

Chapter 1

Introduction

Myanmar's sustainable development heavily depends on the appropriate improvement of its power sector. Its transition from military rule to democracy has brought in international assistance and private investment interests, paving the way for new resources and alternatives for the government to develop its energy-related policy programmes. The government's policy programmes have benefited from the support of international donors and cover the Energy Master Plan (Asian Development Bank), the National Electrification Plan (World Bank), and the National Electricity Master Plan (Japan International Cooperation Agency). In a rapidly changing environment, there is a need to review these programmes as they are being implemented, or they may even have to be updated before implementation.

This report analyses most of the salient points in Myanmar's policies for the power sector. The guiding research questions are: How can Myanmar's future electricity sector be sustainable and conducive to inclusive development, and contribute to conflict resolution? What kind of policies will be able to assist such progress? These questions are examined from both the main-grid and off-grid perspectives.

As the related issues are wide-ranging, multiple methods are used to explore the future of Myanmar's electricity sector. Table 1-1 shows the structure of the report. The outputs and recommendations are the result of desk research and numerous engagements with local and international stakeholders through workshops, seminars, interviews, as well as one-on-one discussions.

Table 1-1. Structure of the Report

| Category | Chapter | Issue and Method |
|---|-----------|---|
| Overview | Chapter 2 | Recent policy development; literature review |
| On-grid issues (including connectivity) | Chapter 3 | Power development plans; Energy/environmental modeling |
| | Chapter 4 | Solar photovoltaics deployment; SWOT analysis |

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| Off-grid issues | Chapter 5 | Rural electrification with mini-grids; techno-economic modeling and barrier analysis |
| Foreign investment | Chapter 6 | The Myitsone Dam; analysis of policy process |

SWOT = strengths, weaknesses, opportunities, and threats

Source: Authors.

Chapter 2 provides an overview of Myanmar’s power-sector policy, focusing on recent developments. The country’s electricity supply is still very low, both in terms of its quantity and quality.

Chapter 3 analyses opportunities for the sustainable development of the large hydropower potential of the country. In particular, it explores an optimal dam portfolio from a sediment trapping point of view. The current government’s capacity expansion plan is found to have a severe impact on the ‘health’ of the basins. An alternative hydropower development plan that excludes the most damaging ones can reduce the impact while maintaining the electricity generation and economic development activities. This would also allow for the development of power generation from solar, natural gas, biomass, and small hydro plants, which can substitute for power generation from large-scale hydropower.

Chapter 4 looks at the possible role of utility-scale solar energy. Myanmar, a key state in the Greater Mekong Subregion, is far behind neighbouring countries and global trends in terms of turning to solar generation. Previous studies revealed that there is a high technical and economic potential in the nation, especially in the Central Dry Zone. Using a strengths, weaknesses, opportunities, and threats (SWOT) framework, the chapter sheds light on the drivers and bottlenecks of a solar energy strategy in Myanmar.

Chapter 5 discusses the potentials of mini-grids for rural electrification and analyses the barriers to the deployment of such option in Myanmar. In particular, the use of clean energy sources should be preferred over fossil fuels. This study first calculates the levelised cost of electricity (LCOE) of diesel, solar + battery, and solar + battery + diesel mini-grids, using data collected from private developers in Myanmar. Then, the barriers for renewable energy-based mini-grids in Myanmar are explained based on data from existing literature as well as interviews conducted with different stakeholders, such as officers from international development organisations,

private companies, nongovernmental organisations, and local researchers.

Chapter 6 explores the suspension of the Myitsone mega-hydropower project, and traces the process behind the publication of the social and environmental guideline for China's projects in foreign countries. A framework called the Issue Attention Cycle model, which was originally found in democratic institutions, was discovered to be applicable to the Chinese socialistic decision-making process. This has a policy implication on how Myanmar should deal with foreign investments for its future power projects.

Chapter 7 concludes with policy recommendations for Myanmar's power sector and related policy areas.