



What is Myanmar? How is Myanmar?



Presented By
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Ministry of Electricity and Energy

WORLD

Location Of Myanmar

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The State Logo



National Flag

"The yellow represents solidarity; the green symbolizes peace, tranquility and lush greenery; the red represents courage and determination; and the white star stands for the **significance** of the union of the country."



NAYPYIDAW

EXPLORING MYANMAR'S CAPITAL

Introduction

Official Name: The Republic of the Union Myanmar

Location: Between 9° 32' and 28° 31' North Latitude and 92° 10' and 101° 10' East Longitude.

Former Capital: Yangon

Administration City: Nay Pyi Taw

Area: 676,578 sq. km

International Boundary: 5860 km

Races: 135

States & Division: 14

Population 53.86 millions (2018 estimated)

(Average Growth Rate - 1.75% Per Annum)

Neighbouring Countries: China, Laos, Thailand, Bangladesh, India

Seacoast: Bay of Bengal, Upper Corner of Andaman Sea

It is characterized by mountain ranges in the North, East and West and a long coastal strip in the South and West.



PRESIDENT U Win Myint



The State Counsellor of Myanmar (Daw Aung San Su Kyi)



- The Noble Winner Prize “ Aung San Su Kyi” - Nation League For Democracy (NLD) party
- NLD party is majority win in myanmar’s first openly contested election in 25 years in Nov, 2015
- In 1991, “ The Lady ” as she is known ,was awarded the Noble Peace Prize called her
- “An outstanding example of the power of the powerless”
- Parents - General Aung San , Myanmar’s independant hero, the national mother Daw Khin Kyi, myanmar ambassador in delhi, India ,in 1960.



Water Resources in Myanmar

Myanmar

- ❖ 24th most populous country in the world and the 40th Largest Country by area.

Water Resources

- ❖ Possesses 12% of Asia's freshwater Resources
- ❖ 16% in ASEAN Countries

Major Rivers

- ❖ Ayeyarwady,
- ❖ Chindwin,
- ❖ Sittaung,
- ❖ Thanlwin

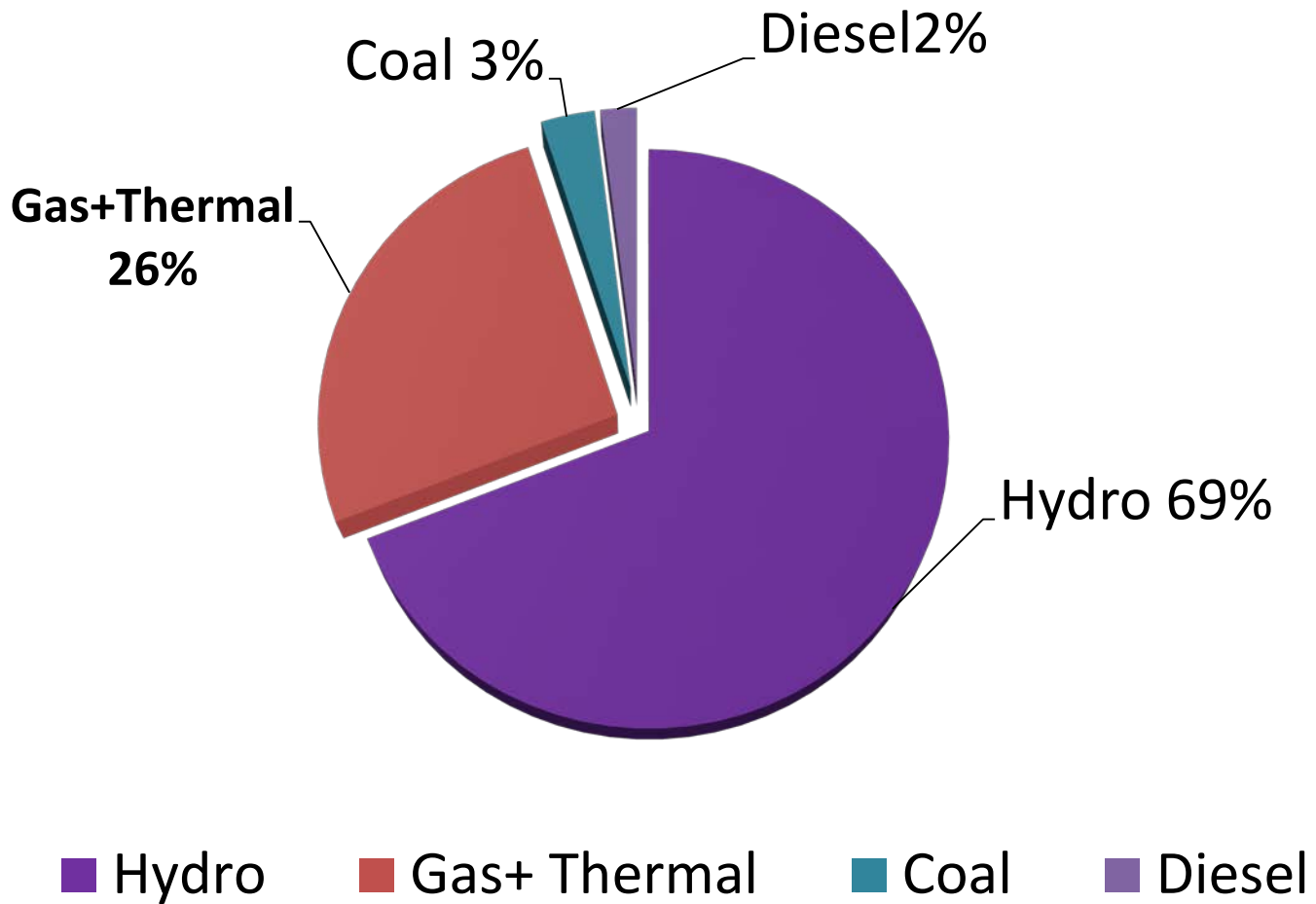
Hydropower

- ❖ 6% of Asia's Hydropower Potential >100,000 MW

THE AYEYARWADY RIVER



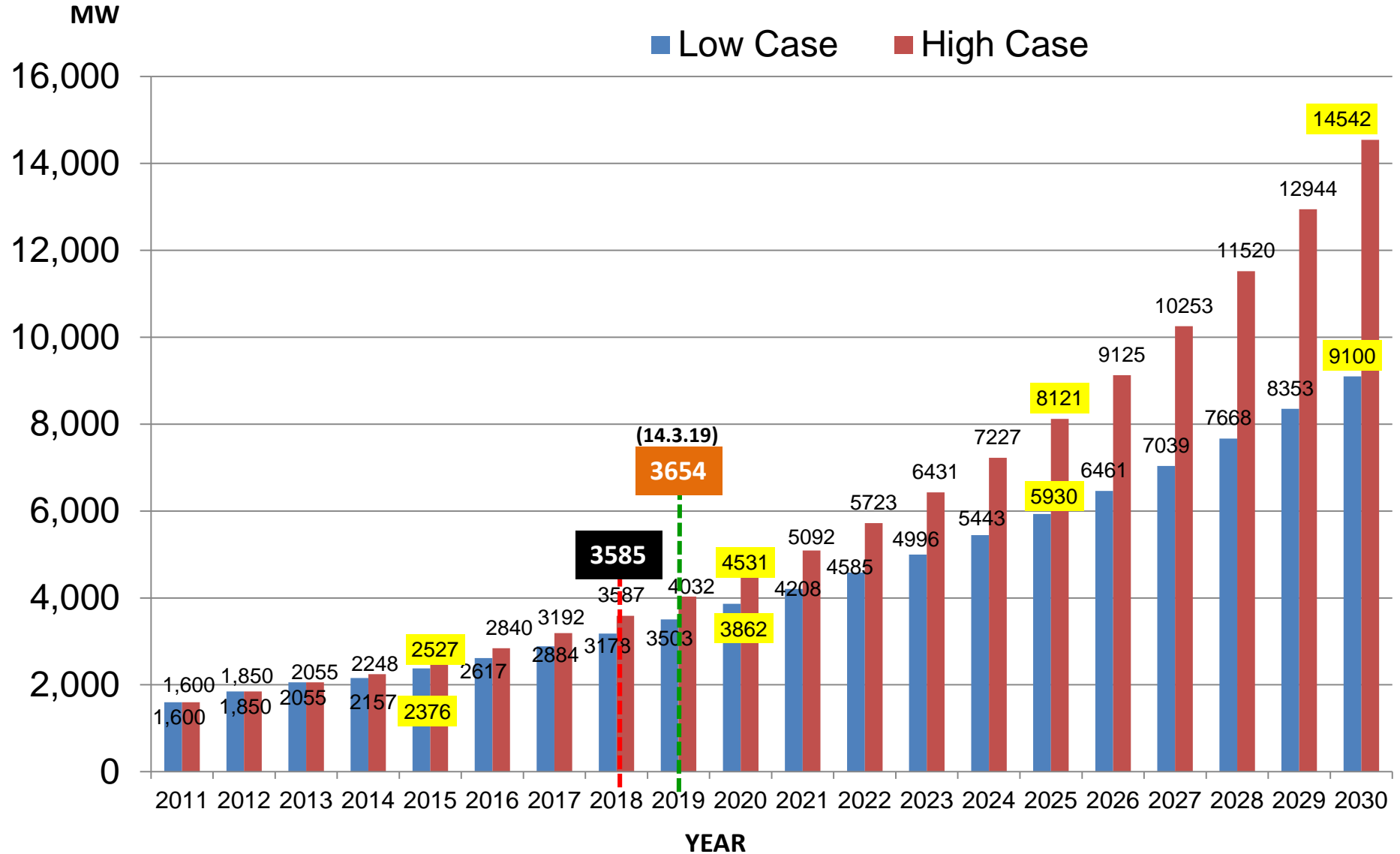
Current Status of Electricity Supply



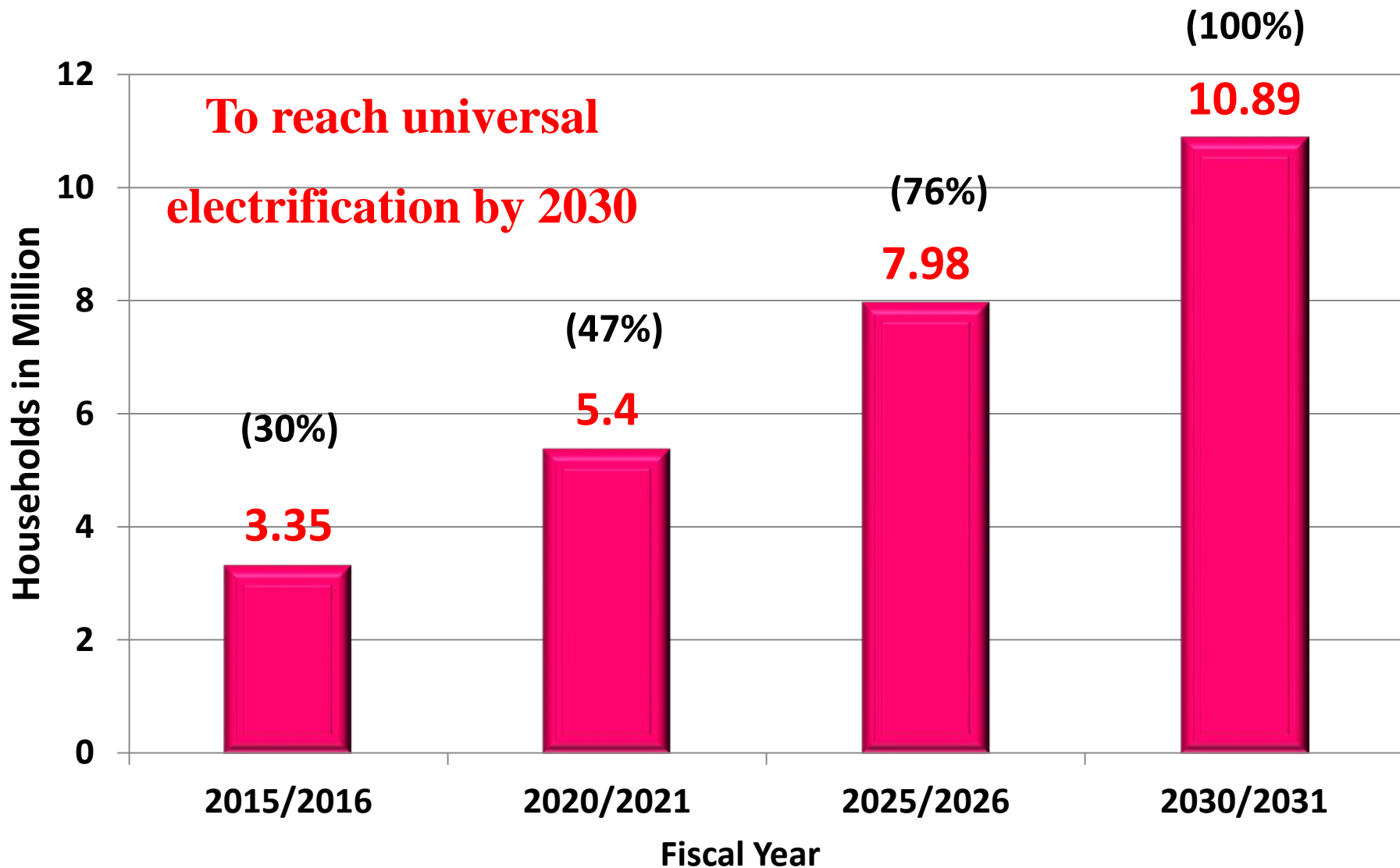


Ministry of Electricity and Energy

Demand Forecast for 20 years period (2011-2030)



National Electrification Plan – NEP



National Electricity Master Plan -JICA (2001-2031)

Wind



Solar



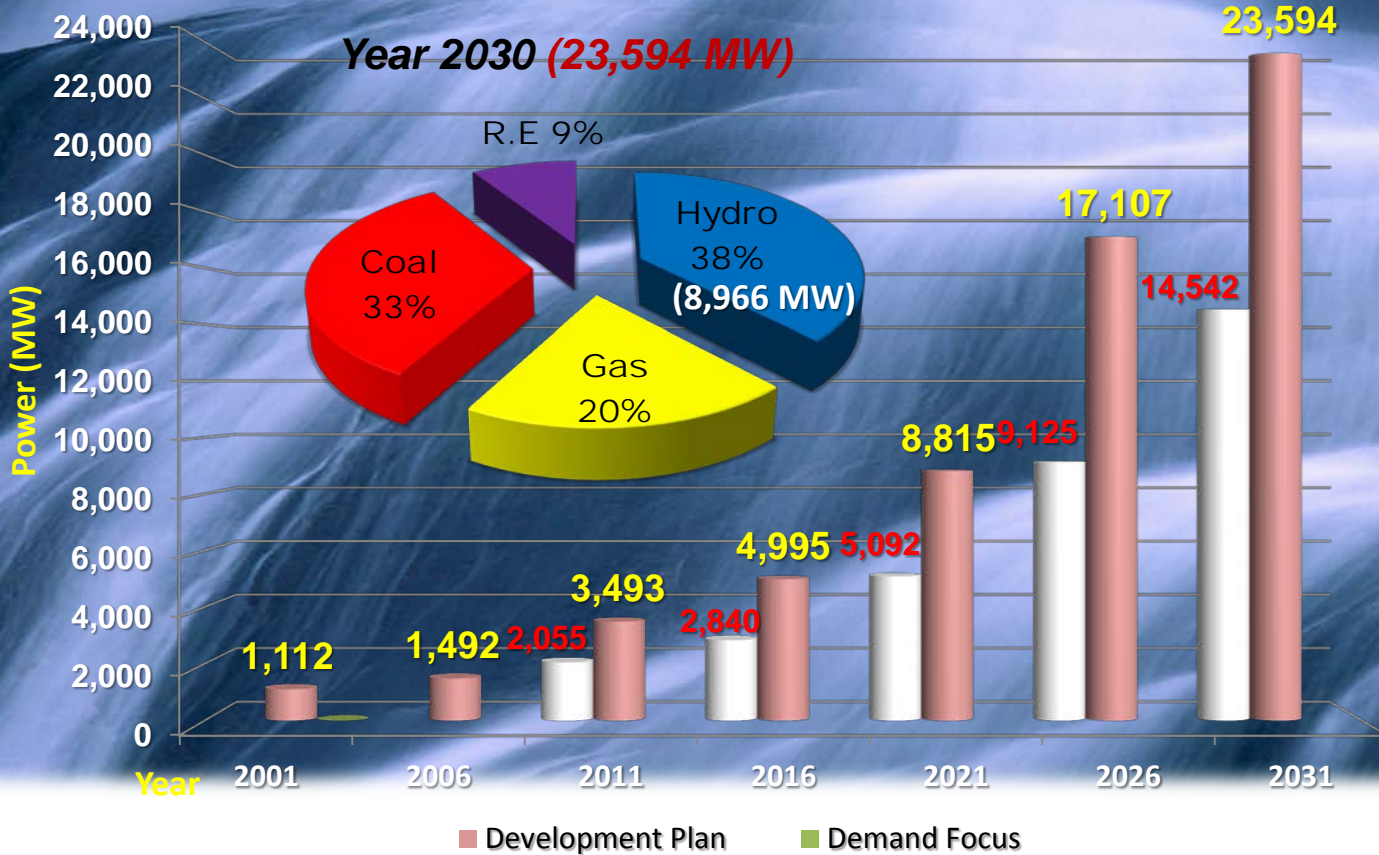
Hydro



Gas



Thermal



Existing National Grid System



Existing Transmission Lines

Voltage (kV)	Nos. of Line	Length (miles)
230	62	2848.75
132	40	1366.68
66	195	3704.55

Existing Substations

Voltage (kV)	Nos. of Sub-station	Capacity (MVA)
230	46	5,865
132	36	2,193.5
66	166	3338.61

- Future**
- (white) Hydro-power Station
 - (red) Gas Turbine Power Station
 - ⊠ (white) Steam Turbine Power Station
 - △ (red) 230 kV Substation
 - △ (blue) 132 kV Substation
 - △ (green) 66 kV Substation
 - △ (yellow) 33 kV Substation
 - △ (brown) 11 kV Substation
- Existing**
- (blue) Hydro-power Station
 - (red) Gas Turbine Power Station
 - ⊠ (black) Steam Turbine Power Station
 - ▲ (red) 230 kV Substation
 - ▲ (blue) 132 kV Substation
 - ▲ (green) 66 kV Substation
 - ▲ (yellow) 33 kV Substation
 - ▲ (brown) 11 kV Substation
- (red) 230 kV Transmission Line
- (blue) 132 kV Transmission Line
- (green) 66 kV Transmission Line
- (yellow) 33 kV Transmission Line
- (brown) 11 kV Transmission Line

On-going 500kV Transmission Lines and Substations

500kV Transmission Lines

Sr. No	Particulars	Length (miles)	Completed (%)	To be Completed (Estimate)
1	Myeiktilar-Taungoo Transmission Line	146	65.88 %	2020
2	Taungoo-Phayagyi Transmission Line	117	Investigation	2021
3	Phayagyi - Hlaingtharyar Transmission Line	60	Investigation	2021

500kV Substations

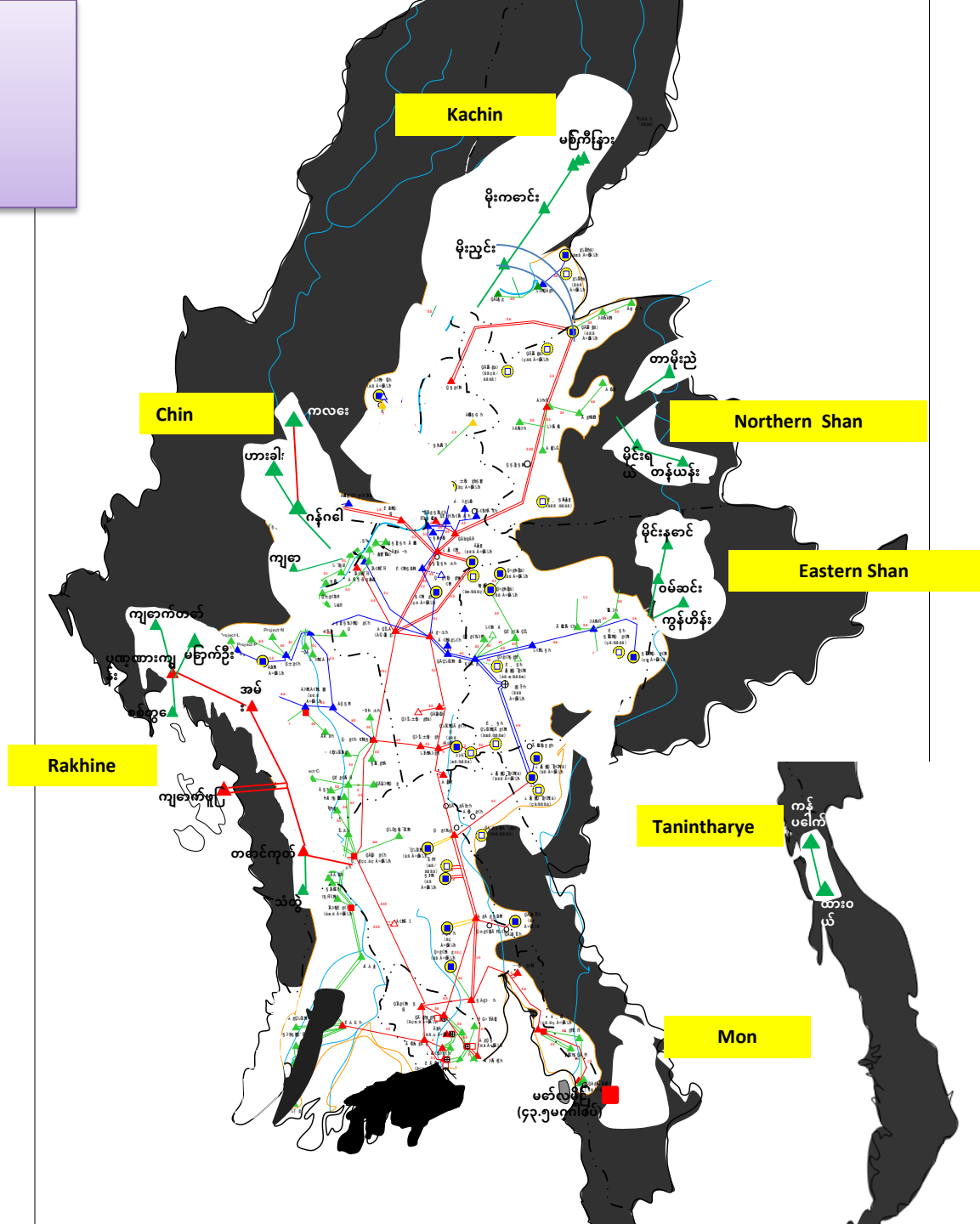
Sr. No	Particulars	Completed (%)	To be Completed (Estimate)
1	Myeiktilar Substation & Taungoo Substation	Investigation	2021
2	Phayagyi Substation & Hlaingtharyar substation	Investigation	2021

Electrified Areas in 2018

Total Household (Million) **10.88**

Electrified Household (Million) **4.35**

Electrified Household **39.98 %**



Existing Offshore Projects in Myanmar

YADANA PROJECT

TOTAL 31.24%
 UNOCAL 28.26%
 PTTEP 25.50%
 MOGE 15.00%

Export 650 MMscfd
 Domestic 200 MMscfd



YETAGUN PROJECT

PETRONAS 40.75%
 NIPPON 19.40%
 PTTEP 19.40%
 MOGE 20.45%

Export 200 MMscfd
 5,000 condensate



SHWE PROJECT

DAEWOO 51.00%
 ONGC 17.00%
 GAIL 8.50%
 KOGAS 8.50%
 MOGE 15.00%

Export 400 MMscfd
 Domestic 100 MMscfd

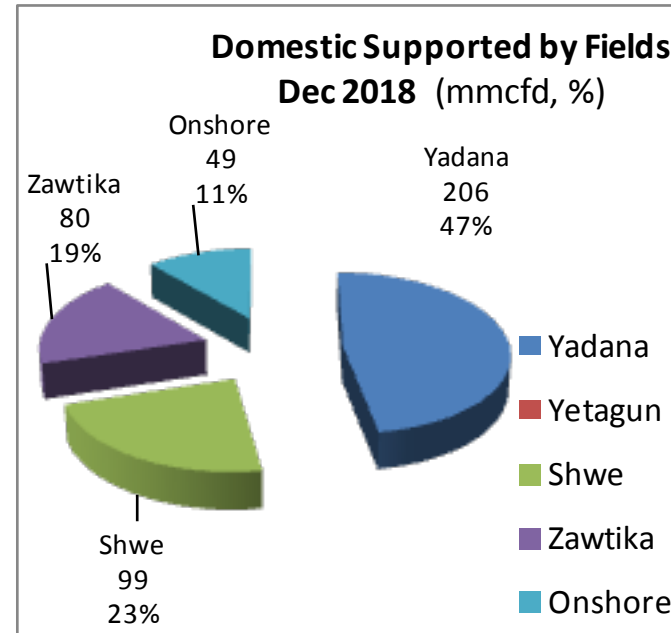
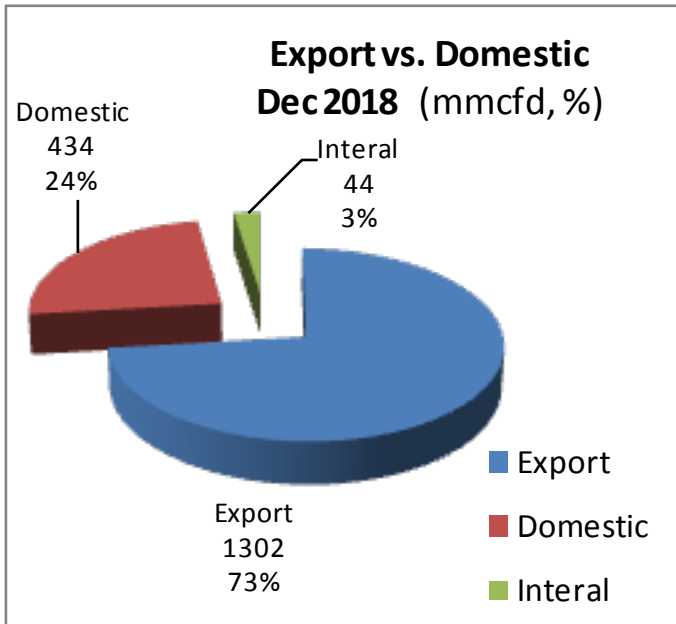
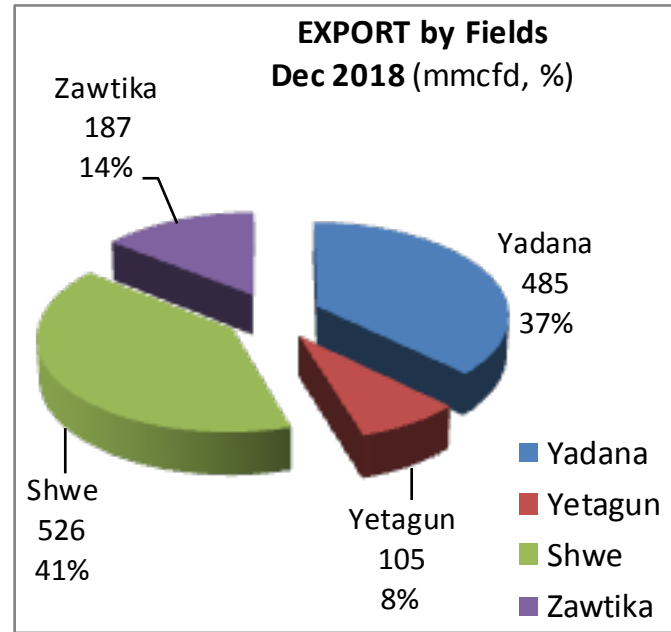
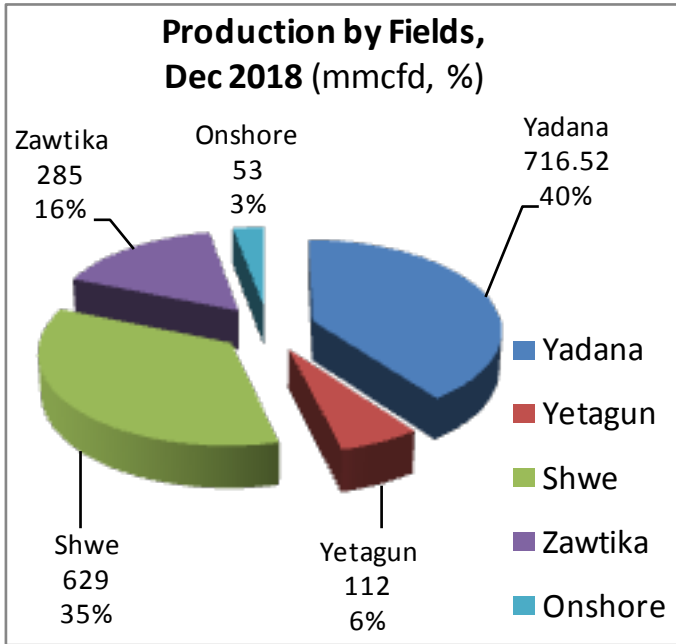


ZAWTIKA PROJECT

PTTEP 80.00%
 MOGE 20.00%

Export 200 MMscfd
 Domestic 100 MMscfd

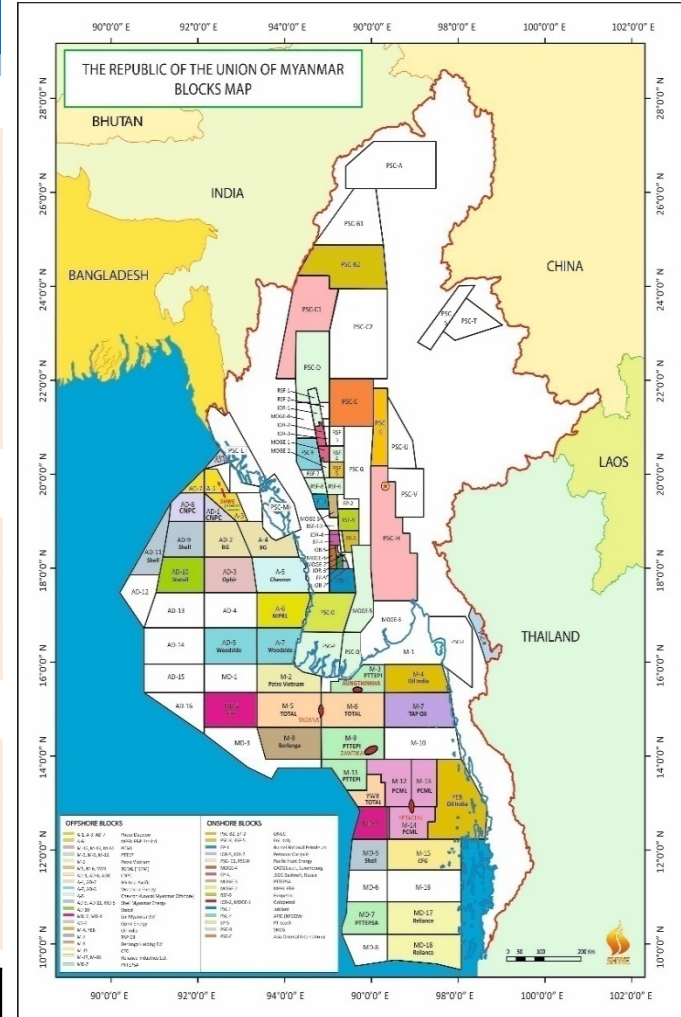




Status of Onshore and Offshore Blocks

(January 2019)

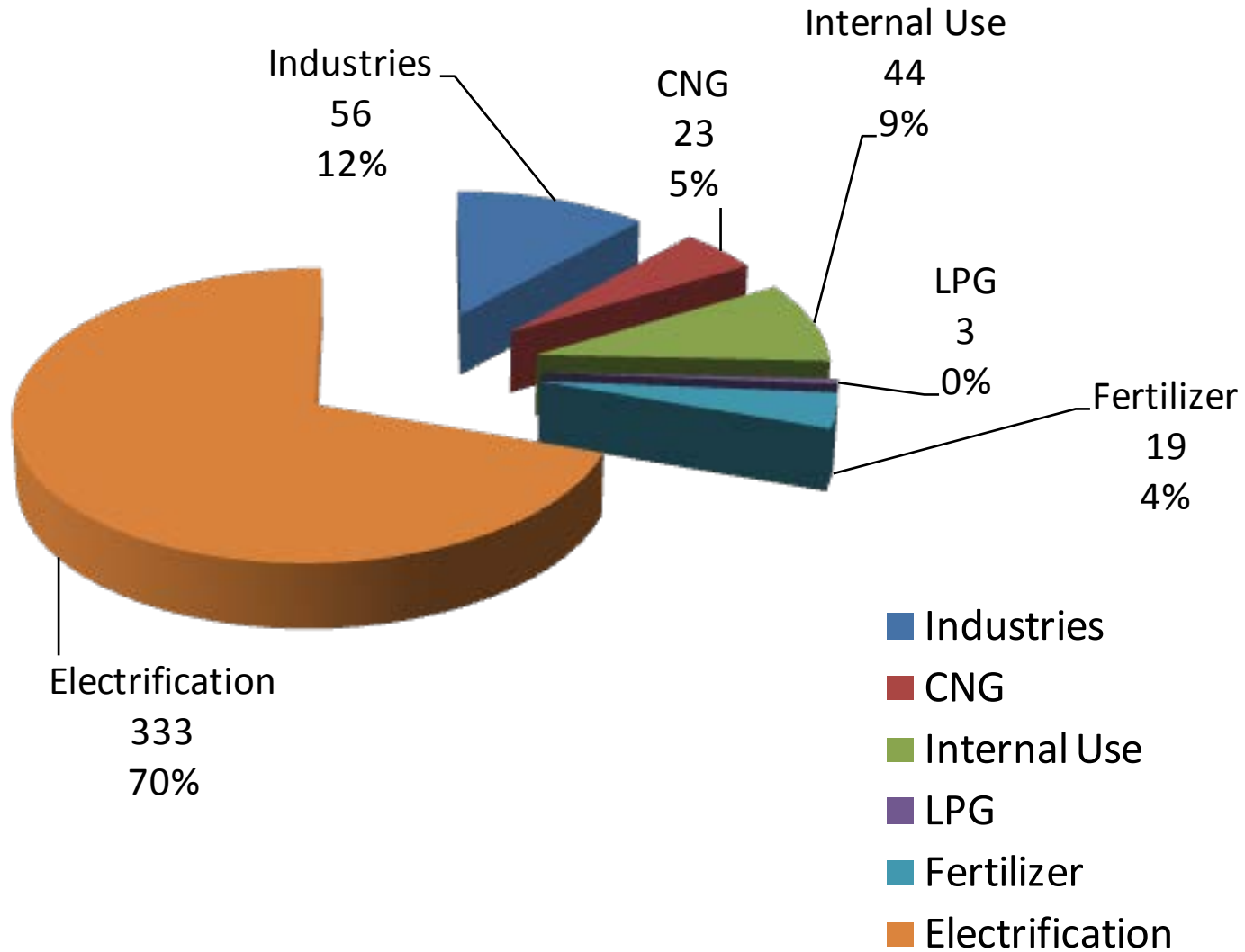
Type	Description	Total	Operatio n	Open
Onshore Blocks				
PSC	Production Sharing Contract	23	6	17
EP	Exploration and Production	5	3	2
RSF	Reactivation of Suspended Fields	10	1	9
IOR	Improved Oil Recovery	7	3	4
MOGE	Myanma Oil and Gas Enterprise	8	4	4
Total Onshore Blocks		53	17	36
Offshore Blocks (Shallow)				
A	Arakan (Rakhine) Coastal Area	6	6	0
M	Moattama & Taninthayi	18	10	8
Sub-total		24	16	8
Offshore Blocks (Deep)				
AD	Arakan Offshore Area (Deep)	16	7	9
MD	Moattama & Taninthayi (Deep)	11	4	7
Sub-total		27	11	16
Total Offshore Blocks		51	27	24
Block Total		104	44	60



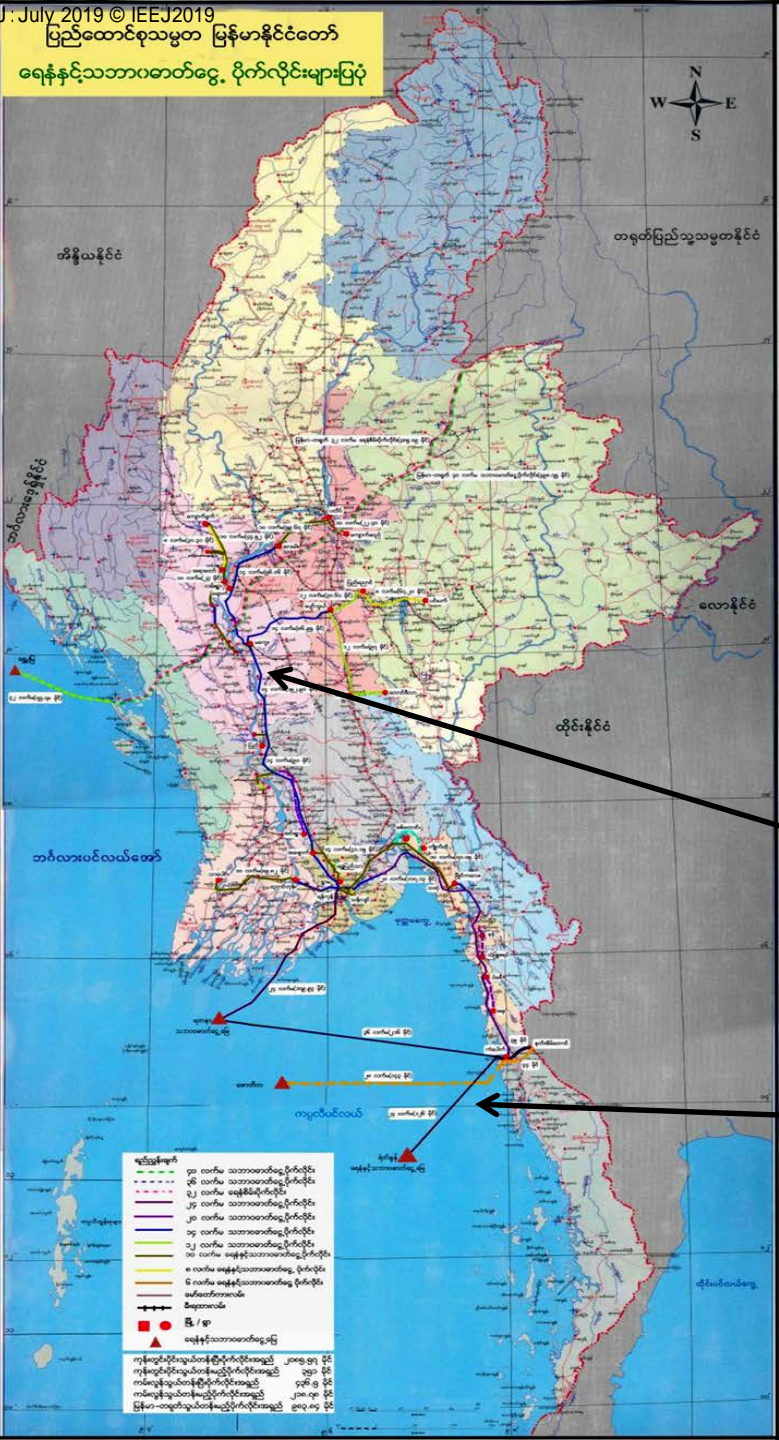
Status of Blocks

- ❖ 17 onshore blocks and 27 offshore blocks (Total 44) are under operation by various companies including MOGE
- ❖ 36 onshore blocks and 24 offshore blocks (Total 60) are available for investors

Utilization of Natural Gas by Domestic Sectors 478 mmcf/d (Dec, 2018)



Oil & Gas Pipeline Grid



- About 2549 miles of onshore gas pipeline were constructed by MOGE pipeline team.
- Pipeline sizes are varying from 6" to 30".
 - Main Trunk Line: 20" to 30"
 - Spur Lines: 6" , 8" , 10" , 14"

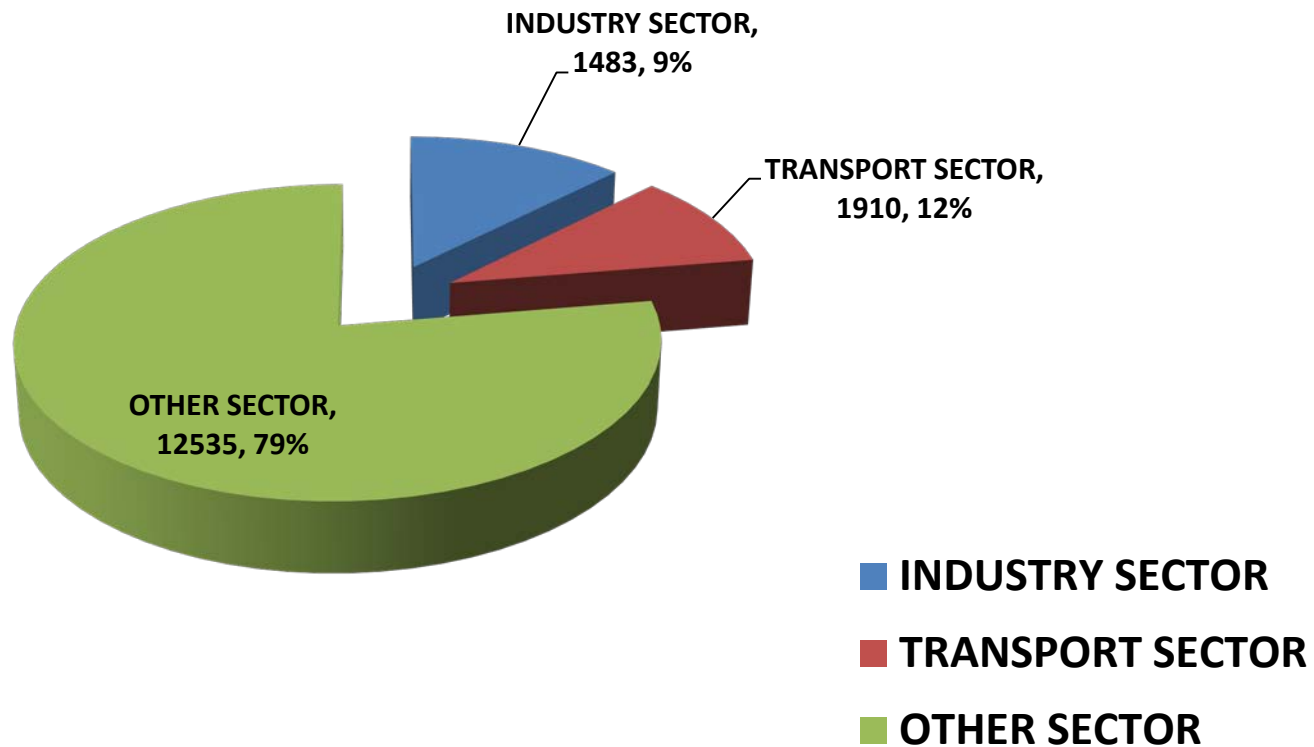
Onshore Gas Pipeline(2549)miles

Offshore Gas Pipeline (1800) miles

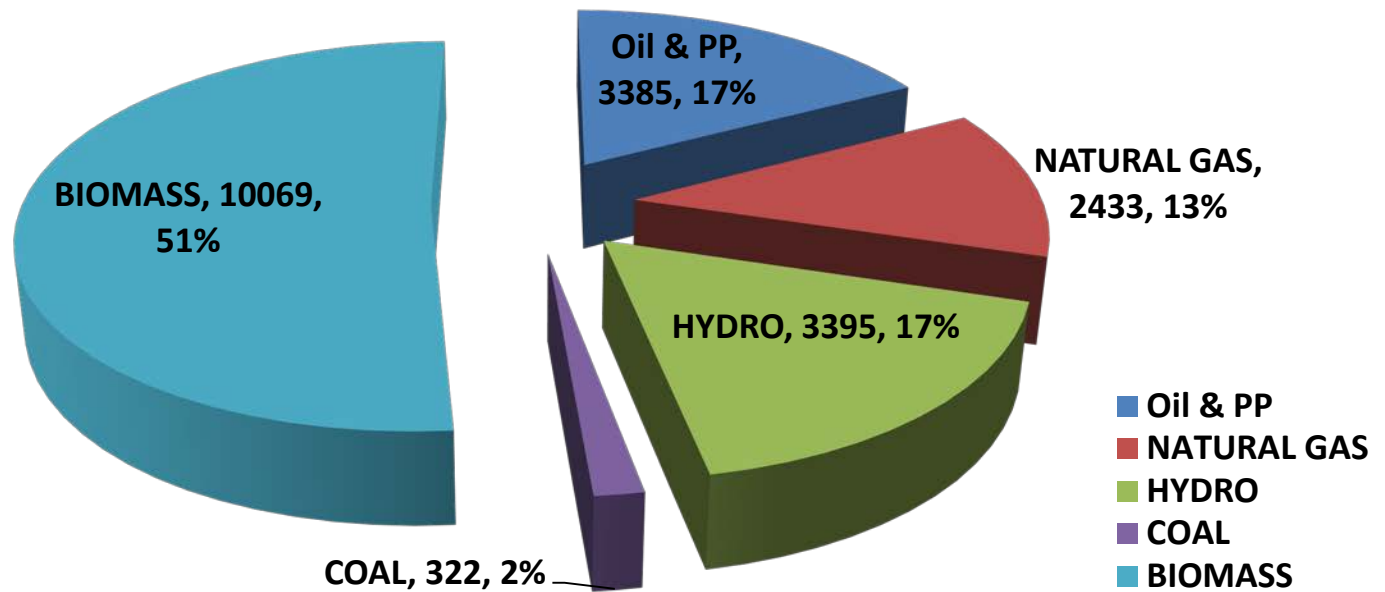
Market Price (Natural Gas) Domestic (Government & Private)

Project	Unit	Price	
		MMK	USD
<u>Onshore</u>			
Government Use	1,000 ft ³	2,000	
Private Use	1,000 ft ³	6,060	
<u>Offshore</u>			
Government Use	1MMBTU		7.5
Private Use			
(i) Zawtika Gas			
(1) Private	1,000 ft ³		4.6698
(2) Joint Venture	1,000 ft ³		5.0105
(ii) Shwe Gas (Offtake Point)			
(1) Kyaukphyu	1MMBTU		7.7207
(2) Yenangyaung	1MMBTU		8.4551
(3) Taungtha	1MMBTU		8.8654
(4) Mandalay	1MMBTU		9.1728
(iii) Yadana Gas	1,000 ft ³		5.0389

Final Energy Consumption by Sector (2016-2017) KTOE

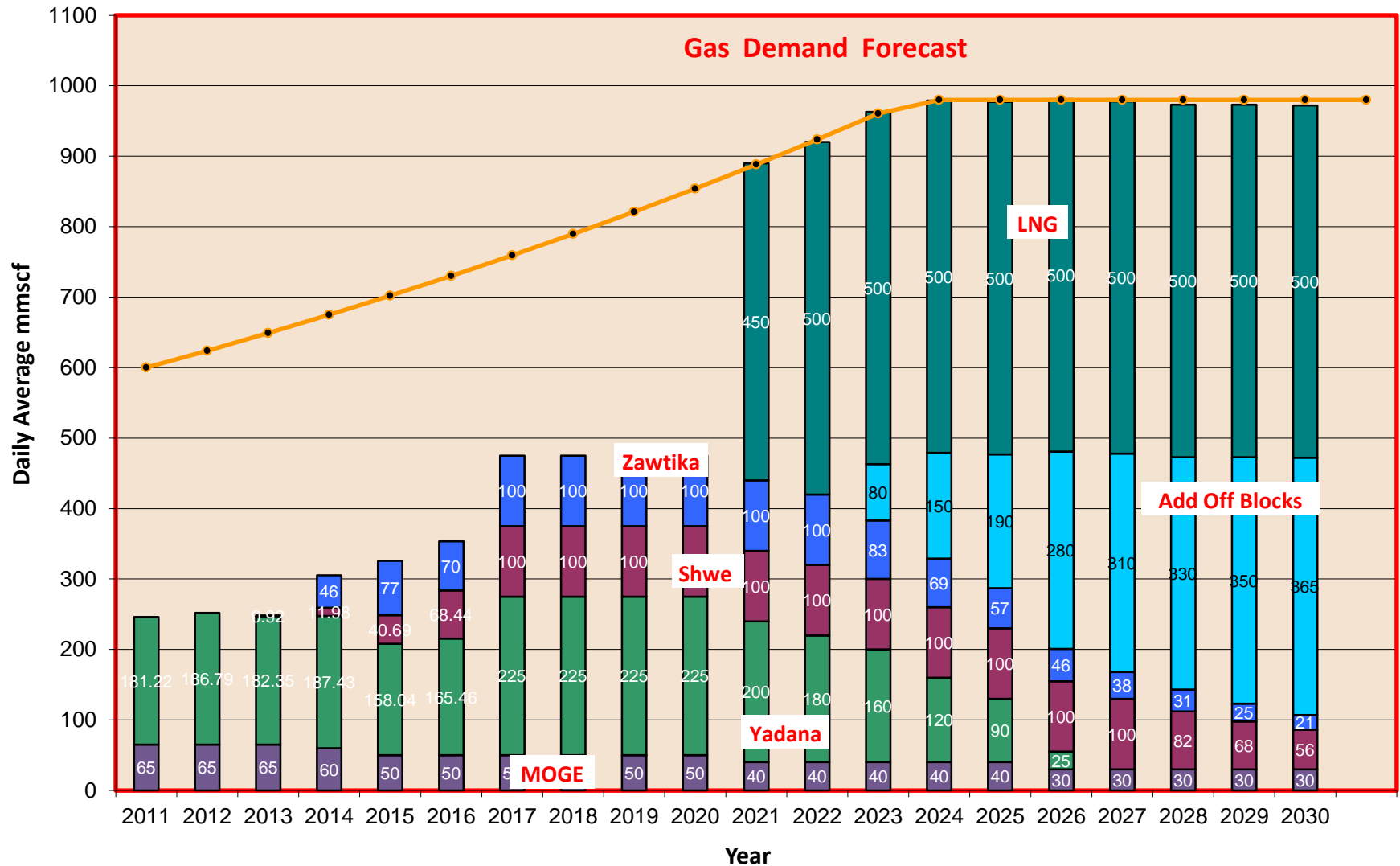


Primary Energy Supply (2016-2017) KTOE



Prediction for Gas Demand & Supply in Myanmar

GAS DEMAND AND SUPPLY FORECAST IN MYANMAR



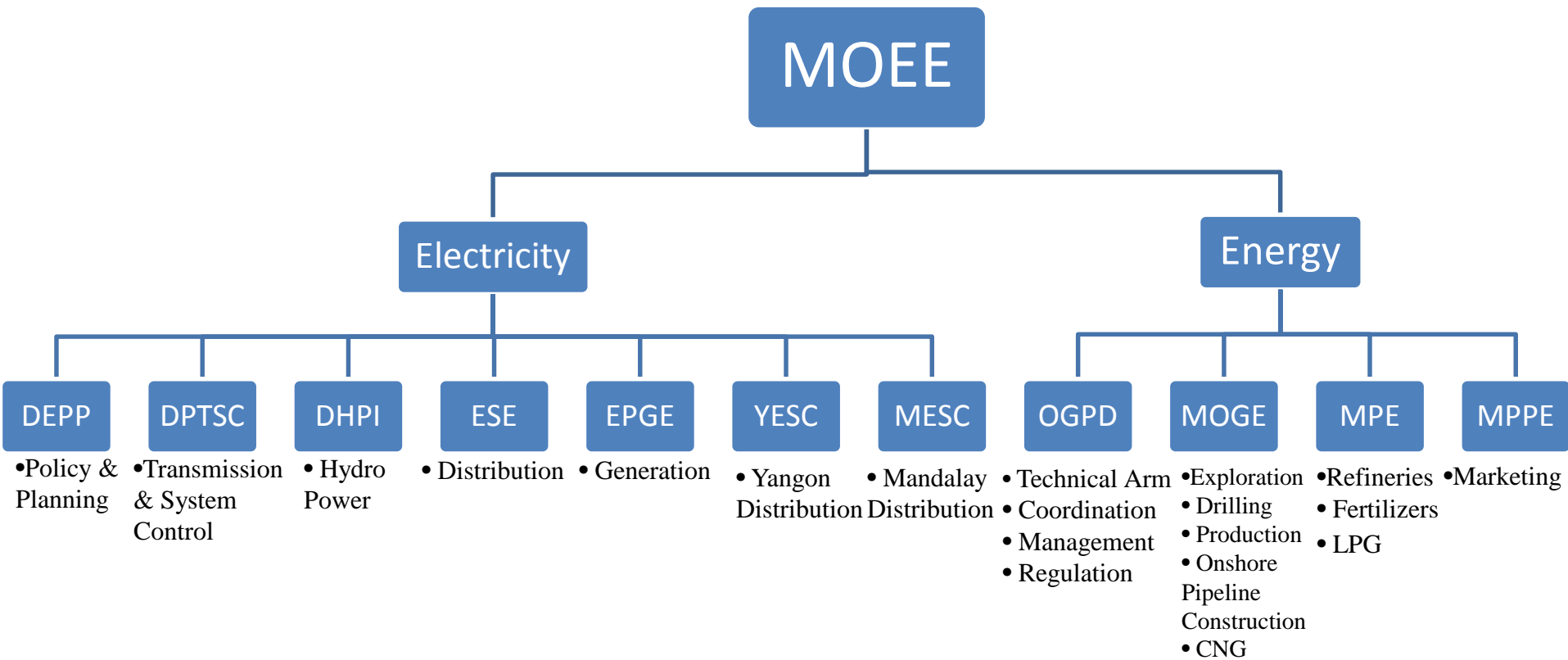
Tentative National Energy Policy of Myanmar

1. To minimize the environmental impacts, to include natural resources utilization plan for future generations, to invite the local and foreign investments and to continuously carry out Corporate Social Responsibility (CSR) activities in extraction and utilization of natural resources in order to fulfill the nation's energy needs.
2. To adopt prioritized plans on Energy Efficiency and Conservation
3. In defining the energy pricing in accordance with the market oriented economy, the necessary laws and regulations shall be promulgated by observing the ASEAN and international energy pricing policy in order to maintain the stability of energy prices, to guarantee the economic benefits for both energy producers and energy consumers, to ensure affordable energy price for the people, to ensure affordable energy price for the people and to set up an energy fund.
4. To follow energy standards and specifications which are appropriate for the nation and which are also in compliance with ASEAN and international practices.
5. To promote private sector participation or privatization according to the State's economic policy for realizing the success of State's Own Enterprises.

Tentative National Energy Policy of Myanmar

6. To lay down the short term and long term plans for not only renewable energy and hydropower projects but also feasible utilization of Liquefied Natural Gas (LNG) in thermal power plants to generate more electricity in order to meet the increased demand which will accompany with the nation's GDP growth.
7. To participate in regional energy trading (such as electric power, crude oil and natural gas) by expanding the power grid and pipeline network to neighboring countries including ASEAN nations.
8. To implement the following short term and long term plans in order to get power generation stability by conserving the water catchment areas of hydropower dams and the reservoirs, rehabilitating the aged plants and constructing the new ones in the grid system and replacing the ineffective transmission lines, constructing newlines, expanding the network system and building substations in the national grid system.
9. To prioritize the use of solar, wind, hydro, biomass and other renewable energy resources in fulfilling the electricity demand of off-grid areas.
10. To establish Energy Database System and to draw and implement the energy supply plans by surveying the nation's energy demand annually.
11. To formulate a plan on civilian use of nuclear energy.
12. To set up the energy stockpiling plan for future energy security

II. Organizational Structure of Ministry of Electricity and Energy



Electricity Tariff

Sr. No.	Type	Unit Range (kWh)	Tariff Rate (Kyats)
1	Commercial	1~100	35
		101~200	40
		201~above	50
2	Industrial	1~500	75
		501~10000	100
		10001~50000	125
		50001~200000	150
		200001~300000	125
		300001~above	150

Challenges in Power Sector

- ❖ Need to do Tariff Reform because of subsidies in power sector for so long
- ❖ Need to implement New Power Plants by using alternative energy because of demand increasing
- ❖ Need to upgrade Distribution System
- ❖ Need to build High Voltage Transmission Line

Challenges in Energy Sector

- ❖ Need to explore New Blocks because oil and gas production in existing blocks are declining.
- ❖ Need to upgrade existing fertilizer plants
- ❖ Need to build capacity development of staff

Way Forward To Address the Challenges

- National Electricity Master Plan for achieving electricity for all
- Energy Master Plan for sustainable energy development
- Adopting short term, middle term and long term plans
- Inviting Foreign Investors

Better Future, Better Myanmar



Thank You