# Chapter 1

# Introduction and Update on Energy Policy in Myanmar

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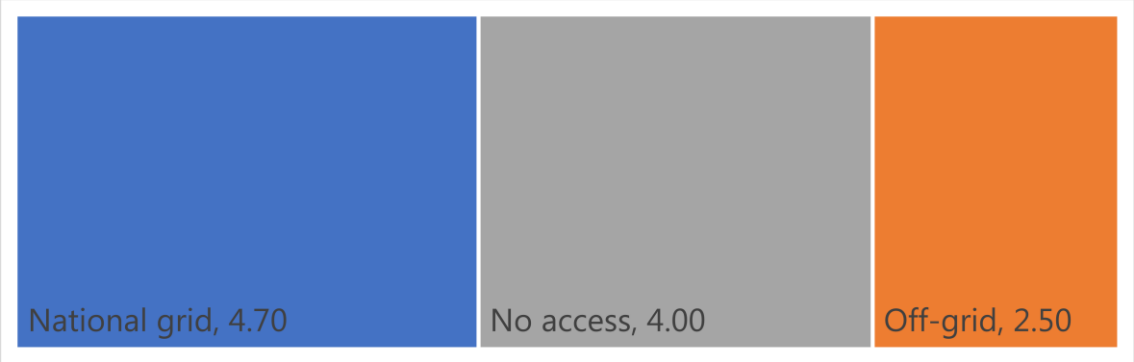
# Chapter 1

# Introduction and Update on Energy Policy in Myanmar

Myanmar's energy situation has not changed significantly in fiscal year 2018–19 compared with previous years. Neither have major changes been made to the institutional architecture, nor has a new energy minister been appointed. However, energy consumption continues growing, tightening supply capacity. Hydropower and gas-fired generation continue to be the national grid's major sources of electricity. In May 2019, China and Myanmar signed an agreement for Myanmar's import of 1,000 MW of electricity. Although it has not yet been implemented, the agreement represents the first major import contract for Myanmar. The government has been discussing an increase in tariffs on electricity from the national power grid. This has finally been approved and a new tariff was put in place on 1 July 2019.

The rural electrification programme is expanding rapidly but not at the desired levels. Of the country's households, 42% or 4.7 million have access to the national grid. An additional 22% or 2.5 million are served through off-grid solutions (mainly solar home systems [SHSs] and diesel mini-grids), which generally provide electricity only for limited hours but at more expensive tariffs. The remaining 36% households (4 million) do not have access to electricity (Figure 1.1) (Billen and Bianchi, 2019).

**Figure 1.1: Access to Electricity in Myanmar (million households)**




Source: Billen and Bianchi (2019).

Government and development partners are making great efforts to develop initiatives to diffuse mini-grid systems. However, the so-called '60-20-20' project, implemented by the Department of Rural Development (DRD) with funds provided by the World Bank's National Electrification Plan (NEP), is still the only main available mechanism. The government and parliament are also revising the electrification law to include a more robust financing scheme to scale up the implementation of mini-grids so that the government can meet its target of full electrification by 2030.

## 1. Generation Increases but Supply–Demand Conditions Remain Tight

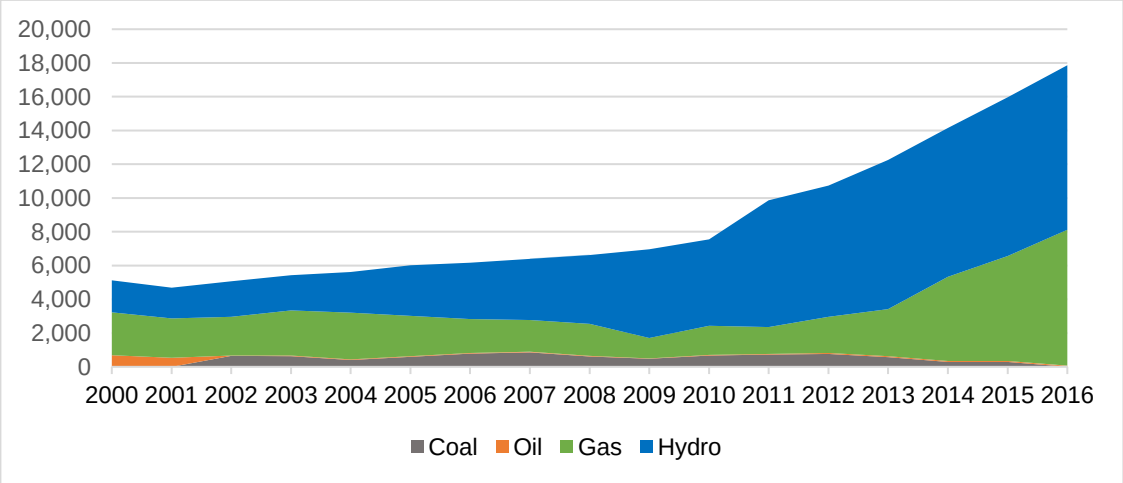
Power shortage in the national grid area continues to be one of Myanmar's gravest issues. In the 2019 dry season, power supply was cut across the country, including in the capital, Nay Pyi Taw. The shortage persists even though Myanmar has abundant endogenous energy sources that could be harnessed. The Ministry of Electricity and Energy (MOEE) has been increasing generation capacity but is facing difficulties keeping up with rapidly rising demand. The country's efforts to solve this problem are explained below.

The country has continued increasing its power generation capacity by around 300 MW per year but demand has been rising rapidly (Figure 1.2). Power is generated primarily from hydropower and natural gas. Since 2010, expansion has come mainly from gas-fired projects. Major hydropower projects have seen no progress but some construction work on new dams has occurred. The International Financing Corporation's (IFC) Strategic Environmental Assessment on hydropower, submitted to the MOEE and the Ministry of Natural Resources and Environmental Conservation (MONREC), recommends not proceeding with hydropower projects on mainstream rivers (IFC, 2018).

Renewable energy has not yet been generated despite efforts being made in that direction. Expected solar projects are still awaiting completion. The first phase of the Minbu solar project (40 MW) has witnessed several delays but is expected to supply electricity to the grid during 2019 (H. M. Htwe, 2018), with solar panels already being imported from China (Kenning, 2019). Two wind projects of 50 MW each are being planned in Chauk township (Magwe region) (N. Aung, 2018). Projects are being explored in other parts of the country (Htike, 2018), such as the Chaung Tha wind power project (30 MW) in the Ayeyarwady Region (Chau, 2019).

The government held significant discussions in 2018 on electricity imports from neighbouring countries. A memorandum of understanding (MOU) was signed with Lao People's Democratic Republic (Lao PDR) following high-level visits. Similarly, India and Myanmar have signed agreements to foster cooperation in the energy sector. However, it is the import of 1,000 MW from China that is expected to have the most significant impact on the power shortage (C. M. Htwe, 2019). The agreement with China is also of interest to Bangladesh, which could import electricity through Myanmar (Begum, 2019). Chapter 3 analyses the implications of these power import schemes for the sustainable development of Myanmar and the region.

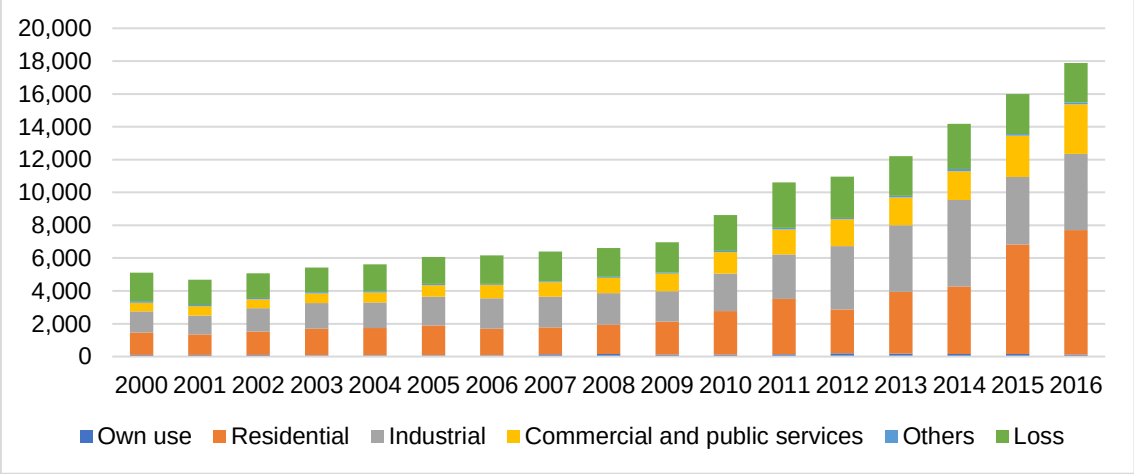
**Figure 1.2: Electricity Production (GWh)**




Source: IEA (2018).

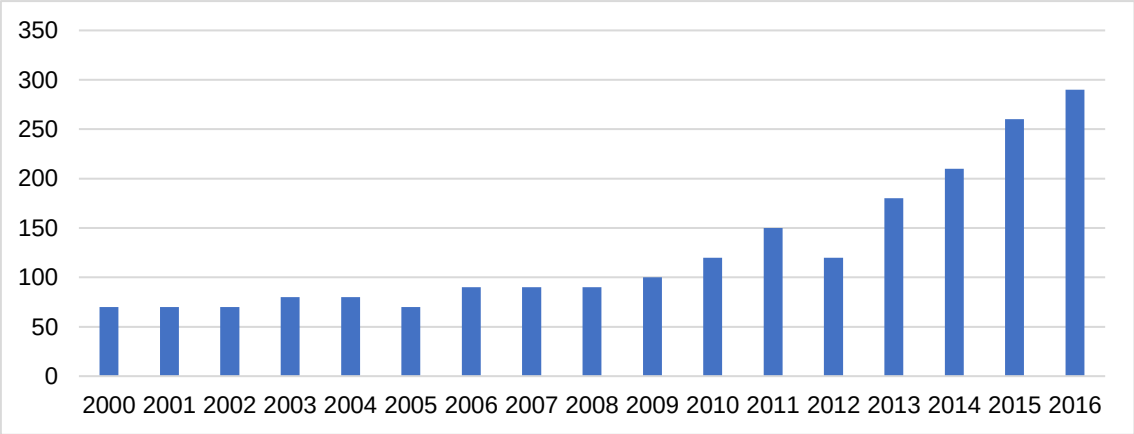
The demand for electricity continues to rise in both aggregate and per capita terms (Figure 1.3 and Figure 1.4). However, national demand is still below the average in the Association of Southeast Asian Nations (ASEAN) members, a trend expected to continue in the short and medium term and giving rise again to discussions on increasing the electricity tariff. As electrification and consumption rates increase, so do the government subsidy and consequent deficit in the sector (Thant, 2018; Thant and Htwe, 2019a), which are touching levels that challenge the MOEE's ability to finance new projects. Rural electrification needs also call for increasing funding, especially for mini-grids (chapter 5).

**Figure 1.3: Electricity Consumption by End User (GWh)**




Source: ERIA (2019).

**Figure 1.4: Per Capita Electricity Consumption (kWh)**




Source: IEA (2018).

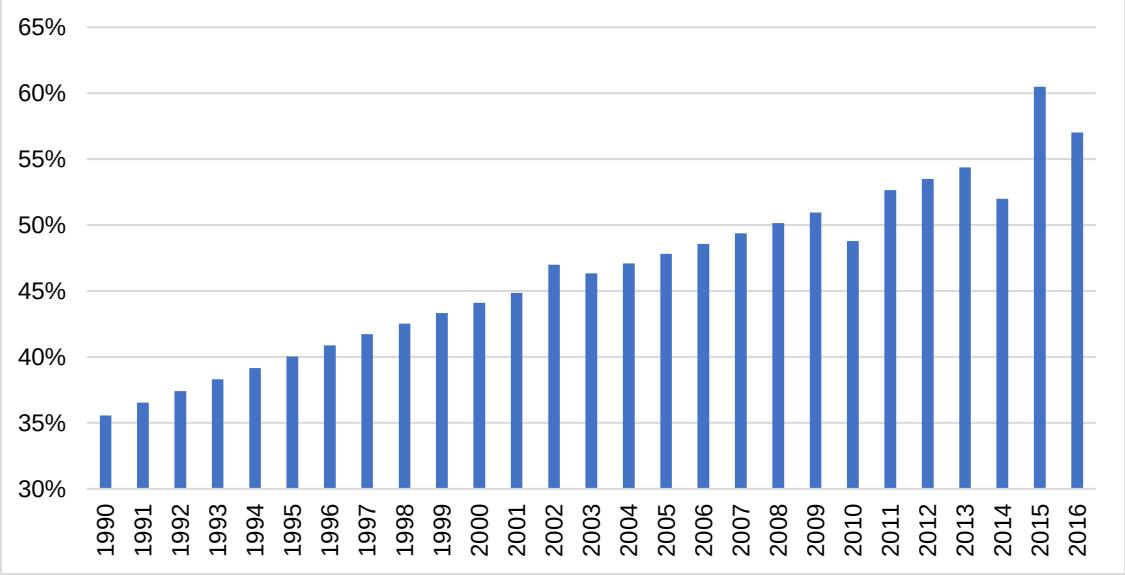
## 2. Rural Electrification Expands but Challenges Persist for Mini-Grids

The government is hopeful of meeting its goal of nationwide electricity access by 2030. It is committed to the World Bank–supported NEP. However, the NEP's component for expanding the national grid has not been implemented, with expansion being done by the MOEE through different funding sources. The off-grid electrification programme, however, is progressing as planned.

As a result, electrification of the country continues to progress (Figure 1.5). Although figures differ depending on their source, the national grid is estimated to reach roughly 40% of the population. SHSs are rapidly expanding in off-grid areas. An additional 20% of the population accesses electricity through isolated systems such as SHSs and/or mini-grids (diesel, solar, mini-hydro, or hybrid).

The government continues to promote mini-grid systems through the '60-20-20' programme using NEP resources. Under this scheme, the government provides a 60% grant for the project's capital expenditure, whilst the developer and the local village electrification committee provide 20% each. The NEP has allocated US$90 million out of US$400 million for off-grid electrification. Other initiatives are being launched to support those efforts. NEP data is being updated (Du Pont, 2019). The governments of Myanmar and Italy have signed a EUR30 million soft loan to support the NEP's rural electrification component (Thant and Htwe, 2019b). Nevertheless, several challenges remain (chapter 4). Chapter 2 analyses the positive impact of rural electrification on sustainable development.

**Figure 1.5: Electrification Rate**




Source: World Bank data (https://data.worldbank.org/).