

# DECENTRALIZING POWER

The Role of State and Region Governments  
in Myanmar's Energy Sector

Executive Summary

April 2019



## BACKGROUND

This report explores the role of Myanmar's state and region governments in the development of the country's energy sector, and how they can increase their agency in shaping their own and the nation's energy future. It is a companion to the Asia Foundation's October 2018 report, *State and Region Governments in Myanmar*, which examines the structure and execution of subnational governance and articulates needed reforms. Like that earlier effort, this report incorporates the views of state and region governments themselves on the challenges and opportunities presented by Myanmar's evolving energy sector.

Myanmar's Union government has been gradually devolving legal and administrative powers to the states and regions since 2011, but these new powers often exist in an uncertain and untested relationship to the traditional powers and prerogatives of the central government. In the energy sector, the states and regions clearly have room to be more assertive in the areas of policy and planning; public consultation and permitting; management of the local (11 kV) electrical grid; off-grid energy, especially renewable energy mini-grids; and the promotion of private investment.

This report describes how state and region governments are discharging their energy-sector responsibilities, and the extent to which existing policies and guidelines empower state/region officials to act to meet regional energy needs.

## OBJECTIVES

This report addresses four key research questions:

- What is the constitutional, legal, and institutional framework of state/region energy authority, and is there a trend toward decentralization of the energy sector?
- Where can the states and regions act autonomously in the energy sector?
- What are the challenges, opportunities, and strategies for improving subnational energy policy, management, and decision-making?
- How can states and regions attract the private-sector energy investments needed for economic development?

## METHODOLOGY

This report draws on six months of interviews with a range of stakeholders across Myanmar, supported by desk research, to understand the forces shaping the energy sector. The project team conducted field research from May to October 2018 in Shan State; Yangon, Tanintharyi, and Bago Regions; and the capital, Nay Pyi Taw. These choices permit the comparison of regions with states and encompass a range of population, poverty levels, geography, governance issues, and conflict histories. During this period, the research team conducted semi-structured interviews with 78 stakeholders in subnational energy governance, including state/region MPs and ministers, Union energy officials within MOEE and a number of its sub-departments, bilateral and multilateral donors, private sector investors and project developers, energy consultants and experts, and members of civil society organizations working on energy issues at the Union and state/region levels.

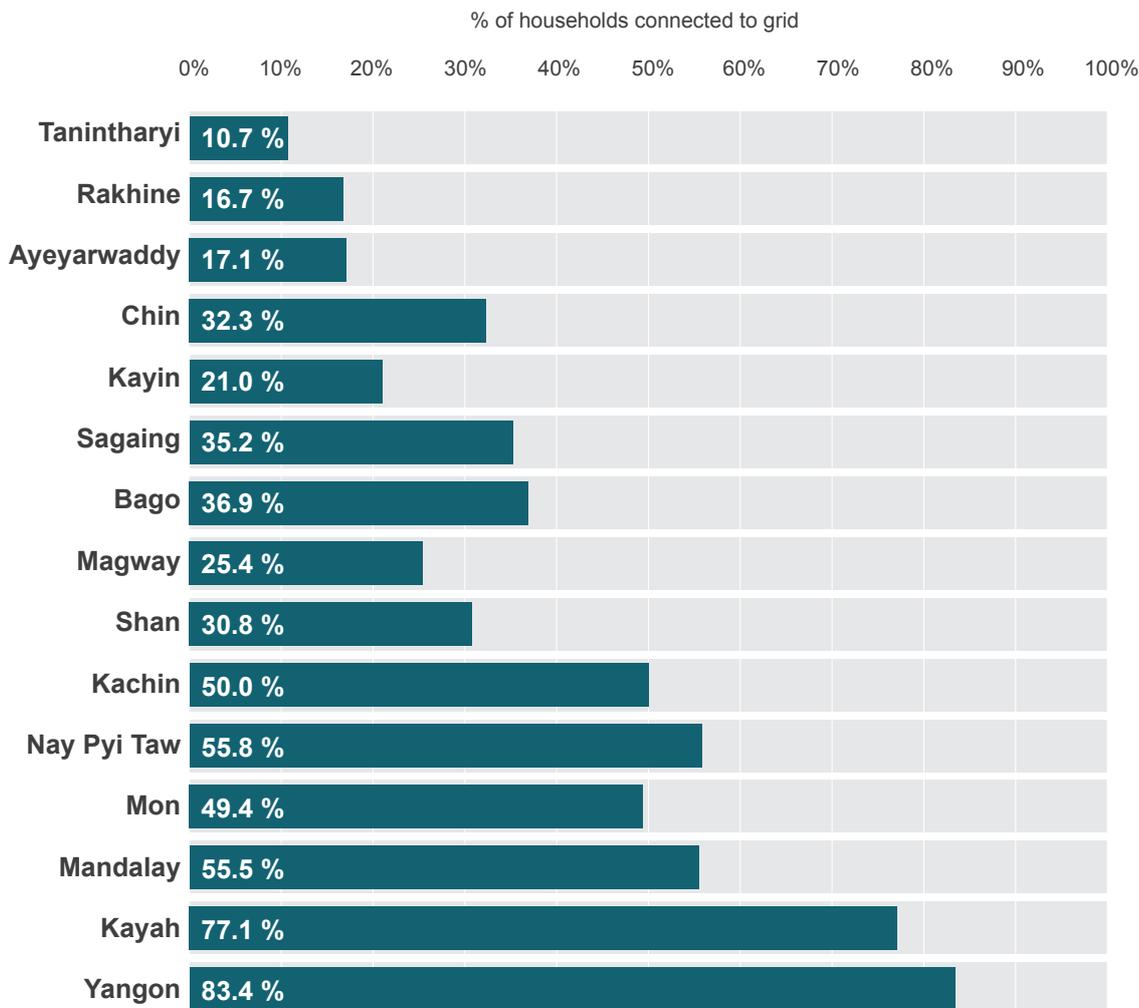
## MYANMAR'S ENERGY SECTOR

The electrification of Myanmar is a tale of inequality. The Yangon metropolitan area alone consumes more than half of the country's electricity. State/region electrification is also starkly unequal, and nine of the 14 states and regions have household electrification rates below 40 percent (see figure below).

The government is tackling this challenge through its National Electrification Project (NEP), which calls for 100 percent household electrification by 2030. Myanmar had 2.3 million household connections in 2014. If successful, the NEP will add more than 7.2 million more by 2030, at a cost of USD 5.8 billion, roughly USD 800 per household connection (World Bank 2016).

The energy sector attracted 58 percent of all foreign direct investment (FDI) in Myanmar from 1988 to 2017. Nearly half of this energy sector investment went into the power sector—USD 20.1 billion across 14 investments, most of them large hydropower projects. More than 60 percent of this power-sector FDI took place in 2010–12, shortly after the reopening of the Myanmar economy. After power, the next-largest sub-category of energy-sector investment was oil and gas. It appears that the predominant fuel for future planned electrification will be natural gas: some 80 percent of the power-plant projects currently in the pipeline are gas fired, 15 percent are hydropower, and five percent are solar (MOEE 2018A).

FIGURE 1. Electrification rates across Myanmar states and regions



Source: MOEE web site: <http://www.moee.gov.mm/en/ignite/page/80>

## THE PROBLEM OF THE ENERGY SUBSIDY

The national commitment to 100 percent electrification by 2030 has placed the Ministry of Energy and Electricity (MOEE) in a difficult situation, because electricity is heavily subsidized. Myanmar has among the lowest electricity prices in ASEAN. The residential rate is less than half the production cost of roughly MMK 109 (7.2 U.S. cents) per kWh, and the government loses MMK 59–74 (3.9–4.9 U.S. cents) on every unit sold to residential customers (de Langre 2018). Because it loses money on each unit of electricity, the MOEE’s deficit increases as the number of connected households grows.

Financial losses from electricity service in FY 2017–18 exceeded projections by more than a factor of three, reaching MMK 406.52 billion (USD 300 million). This number is expected to reach USD 400–500 million in 2018–19, and as high as USD 1 billion—1 percent of GDP—in the next few years (Thant 2017; de Langre 2018; Thant 2018A). This subsidy cannot be sustained over the long term. The World Bank estimates that achieving the target of 100 percent household electrification by 2030 will require a total investment of more than USD 30 billion. To give a sense of scale, Myanmar’s total tax revenue for 2017–18 is estimated at just under USD 5 billion, so the electrification effort could absorb about half of total tax revenues over a 10-year period (de Langre 2018).

## LEGAL MANDATE AND STRUCTURE OF SUBNATIONAL ENERGY GOVERNANCE

The 2008 Constitution lays out the respective powers of the Union and state/region governments with regard to energy. It gives the Union government the right to

manage all generation and distribution of electricity connected to the national grid, and authorizes the state/region governments to manage unconnected, medium- and small-scale power systems.

The 2014 Electricity Law limits the licensing authority of state/region governments to grid-unconnected systems smaller than 30 MW. If the owner of such a system wishes to connect to the national grid, the license holder may apply to the state or region for a connection, but the MOEE “may allow or refuse” the connection. It is up to MOEE to set the terms of licenses and connections. Currently, there are no legal provisions for the connection of mini-grids to the main grid.

The tables below show the division of responsibility between state/region governments and the Union government. Table 1 covers power generation, and table 2 covers transmission and distribution.

Each state or region has a chief minister and a minister whose portfolio includes energy. It is a singular feature of Myanmar’s system of government, however, that most of the departments over which state/region energy ministers preside are actually part of Union ministries. These Union departments have offices in each state or region, staffed by engineers who work for the Union ministry. Limited state/region energy budgets further compound the reliance of state/region governments on Union energy personnel for everything from technical operations to management.

Yet despite these constraints, state/region energy ministers are exercising growing authority over their departments and playing an increasing role in policymaking, planning and budgeting, and even human resource decision-making.

**TABLE 1. Responsibility for generation of electricity in Myanmar**

ACTIVITY	RESPONSIBLE PARTY
Electricity generation ≥ 30 MW or connected to the national grid	Union level: Electricity Power Generation Enterprise, under MOEE
Electricity generation < 30 MW and isolated from the national grid	State/region governments

**TABLE 2. Responsibility for transmission and distribution of electricity in Myanmar**

ACTIVITY	RESPONSIBLE PARTY
Electricity transmission, 33 KV and above	Union level: Department of Electric Power Transmission and System Control, under MOEE
Electricity distribution, 11 KV	State/region governments (or the relevant leading body of an SAD/SAZ)
Electricity distribution, 400V	Community (or the relevant leading body of an SAD/SAZ)

Note: SAD is a self-administrated division, SAZ is a self-administrated zone.

## STATE/REGION ENERGY PRIORITIES AND OPPORTUNITIES

State/region energy ministers have three main objectives: increase access to electricity, improve the affordability of electricity, and ensure adequate generation capacity. These priorities are nested within the development priorities of the National League for Democracy (NLD)—namely roads, water, power, and education. To achieve these outcomes, energy ministers must work within Myanmar’s legal, institutional, and budgetary frameworks. This report highlights some key priorities and concerns that emerge within this context, drawn from personal interviews, including:

- Ensuring adequate power generation
- Ensuring comprehensive and effective electricity distribution
- Coping with inadequate budgets and the low tariff
- The state/region role in project approval
- New state/region energy laws

The report also identifies several significant *opportunities* for state/region action in the energy sector, including:

- **Championing large-scale power development.** Kayin State recently promoted the development of a large coal-fired power plant within its borders. Although local opposition scuttled the plan, the precedent suggests that state/region governments can play a proactive role in power projects larger than 30 MW, even though they are legally a Union responsibility.
- **Increasing state/region autonomy over regional grids.** Tanintharyi Region is unconnected to the national grid. It relies instead on a number of “regional grids,” which deliver electricity from local generators over distribution lines originally built by the Union government. A case study of electricity concessions in Tanintharyi shows how a state/region can effectively manage and improve electricity service within its borders through a process of competitive tendering and rebidding. A regional energy law passed by the Tanintharyi legislative assembly (or “Hluttaw”) in 2013 formed the basis for the region’s active engagement in regional grid development and oversight.
- **Promoting mini-hydropower.** Roughly one-quarter of Myanmar’s 64,000 villages have diesel-generator, micro-hydropower, or biomass/biogas mini-grids. Only about 6 percent of villages are substantially electrified, however (Greacen 2017). At the same time, there is vast, relatively untapped, potential to expand investment in mini-hydropower. Shan State, for example, has built more than 5,000 hydro mini-grids smaller than 1 MW, and regional

grids, developed under state oversight, could turn these into an important source of power (Min 2018). State regulations could play an important role in supporting mini-hydro development.

- **State/region action in decentralized energy and projects smaller than 30 MW.** A number of states and regions have built village-level mini-grids, but there has been very little investment in slightly larger-scale decentralized power production in Myanmar. Such small-scale generation projects of 1–30 MW are technically feasible and can be commercially viable and cost-effective. However, investors in Myanmar, whether domestic or foreign, consider these projects “unbankable”—impossible to finance—because state/region governments lack the budget authority to enter into power purchase agreements for the electricity they produce. This report looks at Thailand’s efforts to decentralize power production over the past two decades through its Small Power Producer Program. Of the 24,750 MW of new generation capacity in Thailand since 2009, 20 percent has been from power plants smaller than 50 MW. This could be an interesting model for Myanmar (Greacen and Greacen 2004; Tongsopit 2014).
- **State/region action on off-grid electrification and village-scale mini-grids.** One area that is clearly within the domain of the states and regions is small-scale, off-grid electrification. The NEP is developing electricity mini-grids in thousands of villages across the country as part of its “preelectrification” strategy, and the states and regions will play an important role in authorizing and overseeing these systems. The Department of Rural Development has already developed draft regulations with guidelines, for consideration by both the Union and state/region governments.

## KEY FINDINGS AND RECOMMENDATIONS

The state/region role in the energy sector will grow in prominence as energy production becomes more decentralized, following regional and global trends. Given this likelihood, this report focuses on areas where states and regions have a mandate, where they will need to develop skills and capacity, and where they have opportunities for greater agency in energy planning and development within their borders. The findings and recommendations fall into three broad areas:

- Energy legislation, policy, and planning
- Energy project review and grid management
- Off-grid, decentralized energy and mini-grid development

### **Recommendations for energy legislation, policy, and planning**

1. A greater state/region role in energy laws and regulations
2. Improved capacity for energy data collection and planning by state/region governments
3. Training to increase the knowledge base of state/region energy ministers
4. Gradual state/region budget increases for energy-sector development
5. Assistance to the poorest households to cover the cost of grid connection

### **Recommendations for energy project review and grid management**

1. A more formal role for states/regions in reviewing grid-connected projects
2. A more formal role for states/regions in championing selected large-scale power projects
3. State/region approval of projects smaller than 30 MW
4. Active promotion of decentralized, grid-connected energy projects
5. Training for ministers and senior officials in energy-related technical and financial literacy
6. Training for state/region engineers

### **Recommendations for off-grid, village-scale energy and mini-grids**

1. Adoption of Union and state/region regulations for development of off-grid energy
2. Risk protection for mini-grid developers
3. Support for development of mini-hydropower in Shan State, and other states/regions as applicable
4. A comprehensive framework for scaling up village-scale mini-grids in Myanmar
5. Technical training in mini-grids for state/region governments

## **THE OPPORTUNITY OF DECENTRALIZED ENERGY**

The energy sector is vital to Myanmar's economic development. Myanmar's household electrification rate of 42 percent is one of the lowest in Southeast Asia, and as noted earlier, nine of its 14 states and regions have electrification rates of less than 40 percent. Significant investment is needed to electrify these areas of the country, and that investment, when it materializes, will bring major economic benefits. But energy generation and distribution cannot be directed and controlled solely by the Union government. Decentralized, smaller-scale energy resources offer several advantages. They can be deployed much more quickly than large-scale megaprojects. They are also scalable, and they improve the reliability and resilience of the electric grid. Many of the largest energy companies are shifting their investments to distributed, decentralized, low-carbon resources—the global energy behemoth Engie being the most prominent example. Decentralizing decision-making on energy infrastructure can help states/regions to attract direct investment in this sector (ACORE 2018). Such investment will not only bring electricity service to millions of Myanmar citizens; it will also create jobs, livelihoods, and new economic opportunities (ILO 2011).



## **The Asia Foundation**

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To request copies of the full report, please contact [country.myanmar.general@asiafoundation.org](mailto:myanmar.general@asiafoundation.org). We also welcome your feedback on the report.

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