for heating a living room in Concepción (Chile) into the particular energy history and contexts of these respective cities. These diverse material cultures of energy use respond to the availability of resources and established infrastructures that are determined by urban energy governance.

Besides all four city chapters following a similar structure, each highlights one particular aspect of the local energy landscape. In

Maputo, the role of the cookstove and its relation to charcoal is at the centre of analysis. Energy sources intervene in the classification of neighbourhoods by dividing the capital into a 'cement city', where liquefied petroleum gas is the dominant energy source; and the *bairros* (neighbourhoods) that make up a large part of the city territory and where charcoal is omnipresent in public spaces. In Maputo, charcoal is related to a specific architectural typology and contributes to the socio-spatial ordering and reproduction of the city. The focus on energy sources hence constitutes an entry point for thinking about the everyday manifestation of the political economy of energy in Mozambique (p. 95).

Heterogeneous urban energy landscapes and internal differences in energy access are also manifest in Bangalore. While in Maputo the types of energy sources characterise neighbourhoods, the energy landscape in Bangalore is more intermingled, with energy sources not clearly separable along built structures. Renewable energy, such as solar water heaters, is popular in both affluent neighbourhoods and slums as it is a way to handle the frequent power cuts and enables autonomy from state-run infrastructure and policies. Castán Broto roughly distinguishes between three groups and their lived energy landscapes in Bangalore: the ill-defined middle class (access to electricity and fuel is normal but also intermittent), the cosmopolitan middle class (e.g. IT professionals living in residential enclaves with energy-intensive lifestyles) and the slum population (mainly dwelling in informal settlements with precarious energy services). While members of each group obviously have other relations to infrastructure and fuel provision, the author emphasises that their 'radically different choreographies of energy use actually coexist, creating patterns of contiguous heterogeneity' (p. 108).

The tension between perceived homogeneous energy landscapes and lived heterogeneous choreographies also pervades the case study of Hong Kong. While official discourses outline that network coverage reaches all households, some families are unable to connect as they live in subdivided units where landlords control energy access, thus creating highly uneven energy landscapes on the ground. Despite Hong Kong claiming to be an energy-efficient and green city through its densely built landscape, it greatly depends upon fossil fuel and imported energy. Built legacy, structures of governance and the existing infrastructures so far hinder a sustainable energy transition (pp. 137–138).

In contrast to Hong Kong's reliance on imported energy, Concepción's urban energy landscapes are embedded in the topography and geography of the region, with hydropower and coal-fired power plants as the main sources of electricity. Large industry complexes here are built testimonies to an energy sector that relies on resources from its rural surroundings. However, despite the omnipresent physical installations that dominate the cityscape, on closer examination many residents heat their houses with the structurally less visible firewood. Firewood is widely available in the region and is less expensive than piped gas or petroleum. As stressed in all cases, Castán Broto also reminds us here of the socio-economic disparities that become apparent in the accessibility of energy sources. While the richer neighbourhoods in Concepción use the gas infrastructure, poorer areas instead rely on firewood (pp. 156–157).

Apart from the rich historical and governance-related data on the various energy landscapes, Castán Broto assessed neighbourhoods in all four cities through walking. These walks have provided her with a sense of the 'complex social, spatial, and material relationships that structure the different uses of energy' (p. 178) and offer readers graspable insights into local lived energy realities in urban streets and homes.

Castán Broto anchors everyday objects and choreographies within urban energy landscapes, revealing new ways of conceiving energy transition in the cities portrayed and beyond. In the sense of Ingold's taskscapes, the author sees tasks as key to transforming the landscape in both material and cultural ways. 'Small tasks in the landscape, whether it is turning on the air conditioning, connecting your shop to the electricity network without permission, finding the appropriate firewood for a party roast or using micro solar panels to charge a mobile phone are all actions that transform or maintain the urban energy landscape' (p. 207). Moreover, those tasks are not the practices of individuals but belong to a collective landscape shaped by multiple actors (p. 199). It is this emphasis on how energy governance, material infrastructures and daily practices interrelate in urban landscapes that makes the book most pertinent. It underlines the idea that infrastructure is not just a tool for assessing energy or a symbol for the political but that 'infrastructure itself has become a political terrain. […] this is a politics of nonpublics, inscribed within pipes, wires, and technical devices as much as in the more visible protests' (Von Schnitzler, 2013: 687). Decisions about energy sources and usage can be a form of resistance against governmental structures which are often incapable of fully dealing with the energy accessibility of a city's heterogeneous population. The use of energy-related objects such as the cookstove or solar water heaters are thus political responses to energy regimes and so deserve proper attention in energy transition debates. Castán Broto refrains from providing a guideline for how energy transition can be successful, which could be considered a deficiency of the publication. From my anthropological perspective, however, it offers a valuable approach to conceptualising energy transition in new directions, namely by generating an understanding of how contemporary everyday realities are interlinked with the historically grown energy landscape, an idea also promoted by Hein's (2018) analysis of petroleumscapes.

Castán Broto aims to break with an urban energy research field that is dominated by a 'male-led, rational, abundant, engineered, efficient, and rational city' (p. 202). She achieves this on the one hand through the chosen cities expanding our range of urban knowledge beyond the usual suspects. On the other hand, by shedding light on aspects such as energy scarcity, cooking practices or heterogeneously lived energy realities, Castán Broto takes us beyond an energy perspective preoccupied with infrastructural constructions and coverage to the small tasks that perpetuate energy landscapes. I recommend this book to everyone interested in the interrelations between urban dwelling, infrastructure, social practices and energy transition. Its comprehensive approach outlines an understanding of how governance, structures and practices co-constitute the 'connective tissue' (p. 52) of urban energy landscapes. Energy futures cannot be planned solely from a top-down perspective. Rather, they have to depart from contextualised energy practices and truly reflect the heterogeneous urban worlds that people inhabit.

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