SUMMARY

In the last two decades, renewable energy (RE) has emerged as a central ingredient in the broader sustainability transition. Complementarily, this has led to significant investments in renewable energy technologies by advanced industrialised countries and emerging economies like the BRIC countries. However, this renewable energy trend has eluded some developing countries of the South and, more importantly, rentier states. As such, numerous theoretical models have been developed in the sustainability transitions literature to understand how these renewable energy solutions have emerged and how they have continued to gain relevance in the global sphere. One such theoretical construct is the multi-level perspective on sociotechnical transitions (MLP). The MLP understands energy transitions as the product of interactions between niche innovation, established regimes and the influence of landscape/exogenous factors. The theory relies on historical perspectives to identify how long-term societal transformations within energy systems emerge and propose pathways by which transitions can be achieved. The perspective, however, suffers from a number of flaws.

This thesis aims to contribute to the MLP literature by addressing three specific gaps. First, the theory has been largely tested in advanced developed countries as such disregarding the geographical contexts in which distinctive cases of sustainability transitions occur while reducing the comparability between countries. Second, it positions firms and institutional actors as drivers of change within the energy system. However, this conceptualisation is more applicable to advanced countries of the North with the fiscal capacity to invest in high-tech energy solutions and public support for RE. It contradicts common narratives in the South where economic, social and political structures are tied to the fossil fuel industry. Third, due to its origins of structuration, the MLP’s conceptualisation of power, resources, politics and hierarchies in transitions has been relatively weak. To address these gaps, this thesis conceptualises and empirically explores transitions in a developing country with a resilient fossil fuel industry (case study: Nigeria).

Nigeria is an interesting case because of its comparability with energy poor countries of Africa, its parallelism with oil producing states of the Arab Gulf and it semelances with emerging economies like the BRIC countries. In the last three decades, Nigeria, the 10th largest oil producing country in the world has been confronted with an increasing demand for energy services, which currently exceeds available supply. As such, energy access is below 50%, energy generation is below 14,000 MW, electricity consumption per capita is less than 3%, and energy corruption is significantly high. By and large, these issues have been attributed to an accelerated rate of population growth, an alarming increase in poor energy infrastructure and a weak energy governance system.
A resultant effect of this phenomenon is an acute loss of economic productivity, unemployment, low industrialisation, and severe health, social and environmental consequences. Overcoming these negative effects would require a transition to cleaner and sustainable low carbon energy services, which invariably proffers a range of economic, environmental and social benefits; while also ensuring a significant expansion of already identified energy alternatives. Nonetheless, securing the requisite energy investments to proliferate access to low carbon energy in Nigeria while concurrently meeting fast-growing energy demand in a sustainable manner is even more daunting. Projections suggest that at a minimum, USD4 billion is needed annually in the power sector to meet future demand. Even more crucial is that fact that moving to an alternative energy system might be difficult as this does not only entail fostering technological innovation and change but also requires political will and support. While the needed technological innovations could be initiated by transfer, and collaborative research from developed countries like Germany and Japan who have more experience with this type of energy system. However, the radical change, which is anticipated, will be primarily political as this decision would be hinged on balancing rising consumer demand, need for economic growth, addressing political corruption in the energy sector as well as maintaining Nigeria’s external relations, particularly its role as an OPEC member.

Accordingly, the aim of this thesis is to investigate the political feasibility of renewable energy transitions in Nigeria. Political feasibility is operationalised as opportunities, constraints and implications of a transition to renewable energy in Nigeria. In this regard, this thesis combines the MLP and the political economy perspective to explore the influence of state structures and economic rent on the trajectory of transitions. It argues that transitions or the lack thereof are beyond technological transfers but rather lies in the political capabilities of actors. Conceptually, it focuses on how natural resources produce socio-political materiality, which influences the interactions of actors within the political landscape and how this shape energy transition pathways.

In operationalising my research aim, I provide a broad and general analysis on Nigeria’s energy sector, existing infrastructure, policies and systems. This allows me to examine existing gaps within the energy sector, while also exploring provided low carbon solutions. In pursuing this, I bring together socio-technical perspectives and debates on rentier influences on the trajectory of transitions in rent dependent states like Nigeria. Fused together, both approaches provide insights on the politics of energy transitions, specifically revealing why the existing energy sector in Nigeria has remained moribund, tactics incumbents use in maintaining status quo, and why the scale-up of low carbon technologies have become difficult to bring to fruition. One of the main features of the Nigerian energy sector is that while it is apparently locked-in, it is also under tremendous external pressure
because it does not provide growing amounts of reliable power for development. A large number of efforts have been made over decades to try and bring the transition to an effective power system. Understanding why these efforts have failed is important. As is trying to understand the current changes. To buttress the above, the thesis synthesises four empirical studies of Nigeria’s oil and electricity sectors while also providing concurrent development of renewable energy (RE) (solar, the wind, biofuels/biomass) in the energy sector. These studies also feature local, regional and national cases of renewable energy deployments. As such, data collected involved interviews with stakeholders in the energy sector and a review of existing literature. This multi-level analysis helps to analyse the socio-political dynamics of energy in rentier states like Nigeria, while also highlighting the role of political actors, resources and institutions (rules and how they are broken) in shaping the type, scale and processes of transitions.

It is revealed that Nigeria’s energy problem has been the monopoly position of energy institutions like the power Holding Company of Nigeria (PHCN) and the Nigerian National Petroleum Corporation (NNPC). This has created all sorts of opportunities for rent seeking, including the diesel generator as a ‘niche’ competitor to traditional centralised power stations and grids. Conventionally, policy makers and rentier elites have favoured fossil fuel powered systems. It is unsurprising that these approaches feature conspicuously in adopted policy plans, such as the Power Sector Reforms and Vision 20:20:20 Initiative. Even more pervasive is the socio-cultural identities built around fossil fuels by citizens who legitimise governments in exchange for subsidies in the energy sector. Nonetheless, the analyses also show how pockets of transitions have begun to take place at decentralised levels in Nigeria. More importantly is the role of innovation niche hubs, political coalitions of green advocates and transnational actors pushing for reforms in the energy sector. This has spurred the introduction of regulatory and fiscal policies on renewable energy and the implementation of pilot-scale RE projects at state levels.

The theoretical contribution of this thesis is largely theory building — the expansion of existing sustainability transitions theory to accommodate politics and the role of economic rent in the analysis of energy transitions specifically for developing countries. It argues that the fusion of the MLP and rentier theory enhances and provides a spatial recognition on geographies of transitions, which ultimately helps in problem definition and policy prescriptions in less developed societies. In addition, this thesis emphasises institutional and political aspects of energy regime dynamics, including the fantastic distortions it brings. By and large, it helps us understand how energy systems become locked-in and the process of policy contestation in transition arenas in rentier developing countries like Nigeria. Hence, the concluding insight is that even when energy transitions opportunities exist, they are only achievable when aligned with socio-political realities of sectors or systems intended
for a change. More importantly, if actors powerful enough can place energy transitions on political agendas, then it is likely that such processes might trigger a socio-technical change or a coalition towards change.