



# The Republic of the Union of Myanmar

## Ministry of Electricity and Energy



## COUNTRY REPORT PRESENTATION

26<sup>th</sup> November, 2020

Japan

Presented By

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# Outline of Presentation

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- ❖ Organization chart of Our Ministry
- ❖ Institutional Framework of Myanmar Energy Sector
- ❖ Current Electricity and Energy Policies
- ❖ Existing Facilities and Installed Capacity
- ❖ Past Energy Demand and Supply
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- ❖ Ongoing Power Supply Infrastructure
- ❖ Major difficulties and bottlenecks when fulfilling energy policies
- ❖ Subjects that we need to study

# General Information of My Country

## THE REPUBLIC OF THE UNION OF MYANMAR



- Capital (Administrative)                      Nay Pyi Taw
- Largest City (Commercial)                    Yangon  
(about 7,360,703 people)
- Population    About 54,045,420 people  
(equivalent to 0.7 % of world  
Population)
- Race    135 races (8 major nationalities)
- Official Language                                Myanmar (Burmese)
- Regionalization                                    7 regions and 7 States, 1 Union  
Territory and 6 self-administered  
zones
- Currency    Kyat
- Climate (Seasons)                                Summer, Rainy and Winter
- Total Land Area                                    676,577 km<sup>2</sup>
- Population Density per km<sup>2</sup>                76.1 people
- Population Growth Rate (annual)        0.89 %
- Forest Area    49% of the country
- Sharing of Borders;
  - Bangladesh & India                            North-West
  - China    North- East
  - Laos     East
  - Thailand    South-East
- Coastal Strip                                        2,832 km  
Facing to The Bay of Bengal  
and Andaman Sea.



# Organization chart of Our Ministry

## Union Minister Office

### Electricity

DEPP

Dept. of Electric Power Planning  
(Policy and Planning)

DPTSC

Dept. of Electric Power  
Transmission & System Control  
(Transmission & System Control)

DHPI

Dept. of Hydropower Implementation  
(Hydro Power)

ESE

Electricity Supply Enterprise  
(Distribution)

EPGE

Electric Power Generation Enterprise  
(Generation)

YESC

Yangon Electricity Supply Corporation  
(Distribution)

MESC

Mandalay Electricity Supply Corporation  
(Distribution)

### Energy

OGPD

Oil and Gas Planning Department  
(Policy and Planning)

PPRD

Petroleum Products Regulatory  
Department  
(licensing and Supervision)

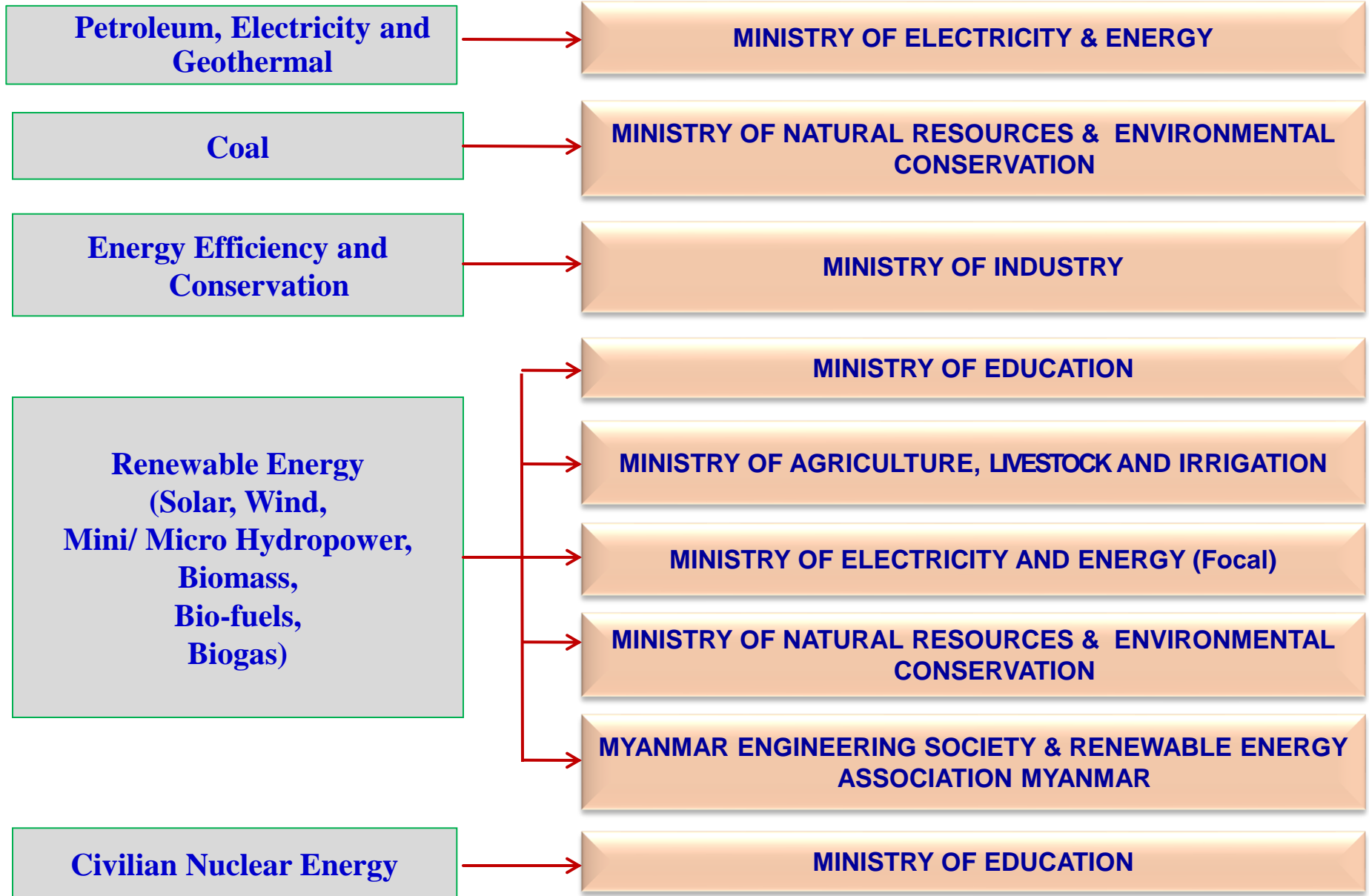
MOGE

Myanmar Oil and Gas Enterprise  
(E&P, Drilling, Production, Onshore  
Pipeline Construction & CNG)

MPPE

Myanmar Petrochemical Enterprise  
(Refineries, Fertilizers & LPG)

# Institutional Framework of Myanmar Energy Sector



# Current Electricity and Energy Policies

- ❑ In extraction and utilization of natural resources in order to fulfill the nation's energy needs, to take the following measures:-
  - to minimize the environmental impacts
  - to include sustainable utilization plans for future generations
  - to invite local and foreign investments
  - to include and carry out Corporate Social Responsibility (CSR) activities
- ❑ To set and carry out prioritized plans to systematically and effectively use of electricity and energy
- ❑ In defining electricity and energy pricing in accordance with the market oriented economy, after studying international electricity and energy pricing policies:
  - to set fair and stable prices for electricity and energy consumers
  - to ensure fair benefits to both producers and distributors
- ❑ To set and enforce electricity and energy standards and specifications of the nation based on international standards and specifications
- ❑ To encourage more cooperation with local and foreign private partners in accordance with the State's economic policies
- ❑ For exploration and utilization of New and Renewable Energy (NRE) resources, to take the following measures:-
  - to improve Research and Development (R&D) programs and awareness raising activities
  - to promote private sector participation by making laws and rules
  - to lay down short term and long term plans

# Current Electricity and Energy Policies (cont.)

- ❑ To facilitate the operation of power plants using local energy sources like hydropower, renewable and thermal energy in order to provide full and stable domestic electricity supply
- ❑ To set and carry out short-term and long-term plans to be able to use Liquefied Natural Gas (LNG), Liquefied Petroleum Gas (LPG), Coal and other fuel energy sources
- ❑ To expand to regional trading if domestic supply of electricity and energy is sufficient
- ❑ To cooperate with neighboring countries to build power grid network and oil and gas pipeline network
- ❑ To implement modern petrochemical complexes in cooperation with local and foreign partners, which can produce petroleum and petrochemical products in line with international standards and specifications, in accordance with economic policy and if surplus, to set short-term and long-term plans to export.
- ❑ For future electricity and energy security :-
  - to carry out long-term plans to increase reserved energy
  - to formulate plan on the use of civilian nuclear energy in line with the ASEAN Standards

# Existing Facilities and Installed Capacity (as of August 2020)



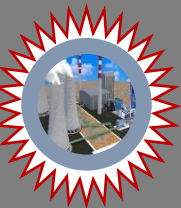
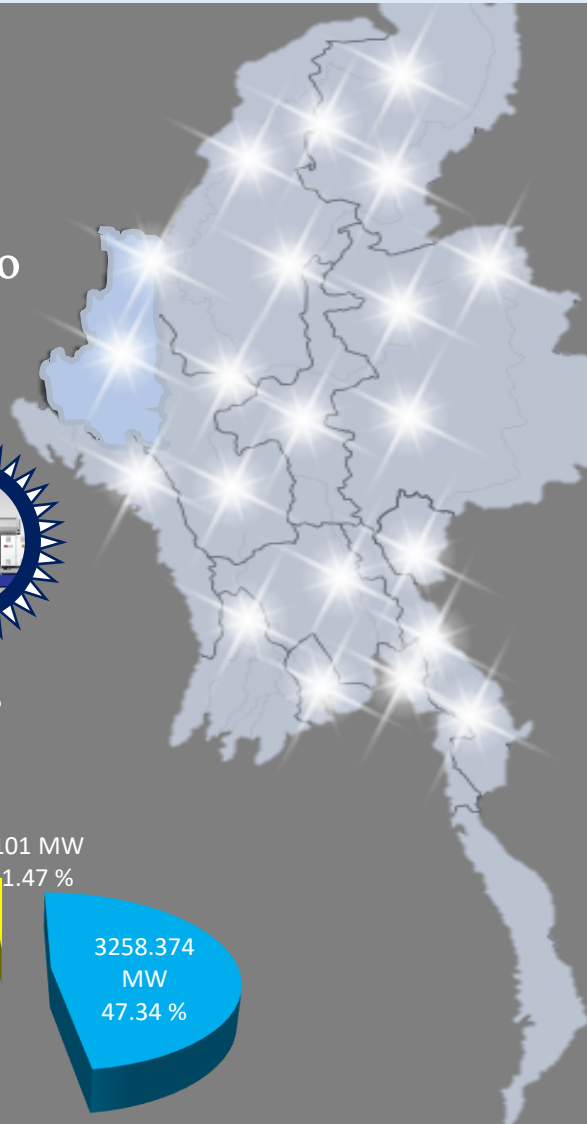
Resource - Hydro  
47.34 %



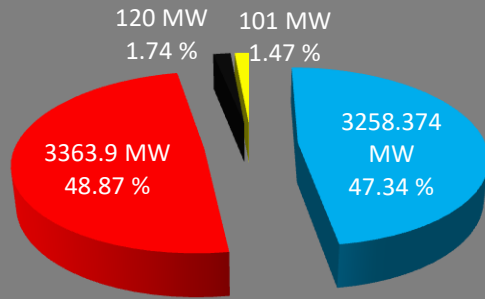
Resource - Coal  
1.74 %



Resource - Diesel  
1.47 %



Resource - Gas  
48.87 %



## Types of Power Plants

Types of Power Plants	No. of Stations	Installed Capacity (MW)
Hydropower Plants	28	3225
Coal-fired Thermal Plants	1	120
Gas Turbine Power Plants	28	3363.9
Solar Power Plants	1	40
<b>Installed capacity connected to Grid</b>		<b>6748.9</b>
Diesel (Off Grid)		101
Small Hydro (Off Grid)	33	33.374
<b>Total (Grid + Off Grid)</b>		<b>6883.274</b>

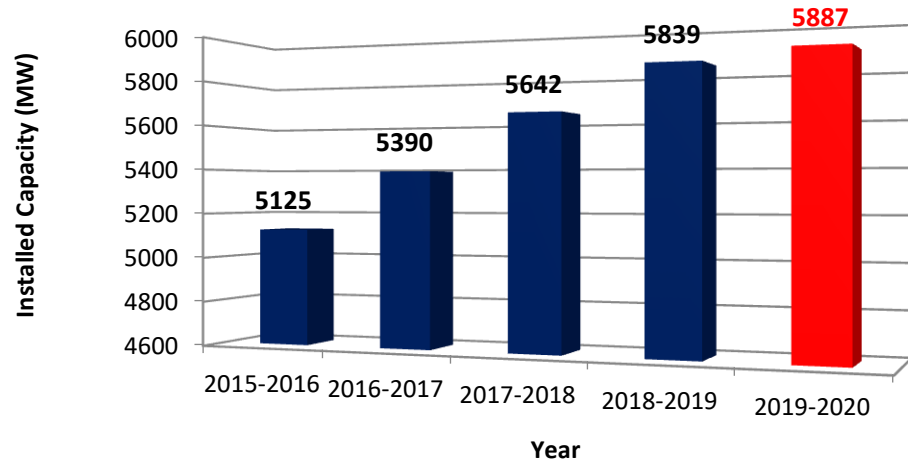
■ Hydro ■ Thermal ■ Coal ■ Diesel

**Total Installed Capacity = 6883.274 MW**

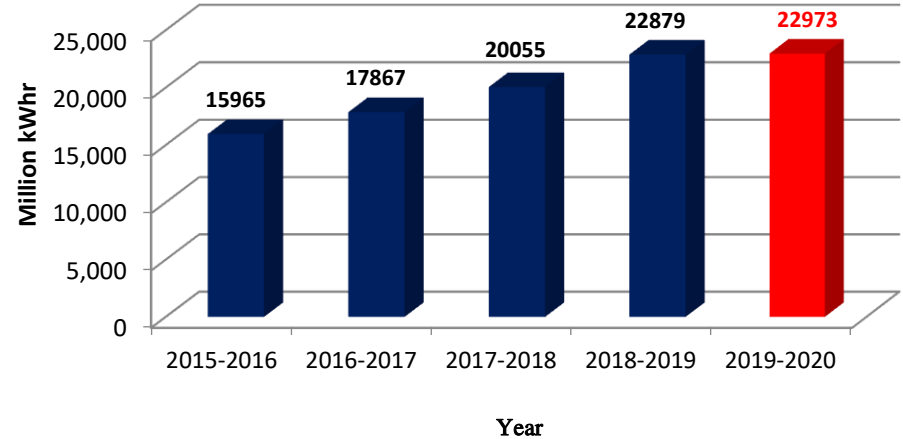


# Past Energy Demand and Supply

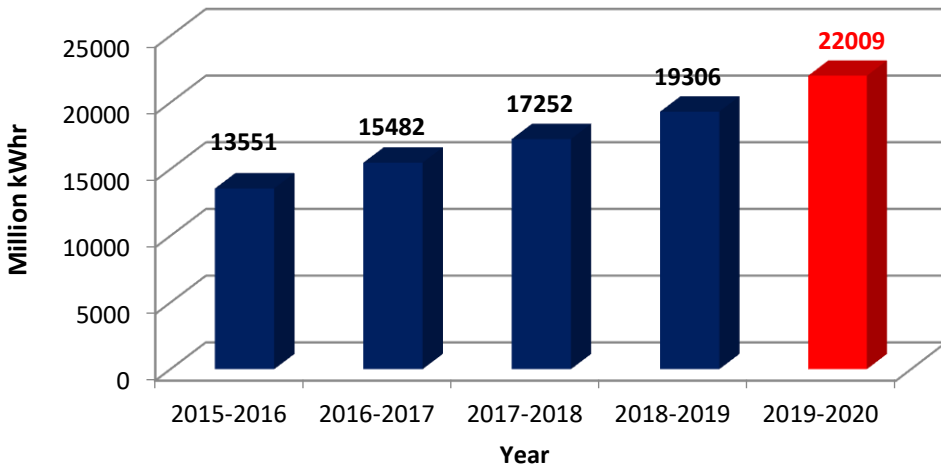
## Yearly Installed Capacity



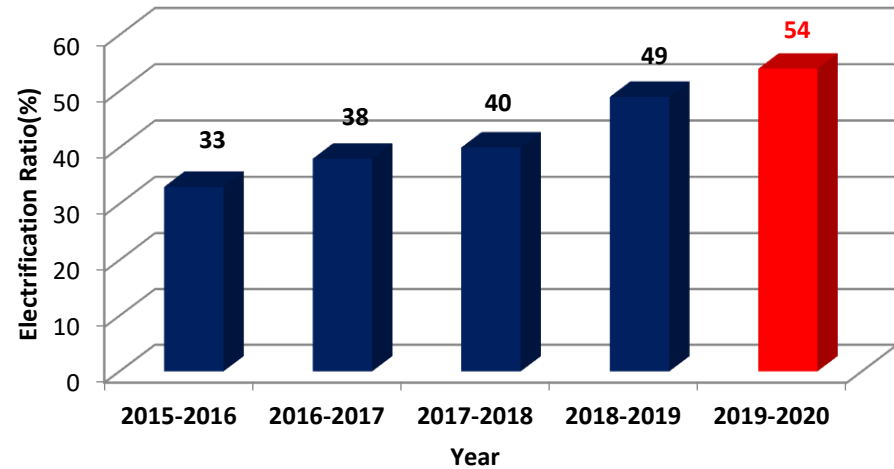
## Yearly Generation



## Yearly Electricity Consumption

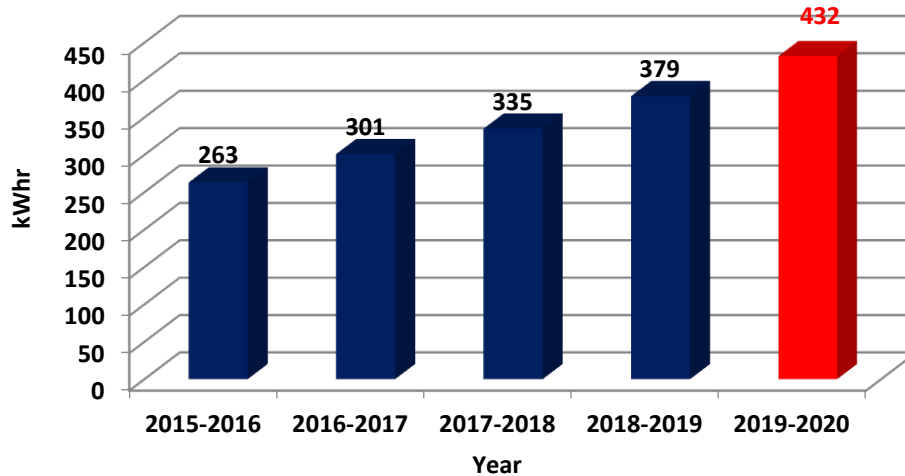


## Yearly Electrification Ratio(%)



# Past Energy Demand and Supply (cont.)

Per Capital Consumption kWhr

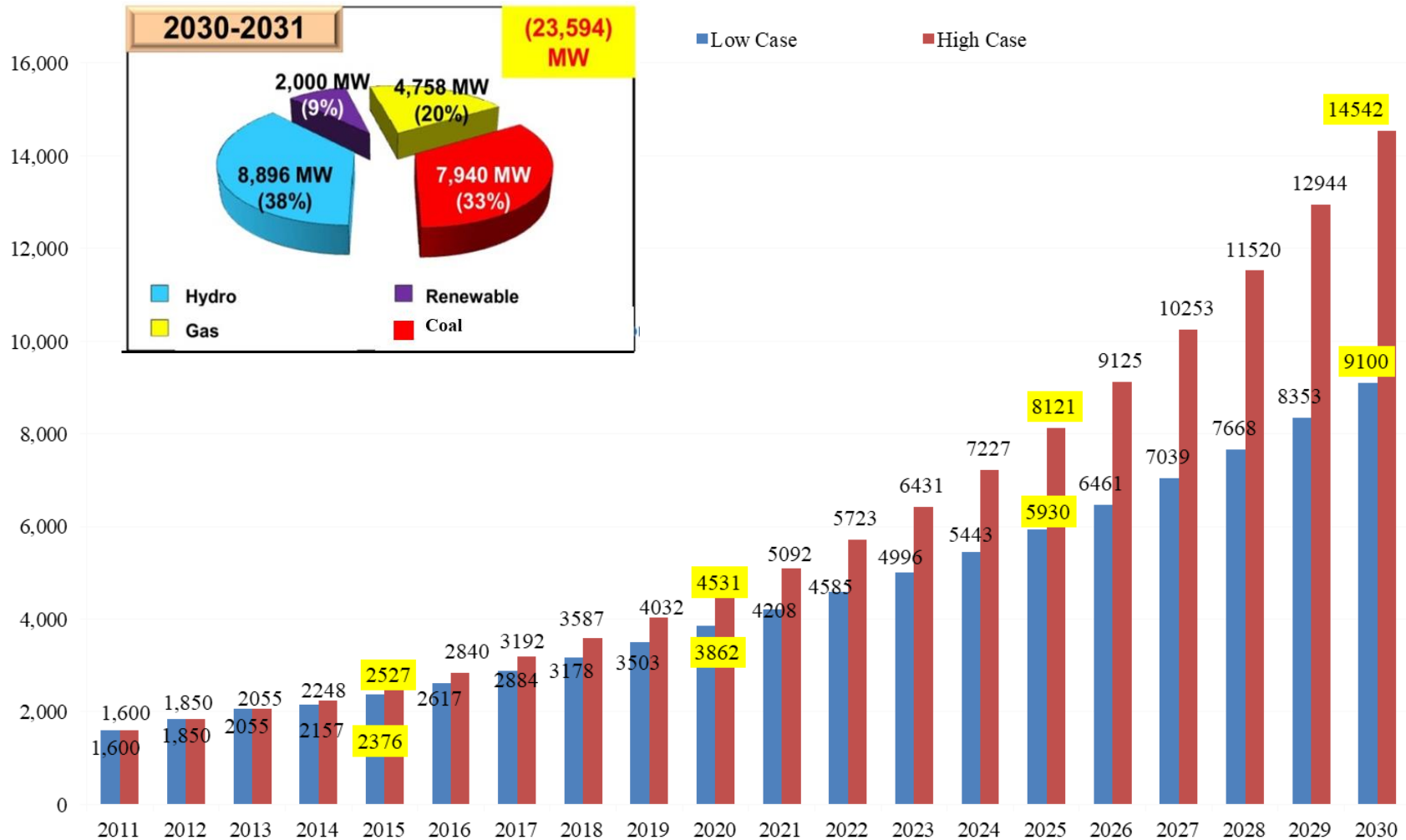


Current Status of Transmission Network

Voltage Class (kV)	Power Transmission Line		Substation	
	Quantity	Length (km)	Quantity	Capacity (MVA)
230	69	4767	45	7716
132	42	2191	22	2141
66	307	8361	357	5991
<b>Total</b>	<b>418</b>	<b>15319</b>	<b>424</b>	<b>15848</b>

**Currently we are constructing 500 kV Transmission lines and substations, all facilities will be completed around 2022**

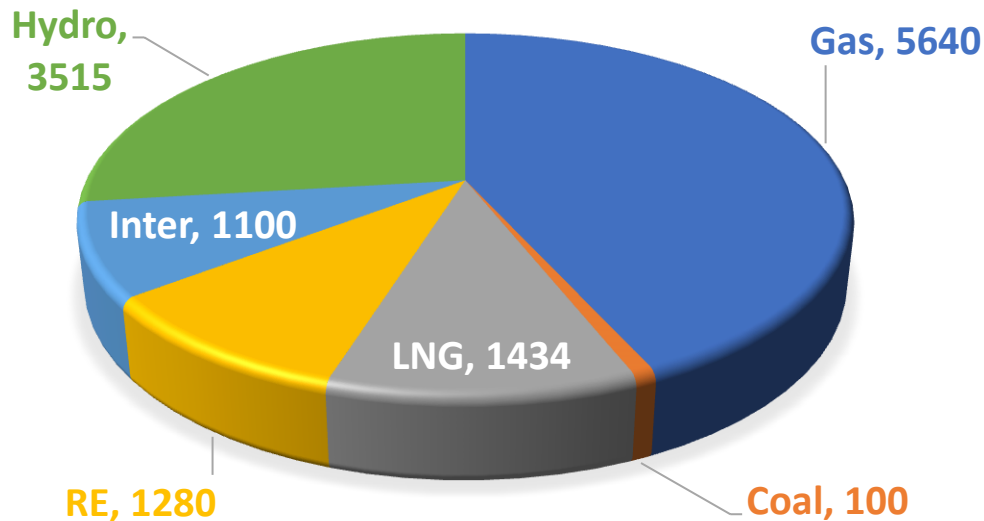
# Power Demand Forecast and Expected Generation Mix in 2030



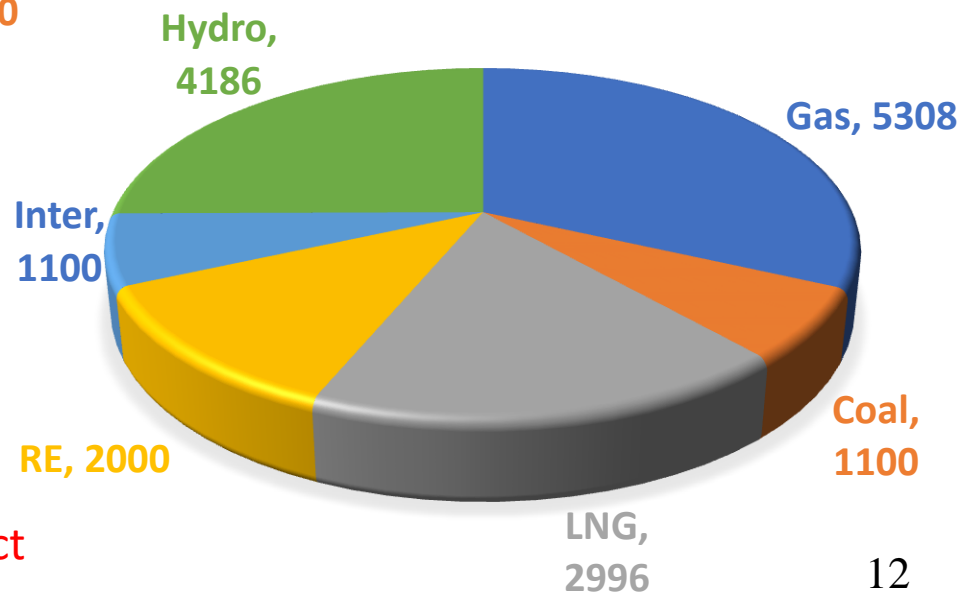
In 2014, Ministry of Electric Power announced and declared their National Electricity Master Plan. These Master Plan are drafted by the help of JICA as technical assistance from Japanese Government. But, according to the current trend on Energy policy and Global energy trend, these Master plan is needed to update and the updating process is underway.

# Transition of Installed Capacity

**Transition Installed Capacity  
(13069 MW) in 2025**



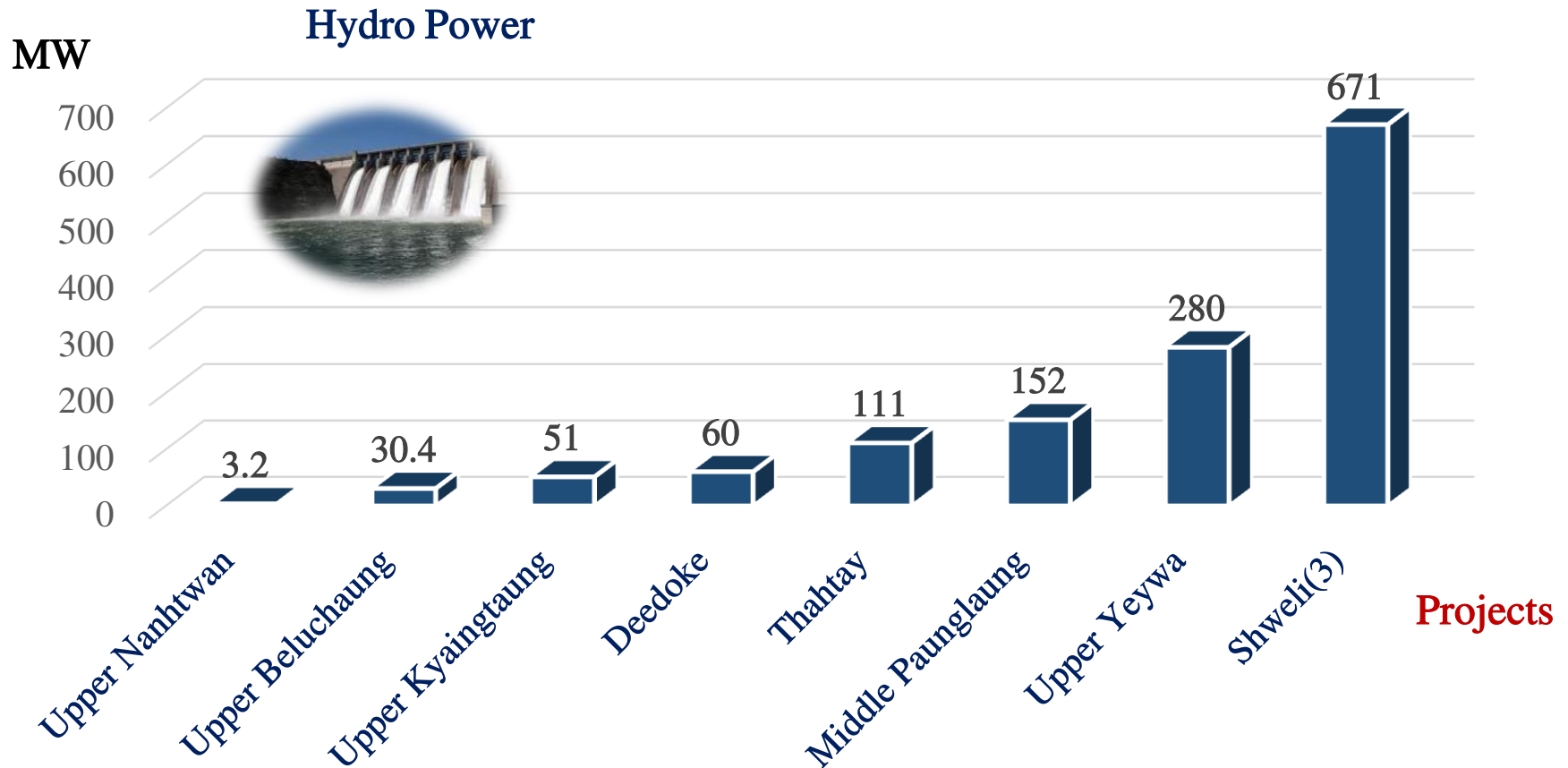
**Transition Installed Capacity  
(16690 MW) in 2030**



Ps. According to the current commitment project

# Ongoing Power Supply Infrastructure

## Ongoing Generation Projects (Long Term)



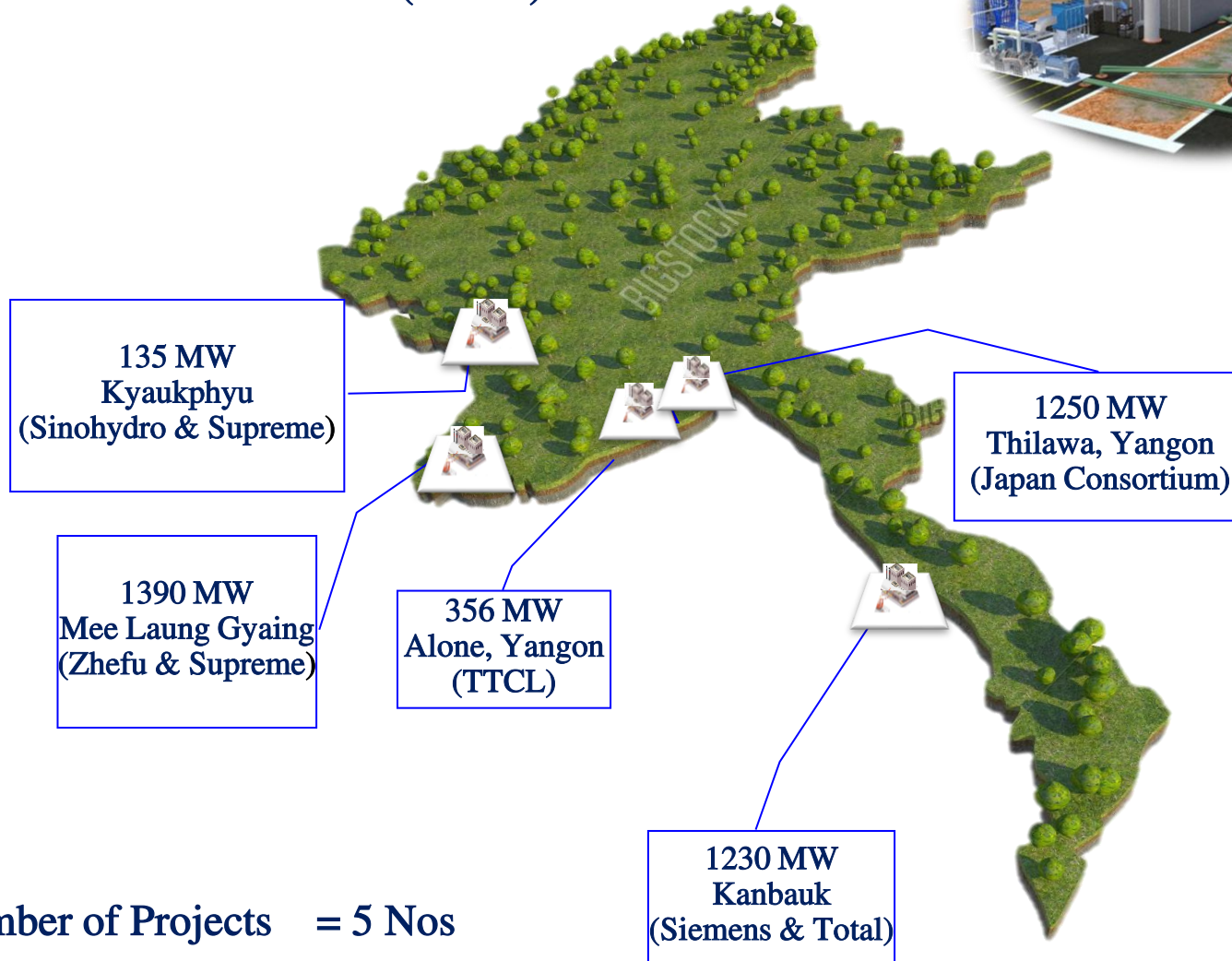
Total Number of Projects = 8 Nos

Total Capacity = 1359 MW

# Ongoing Power Supply Infrastructure (cont.)

## Thermal Power Projects (Long Term)

Gas & LNG Power Generation (Future)



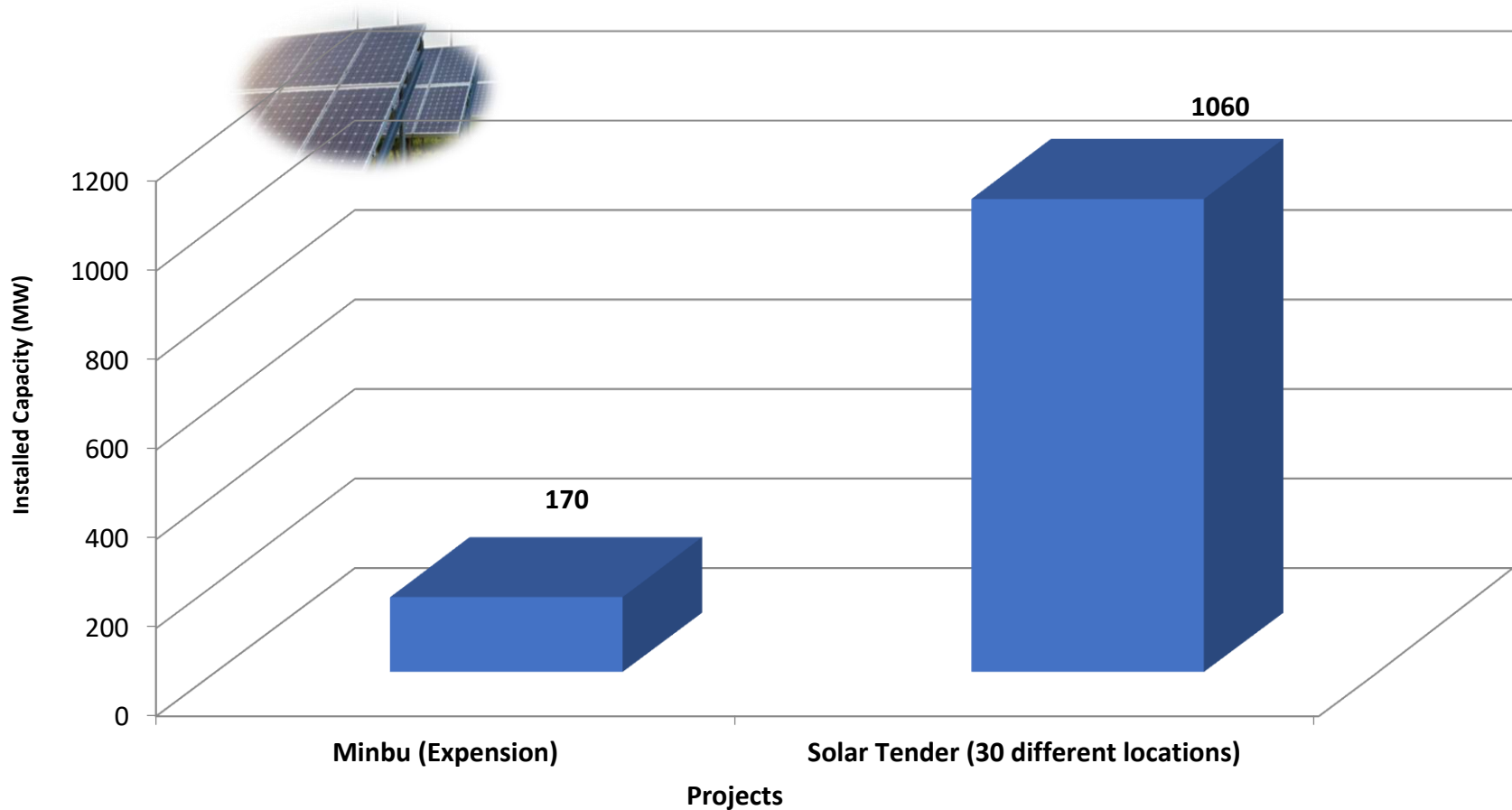
Total Number of Projects = 5 Nos

Total Capacity = 4,361 MW

# Ongoing Power Supply Infrastructure (cont.)

## Ongoing Renewable Generation Projects (Long Term)

### Solar Power Generation



**Total Number of Projects = 33 Nos**

**Total Capacity = 1230 MW**

# Major difficulties and bottlenecks when fulfilling Energy Policies

- Limitation of budget (Budget allocation by Union)
- Low electricity tariff rate (compare with other ASEAN countries)
- Lack of electricity tariff mechanism
- Lack of advanced technologies and skill workforces
- Scatter population around the mountainous and remote area
- So many ministries and organizations participate in the institutional framework of Myanmar Energy Sector
- No reserve power generation and system stability when operating renewable energy generation



# Subjects that we need to study

- Energy Efficient and Conservation
- Smart Grid Technologies and smart cities development
- Green technologies development
- Electricity market development

For more information about our energy sector, you can visit to <https://www.moee.gov.mm/> and Central Statistical Organization website : <https://www.csostat.gov.mm/>



Thank You

Kyay Zuu Tin Par Tal