

POWER SECTOR POLICY IN MYANMAR: LESSONS FROM STAKEHOLDER ENGAGEMENT

Masako Numata
Institute for Future Initiatives
the University of Tokyo



This research is supported by



LIST OF CONTENTS

Introduction

- Project overview
- Current situation in Myanmar

Cost competitiveness of solar mini-grids

Barriers to the deployment of renewable mini-grids

Findings and recommendations

PROJECT HISTORY

Mission

- Analyze the regional structure of energy supply and demand as well as energy policies in Myanmar
- Prepare policy recommendations based on the latest energy policy research

Activities

- International Symposiums such as “Energy Policy Roundtable” (2012-)
- Policy recommendations and human resource development on rural electrification in Myanmar (2013-)
- Collaboration with the universities; Chulalongkorn University of Thailand (2013-), University of California, Berkeley, and Yangon Technological University



International symposium with Members of Parliament and government officials (June 5, 2019)

Global New Lights of Myanmar (newspaper) (Aug 17, 2018)

CAPACITY BUILDING



Workshops with Members of the Parliament in Myanmar (Aug 17, 2018, Sept 14, 2018, Feb 18-19, 2019)

2 PARLIAMENT

MPs read three reports, discussions ongoing

At the fourth-day meeting of the Second Pyithagu Hluttaw's sixth regular session held at the Pyithagu Hluttaw Joint Bill Committee members U Nay Myo Tun and U Myae Kyau, after which Pyithagu Hluttaw Speaker announced that Hluttaw representatives who want to discuss a report to avoid their names.

Reading of reports

At the meeting, reports on Myanmar dental, oral medical council bill and Condominium Rule in which the two Hluttaws were in disagreement were first read by Pyithagu Hluttaw Joint Bill Committee members U Nay Myo Tun and U Myae Kyau, after which Pyithagu Hluttaw Speaker announced that Hluttaw representatives who want to discuss a report to avoid their names.

Next, a Joint Public Accounts Committee Report No. (2018) Part 1 on the Office of the Auditor General of the Union's audit report for fiscal year 2016-2017 was read by Committee Vice Chairman U Saw Thaw Hla.

The Committee Vice Chairman at the Part (1) will include the committee's finding, assessment and comments on sector wise implementation of the National Plan, implementation of Union Budget Law, national debt and actual figures submitted by departmental organizations.

On implementation of the National Plan, agriculture sector was unable to achieve the target by a small margin but industrial and service sector were able to achieve beyond the target set.



Pyithagu Hluttaw Speaker U Thaw Myat. PHOTO: MNA

GDP for 2016-2017 declined to 5.9 per cent, compared to last year. Some work projects of state-owned sector investments were conducted with loans and assistance from international partner organizations, and some work projects were found unimplemented as planned. On the implementation of Union Tax Law, 2014 Union Tax Law was enacted as Pyithagu Hluttaw Law No. 22. As per the estimated, the initial estimate for tax collection was Ks 42,912,553 billion and the revised estimate was increased to Ks 65,12,794 billion. Tax collected was Ks 7,122.43 billion.

Of the 21 types of tax, 17 were collected by and the target amount but four did not meet the target. There were outstanding taxes for Internal Revenue Department to collect and the ratio of tax collected and GDP is much less compared to other ASEAN countries and its observed that

relevant ministries need to manage more on this.

On implementing the Union Budget Law, for fiscal year 2017, an additional Ks 284 billion was permitted with Supplementary Budget Law. It is the opinion of the Office of the Auditor General of the Union that supports to states and regions should be provided only up to the actual amount required. As per the marked amendment to the Constitution on 2015, states and regions were permitted to collect additional taxes and if the ability of the states and regions to collect tax increases, support can be reduced. International local loans need to be acquired in accordance to procedure on loans prescribed in the Union Budget Law Performance guarantee tender winning construction and purchasing contracts are deposited in the departmental accounts, the state budget deficit

could be reduced.

The State had made a total loan of US\$ 14,21 billion out of which, \$11.64 billion was used, \$2.42 billion was repaid and outstanding loan required to be repaid is \$ 9.14 billion.

According to the Joint Public Accounts Committee, the 5.9 Percent GDP increase for fiscal year 2016-2017 being less than fiscal year 2015-2016 was because the entire agriculture sector was unable to reach the target at even for fiscal year 2015-2016. Although tax collection increased, tax receipt to GDP ratio still remains low. Especially the increase in tax collection need to be beyond the GDP increase and inflation rates. As the present tax rates are appropriate, increasing tax is not recommended.

Foreign currency balance, as of 21 March 2017, of Union minister and organizations that are working outside of the Union funds are US\$ 717.29 million and the public needs to be informed transparently through Pyithagu Hluttaw.

Union ministers and organizations need to manage the projects implemented with foreign aids and loans, according to disbursement plan included in the agreement and works are to be fully implemented.

Joint Public Accounts Committee Report No. (2018) Part 2 and Part 3 will be submitted to the Pyithagu Hluttaw, explained the Committee Vice Chairman.

The eleventh-day meeting of the sixth regular session of the Second Pyithagu Hluttaw will be held on 29 August, it is learnt. —Aung Ye Thwin (MNA) ■

Committee Report No. (2018)

Joint Public Accounts Committee Report No. (2018) on the committee's comment and remark on implementation of construction works in fiscal year 2017-2018 by Ministry of Education, Basic Education Department was then discussed by Hluttaw representatives.

Daw Nwe Chis Tun (D. Ar. Kar) Minister of Kayah State constituency 7, Tada-Uda representative Li-Orl Saw Naing, Dr. Sun Mya Aye of Dala constituency U, U Be Oye of Chawng constituency U, U Win of Yangon Region constituency 11, U Saw Thaw Saw of Shwepyithar constituency, U Win Maung of Magway Region constituency 6, U Sai Aung Kyaw of Kachin constituency U, Myo Win of Mon State constituency 8, U Win of Chitthaingyi Region constituency U, U Oha Linn of Myingon constituency U, U San Myint of Ayeyawady Region constituency 3, U Nyunt Aung of Mawmya constituency, U Aung Myo Latt of Mandalay Region constituency 5, U Win Htut of Pagan constituency U, U Hla May of Rakhine State constituency 11, U Than Soe (D. Than Soe) of Yangon Region constituency 4, U Oo Tun Maung of Patheingyi constituency and Dr. Khin Maung Win of Taintharyi Region constituency 11 discussed the report.

Pyithu Hluttaw Deputy Speaker receives PARI, Tokyo University Professor

Pyithu Hluttaw Deputy Speaker U Tun Tin has invited Prof. Dr. Hiromichi Yoshikawa from Policy Alternatives Research Institute (PARI), Tokyo University Japan, at Pyithu Hluttaw Deputy Speaker's office, Hluttaw Building in Nay Pyi Taw yesterday afternoon.

During the discussion, they

exchanged views on promoting the skills of Hluttaw representatives and staff for democratic reforms in Myanmar and increasing the role of Hluttaw, and electricity sector development which is the basic requirement for the development of the economic sector, it is learnt. —Myanmar News Agency ■



Pyithu Hluttaw Deputy Speaker U Tun Tin has invited Prof. Dr. Hiromichi Yoshikawa, PARI, Tokyo University, to Nay Pyi Taw yesterday. PHOTO: MYANMAR NEWS AGENCY

7 AFFORDABLE AND CLEAN ENERGY



SHAPING ENERGY POLICIES TOWARDS THE ACHIEVEMENT OF THE SDGS IN MYANMAR AND THE GMS (FY2018-2019)

- Barriers to mini-grids in Myanmar
- *Energy for reducing inequalities & supporting peace*
- *Improved regional interconnectivity*

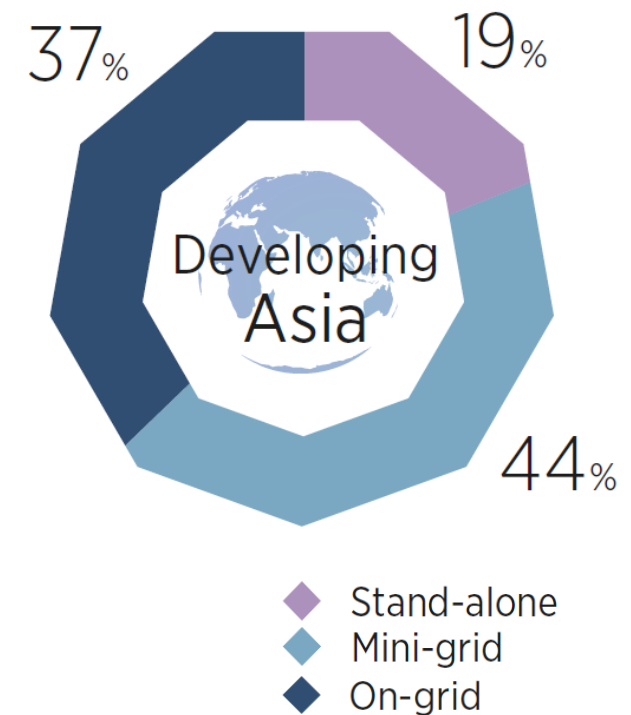
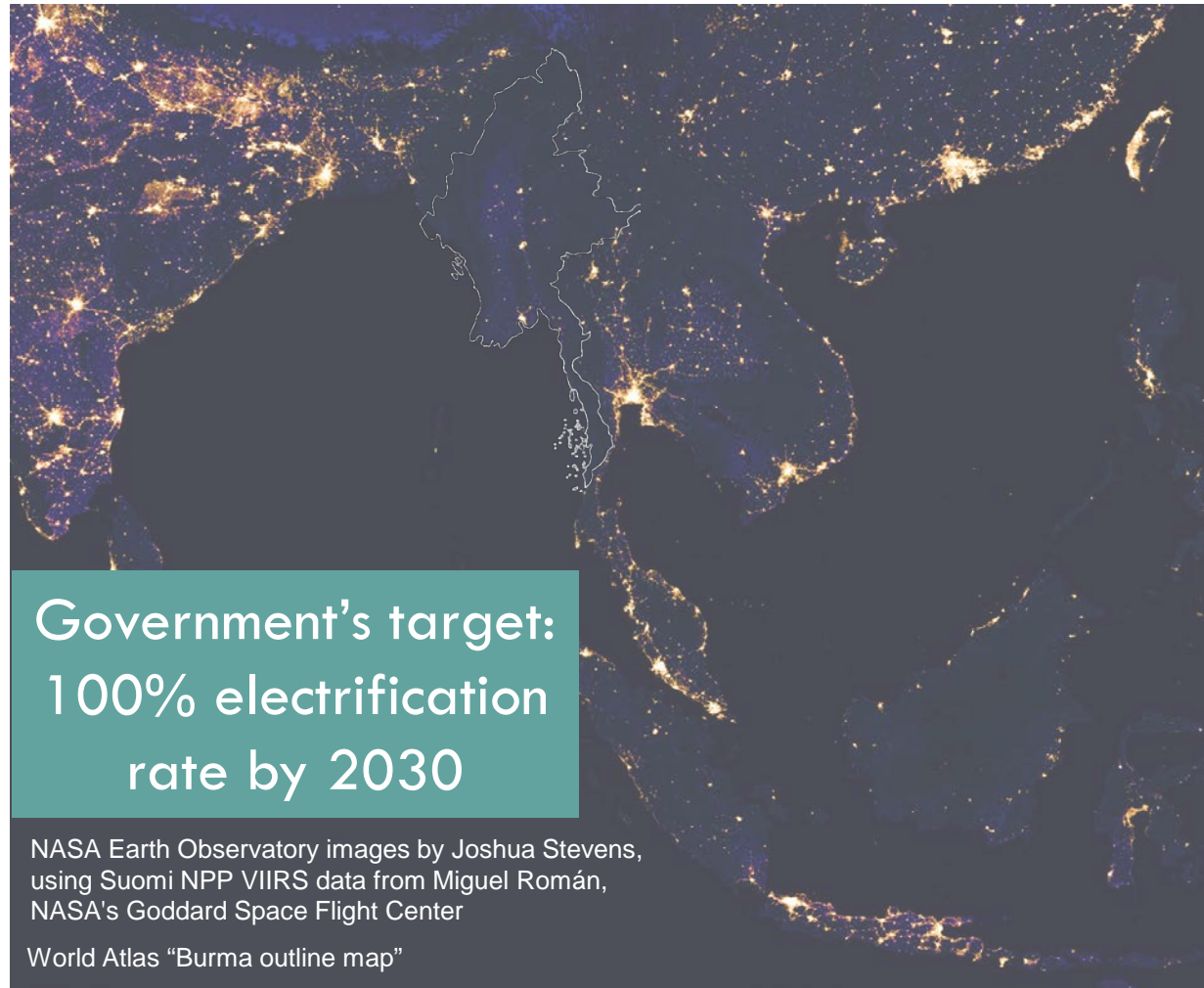
16 PEACE, JUSTICE AND STRONG INSTITUTIONS



13 CLIMATE ACTION

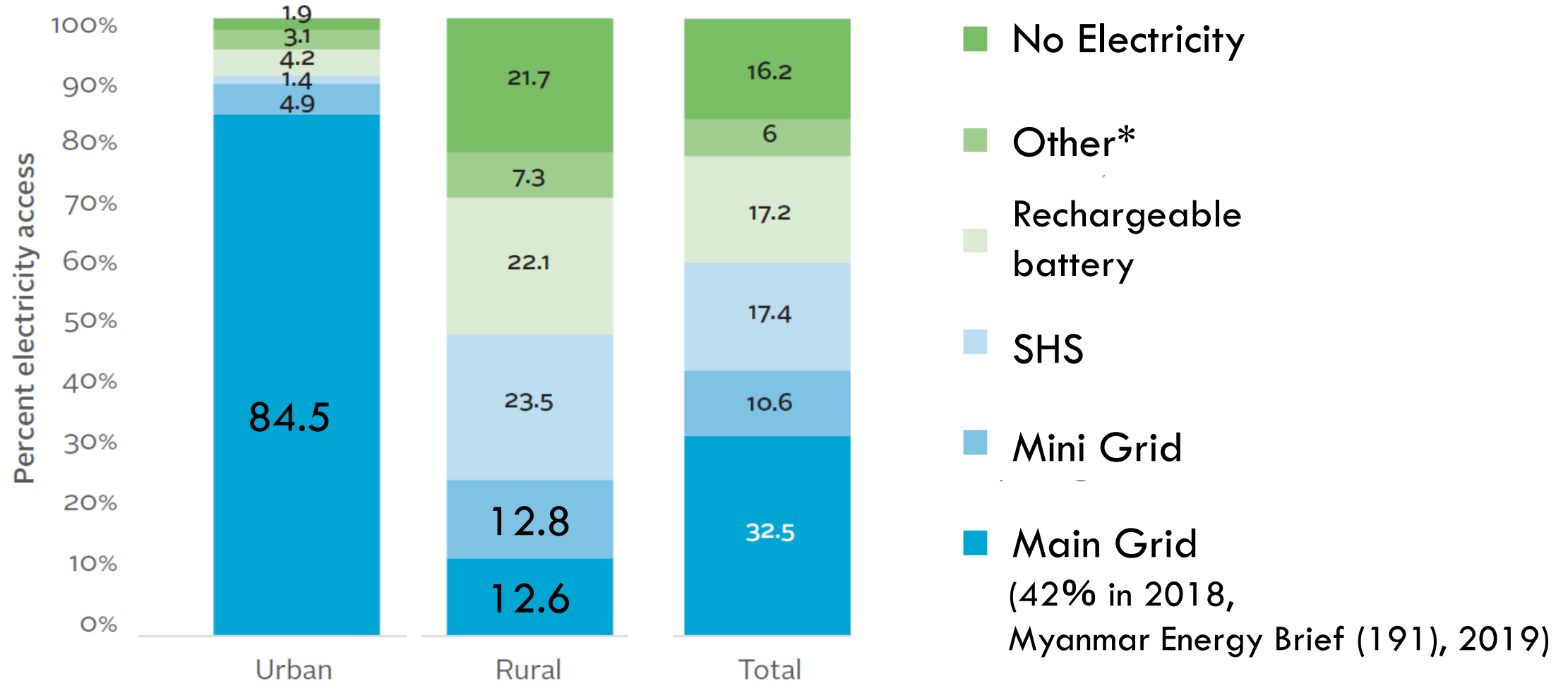


CURRENT SITUATION OF ELECTRIFICATION IN MYANMAR



Estimated source of additional generation
required to achieve universal electricity access
(IRENA, 2017)

SOURCE OF ELECTRICITY IN MYANMAR



Ministry of Planning and Finance, Myanmar and World Bank (2017)

* Mill, Generator, Solar Lantern

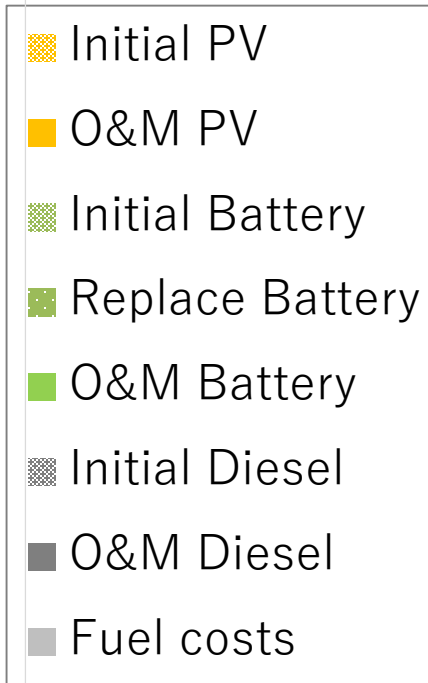
PREVIOUS STUDY

- 
- Technoeconomic Assessment of Mini-grids in Myanmar

- 
- Typology of Barriers to Deployment

- 
- Prioritization of Barrier Factors

PREVIOUS STUDY: COMPARISON OF LCOE



Load: Night & Day, Diesel, Fuel Price (FP) Low

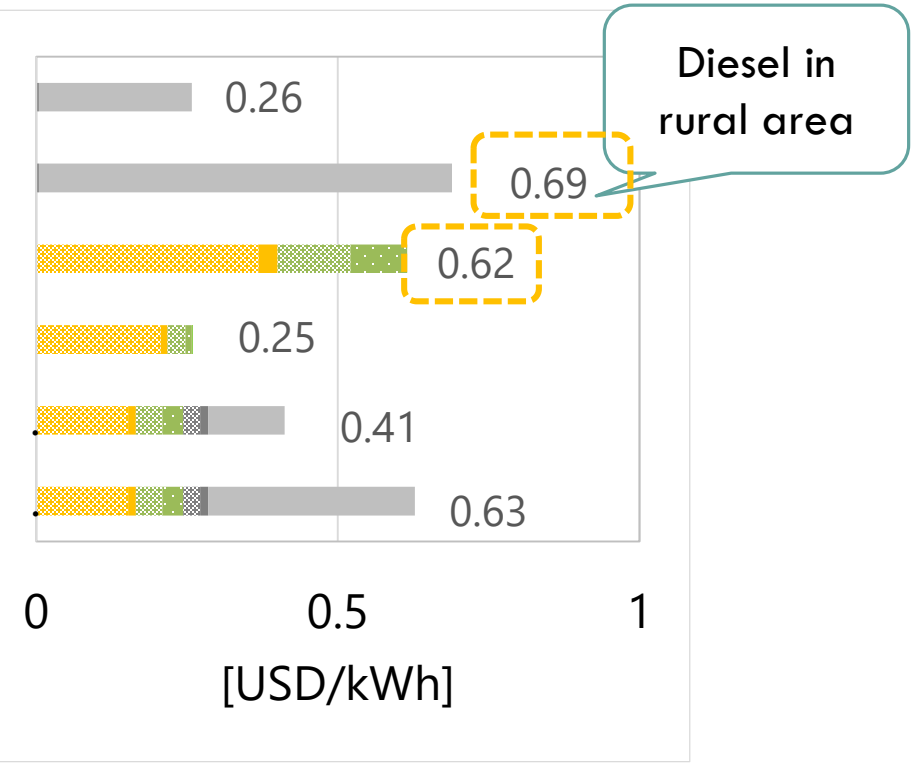
Load: Night & Day, Diesel, Fuel Price High ($\times 2.7$)

Load: Night & Day, PV+Battery (lead-acid)

Load: Night & Day, PV+Battery (LIB, future price)

Load: Night & Day, PV+Battery (lead)+Diesel, FP Low

Load: Night & Day, PV+Battery (lead)+Diesel, FP High



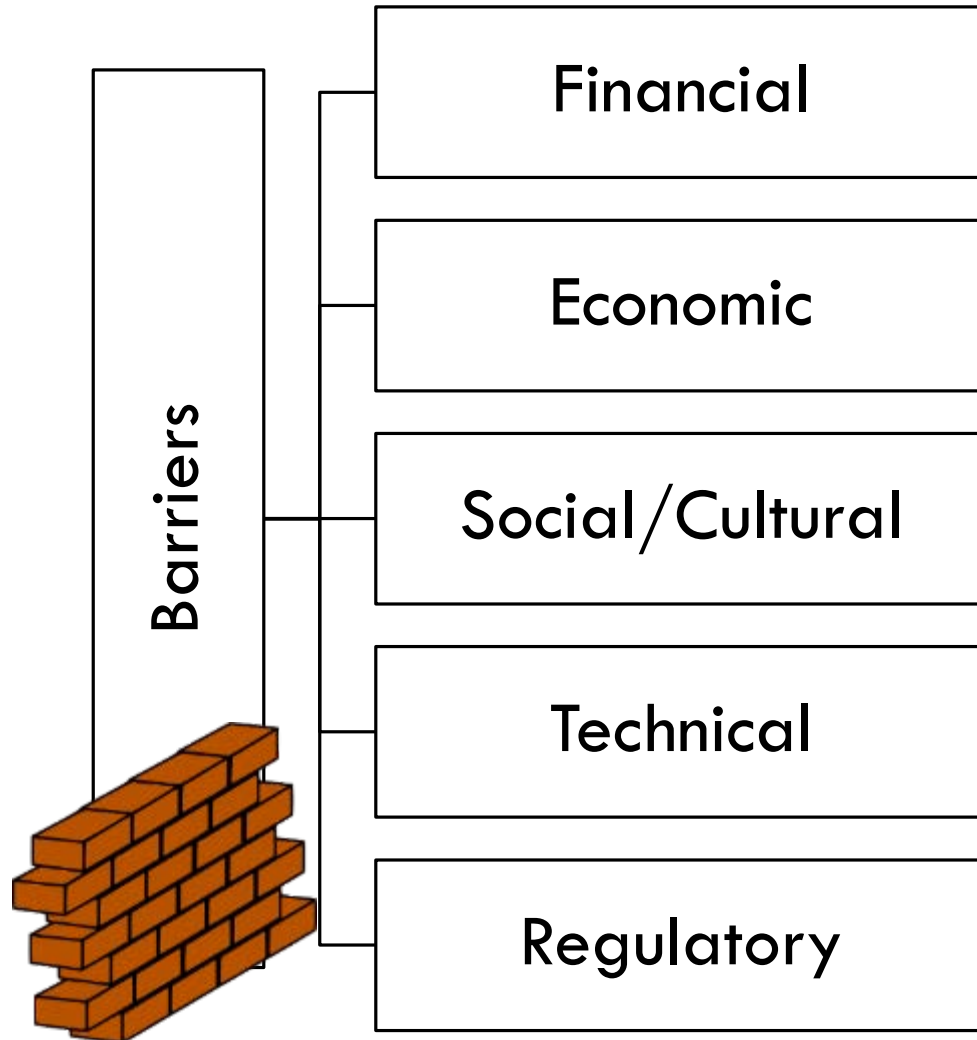
Diesel in rural area

Findings

- Solar + Battery mini-grids are cost-competitive with diesel mini-grids where fuel cost is high (= rural area).

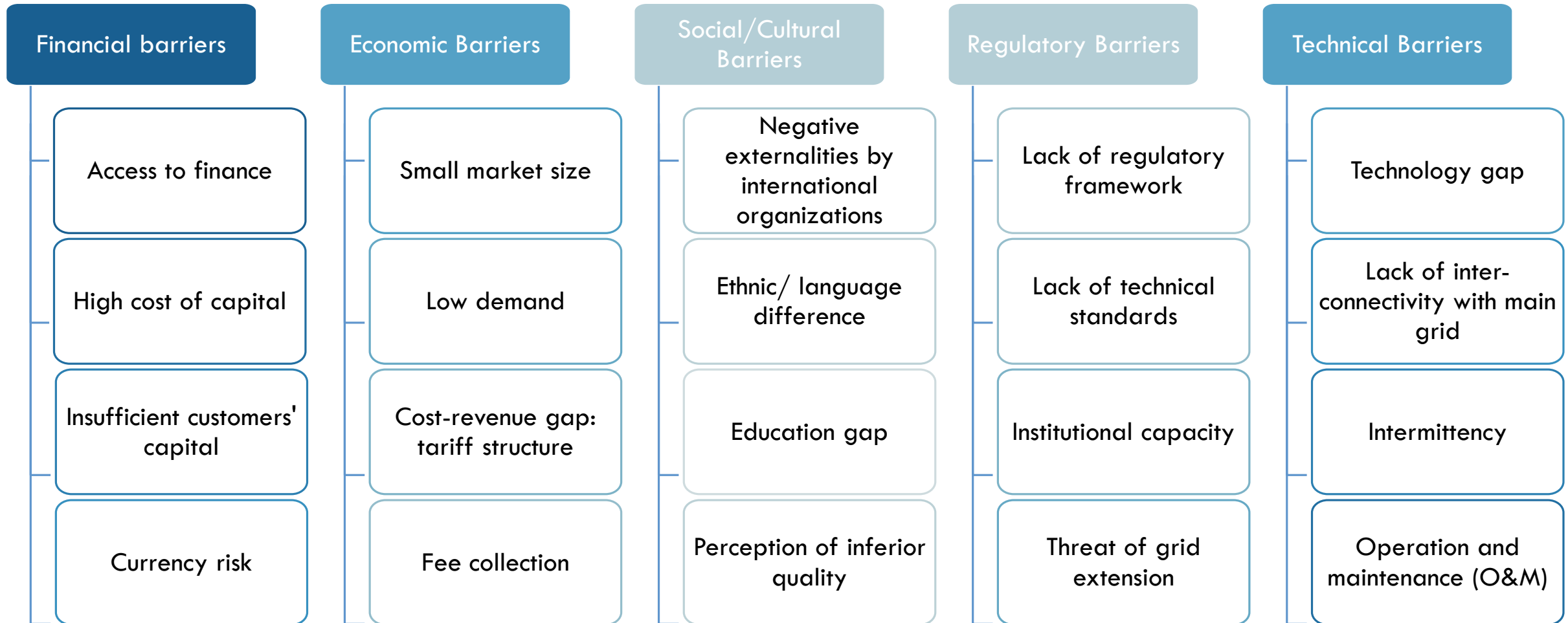
Numata et al., (2018) ERIA Discussion paper series.

BARRIER TYPOLOGY



Painuly (2001) "Barriers to renewable energy penetration: A framework for analysis".

BARRIER FACTORS





TECHNICAL BARRIERS

Technology gap

- Local technology in Myanmar differs from internationally accepted practice in terms of design principles.

Intermittency

- Systems that compensate for intermittency, such as variation between day/night and dry/rainy seasons in the case of solar power, and rainy/dry seasons in the case of hydro power, are necessary.

Lack of interoperability with main grid

- The business risk involved in mini-grids without interoperability with the main grid increases when there is an unplanned extension of the main grid.

Operation and maintenance

REGULATORY BARRIERS



Institutional capacity

- In Myanmar, on-grid systems fall under the jurisdiction of the Ministry of Electricity and Energy, while off-grid systems fall under the Department of Rural Development, the Ministry of Livestock, Fisheries and Rural Development. Coordination across ministries is time-consuming.

Lack of regulatory framework

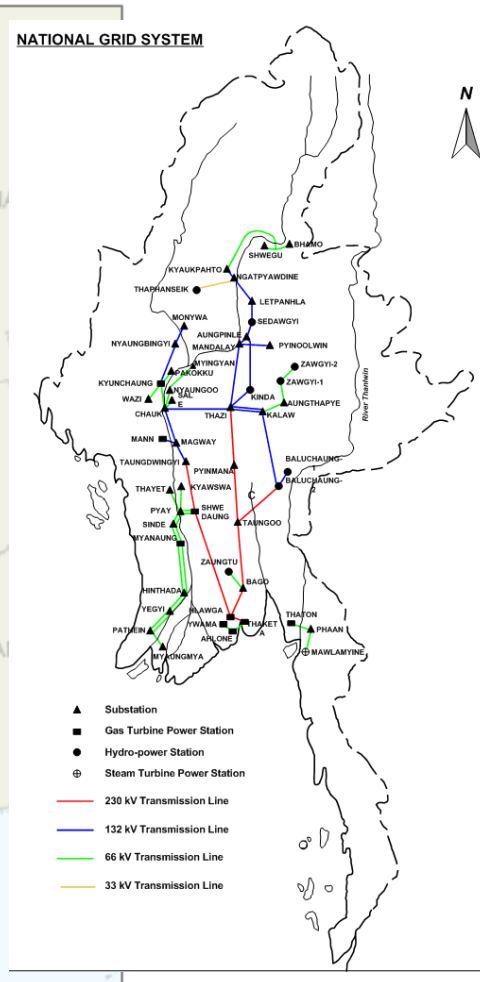
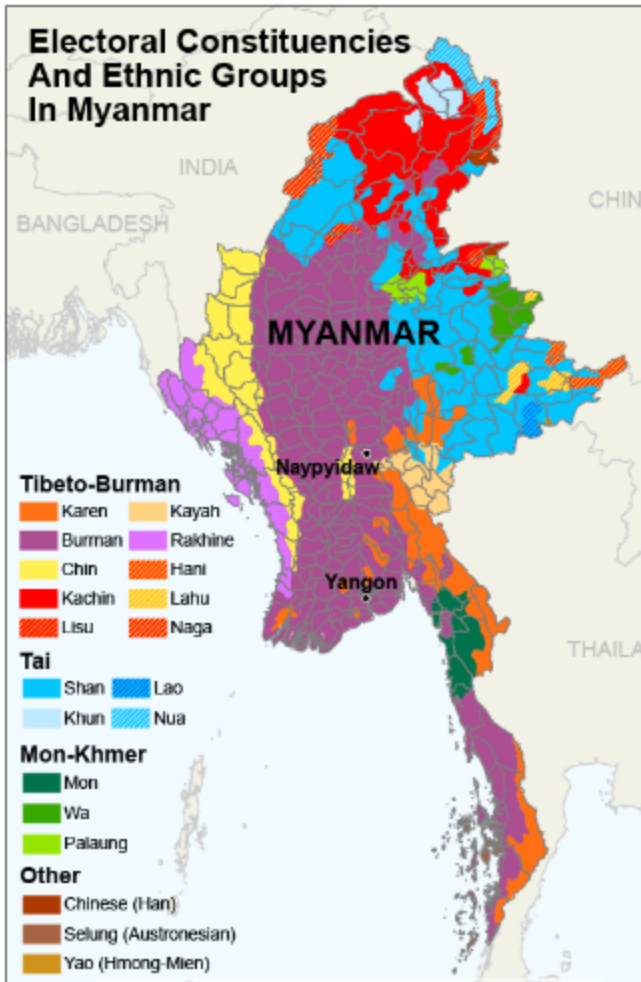
- There is currently no legislation covering mini-grids. However, a draft legislation is being drawn up by the World Bank, GIZ, and Myanmar government.

Lack of technical standards and codes

- Since there are no technical standards or codes, it is difficult to ensure consistency in the quality of mini-grids.

Threat of grid extension

SOCIAL/CULTURAL BARRIERS



Education gap

- It is difficult for local developers/operators to pass assessments set by international aid organizations who provide low cost loan.

Perception of inferior quality

- Even with back-up systems, mini-grids may face the severe climate situation and cannot supply as usual.

Ethnic/ language difference

- Unelectrified regions overlap with areas inhabited by ethnic minorities.

Negative externalities caused by international organizations

- In Myanmar, there used to be a nearly non-profit independent mini-grid business ecosystem. However, people's mindsets have changed as a result of subsidized mini-grid projects by donor organization.

ECONOMIC BARRIERS



Tariff structure: cost-revenue gap

- Should balance between the amount that customers are able to pay and the tariff that reflects costs.

Small market size

- The scale of Myanmar's renewable energy market is still small.

Low demand

- Creation of demand beyond basic use for lighting and charging cell phones is problem.

Revenue collection uncertainty

- Introduction of technologies such as pre-paid meter or Pay As You Go is an effective way of reducing fee collection risk.

FINANCIAL BARRIERS



Access to finance

- Difficulty in access to finance due to the immaturity of Myanmar financial sector.

High cost of capital

- Even if funds can be procured, capital costs (interest rates, loan fees) are high.

Insufficient customers' capital

- Means of procuring funds available to consumers were limited to high-cost private-sector moneylenders. However, microfinance is steadily increasing.

Currency risk

- When funds are procured in a foreign currency, businesses take a risk with regard to the rate of exchange with the revenue, which is in local currency.

PRIORITIZATION OF BARRIER FACTORS

- Which is the main barrier to deployment of renewable based mini-grid?

Regulatory Barriers	<i>Extremely important</i> <i>Very strongly important</i> <i>Strongly important</i> <i>Moderately important</i> <i>Equally important</i> <i>Moderately important</i> <i>Strongly important</i> <i>Very strongly important</i> <i>Extremely important</i>									
	9	7	5	3	1	3	5	7	9	
Lack of regulatory framework										Lack of technical standards
Lack of regulatory framework										Institutional capacity
Lack of regulatory framework										Threat of grid extension

စည်းမညှိစည်းကမ်းဆိုင်ရာ အကျိုးခွေး အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ အလုံအလုံ/အလုံအလုံ	၉	၇	၅	၃	၁	၃	၅	၇	၉	
စည်းမညှိစည်းကမ်းဆိုင်ရာ အကျိုးခွေး										နည်းပညာ စံနှုန်းနည်းစံနှုန်း
စည်းမညှိစည်းကမ်းဆိုင်ရာ အကျိုးခွေး										မရှိသူများ
စည်းမညှိစည်းကမ်းဆိုင်ရာ အကျိုးခွေး										အမြင် အစည်း၏ ဝေဆာပြုမှု ဝေးလံခြင်း

PRIORITIZED BARRIERS AND RECOMMENDATIONS TO OVERCOME



Cost-revenue gap

The tariff for the main grid should be increased to enable equal footing



Perception of inferior quality

Clear communication of limitations to villagers could address perception of low quality



Technology gap

Use affordable technology



Education gap of local developers/operators

Provide support service to apply soft loan

THANK YOU FOR LISTENING!

