Günel, Gökçe. 2019. *Spaceship in the Desert. Energy, Climate Change, and Urban Design in Abu Dhabi*. Durham, London: Duke University Press. 272 pp. Pb: $25.95. ISBN: 9781478000914.

Book review by

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Gökçe Günel offers a timely and unusual ethnography of Masdar City—an eco-city imagined and planned as a hub for Abu Dhabi's emergent renewable energy sector. Established, partially funded, and promoted by the Abu Dhabi government, Masdar City was aimed to ensure that Abu Dhabi would remain "a significant player in the energy industry" (p. 2) in the post-oil era.

The *Introduction* opens with a cosmological metaphor of the "soul of the carbon dioxide" (p. 6). This provocative metaphor, considered "crazy" by its inventor, sets the atmosphere for the book—slightly surreal, futuristic, somewhere on the verge of exotic reality and (science) fiction. The book's central concept is "technical adjustments" (p. 7): "new business models, technological innovations and design solutions" (p. 8) aimed to mitigate climate change without addressing its ethical, political, and social implications.

The book is organised into three parts: *Knowledge, Technology,* and *Governance*, but all three are closely intertwined and come a full circle. Each chapter begins with explaining the vision of a particular "technical adjustment", then historicises it, and finally offers a critical account of its always incomplete implementation. In Chapter 1, Günel examines the "spaceship" analogy coined by an American student cum blogger in Masdar. The viral metaphor of "spaceship in the desert" speaks to the idea of preserving life for a se-

lect few in an enclosed, insular vessel in unfavourable environmental conditions, a kind of modern "Noah's ark". An important aspect of the analogy is the narrative of the desert as a resource frontier. This narrative can be dated back to European colonial imaginations and the search for oil in the desert. The Masdar eco-city built on that imaginary by promoting the ideas of the infinity of sunlight and wind in the desert while acknowledging the finiteness of oil.

Chapter 2 addresses the ways in which "the spaceship" engages with the outside world. Günel identifies "beautiful buildings" and "research contracts" as two "networking devices" used to attract students and researchers to Masdar. These engagements are built on the idea of nodes in the global knowledge economy—where Masdar is seen as one such node, connected to others. The two "networking devices" convey the ideas of innovation, orientation towards the future, the focus on knowledge production and mobility. While Günel does not use the term hierarchy, the implementation of this vision that she describes implies that the relationships which Abu Dhabi attempted to build through these engagements were quite hierarchical, seeking to secure a more "elite" position for Masdar in the global network while also excluding unwanted others, most conspicuously students of Shia background.

In Part II, Chapter 3 focuses on the design and the implementation of "ergos"—an energy currency meant to address the dual challenge of climate change and energy scarcity by reducing energy. All Masdar inhabitants were to receive pre-allocated energy credit, and if it were expended, they would have to pay for energy at a substantially higher price. Ergos was imagined as a mechanism of developing new consumption habits and would rely on IT, specifically the Building Management Systems (BMS), the "hidden brain" of residential buildings. Günel contextualises the concept in earlier ideas of using energy as currency and interrogates the implementation of this idea in Masdar. The greatest risk of implementing ergos has been the threat of a "technocratic dictatorship" because modern technology allows for detailed surveillance. Nevertheless, while aware of the risks, the designers considered them secondary in their pursuit of the "higher good" of efficient energy use.

In Chapter 4, Günel examines the different views and interpretations of the personal rapid system (PRT) in Masdar by its designers, subcontractors, and users. The PRT was imagined as an energy-efficient public transit with up to 1800 travel pods travelling on a network with 78 stations. The project was abandoned in late 2010 as it proved too expensive, and only a prototype connecting Masdar Institute and a parking lot remained from it. For some in Masdar, the PRT system was a clear failure—too expensive and inef-

ficient. However, others who focused on the experience of the PRT described it as enjoyable and fun, although not efficient: a sort of expensive toy. The unfinished project remained important for the futuristic vision of Masdar, which was evidenced by the continued use of the PRT for advertisement even after the project was abandoned.

Chapter 5 (Part III, Governance) traces the production of a policy document on Carbon Capture and Storage (CCS). Written by Masdar's environmental consultants with the participation of oil industry professionals, it was submitted for the preparation of the United Nations Framework Convention for Climate Change (UNFCCC). CCS is a controversial technology of capturing carbon dioxide from industrial production and storing it underground. Often seen as a prime example of business opportunities created by climate change, CCS is especially favoured by oil-producing countries because it allows increasing productivity of ageing oil wells, known as Enhanced Oil Recovery (EOR). However, the long-term effects of CCS are unknown, and EOR, in particular, encourages continued reliance on fossil fuels. The production of a policy document on CCS in Abu Dhabi revealed a rift in the understanding of risk by environmental consultants on the one side and engineers and scientists from the oil companies on the other. While environmental consultants used a generic, "floating" language addressing global problems, the engineers and scientists insisted on utilising local knowledge and quantifying the localised risks.

The book provides a uniquely ethnographic, multivocal perspective on Masdar City. Following the lead of her interlocutors, the "cosmopolitan innovative actors" in Abu Dhabi, Günel defers the simple dichotomy of success and failure, instead opening an endless space of indeterminacy, potentiality, and hope constructed through unfinished, half-working, and abandoned projects. The many unanswered questions that the book poses are crucial for the decisions we as a global community will make about climate change and energy use. Nevertheless, one of the most important issues that the book touches upon but does not elaborate is the figure of the "man with a brush" from Chapter 1—the underpaid labour migrant who is conspicuously absent from the spectacular visions of Masdar, and yet indispensable for its operation.