



**ERC FORUM 2023:  
RENEWABLE AND SUSTAINABLE ENERGY TRANSITION**

**Country Highlights – Energy Policy and Regulation**

**28 AUGUST 2023**

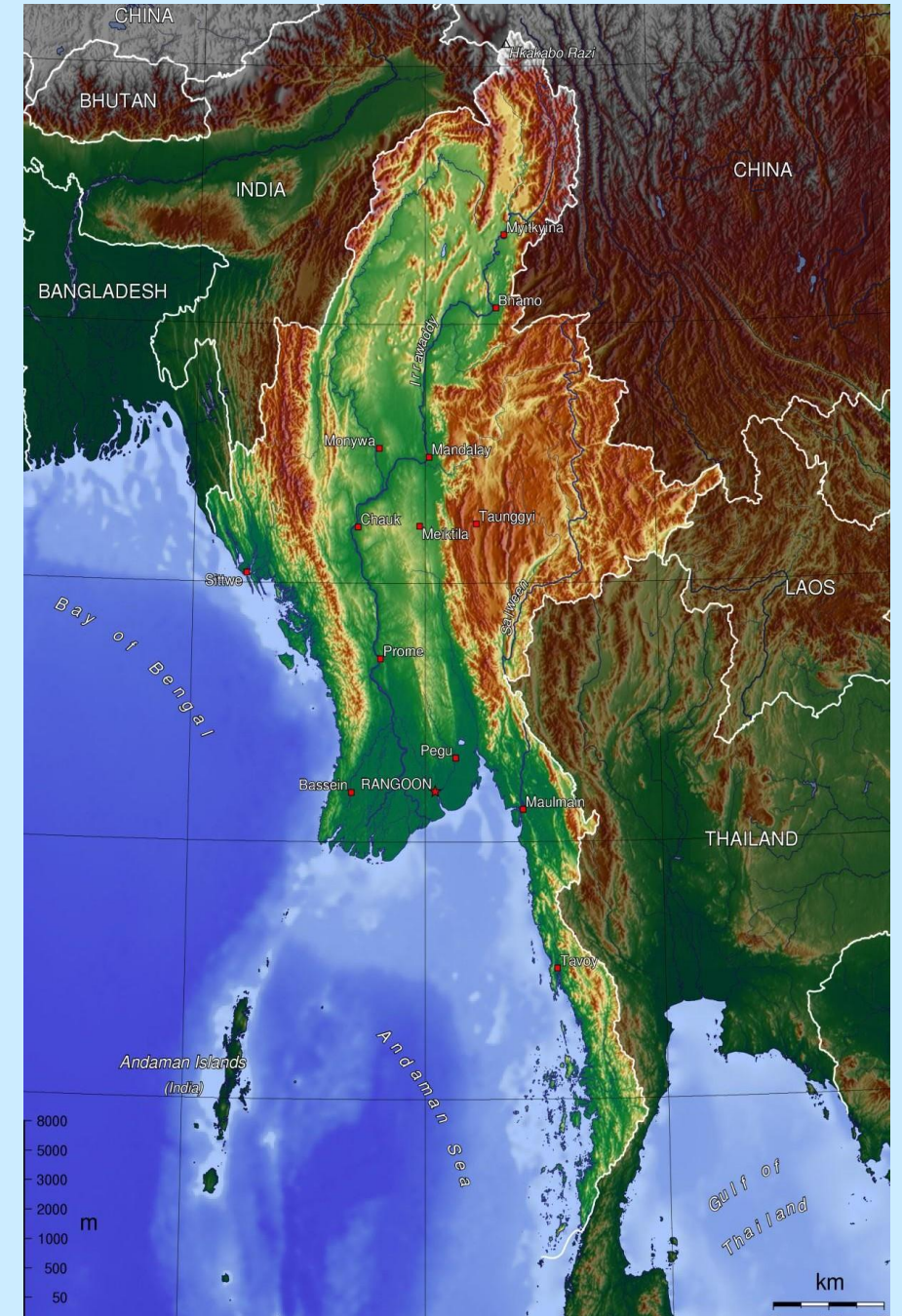
**Presented by:  
Saw Si Thu Hlaing  
Deputy Director General  
Department of Electric Power Planning  
Ministry of Electric Power, Myanmar**

# Outline

- Country Profile
- Energy Resources Potential
- Nine National Energy Sector Policies
- Legal and Logistic Preparations
- Installed Capacity
- Institutional Framework for Myanmar Energy Sector
- Nationally Determined Contribution
- Hydro & Renewable Energy
- Strategy and Forward Process for Effective use and Conservation of National Energy
- Challenges for Energy Transition

# Country Profile

- ❖ Neighboring Countries - China, Laos, Thailand, Bangladesh & India
- ❖ Latitude -  $09^{\circ}-32' N$  &  $28^{\circ}-10' N$
- ❖ Longitudes -  $92^{\circ}-10' E$  &  $101^{\circ}-11' E$
- ❖ Territorial Area - 676,552 km<sup>2</sup>
- ❖ East to West - 936 km
- ❖ International Boundary - 5860 km
- ❖ Coastal Strip - 2833 km
- ❖ North to South - 2051 km
- ❖ Population – 54 Million
- ❖ Electrification Ratio 65.47% of total households (7.1 Million)  
65.45% of total villages (41376 Villages)
- ❖ Per capita consumption 356 kWh (2022)
- ❖ Peak load is 3169.1MW

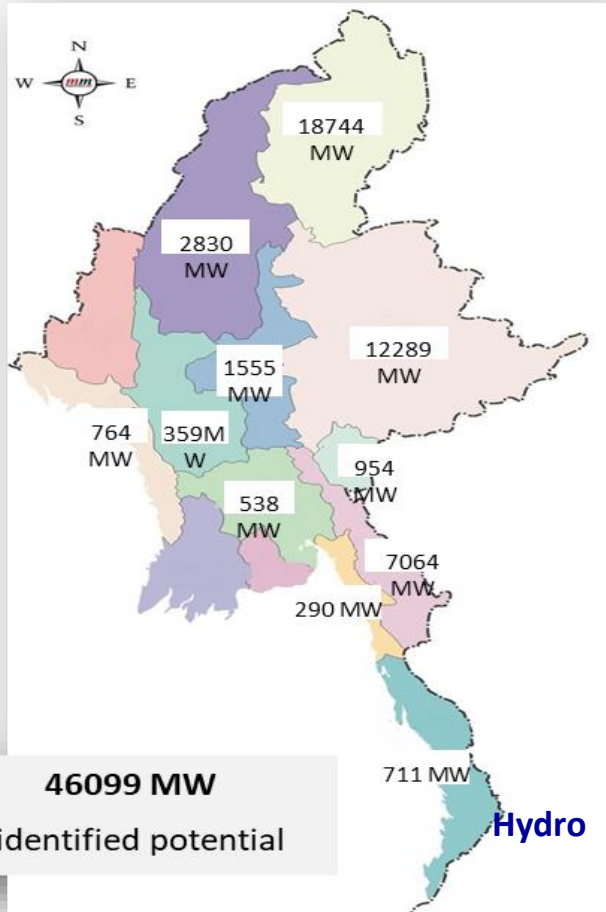


# Energy Resources Potential

1	Crude Oil (Offshore & Onshore)	2100 Million Stock Tank Bbl (Proved as at 1-4-2011)
2	Natural Gas (Offshore & Onshore)	25 TCF (Proved as at 1-4-2011)
3	Oil Shale (65 Sq. Miles)	720 to 3300 Million Barrel (Gross Estimated)
4	Coal (Sub-Bituminous and Lignite)	711 Million Metric Tons (Gross Estimated)
5	Hydro	49,220 MW in 303 locations (Gross Estimated)
6	Biomass, Biogas and Bio-fuel	About 52.5% of total land area covered with forest, Manufactured Digesters in rural area.
7	Wind	365.1 TWH per year New Energy and Industrial Development Organization (NEDO)
8	Solar Power	51973.8 TWH per year by (NEDO)
9	Geothermal	93 Locations, (26.7°C to 65°C) in 43 locations, Estimated max. 200°C in underground.
10	Oil	Table IV



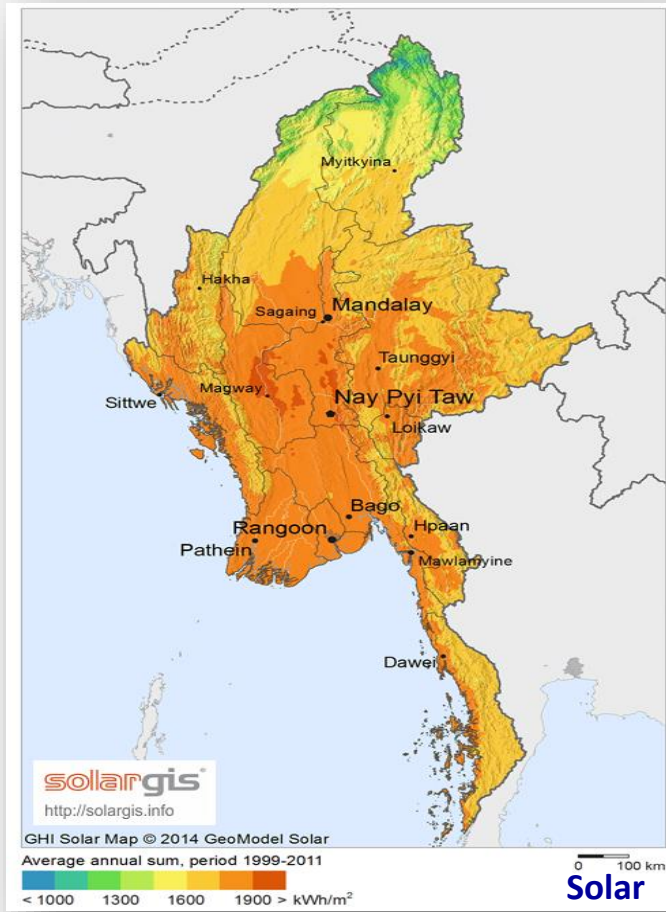
# Renewable Energy Potentials in Myanmar



**46099 MW**  
identified potential

## Hydro

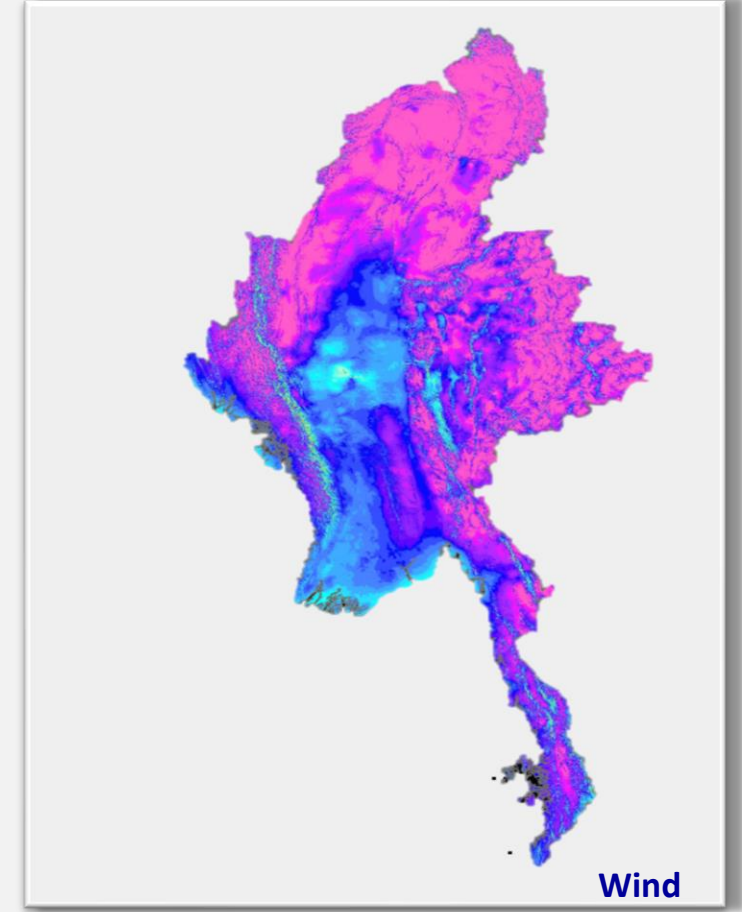
Potential	108,000MW
Identified	46,099MW



**Solar**

## Solar

Potential	51,973.8 TWh/yr
-----------	-----------------



## Wind

## Wind

Potential	365.1 TWh/yr
-----------	--------------

# Nine National Energy Sector Policies

---

- 1) To implement short term and long term comprehensive energy development plan based on systematically investigated data on the potential energy resources which are feasible and can be practically exploited, considering minimum impact on natural environment and social environment
- 2) To institute laws, rules and regulations in order to promote private sector participation and to privatize (100% FDI, Joint FDI, International IPP, local IPP/SPP/VSPP) State Energy Organizations in line with State Economic Reform Policy
- 3) To compile systematic statistics on domestic demand and supply of various different kinds of energy resources of Myanmar
- 4) To implement programs by which local population could proportionally enjoy the benefit of energy reserve discovered in the areas

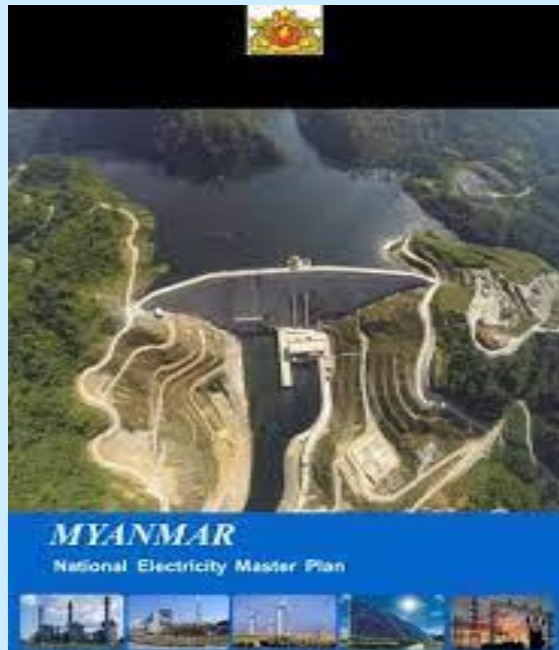
# Continued;

---

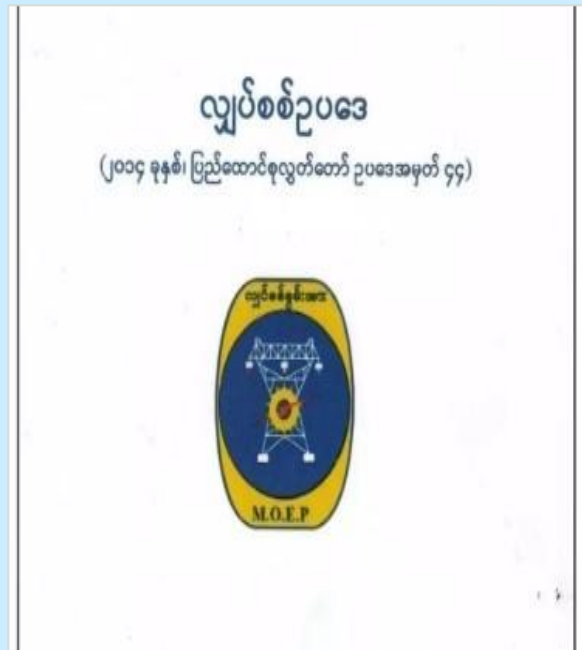
- 5) To implement programs on a wider scale, utilizing renewable energy resources such as wind, solar, hydro, geothermal and bioenergy for the sustainable energy development in Myanmar
- 6) To promote Energy Efficiency and Energy Conservation
- 7) To establish Research, Development, Design, and Dissemination Institution in order to keep abreast with international practices in energy resources exploration and development works and to produce international quality products in order to manufacture quality products and in order to conduct energy resources exploration works in accordance with international standard
- 8) To promote international collaboration in energy matters
- 9) To formulate appropriate policy for energy product pricing meeting economic security of energy producers and energy consumers

# Legal and Logistic Preparations

National Electricity Master Plan was prepared by JICA TA in August, 2014



Electricity law was Legislated by Union Parliament on 27<sup>th</sup> October, 2014



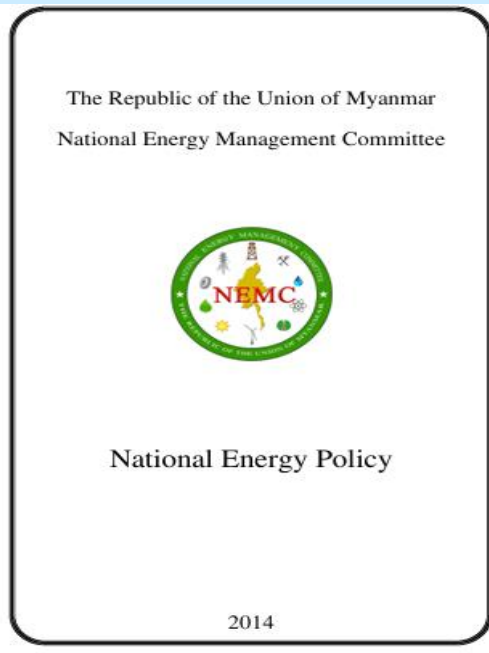
National Energy Policy had been accomplished with the assistance of ADB



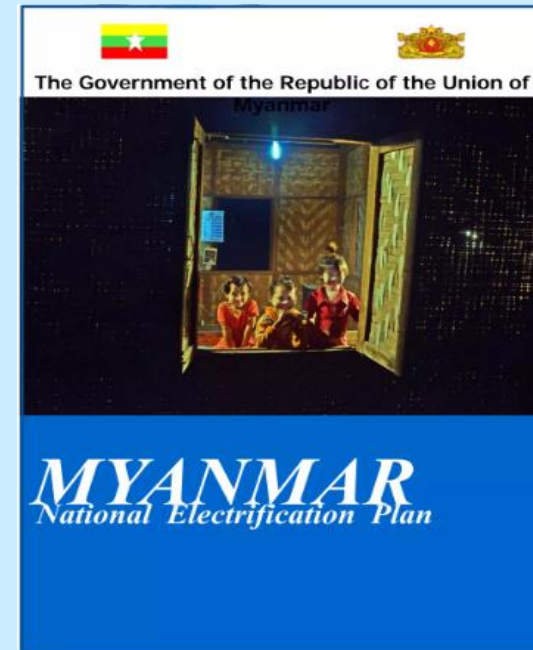


# Continued;

National Energy Management Committee submitted National Energy Policy in 2014

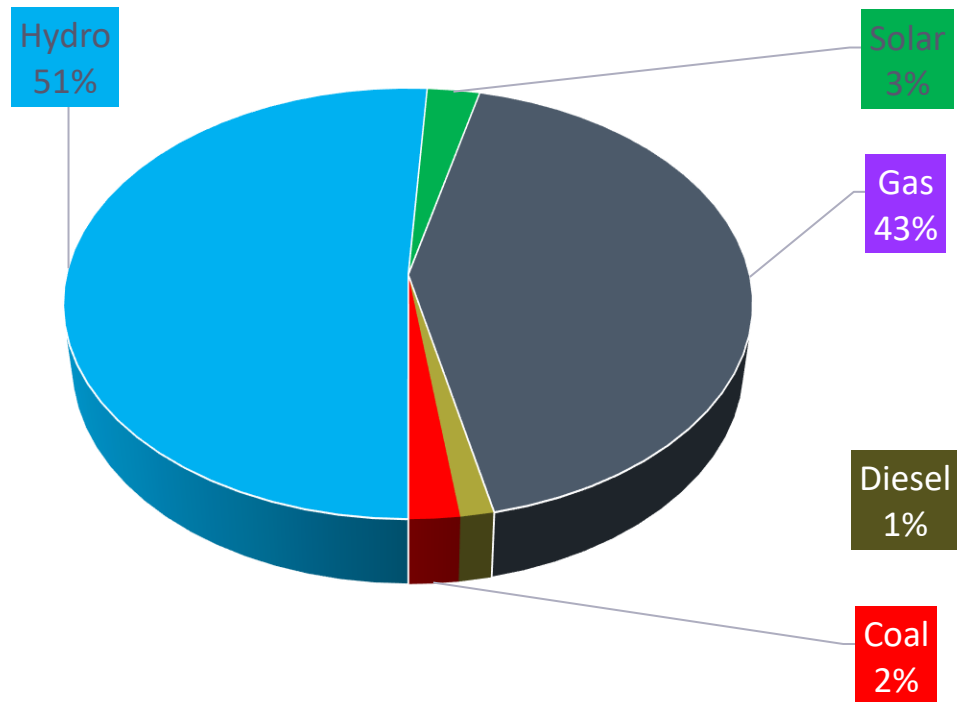


National Electrification Project (NEP) funded by the World Bank through a loan of US\$ 400 million and implemented by MOEP and DRD



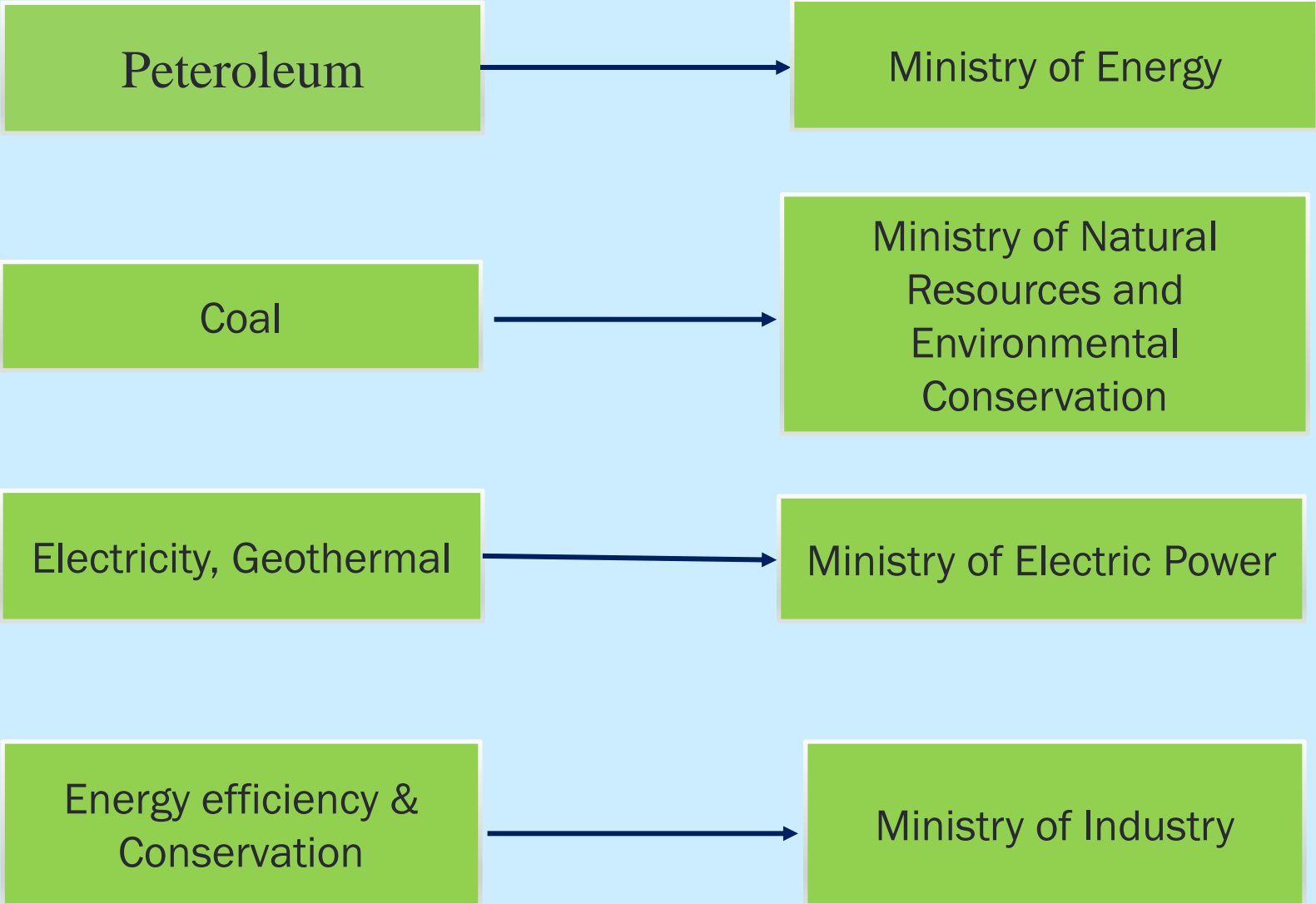
# INSTALLED CAPACITY (Salient Data)

As of 2023 (March)

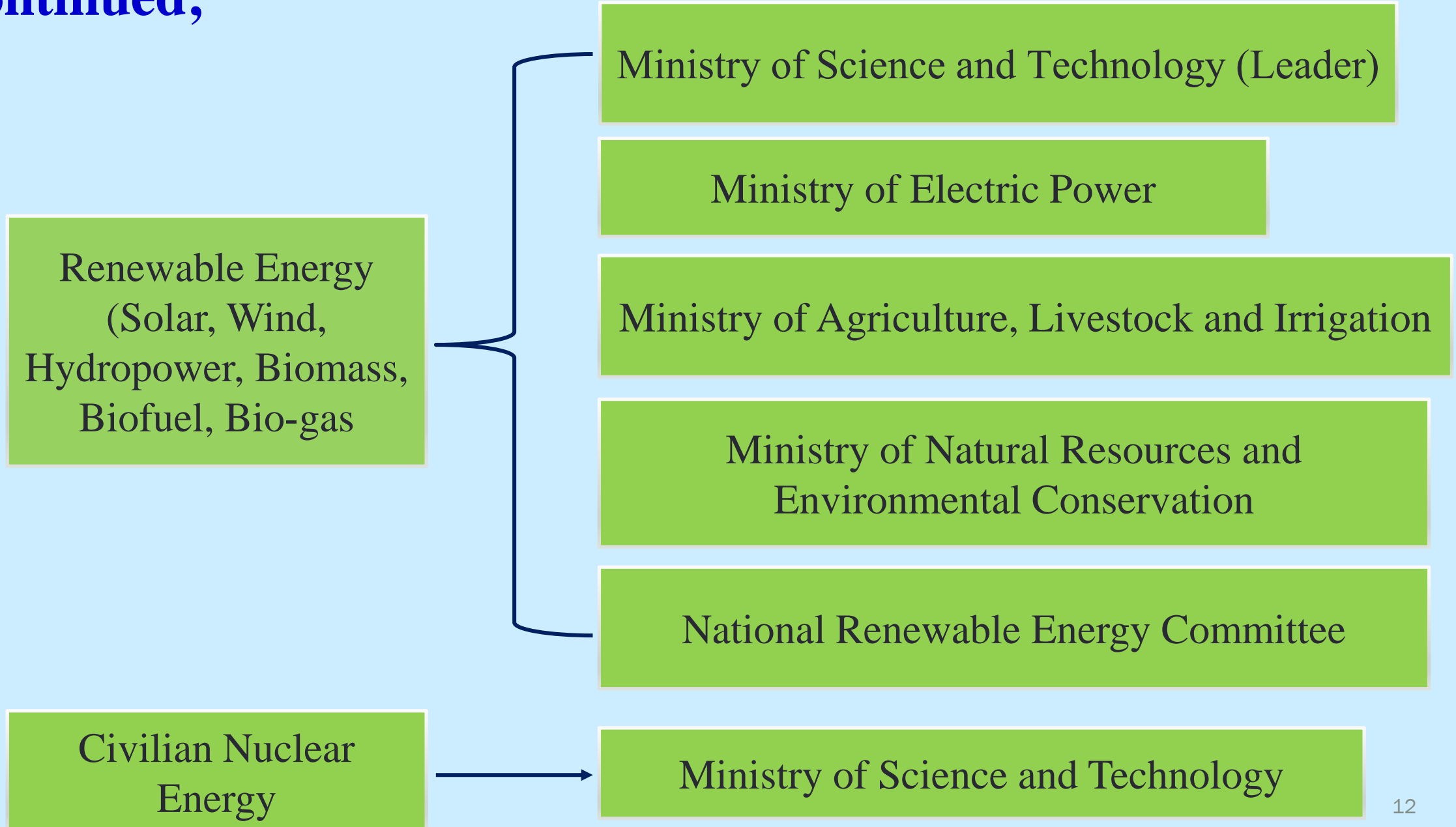


	Installed (MW)	Generation (MWh)
Hydropower	3262.4 (51%)	9069.929
Gas	2723.9 (43%)	11468.184
Solar	181.2 (3%)	194.409
Coal	138 (2%)	705.339
Diesel	91.7 (2%)	100.984
Total	6397.2	21538.845

# Institutional Framework for Myanmar Energy Sector

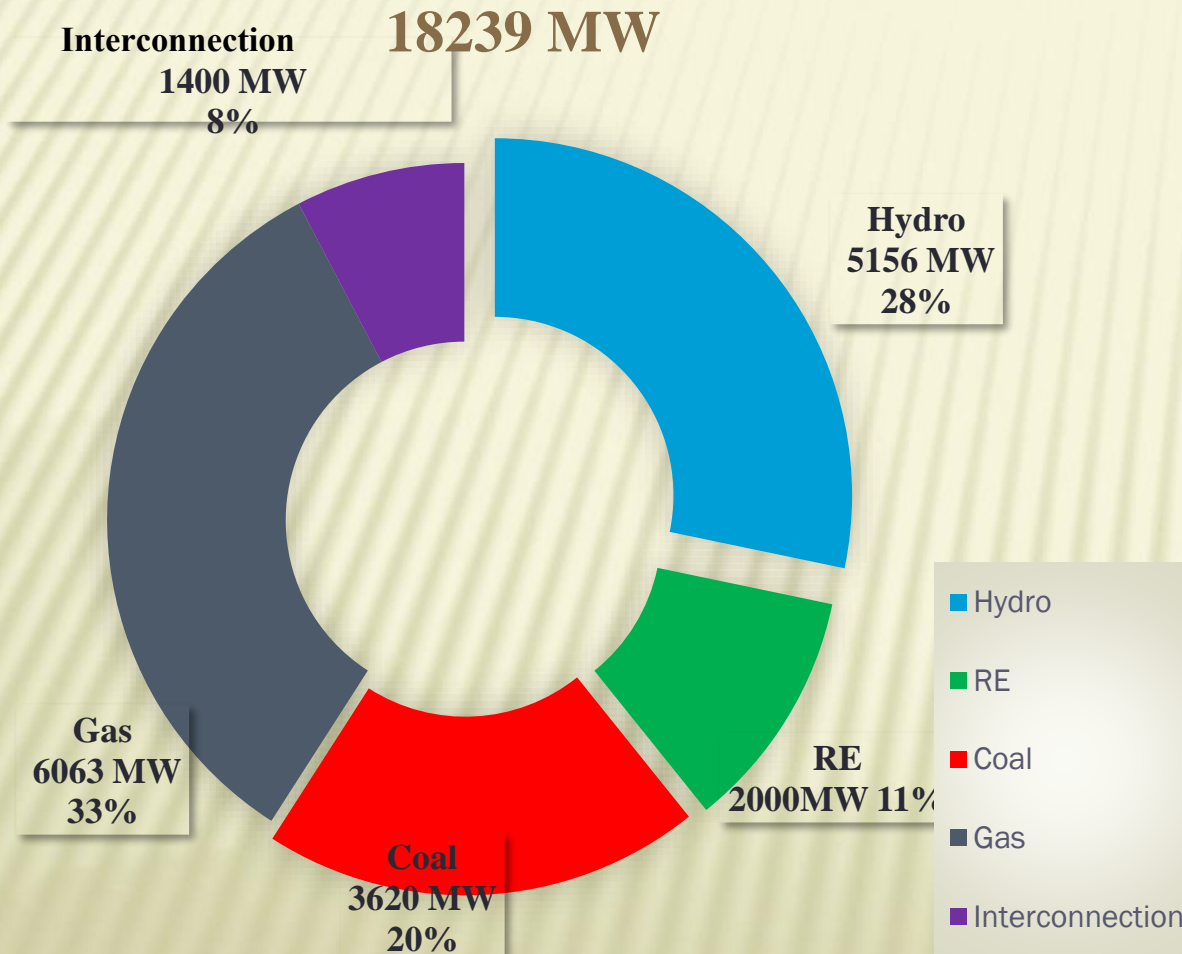


## Continued;

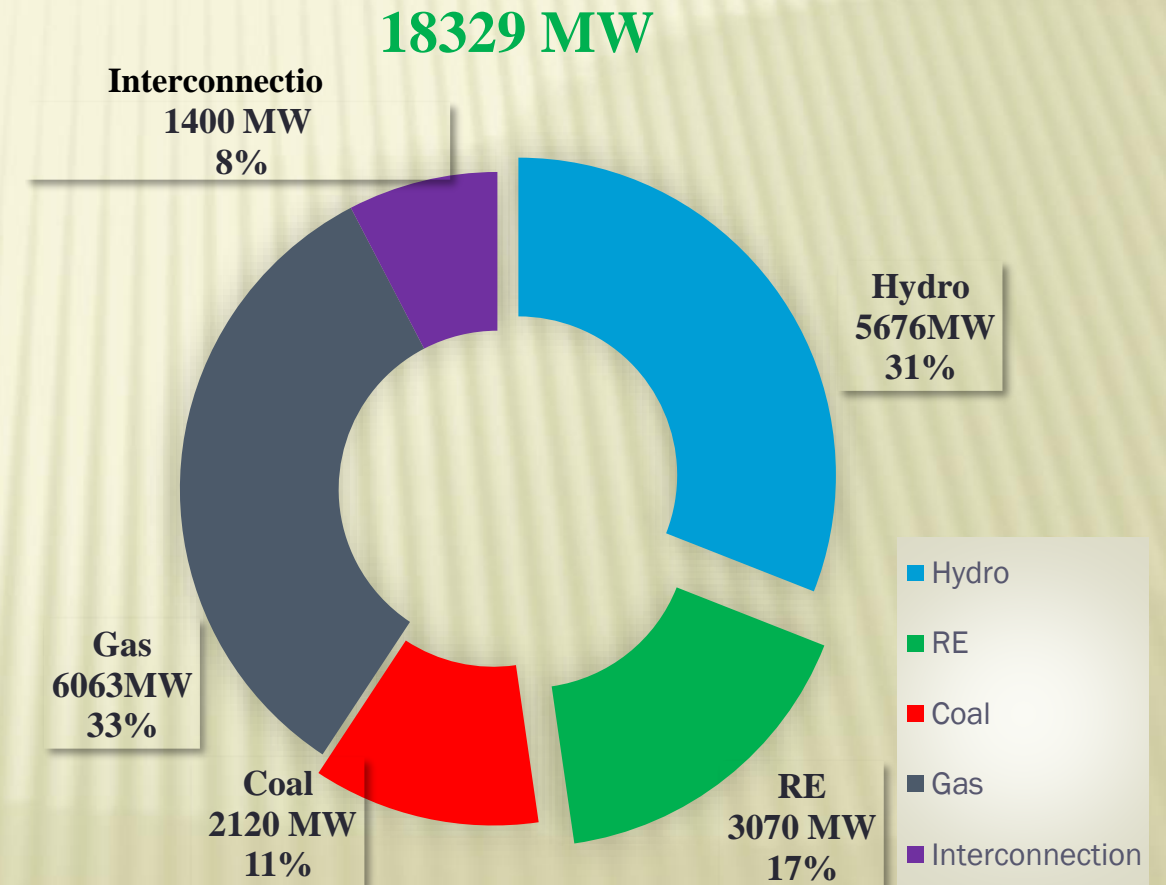


# Nationally Determined Contribution – NDC Report (2021)

Unconditional Target (National Budgetary Resources)



Conditional Target (If International Support is provided)





# Off – Grid Solar Power System in Rural Area

---

## Vision to 2030 Two Targets for Rural Electrification

### ➤ Conditional Target



22.5 MW will be implemented using renewable energy by conditional target

Fulfil 15% of people (0.9 million) in rural area

### ➤ Unconditional Target



88.82 MW will be implemented using renewable energy by unconditional target

Fulfil 30% of people (1.8 million) in rural area

# Hydro & Renewable Energy

## Existing Renewable Power Plants (Only Grid)

➤ Hydropower Plants	29 Nos.	3228 MW
➤ Solar Power Plants	6 Nos.	180 MW
<b>Total</b>	<b>35 Nos.</b>	<b>3408 MW</b>



## Planned Renewable Energy Projects

➤ Hydropower Projects	42 Nos.	40161 MW
➤ Wind Power Projects	16 Nos.	1860 MW
➤ Solar Power Projects	13 Nos.	1290 MW

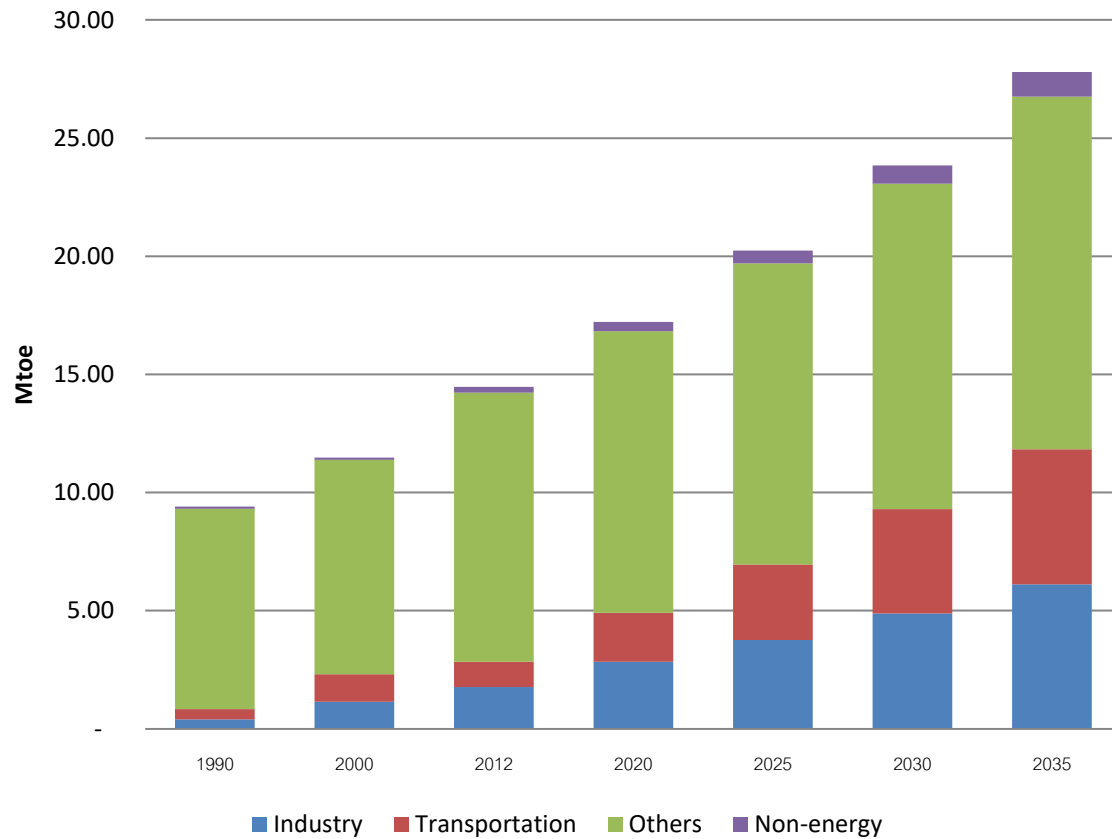
## Interconnection Projects

➤ Lao PDR	1 No.	300-600 MW
-----------	-------	------------

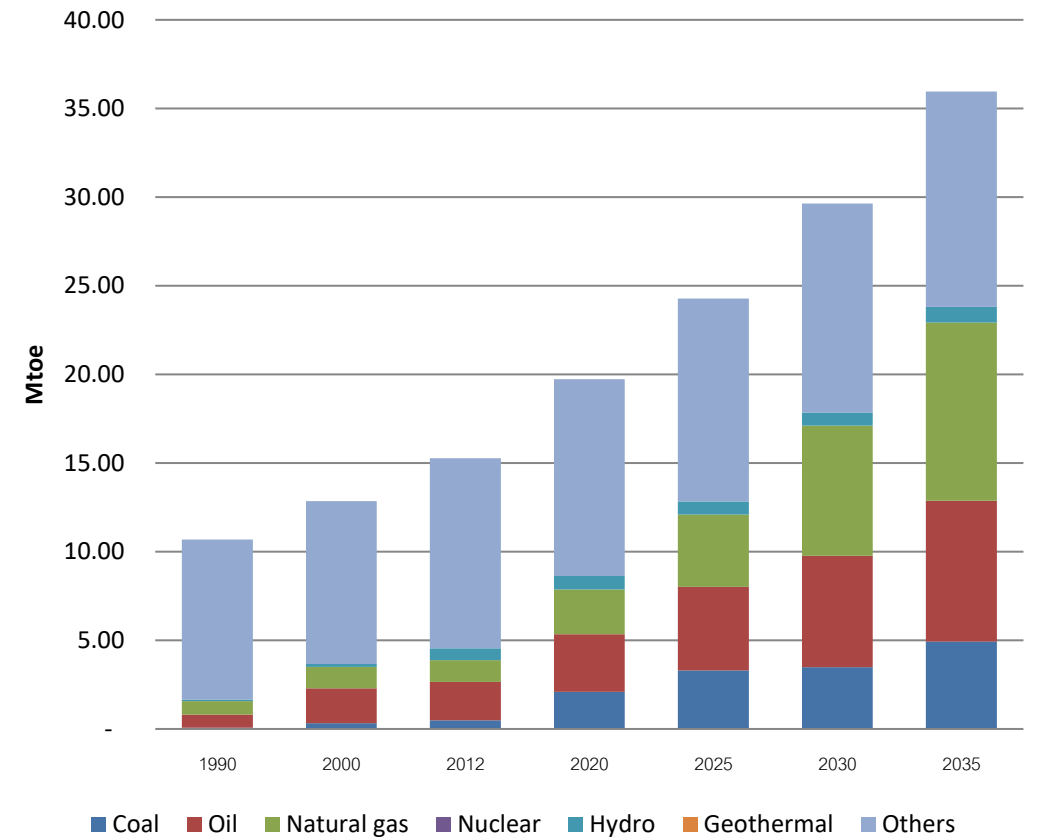
## Ongoing Renewable Power Projects

➤ Hydropower Projects	8 Nos.	1516 MW
➤ Solar Power Projects	6 Nos.	240 MW
<b>Total</b>	<b>14 Nos.</b>	<b>1756 MW</b>





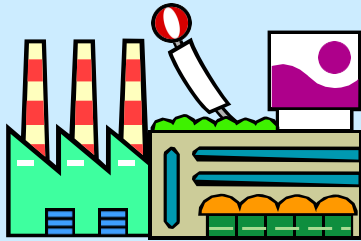
Final Energy Demand (by Sector)



Final Energy Demand (by Type)

# STRATEGY AND FORWARD PROCESS FOR EFFECTIVE USE AND CONSERVATION OF NATIONAL ENERGY

Energy Intensive Industries

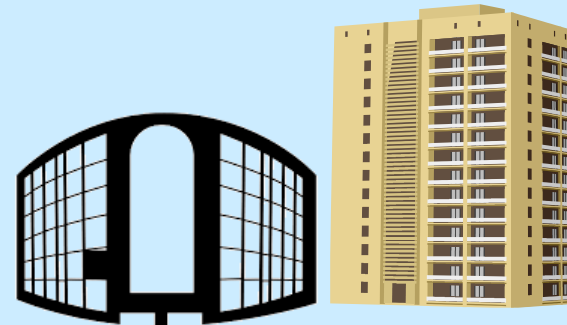


Industrial Guidelines



Energy Manager

Energy Intensive Buildings  
(Commercial, Public)



Building Guidelines

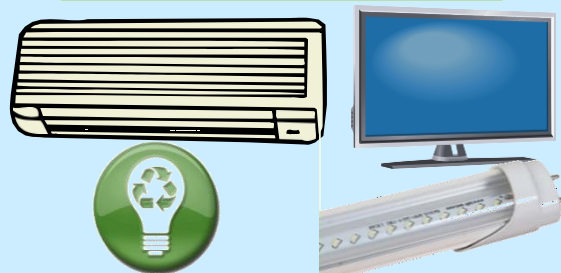


Energy Manager

Residential Sector



MEPS for Electrical Home Appliances



EE Projects and Trainings

- ❖ Demonstration Projects
- ❖ Energy Management Training
- ❖ Energy Efficient Technology Training
- ❖ Awareness Training



# Continued;

Replacing ICE vehicles by EVs and future public transportation



GOVERNMENT



## Government Policy on EVs

- ❖ Exemption from import duties
- ❖ Free from Road & Bridge tax
- ❖ Encouraging emergence of charging stations everywhere



# Continued;

In rural area, firewood is still being used in cooking



Replacing fuel block instead of firewood



By fulfilling electricity to rural area, use of firewood will be reduced and deforestation will be prevented



Identify and promote energy - efficient technologies and practices - such as improved cooking stoves, mini-grid energy and access to biomass

# Challenges for Energy Transition

- ❖ Great pressure to fulfill high-rising electricity demand
- ❖ Advanced Technology for Low Carbon Emission
- ❖ Balancing between growth and energy consumption
- ❖ Dependence upon foreign investments
- ❖ Harmonization of institutional procedures and priorities
- ❖ Scarcity of human capital
- ❖ Limited budget
- ❖ Lack of Advanced Technology



## **Current Policies Deliberation (Plan)**

- Encouraging the Natural Gas Exploration and Production activities and promoting the Natural Gas based industry and infrastructure along the country sites;
- Upgrading existing Myanmar Grid System to a Smart Grid System and exploring more hydropower sources.
- Consideration on Multilateral Power Trading projects with neighboring countries, Laos, Thailand and China to fulfill our domestic and regional requirements.
- Encouraging the public private partnership in green investment;
- National EE&C Policy set the target of 20% electrical energy efficiency in industrial sector by 2030.
- Enhance the development of Energy Conservation Guidelines, recruit and trains energy managers and energy auditors.

# Conclusion

- ❖ Endeavor to increase the RE and Clean Energy in the energy mix
- ❖ From traditional to Global approach
- ❖ Collaborate in the Regional activities
- ❖ Prioritize to become a green and clean environment by balancing growth and mitigate emission





**THANK YOU FOR  
YOUR ATTENTION**

**MINISTRY OF ELECTRIC POWER  
(MYANMAR)**



[pdp.depp.2020@gmail.com](mailto:pdp.depp.2020@gmail.com)