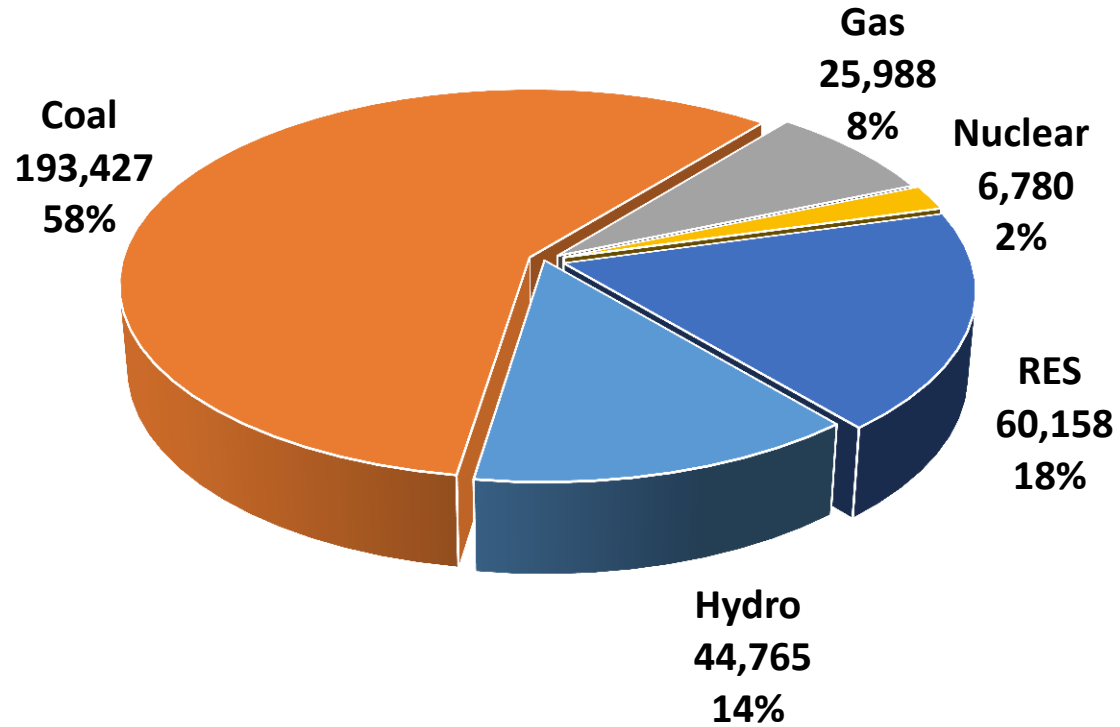


# INDIAN POWER SECTOR SCENARIO & FLEXIBILITY REQUIREMENT – NOW & IN 5 YEARS

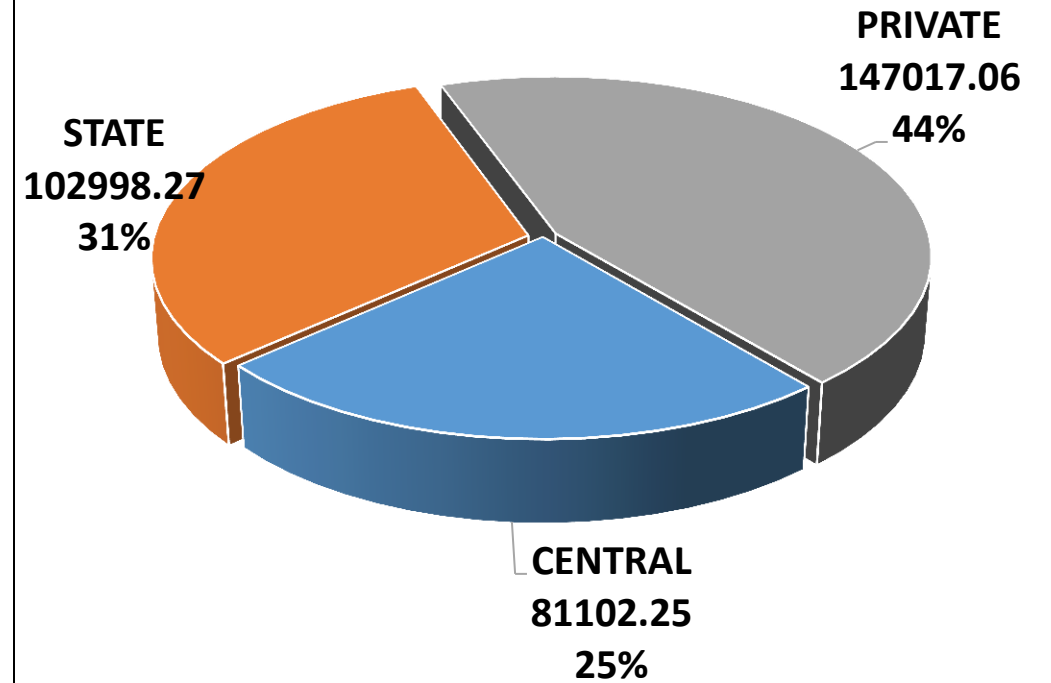
AMMI RUHAMA TOPPO  
DIRECTOR  
CENTRAL ELECTRICITY AUTHORITY

# INSTALLED CAPACITY

FUEL TYPE-WISE ALL INDIA INSTALLED CAPACITY (IN MW) AS ON 31.10.2017

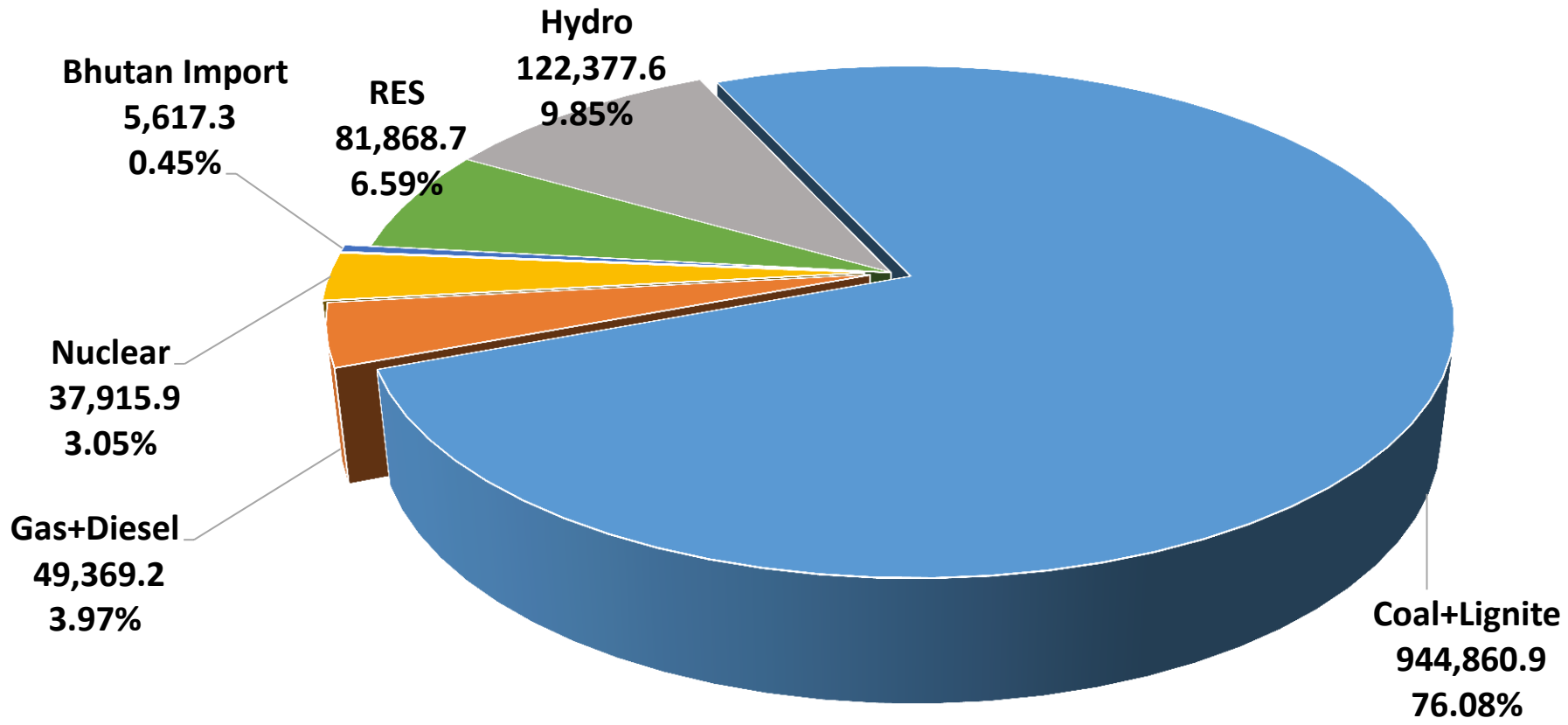


SECTOR-WISE ALL INDIA INSTALLED CAPACITY (IN MW) AS ON 31.10.2017



**TOTAL:331,118 MW**

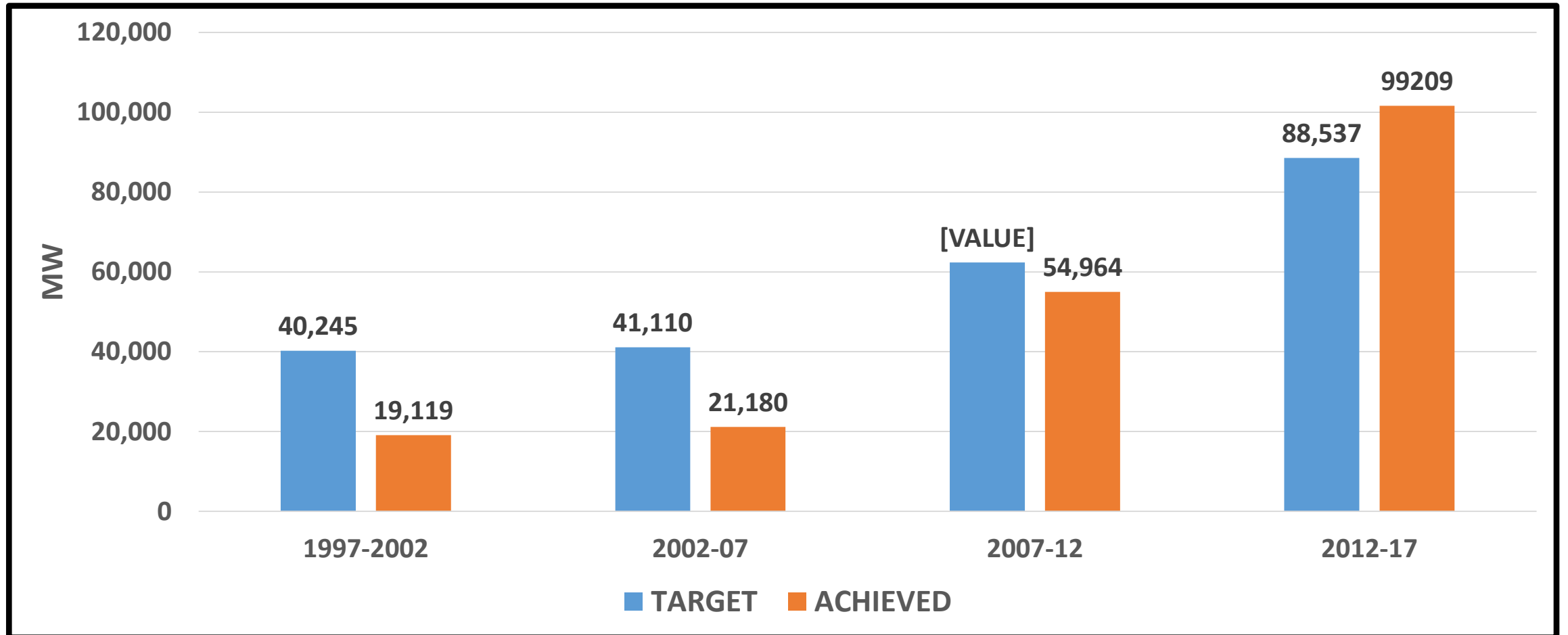
# GENERATION(2016-17)



TOTAL 12,42,009.7 GWh

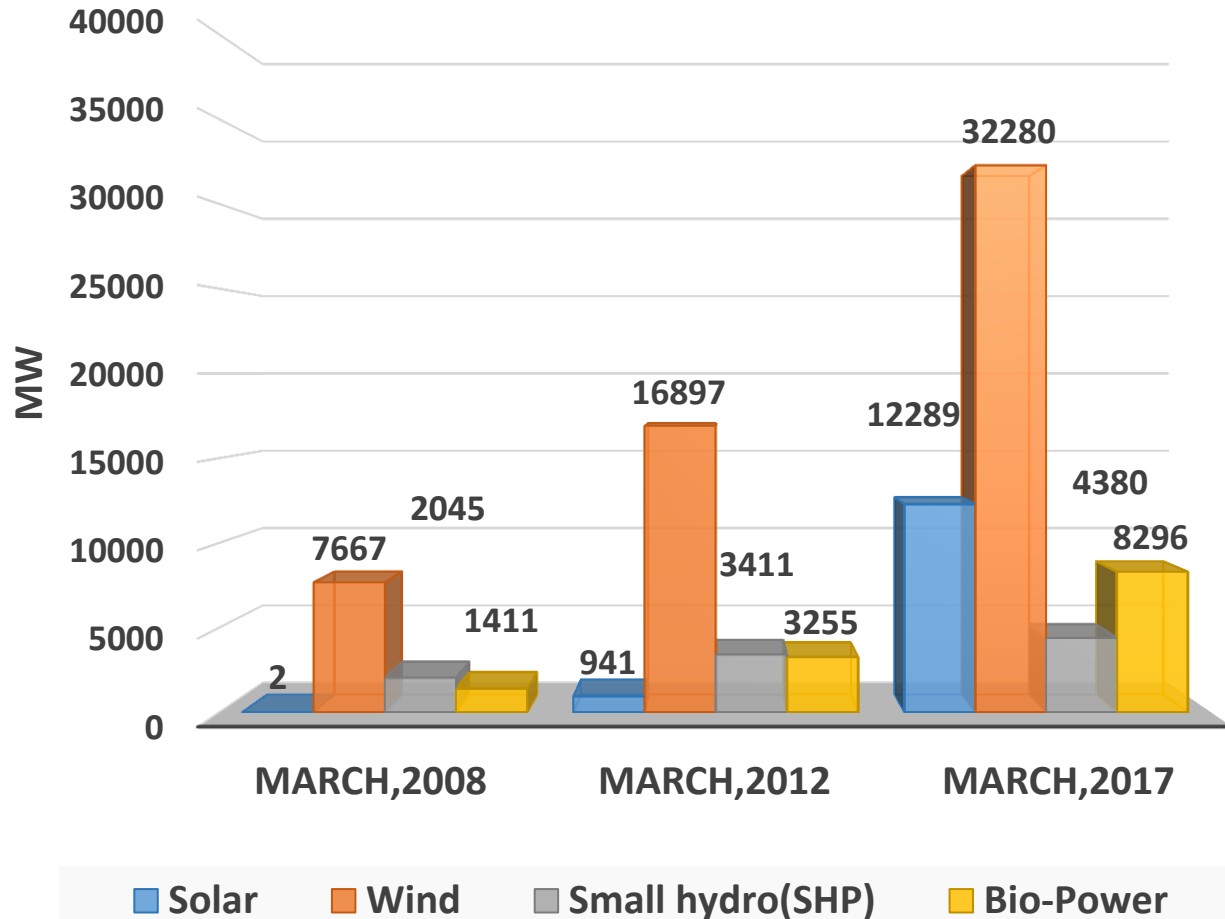
**ALL FIGURES IN GWh**

# CAPACITY ADDITION FROM CONVENTIONAL SOURCES

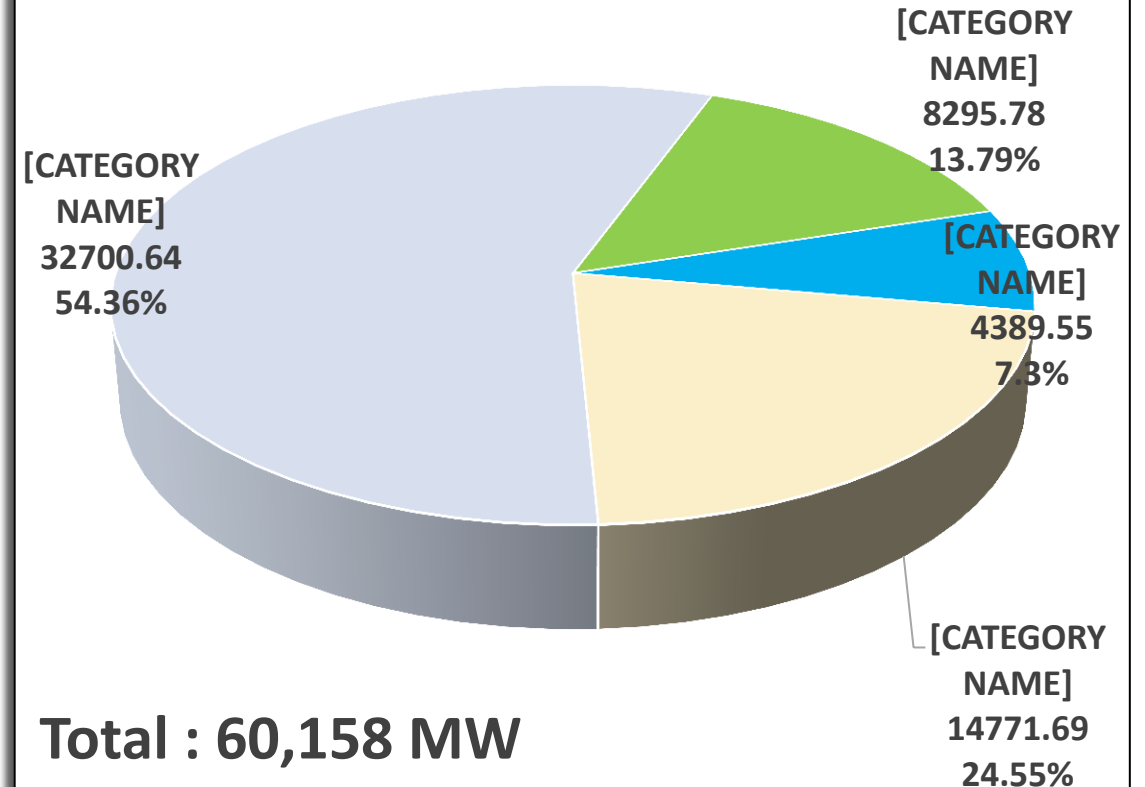


# INSTALLED CAPACITY- RES

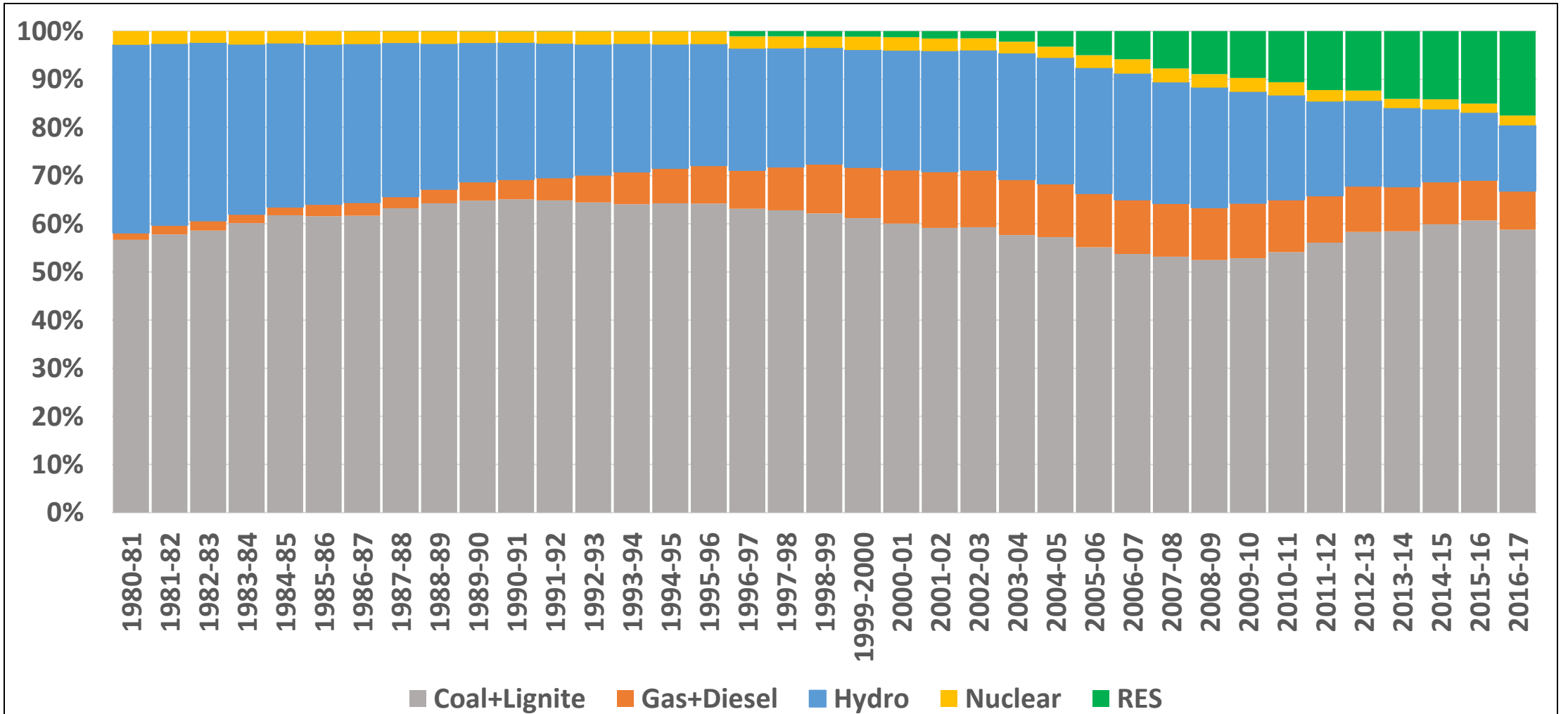
## Development of RE in India



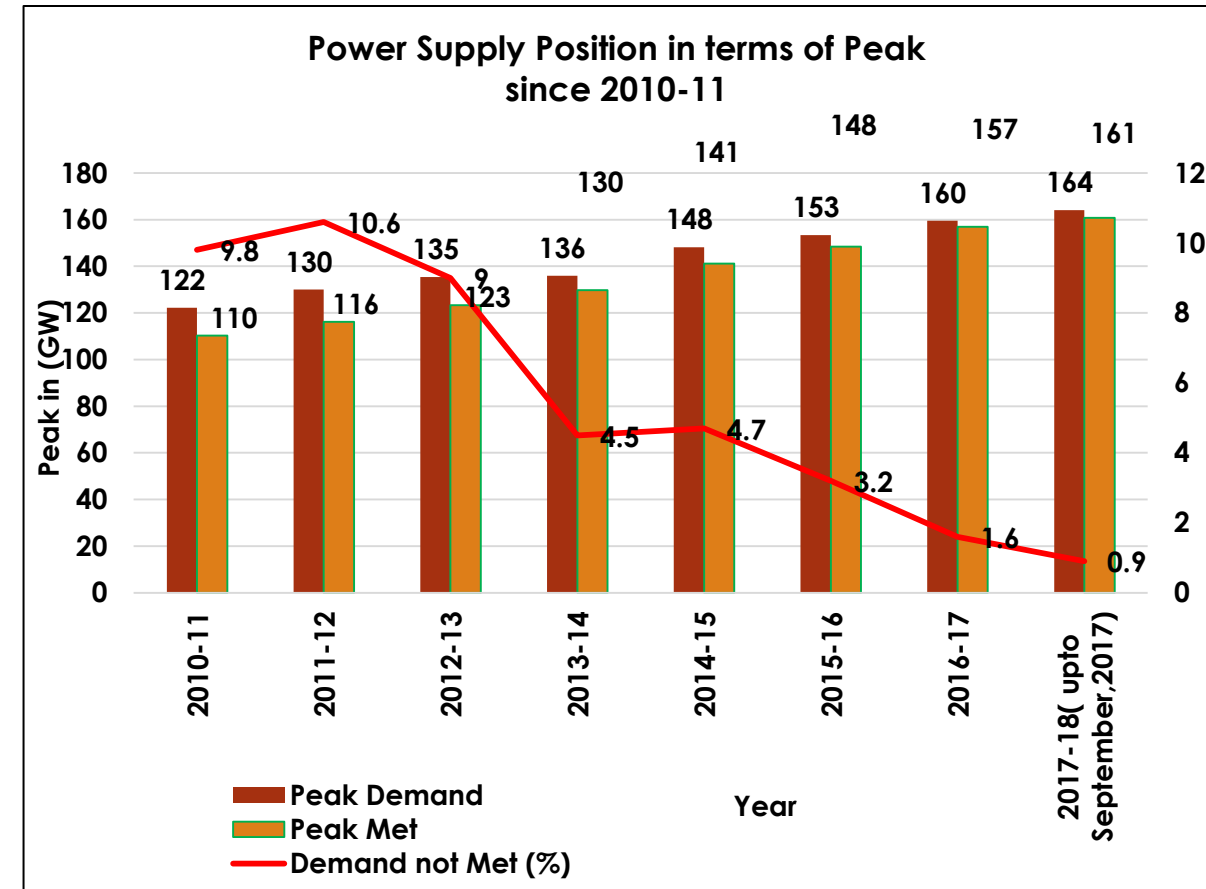
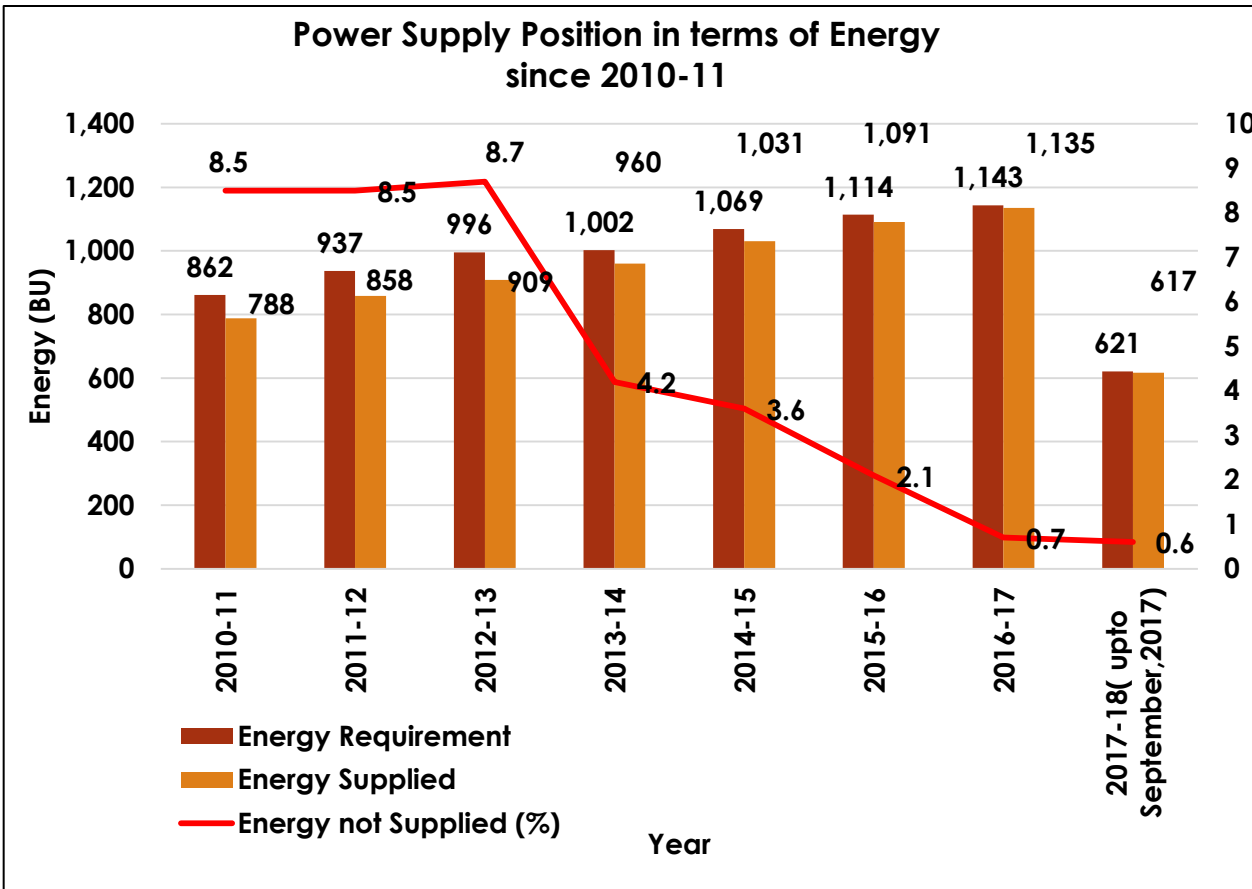
## RES Installed capacity in MW as on 30<sup>th</sup> September, 2017



# CAPACITY MIX (SINCE MARCH,1981)

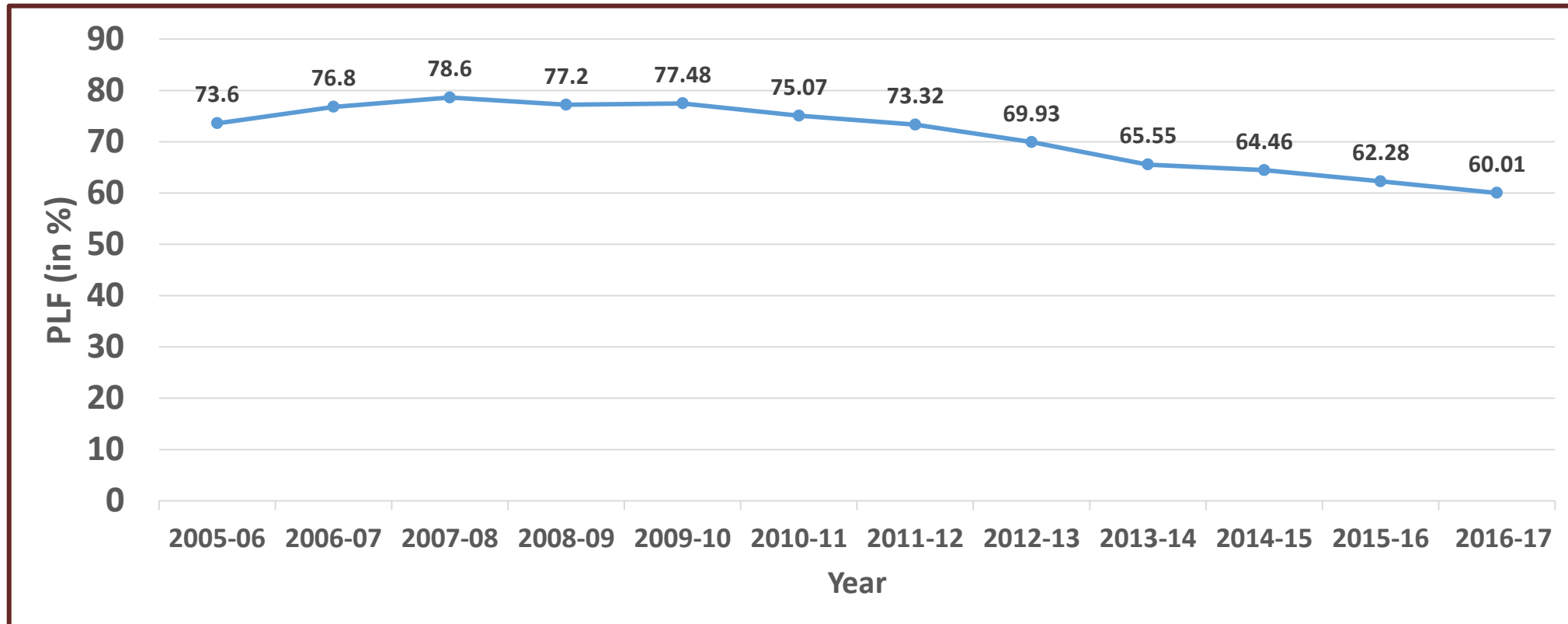


# POWER SUPPLY POSITION IN THE COUNTRY



1. At present, demand supply gap at an all time low of less than 1%. This gap is on account of factors other than non-availability of power.
2. Adequate power available in the country.

# ALL INDIA COAL BASED PLF

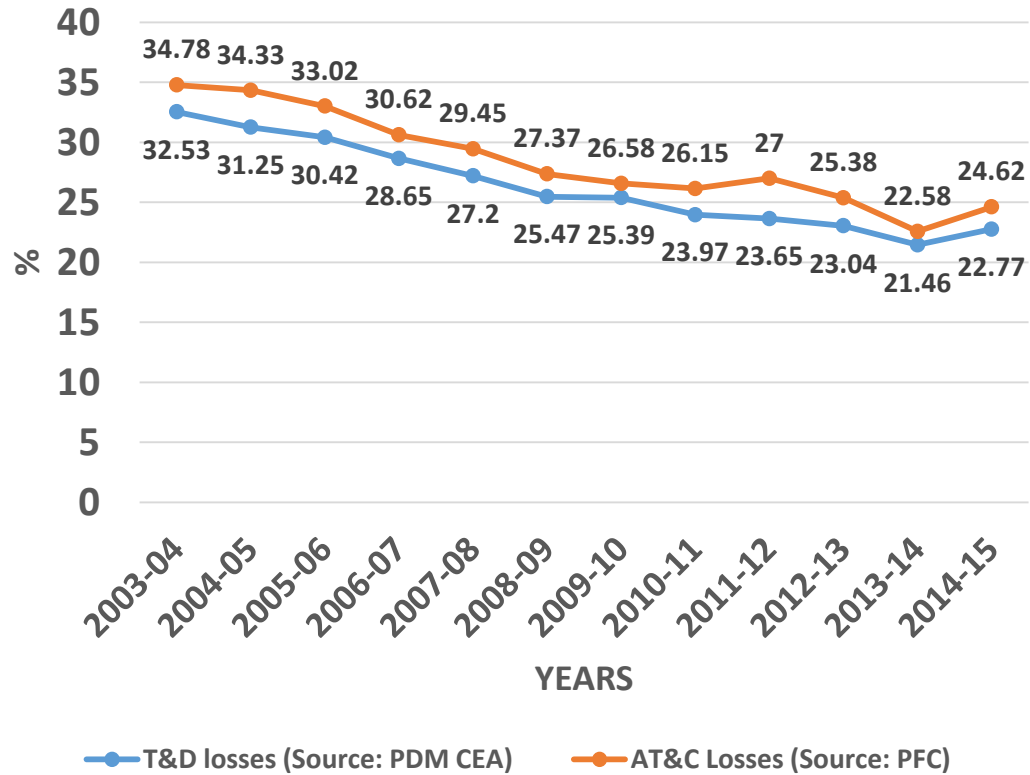


Coal based capacity under reserved shut down during the current year is 15000- 25000 MW.

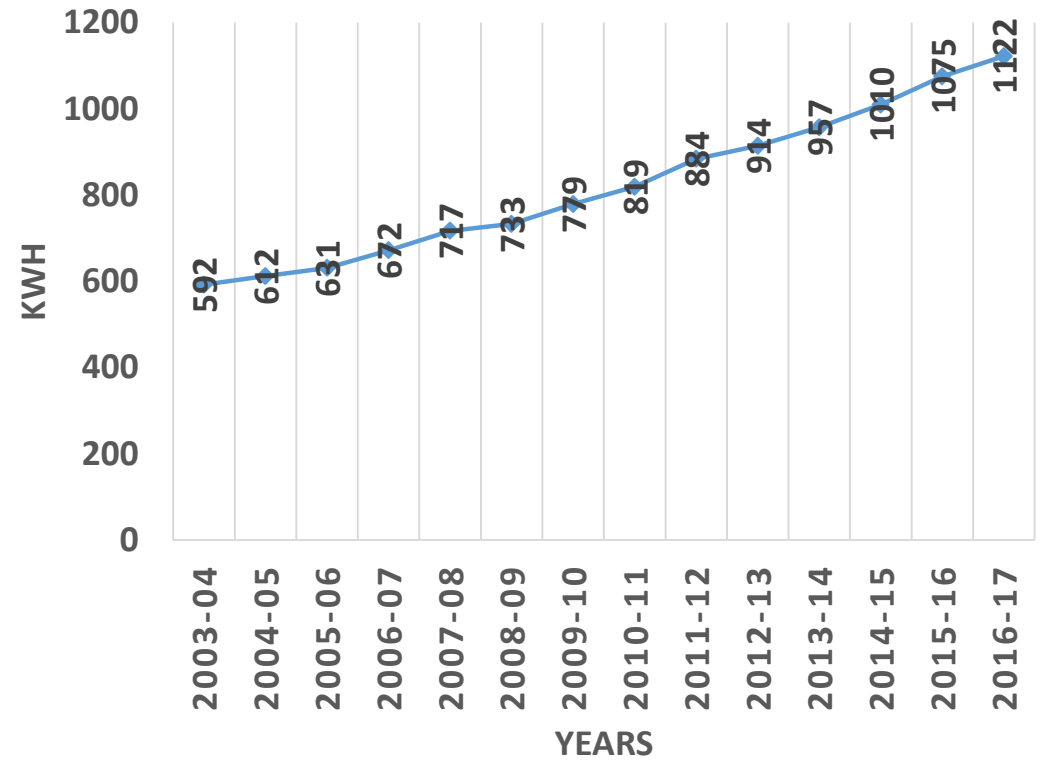


# ALL INDIA LOSSES AND PER CAPITA CONSUMPTION

## T&D AND AT&C LOSSES

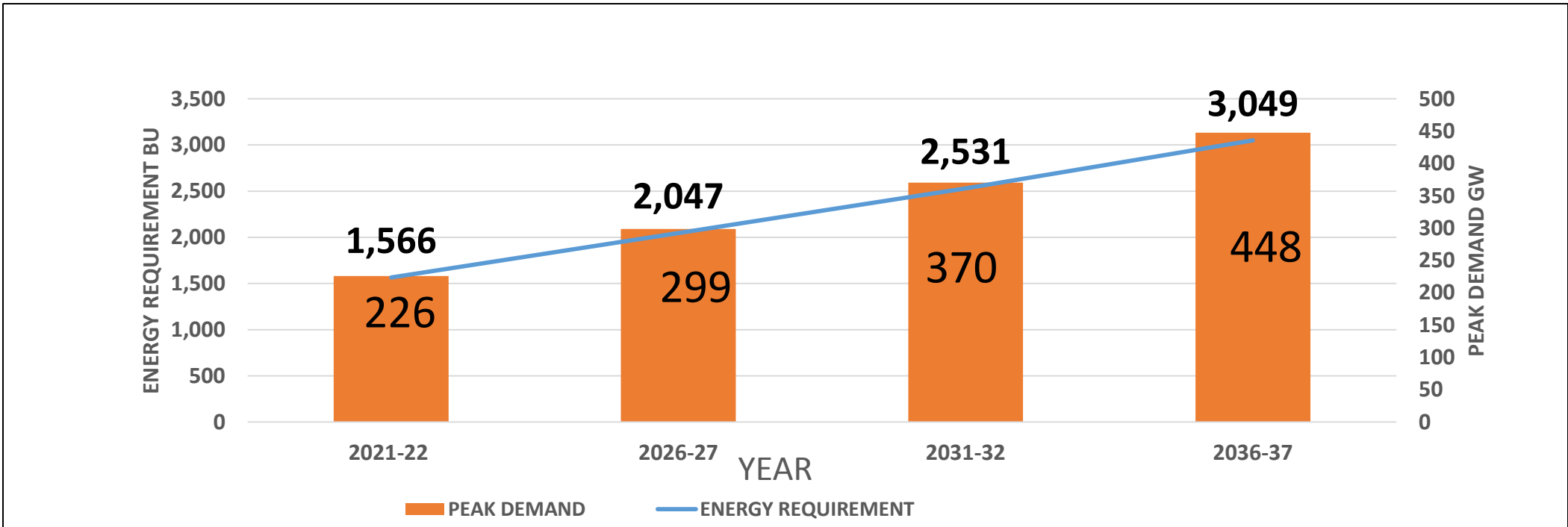


## PER CAPITA CONSUMPTION



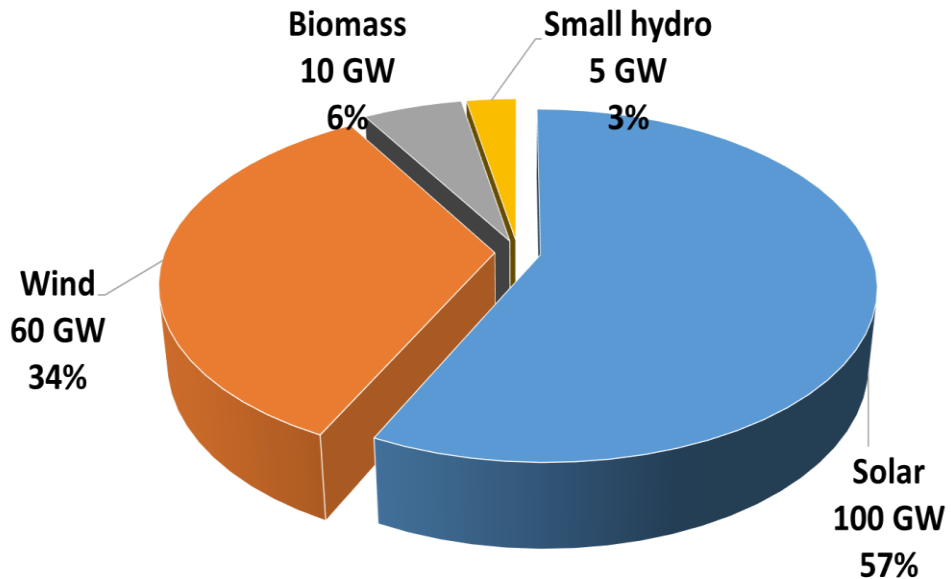
# **FUTURE SCENARIO**

# PROJECTIONS OF ELECTRICITY DEMAND-19<sup>TH</sup> ELECTRIC POWER SURVEY

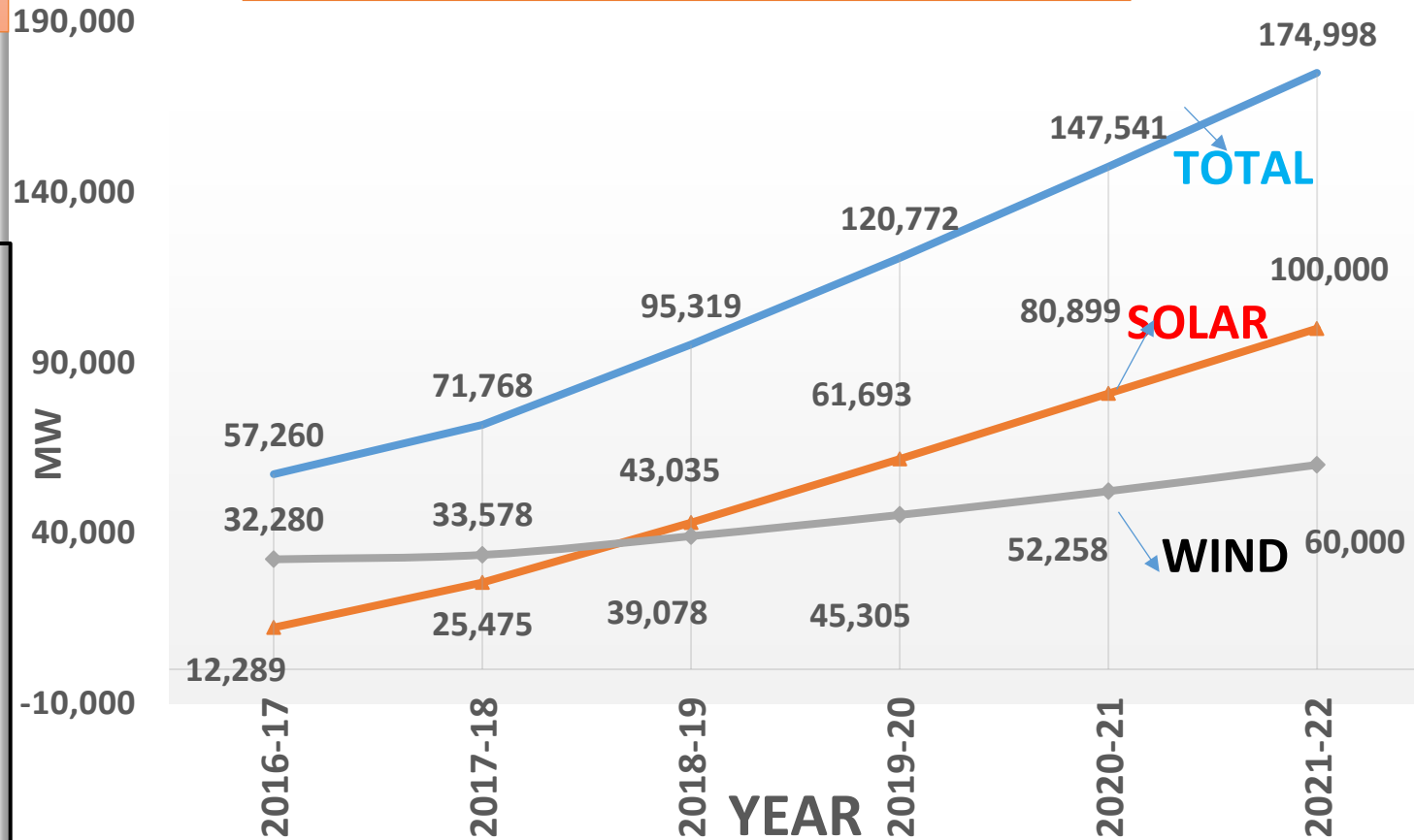


Growth Rate (%)		
	2016-17 to 2021-22	2021-22 to 2026-27
CAGR of Electrical Energy Requirement	6.18	5.51
CAGR of Peak Electricity Demand	6.88	5.77

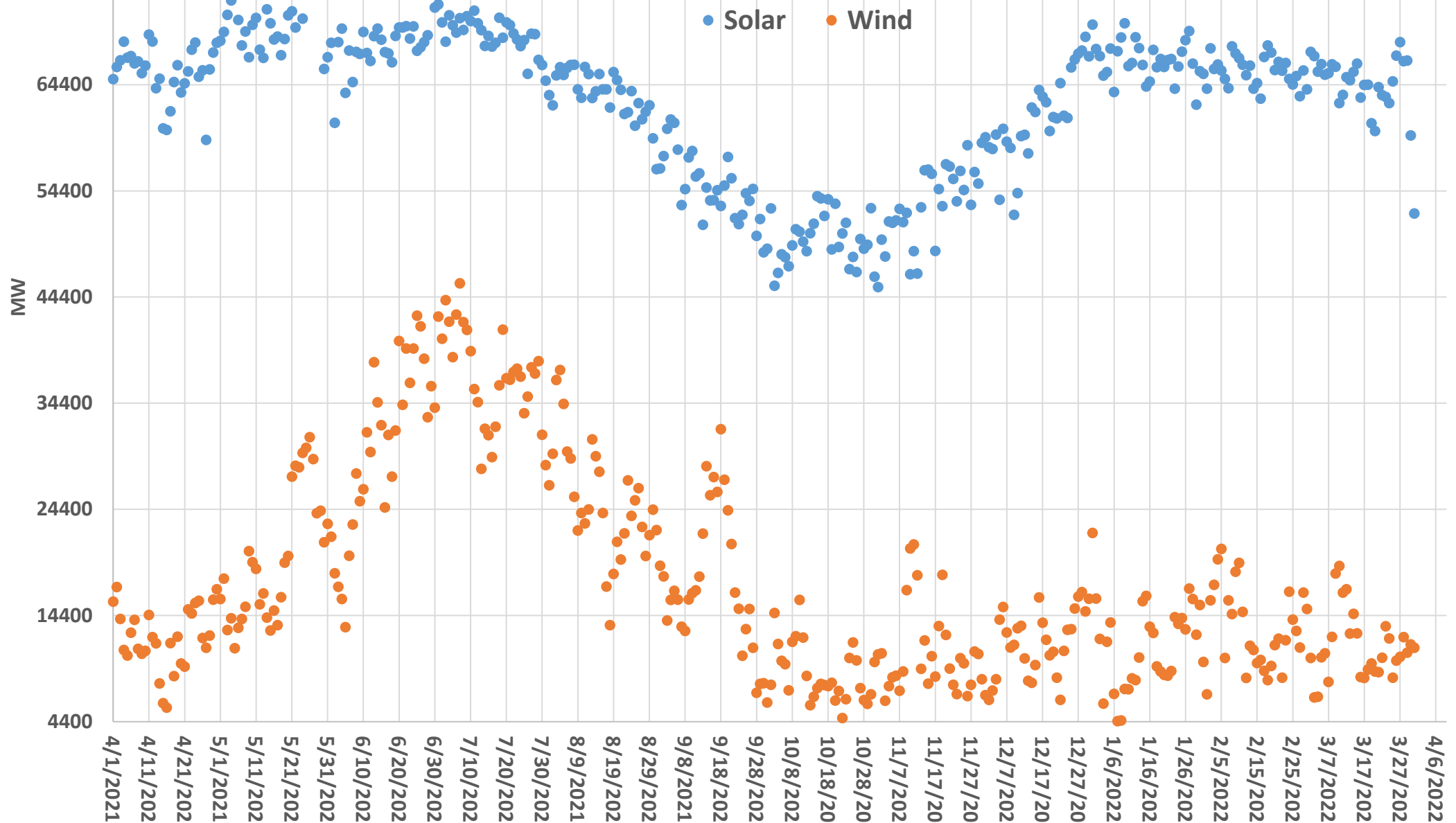
## TARGET RES INSTALLED CAPACITY MARCH, 2022

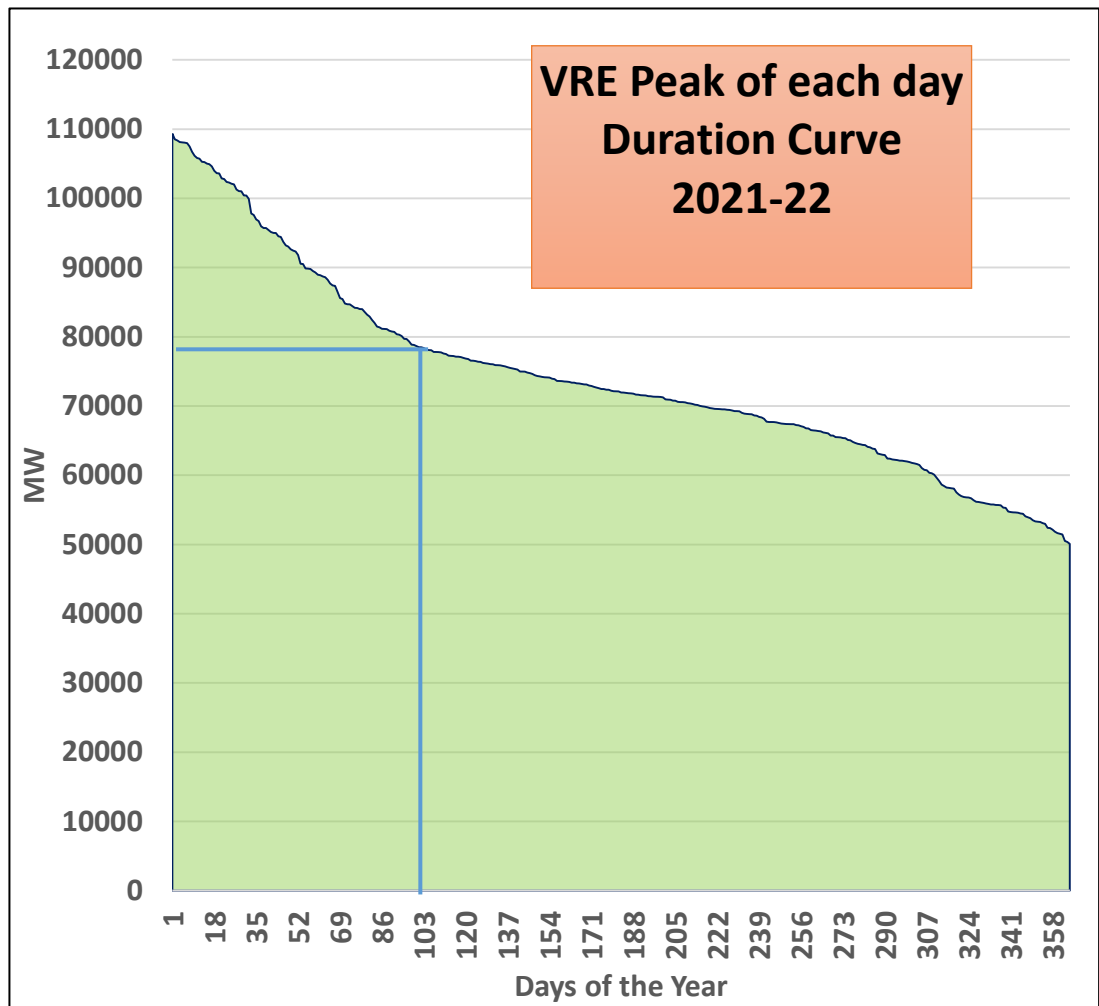
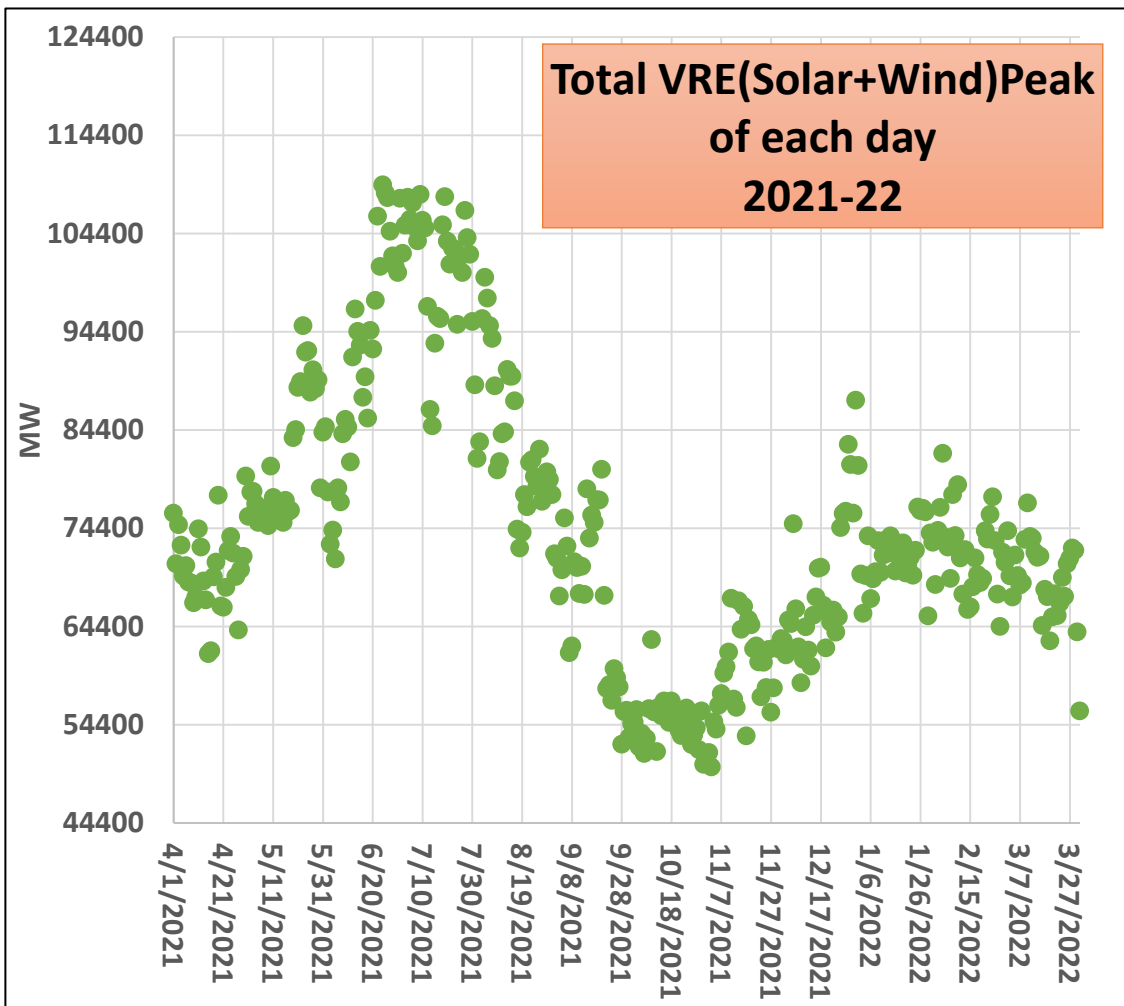


## PROJECTED GROWTH OF RES INSTALLED GENERATING CAPACITY (MW)



# Daily Peak solar & Wind 2021-22

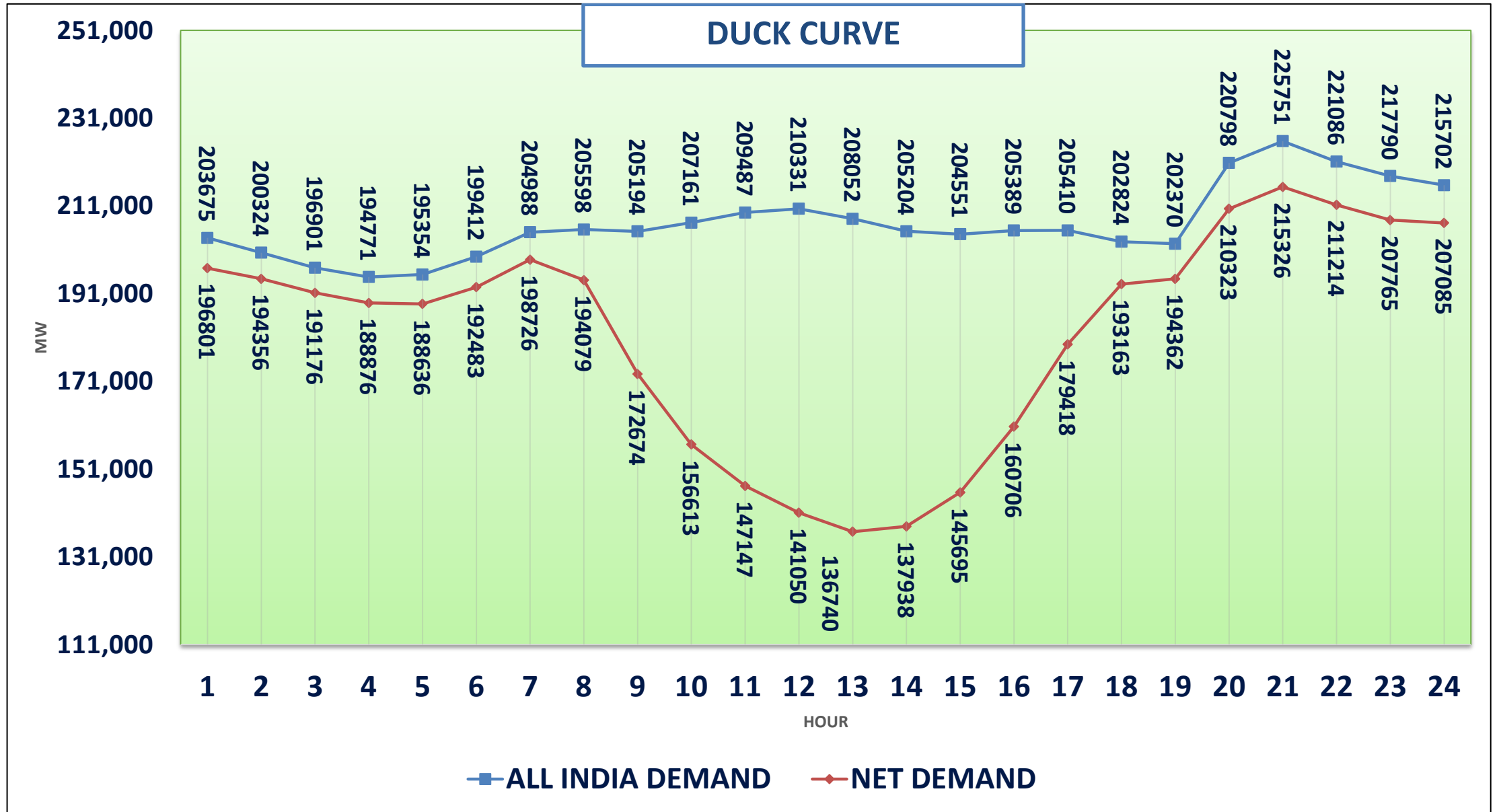




## Estimated Electricity Generation from RES in years 2021-22 and 2026-27

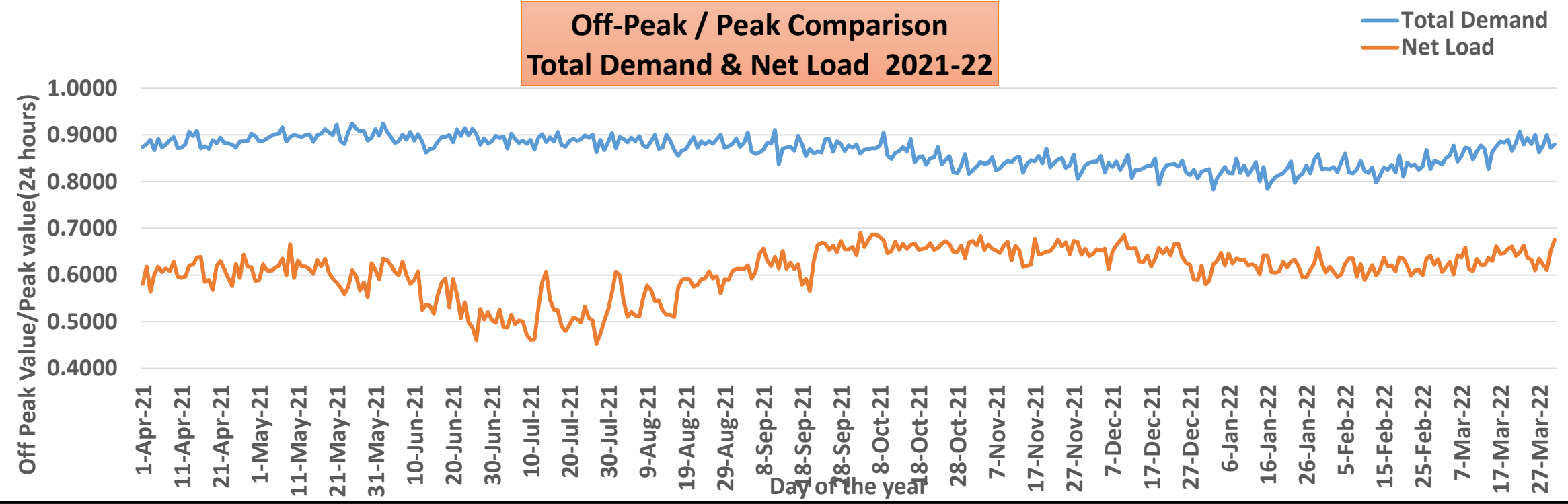
Year	Installed capacity of RES (GW)	Expected Generation in (BU)					Total Energy Requirement (BU)	Contribution of RES to Total Energy Demand(%)
		Solar	Wind	Biomass	SHP	Total		
<b>2021-22</b>	175	162	112	37	15	326	1,566	<b>20.1%</b>
<b>2026-27</b>	275	243	188	63	24	518	2,047	<b>24.4%</b>

# TYPICAL ALL INDIA DEMAND & NET LOAD CURVE (PEAK DAY) (2021-22)

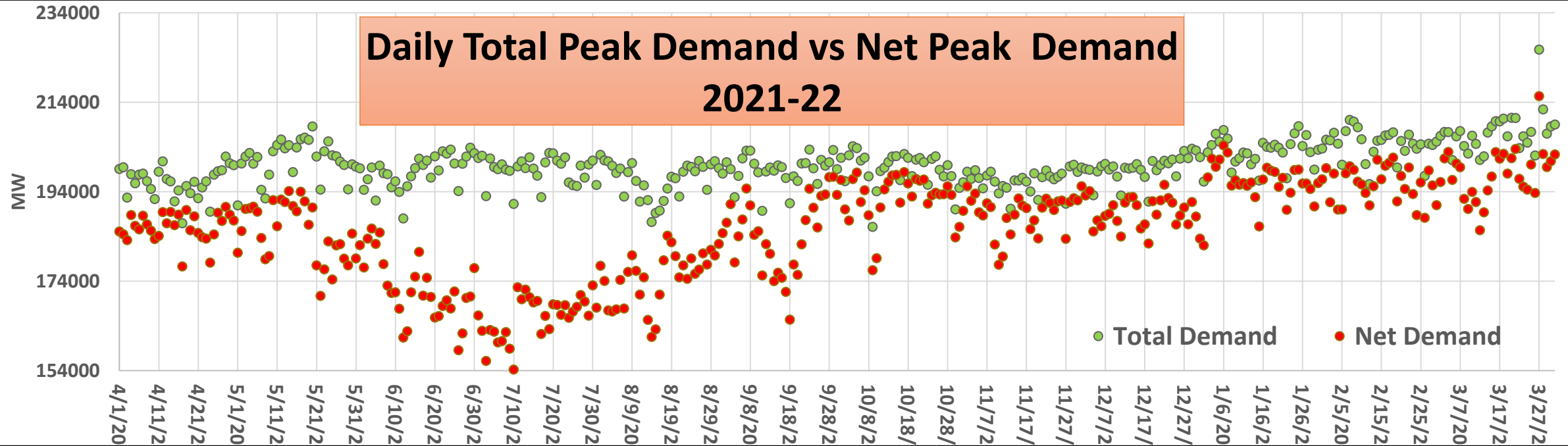




### Off-Peak / Peak Comparison Total Demand & Net Load 2021-22

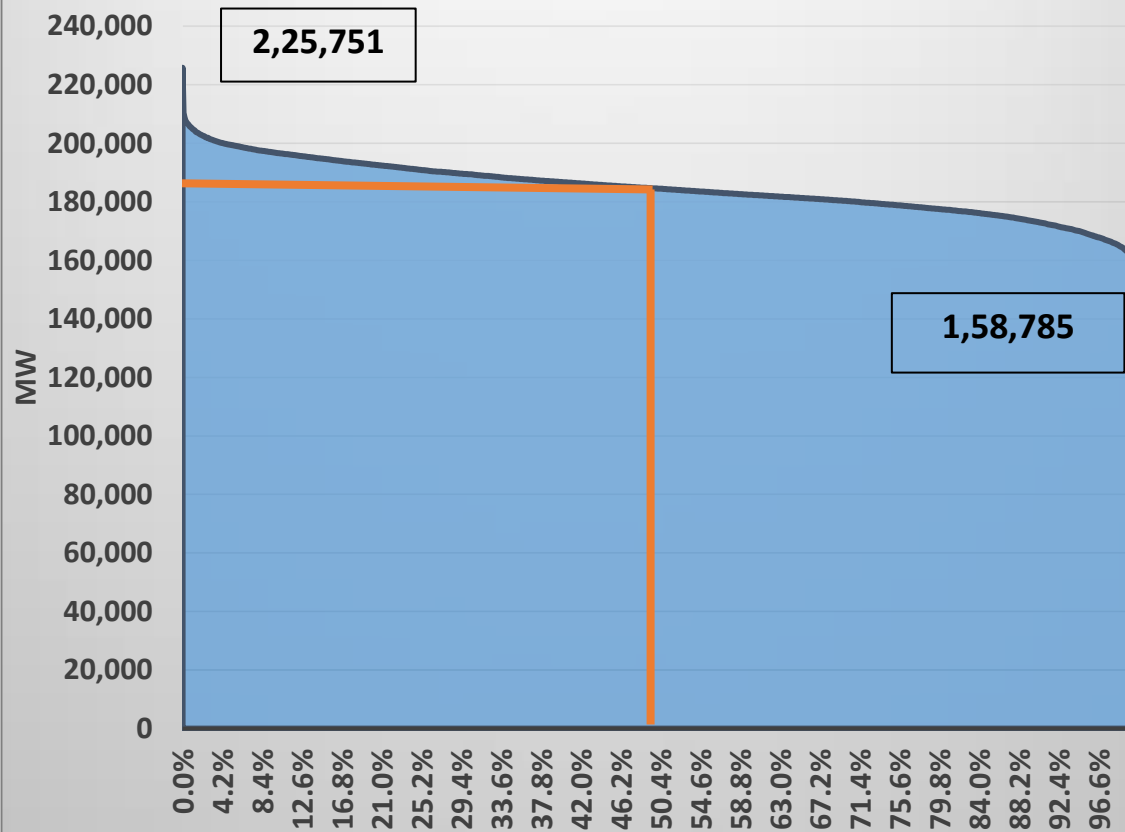


### Daily Total Peak Demand vs Net Peak Demand 2021-22

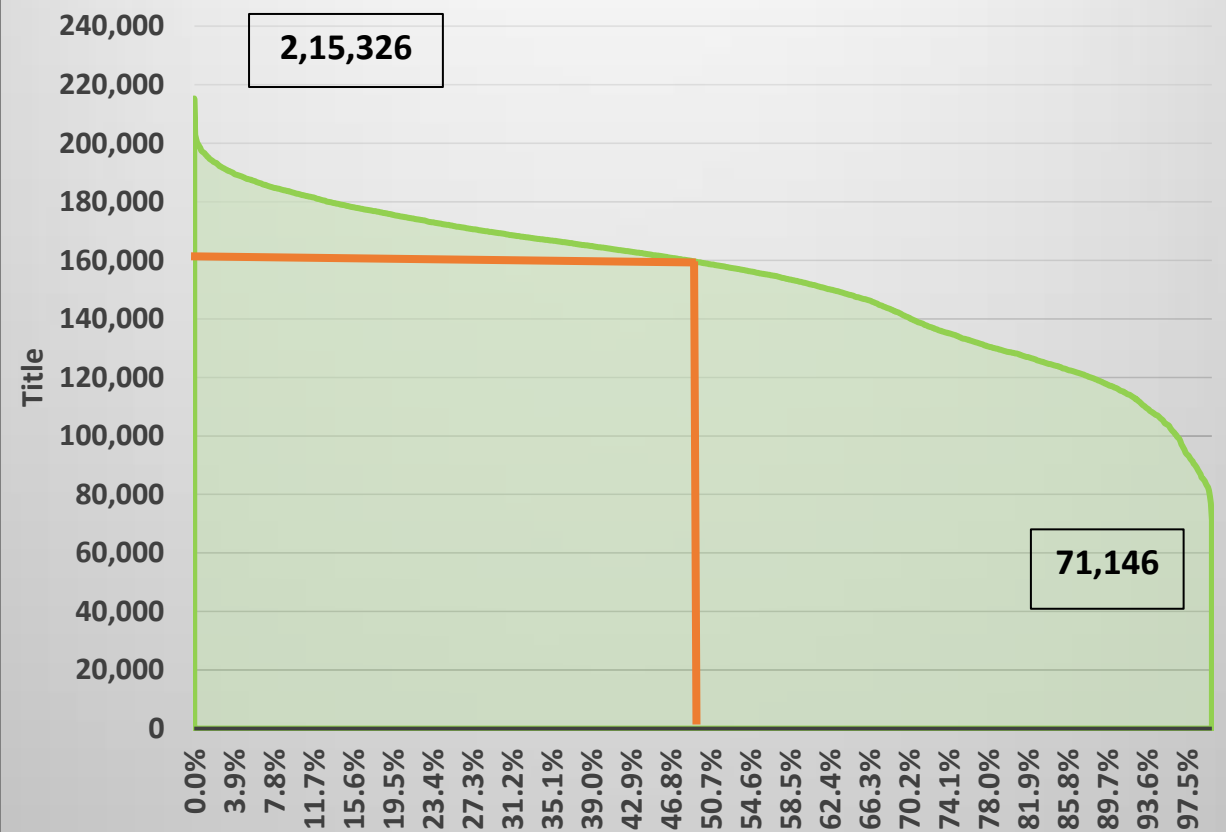


# ALL INDIA LOAD DURATION CURVES (2021-22)

## Total Demand (MW)

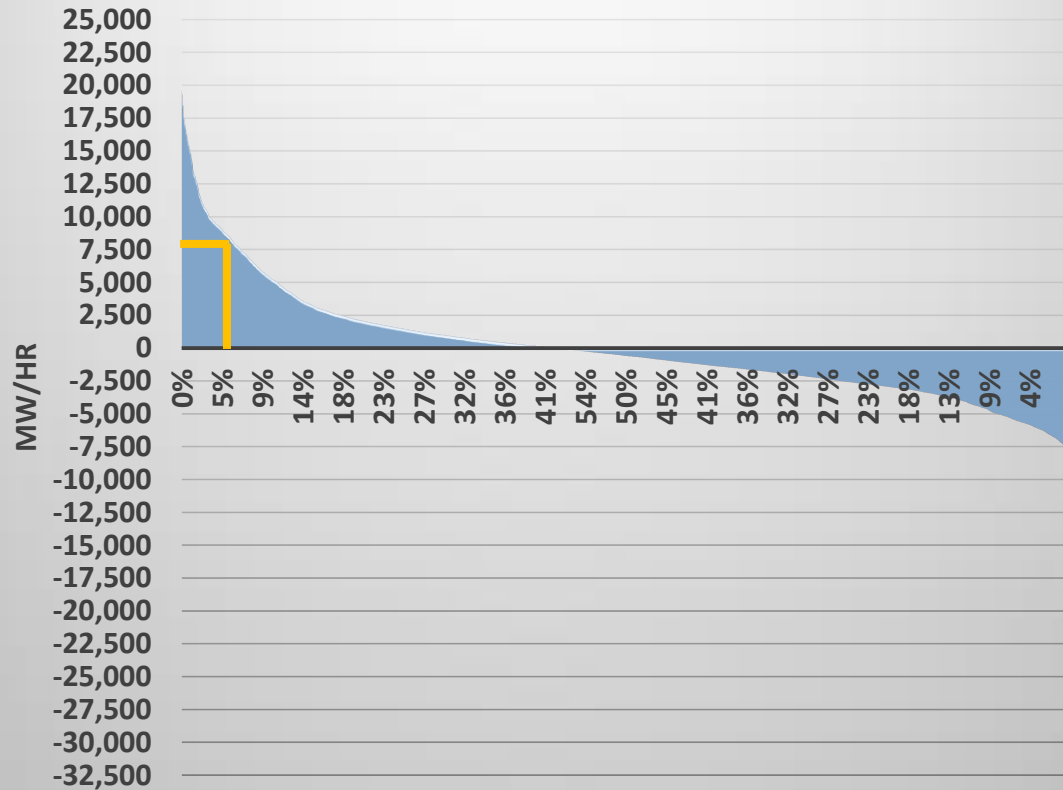


## Net Demand (MW)

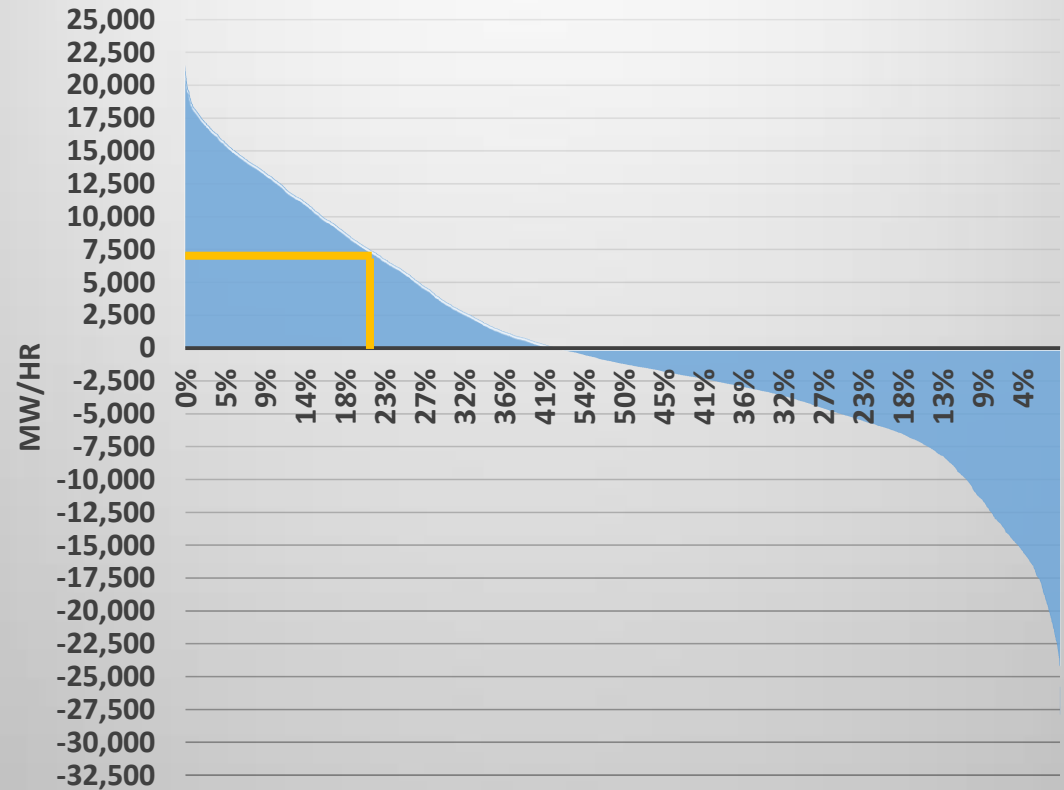


# RAMP DURATION CURVES (2021-22)

Ramping Duration Curve  
(Total Demand)

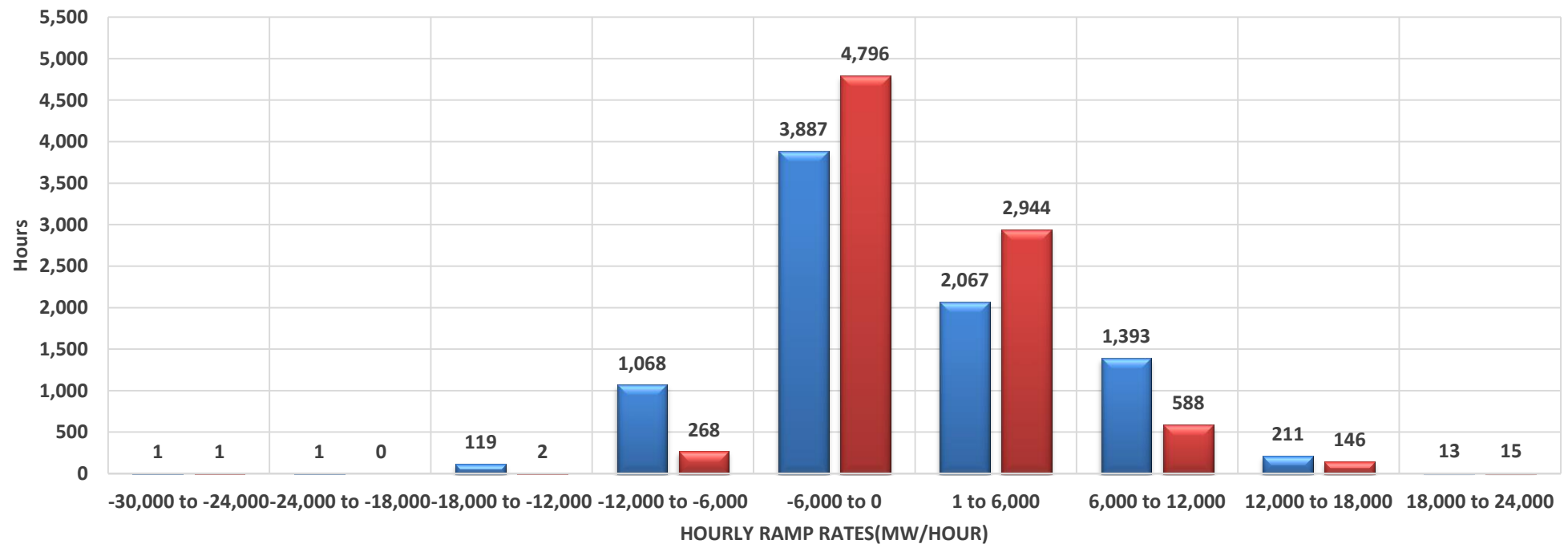


Ramping Duration Curve  
(Net Demand)



# RAMPING CAPABILITIES OF CONVENTIONAL GENERATION

FREQUENCY DISTRIBUTION OF RAMP RATES OVER THE YEAR

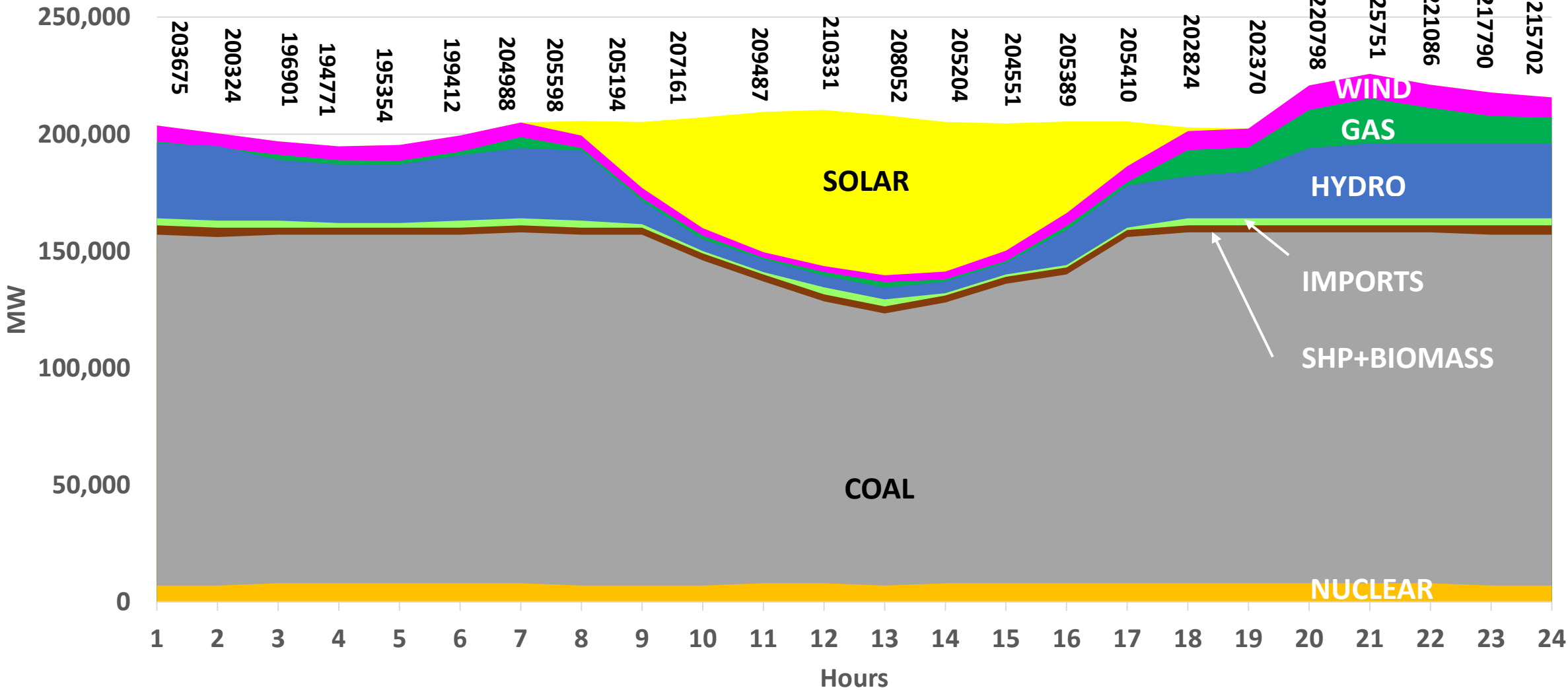


■ Frequency(f1) Net Load
 ■ Frequency(f2) Total Demand



Thank you

**27th March, 2022**  
**(Retirements of Coal during 2017-22 : 22,716 MW)**



■ Solar   
 ■ Wind   
 ■ Gas   
 ■ Hydro   
 ■ Imports   
 ■ Small Hydro +Biomass   
 ■ Coal   
 ■ Nuclear

## Daily Peak Demand (Net) Distribution 2021-22

