

# India's Energy Overview

May 2024

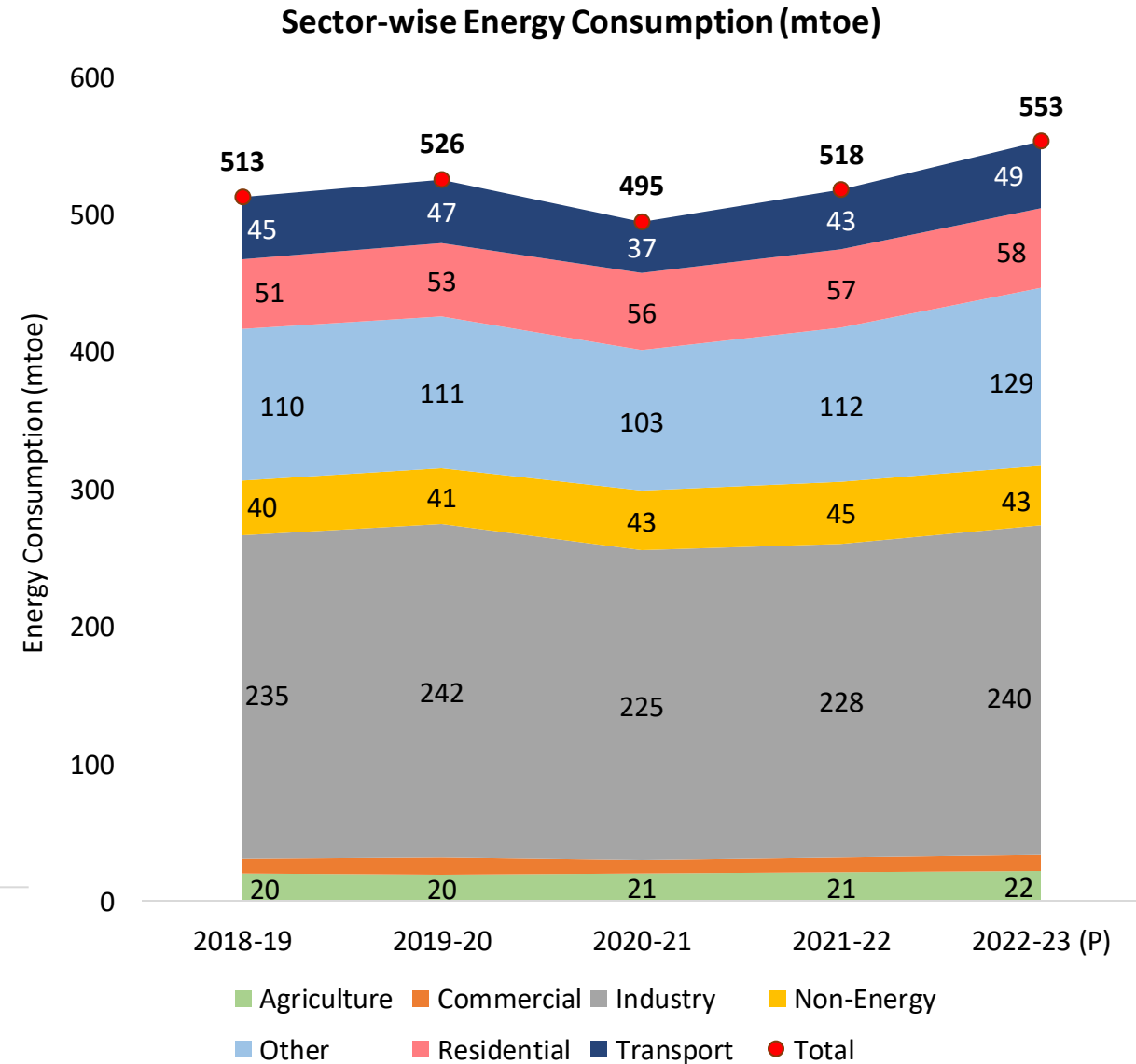
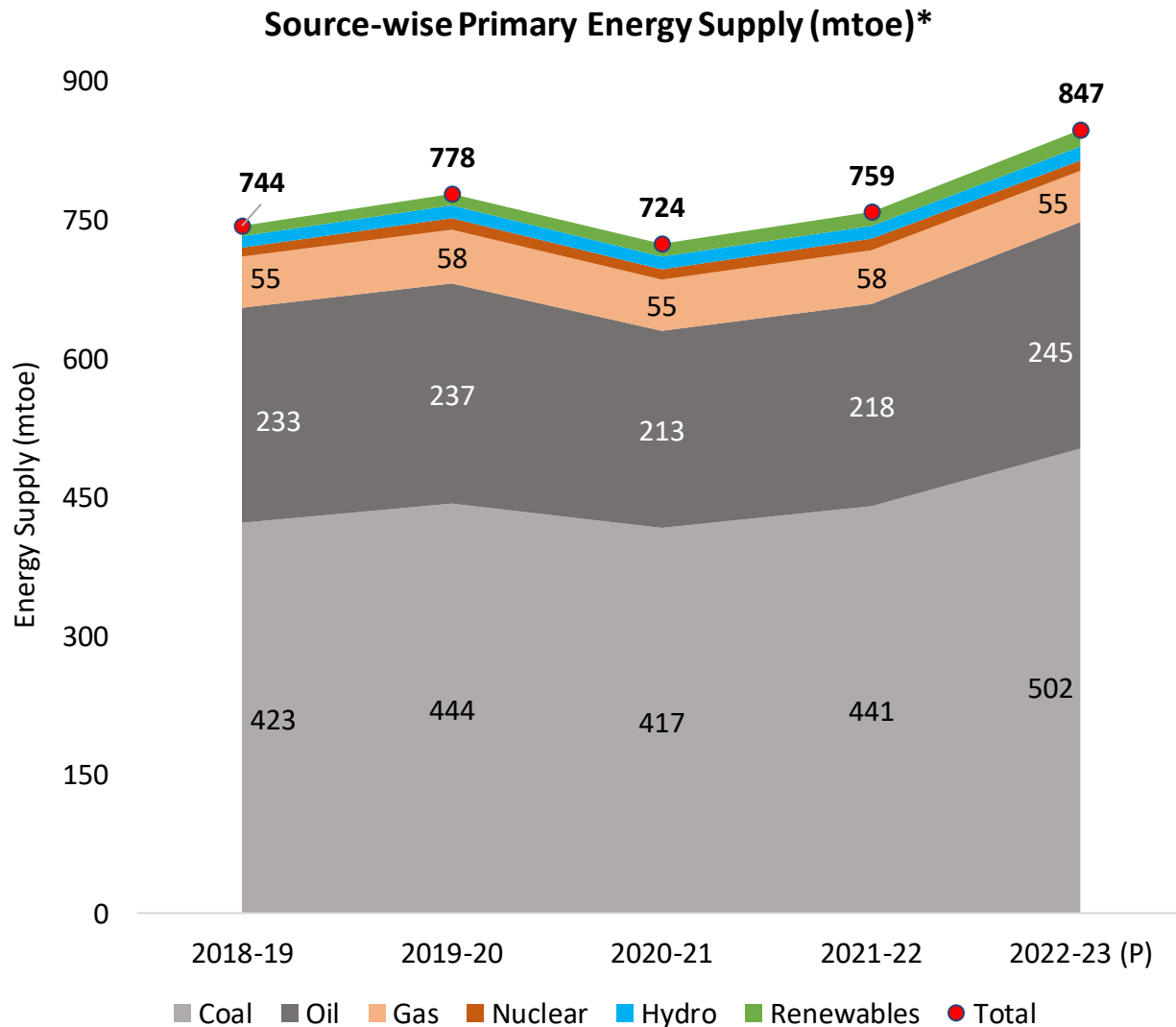


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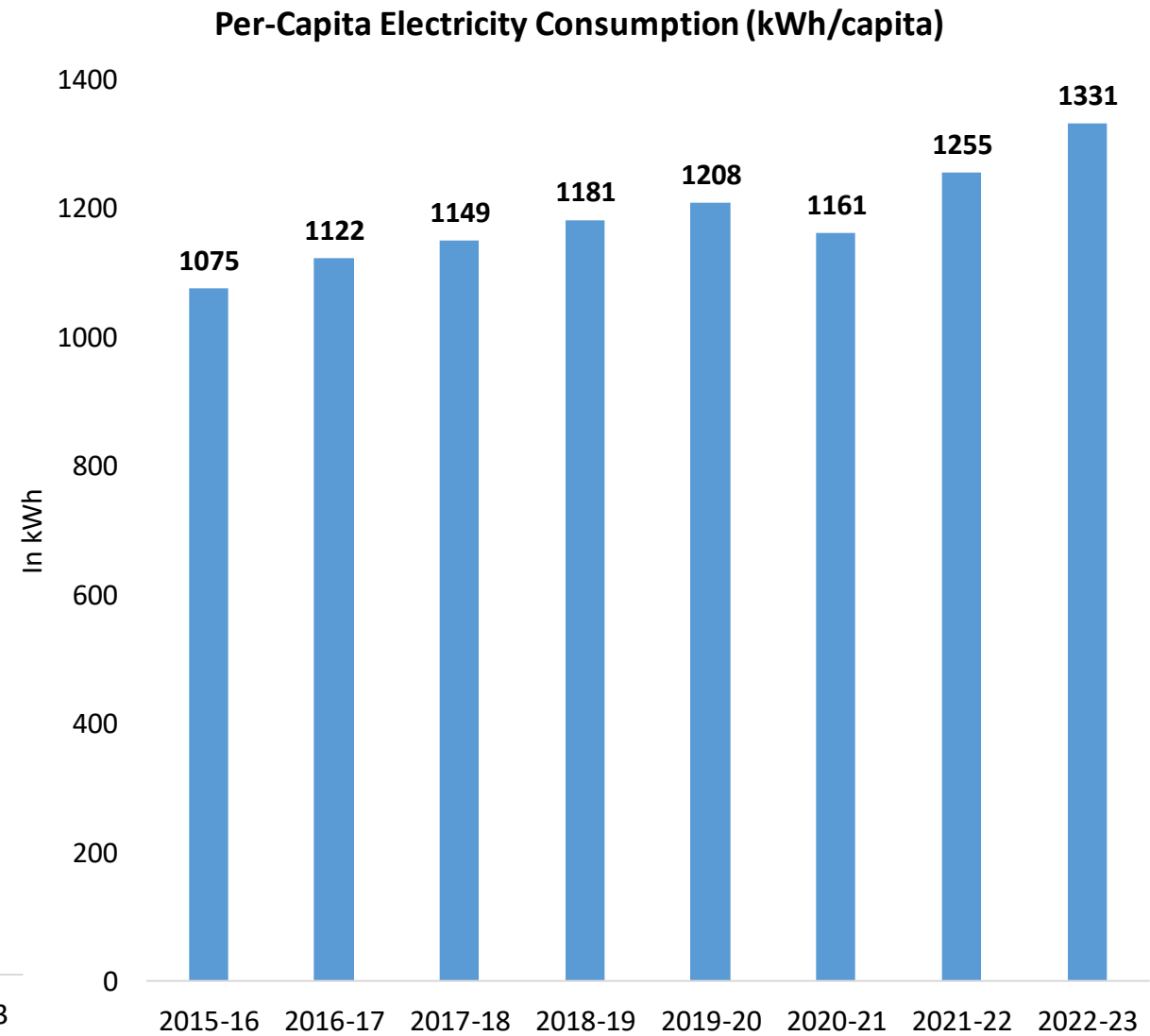
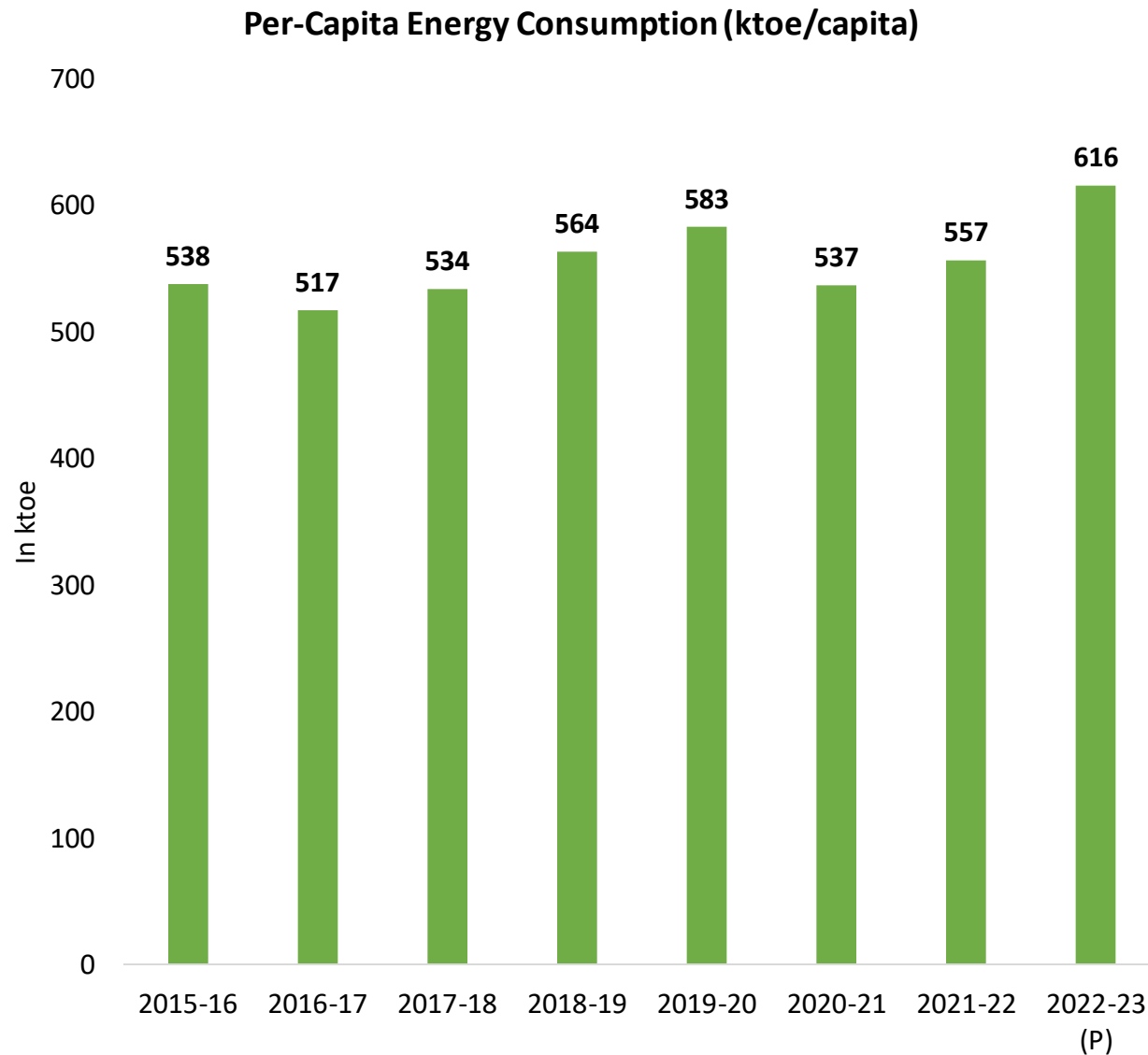
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# Primary Energy Mix\* in India



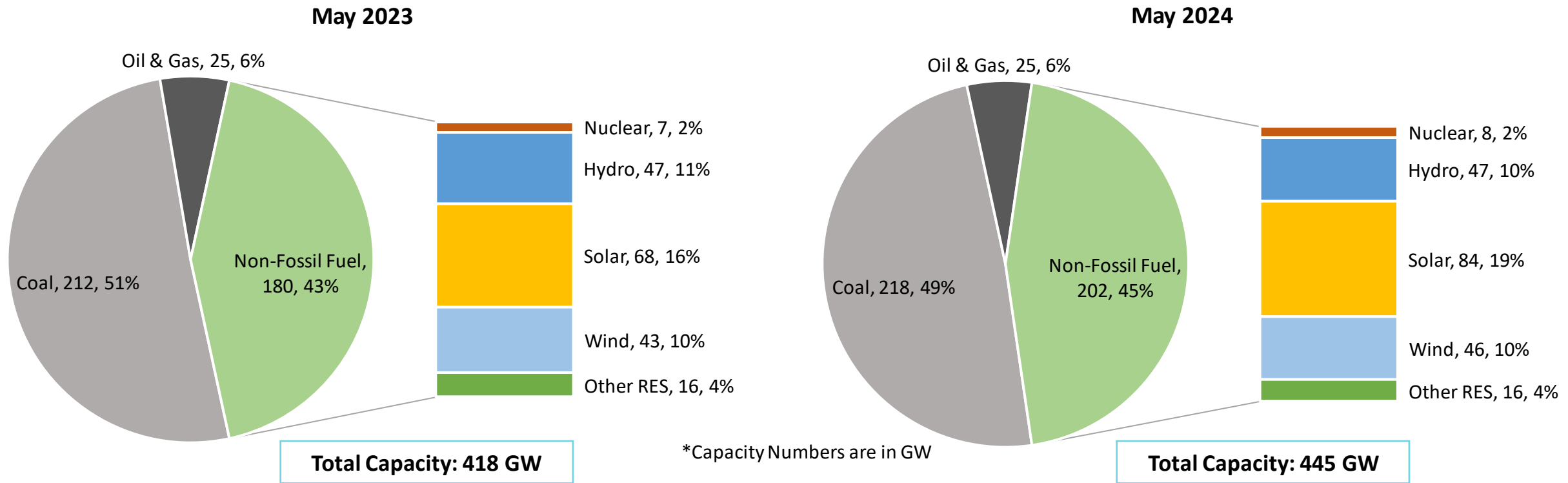
\*Excluding biofuels, waste, and other non-commercial source of energy

# Per-Capita Energy and Electricity Consumption



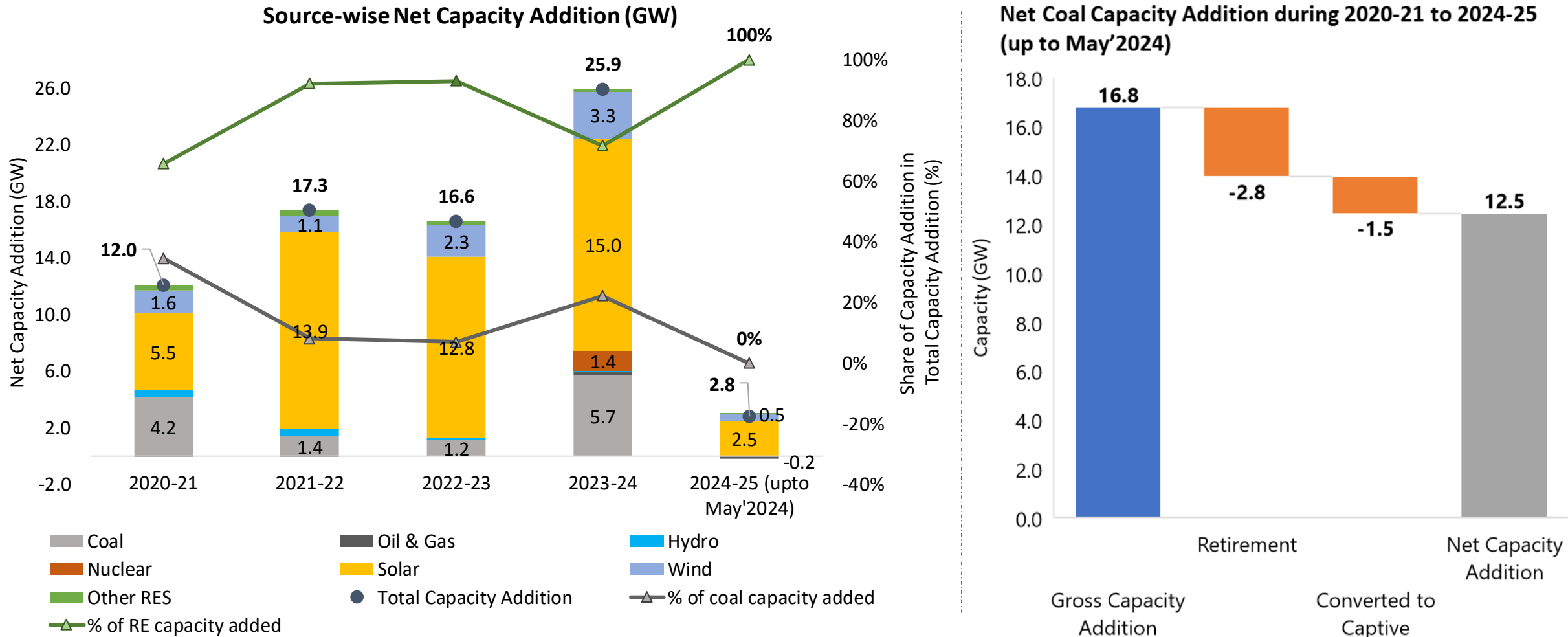
Note: Per Capita energy consumption is calculated on energy supply basis.

# India's Electricity Capacity Mix (Utility-scale)



- India's electricity generating capacity is 445 GW as on May'2024 [coal 218 GW (49%), solar 84 GW (19%), hydro 47 GW (10%), and wind 46 (10%)].
- As on May'2024, the share of non-fossil-based electricity capacity is 45% against the set target of 50% non-fossil capacity by 2030.
- As on May'2024, India's renewable energy capacity (including large hydro) stood at 194 GW out of 445 GW.

# India's Electricity Capacity Addition in last 5 years



- A total of 61 GW of generation capacity has been added in RE (Hydro, solar, wind, and other RES) over the past 5 years (2020-21 to 2024-25), whereas the net coal capacity addition during the same period was 13 GW, mostly in the central sector.



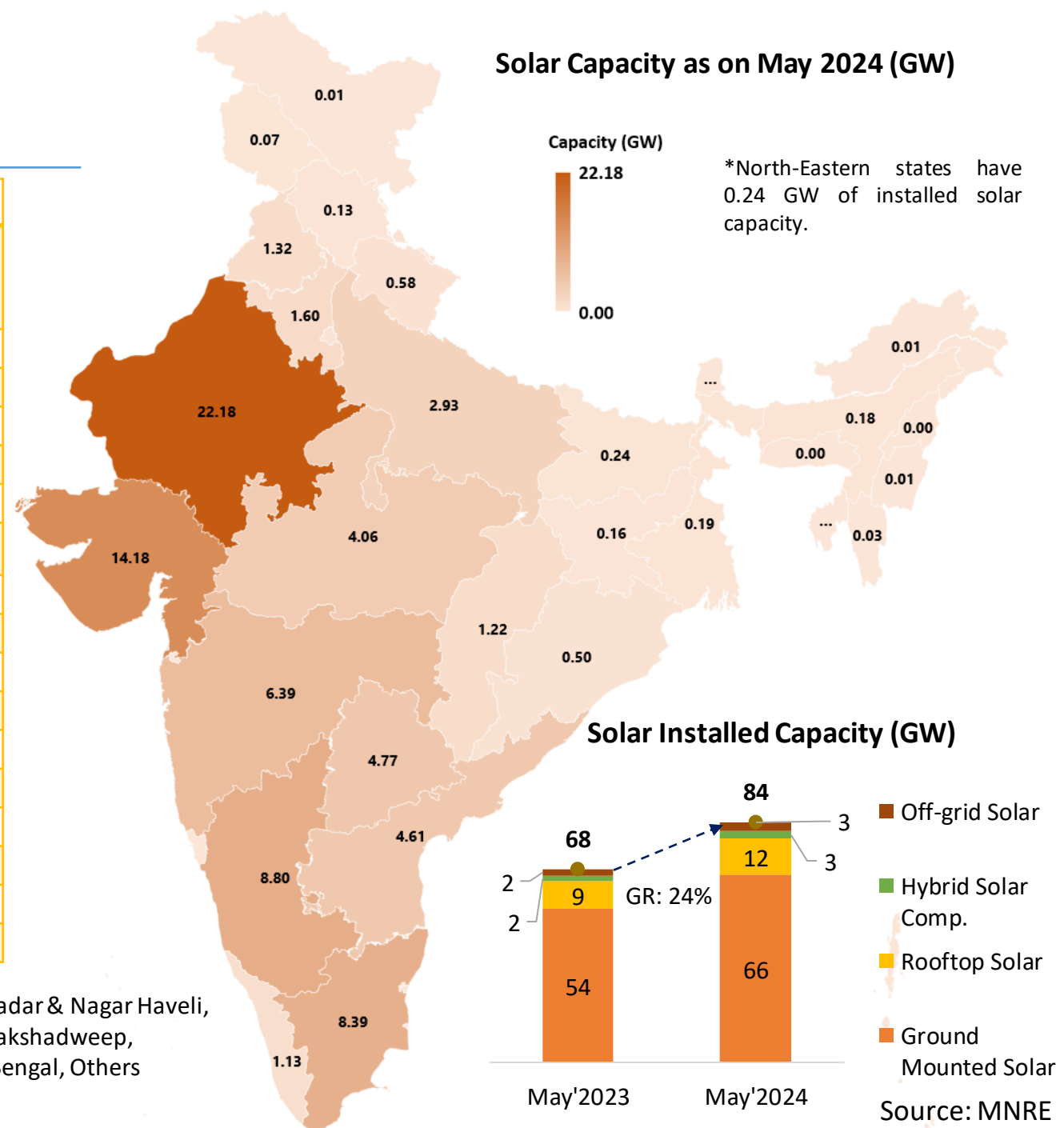
# State-wise Solar Capacity

as on May 2024

State-wise installed capacity of Solar Power (GW)					
States	Ground Mounted	Rooftop	Solar Component in Hybrid	Off Grid	Total Solar Power
Rajasthan	18.29	1.21	1.98	0.70	22.18
Gujarat	9.85	3.67	0.59	0.07	14.18
Karnataka	8.17	0.59	0.00	0.04	8.80
Tamil Nadu	7.67	0.65	0.00	0.07	8.39
Maharashtra	3.85	2.14	0.00	0.40	6.39
Telangana	4.36	0.40	0.00	0.01	4.77
Andhra Pradesh	4.32	0.20	0.00	0.09	4.61
Madhya Pradesh	3.60	0.36	0.00	0.10	4.06
Uttar Pradesh	2.45	0.27	0.00	0.22	2.93
Haryana	0.27	0.64	0.00	0.70	1.60
Punjab	0.89	0.36	0.00	0.08	1.32
Chhattisgarh	0.75	0.08	0.00	0.39	1.22
Kerala	0.32	0.78	0.00	0.02	1.13
Uttarakhand	0.30	0.26	0.00	0.01	0.58
Others	1.00	0.85	0.00	0.27	2.11
<b>All India</b>	<b>66.07</b>	<b>12.46</b>	<b>2.57</b>	<b>3.18</b>	<b>84.28</b>

Others include- Andaman & Nicobar, Arunachal Pradesh, Assam, Bihar, Chandigarh, Dadar & Nagar Haveli, Daman & Diu, Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Ladakh, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry, Sikkim, Tripura, West Bengal, Others

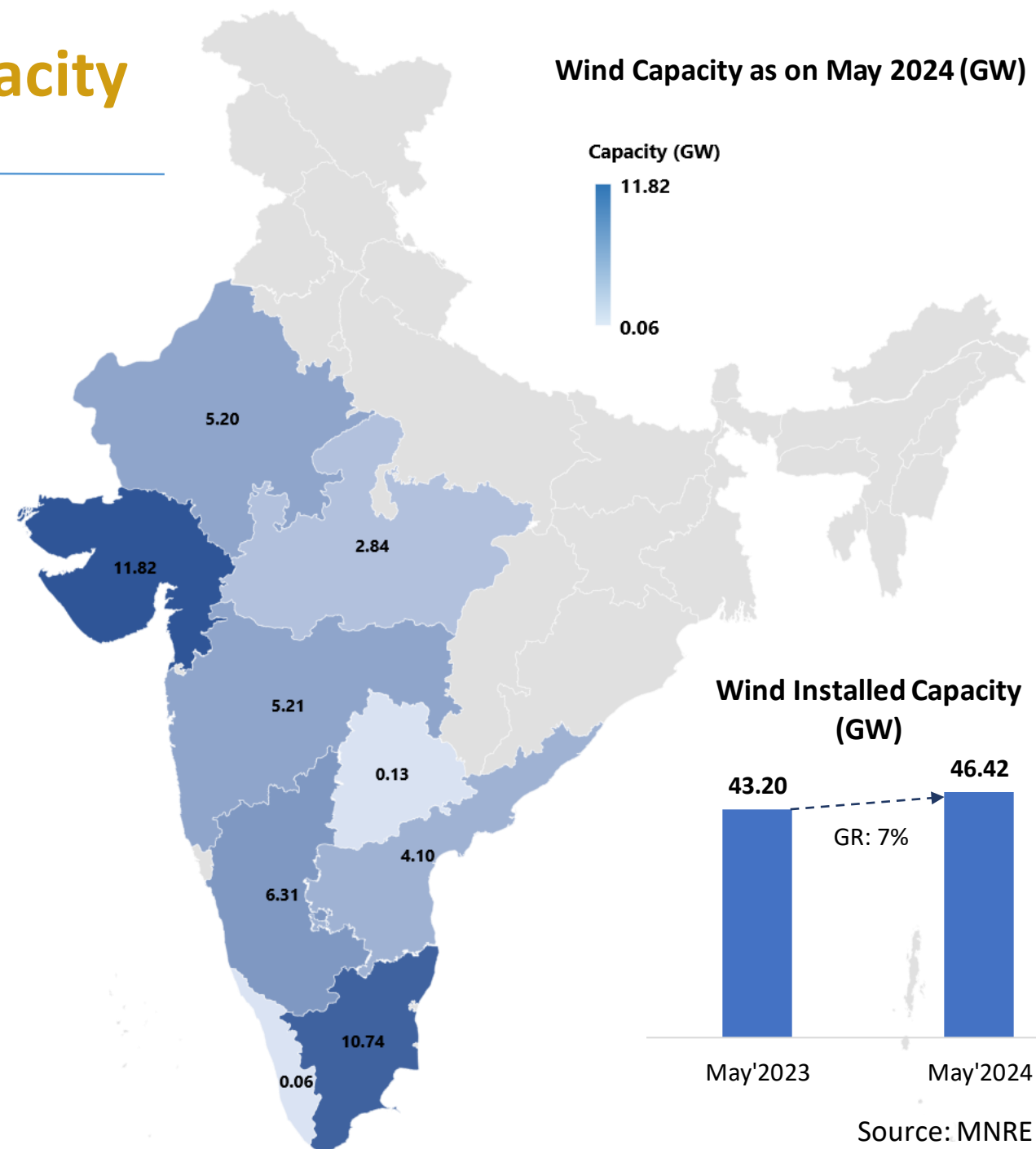
## Solar Capacity as on May 2024 (GW)



# State-wise Wind Onshore Capacity

as on May 2024

State-wise installed capacity of Wind (Onshore) Power	
States	Installed Capacity (GW)
Gujarat	11.82
Tamil Nadu	10.74
Karnataka	6.31
Maharashtra	5.21
Rajasthan	5.20
Andhra Pradesh	4.10
Madhya Pradesh	2.84
Telangana	0.13
Kerala	0.06
<b>India Total</b>	<b>46.42</b>

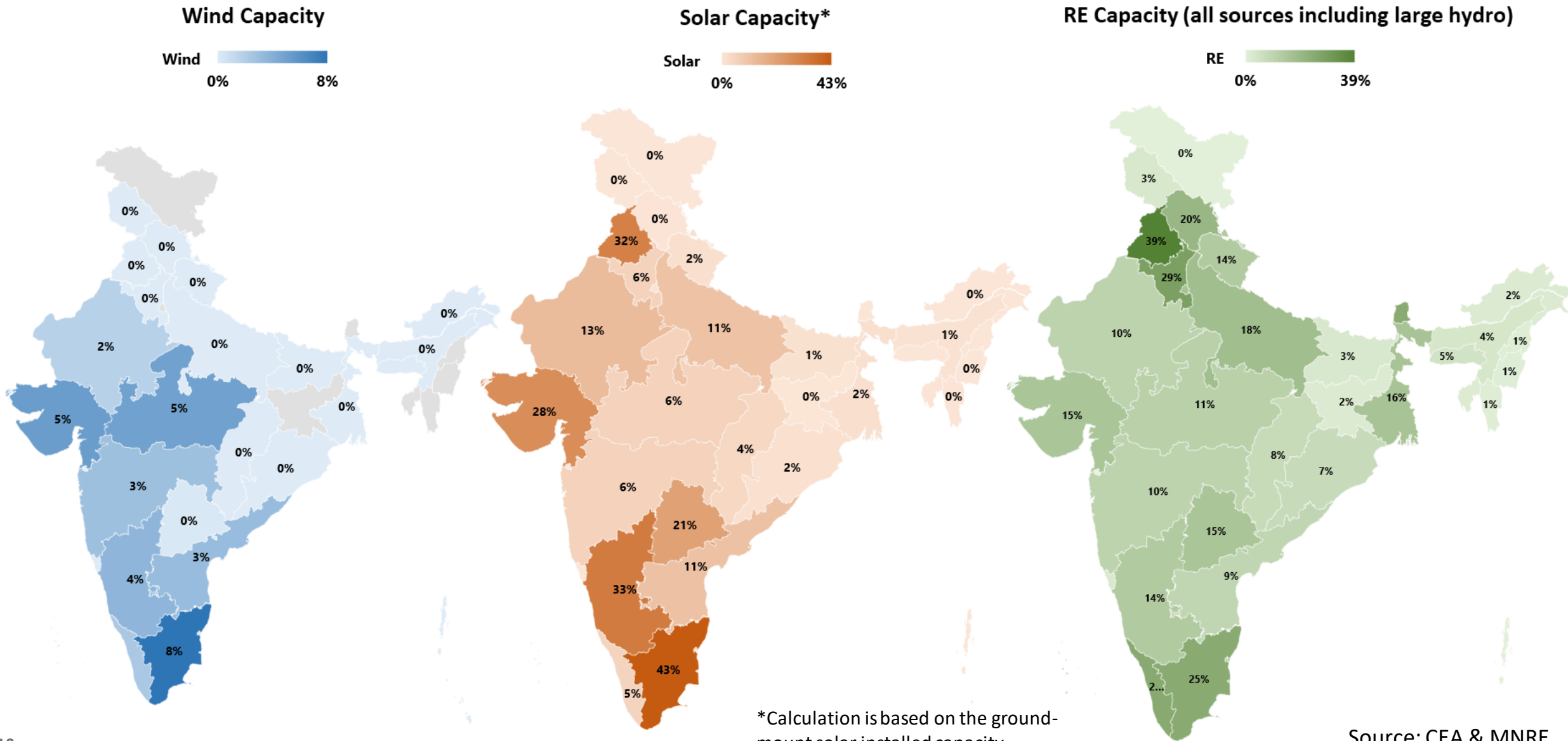






# RE Potential and Installed Capacity (2/2)

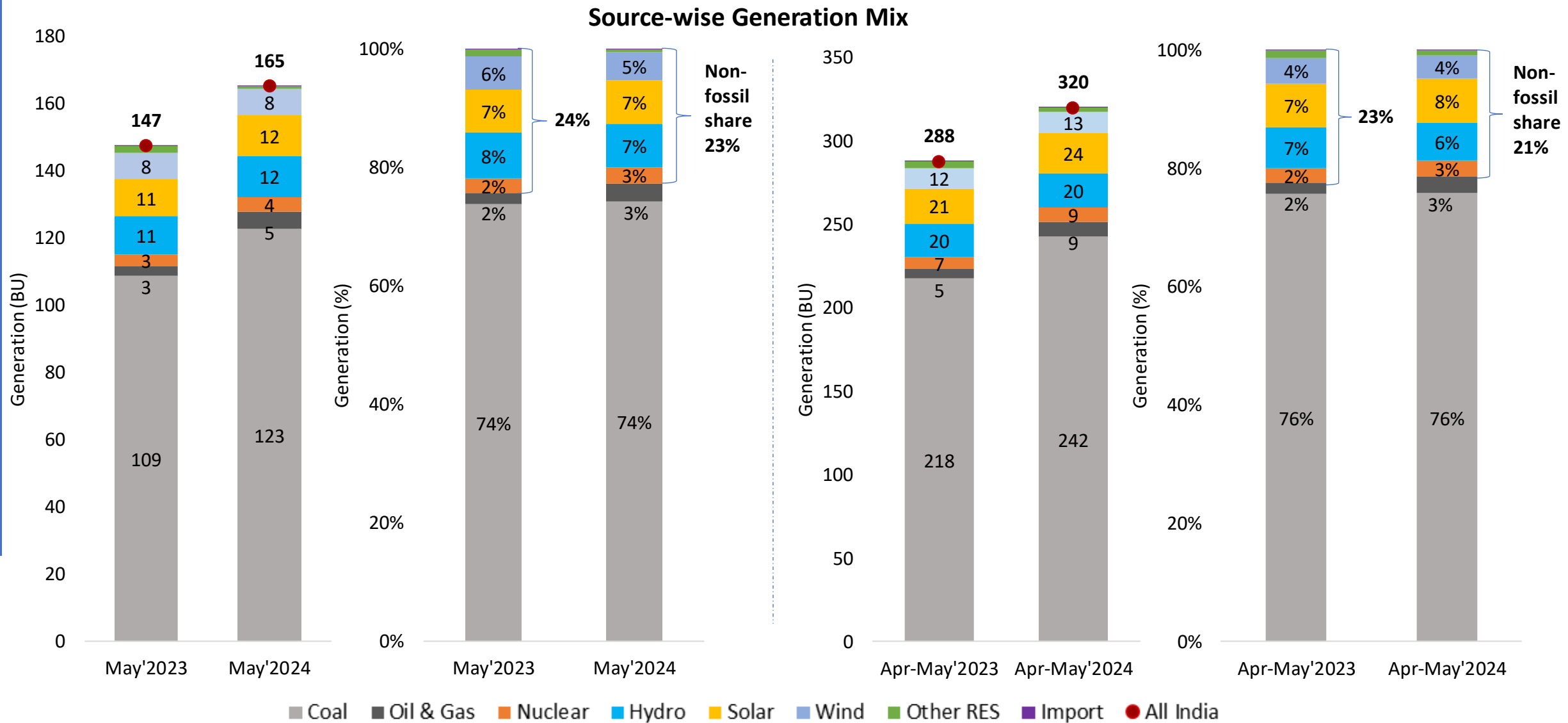
RE Installed capacity as a Percentage of the total resource potential in the state as on May 2024



\*Calculation is based on the ground-mount solar installed capacity.

Source: CEA & MNRE

# India's Electricity Generation Mix

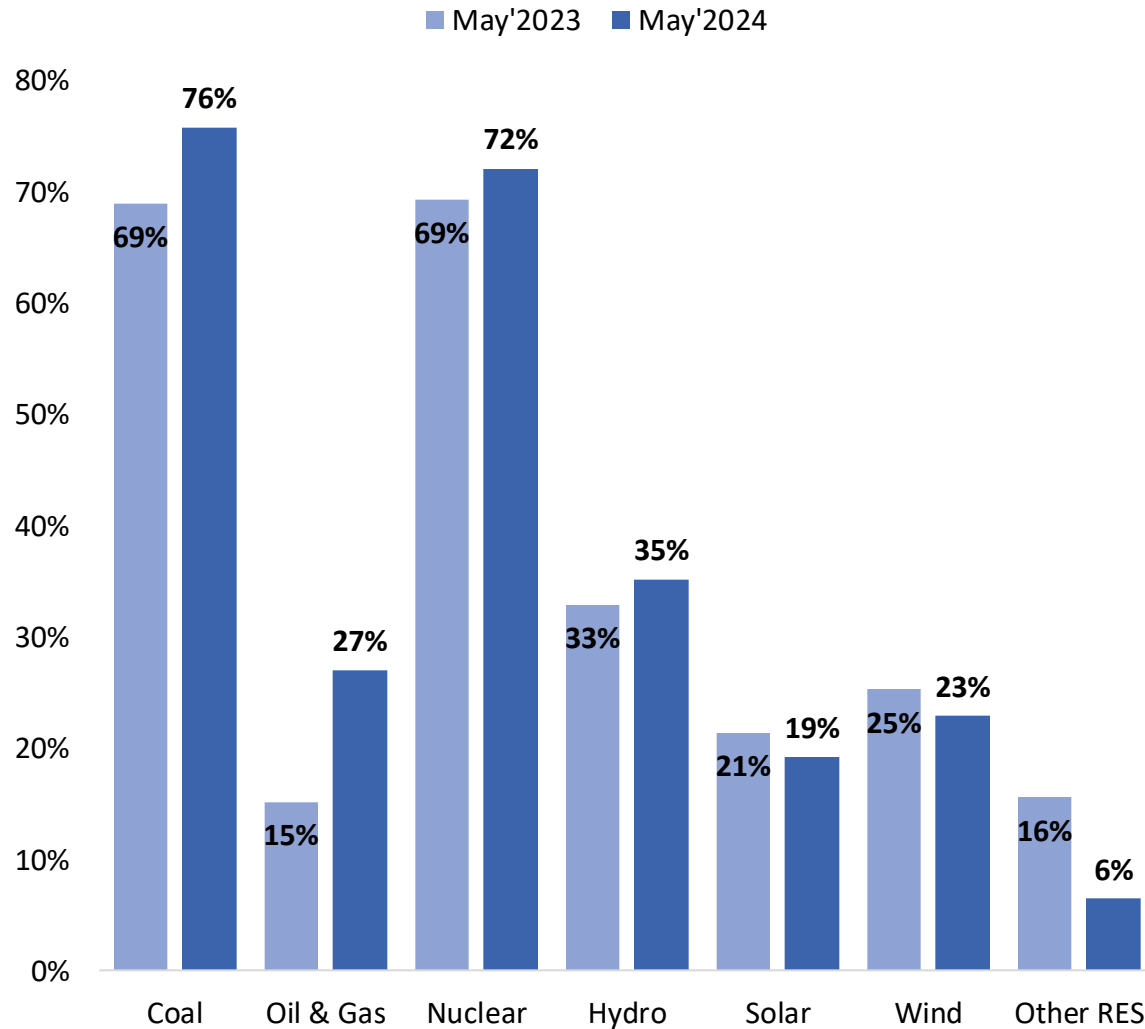


NOTE: The generation data for May'2024 is provisional.

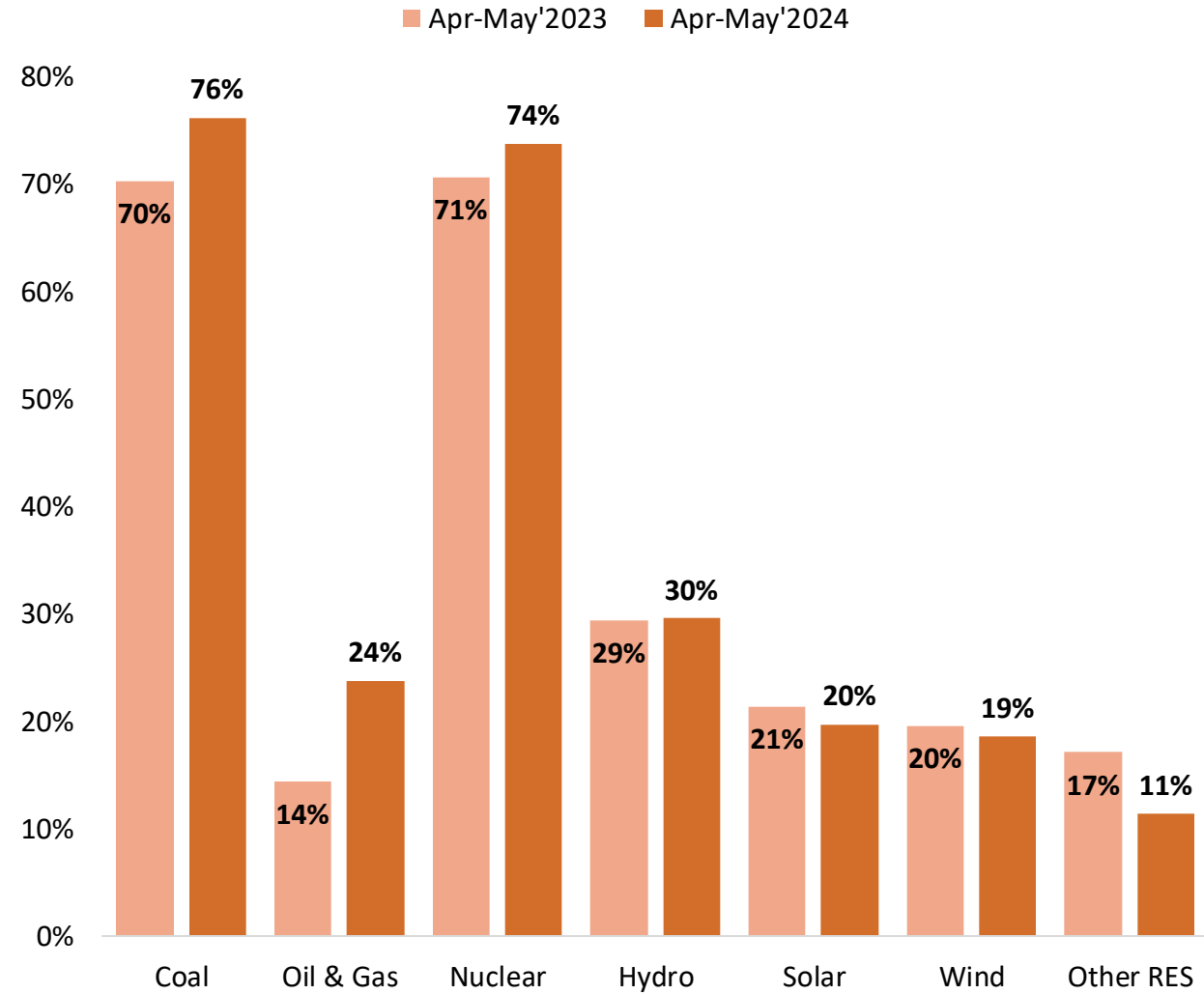
Source: CEA

# Source-wise PLF/ CUF

Source-wise PLF/ CUF in May (%)



Source-wise PLF/ CUF Comparison (%)

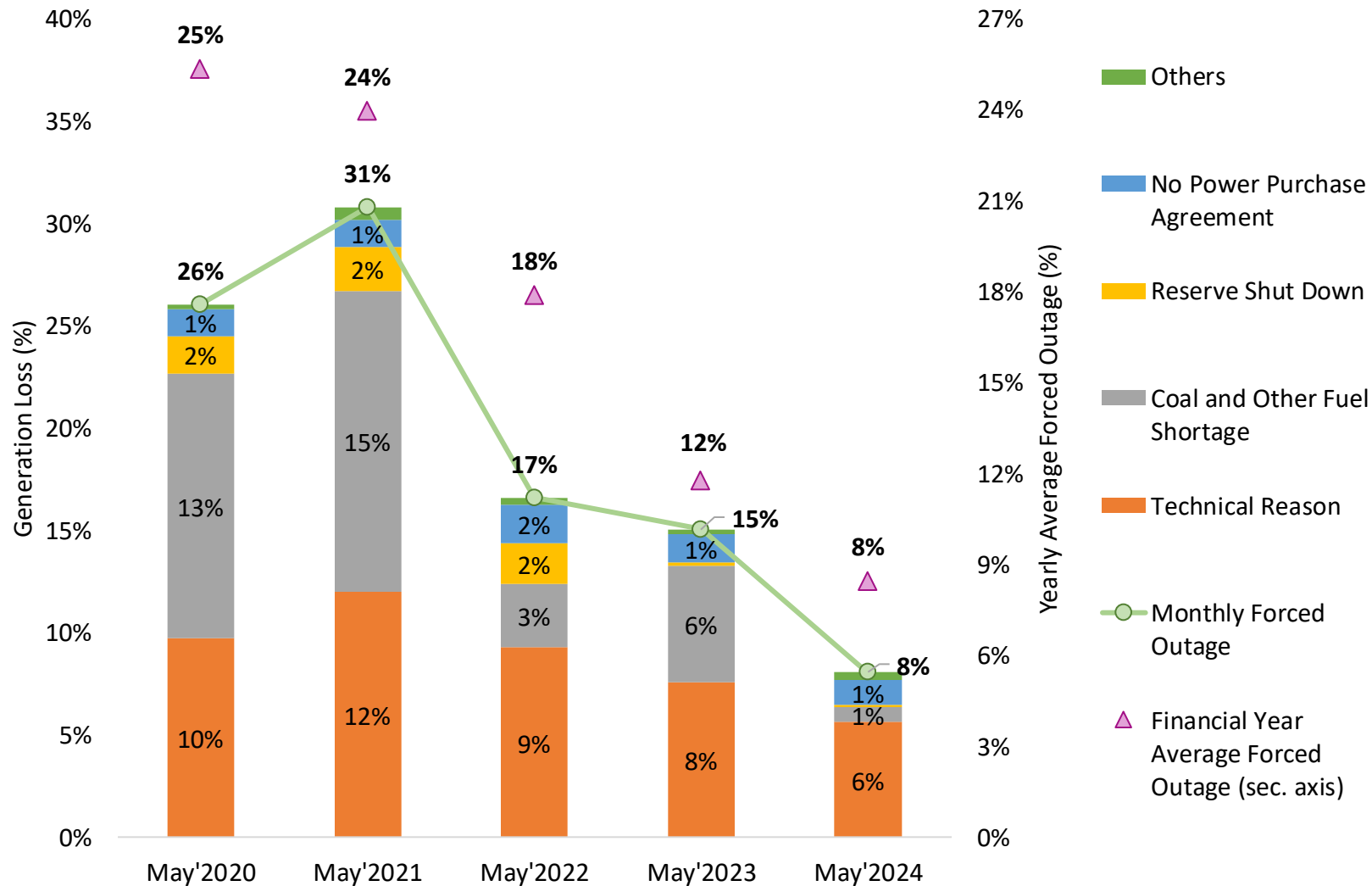


NOTE: The PLF/ CUF data is based on provisional generation for May'2024.

Source: CEA & MNRE

# Thermal Generation Loss and Reasons for Forced Outages

Forced Outages for May over the years



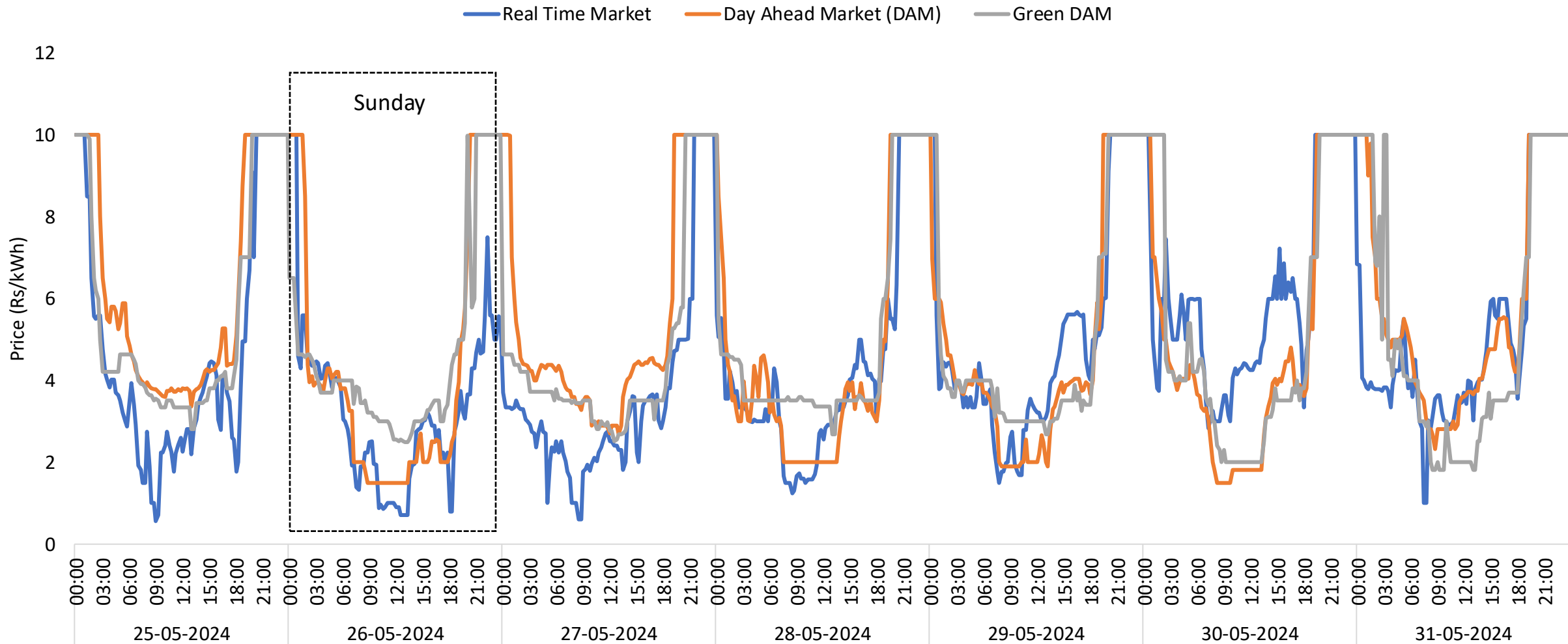
Year/ Month		Average Forced Outage Share
Yearly	FY 2022-23	18%
	FY 2023-24	12%
	FY 2024-25 (up to May'2024)	8%
Monthly	May'2022	17%
	May'2023	15%
	May'2024	8%

Thermal includes only Coal and Lignite Plants.

Source: ICED

# Indian Electricity Exchange (IEX) Market Snapshot

## Market Clearing Prices of last 7 days of May 2024

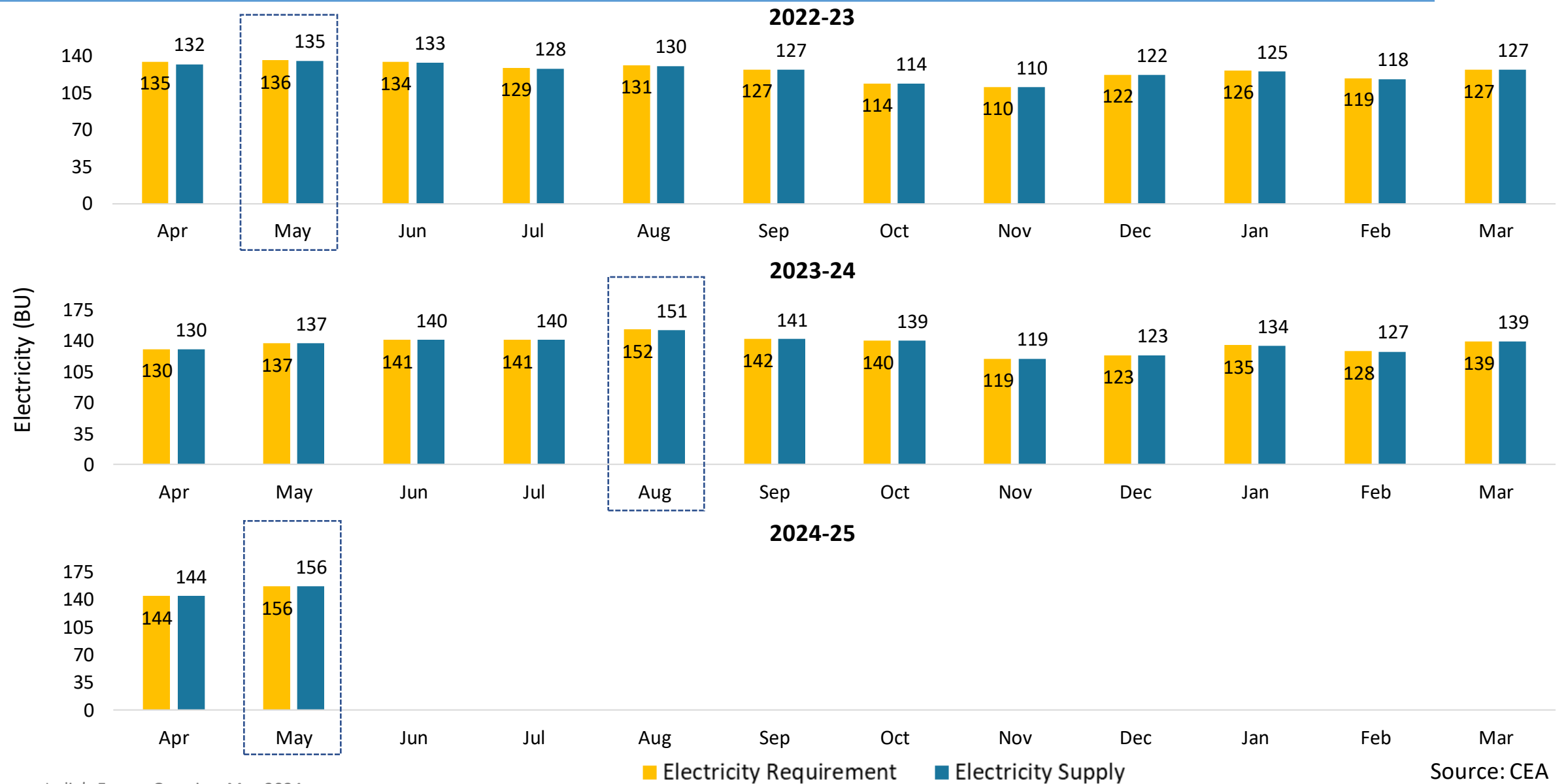


In April 2023, CERC revised the price ceiling from ₹12/kWh to ₹10/kWh in the power exchange market.



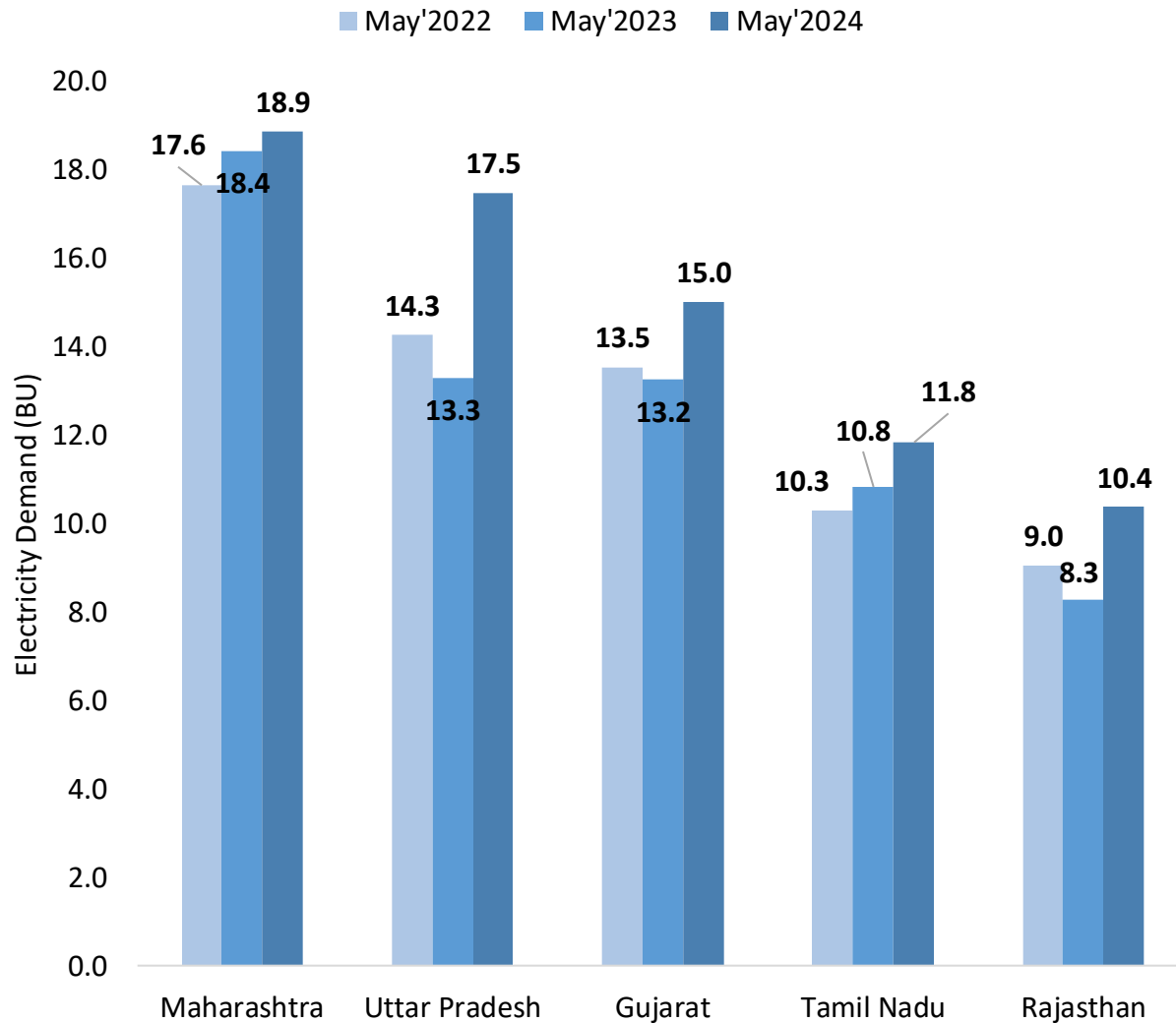


# India's Monthly Electricity Requirement and Supply

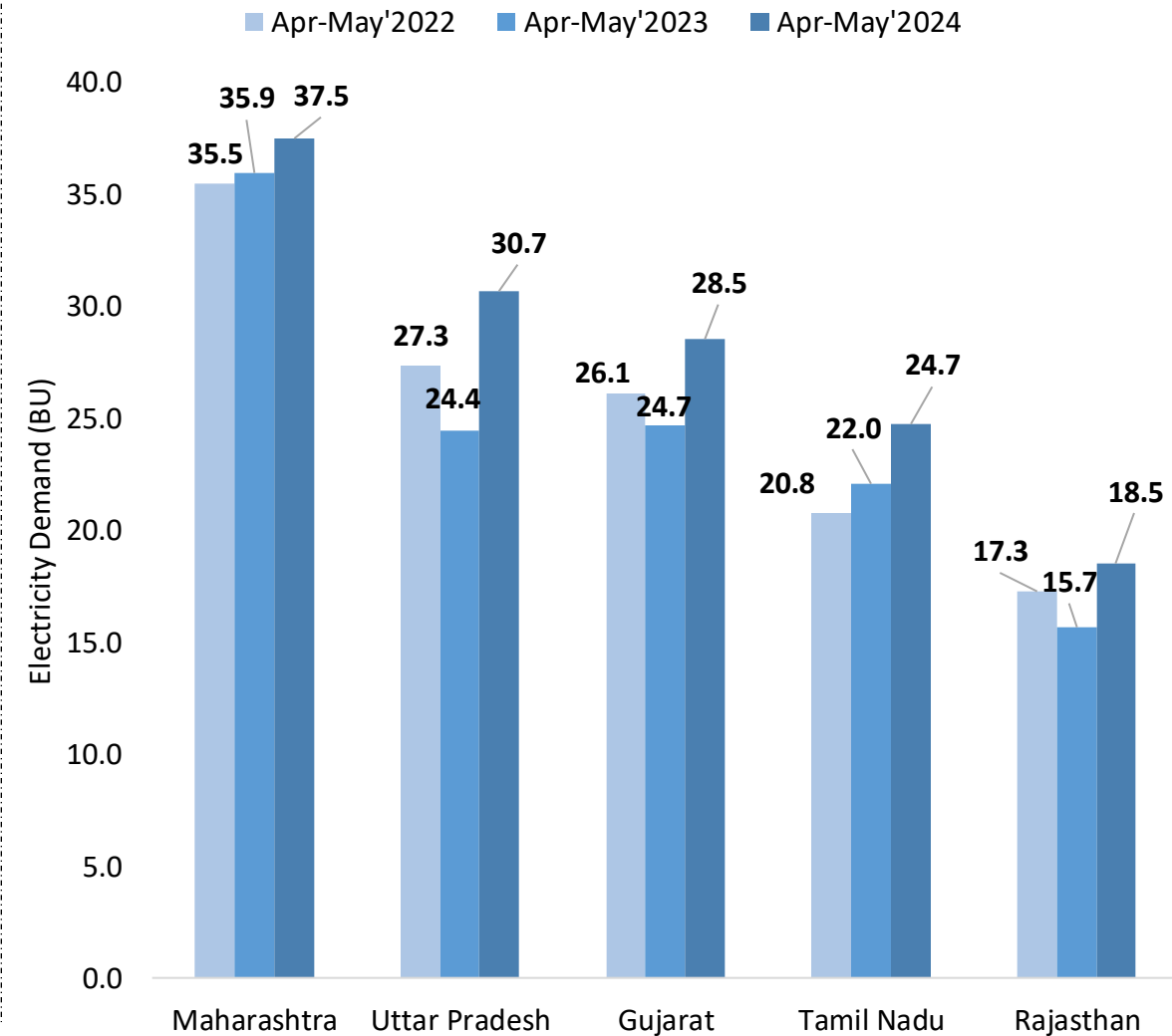


# Monthly Electricity Demand of the top 5 states

## States with Highest Electricity Demand in May (BU)



## States with Highest Electricity Demand (BU)

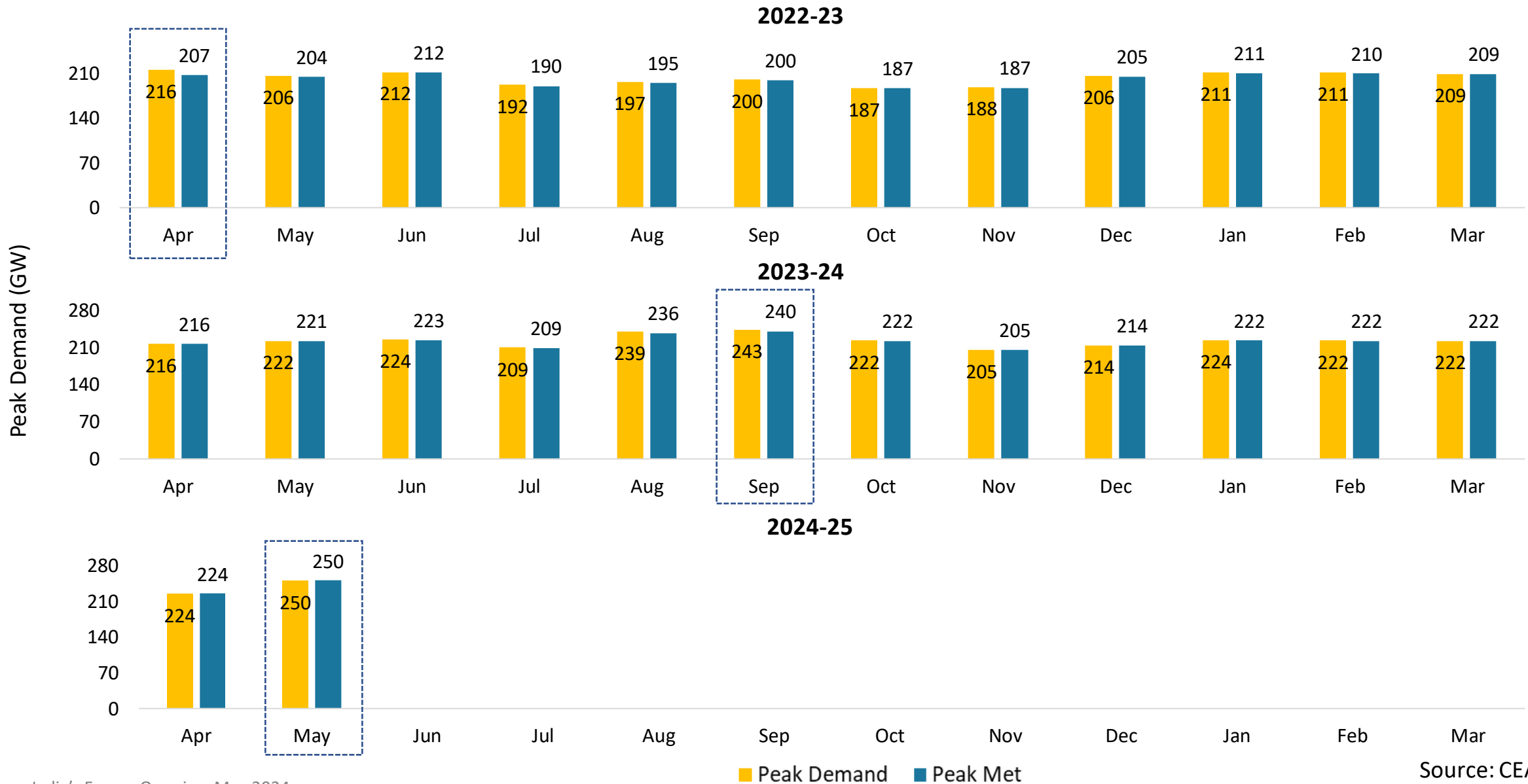


Note: The electricity demand data for May'24 is Provisional.

Source: CEA

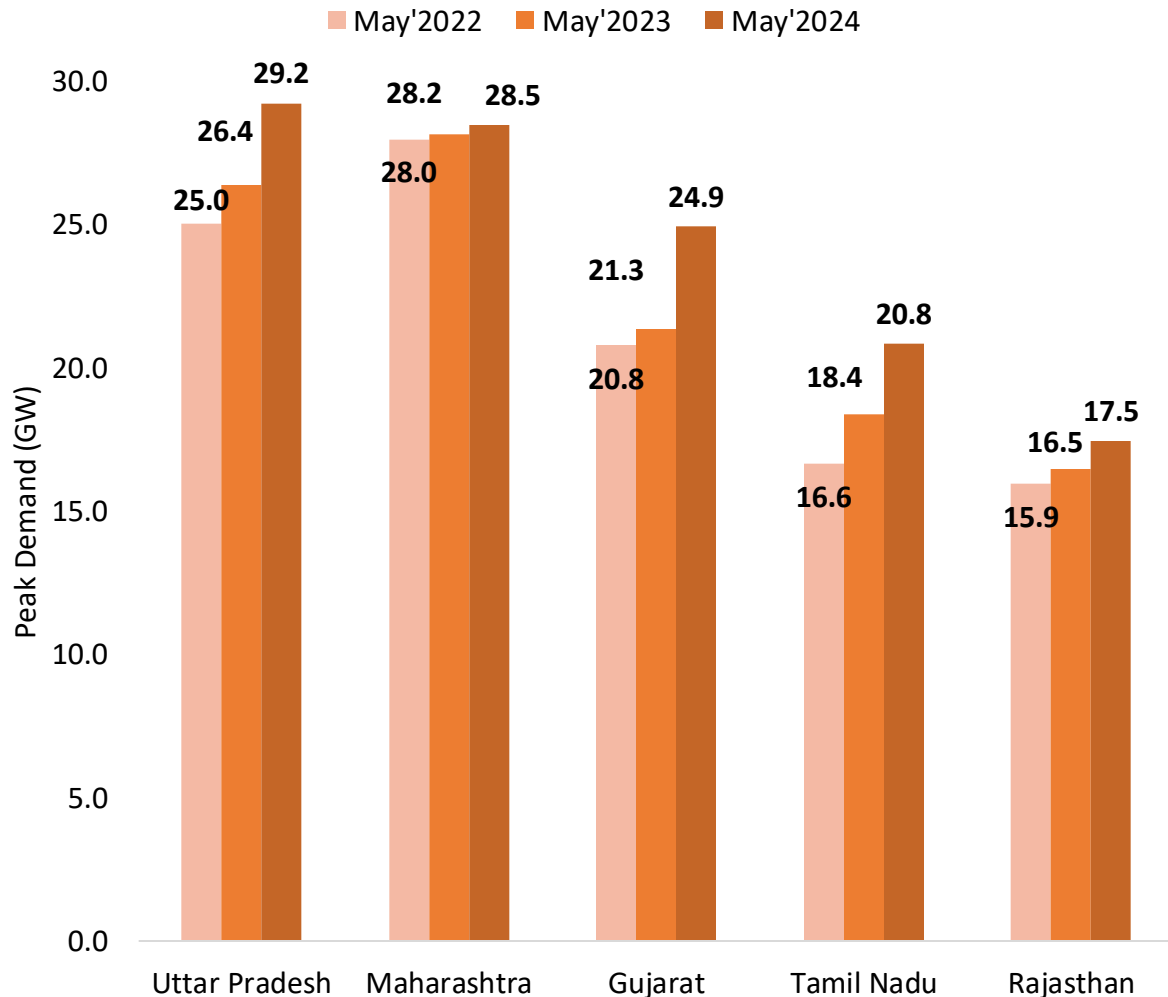


# India's Monthly Peak Electricity Demand and Supply

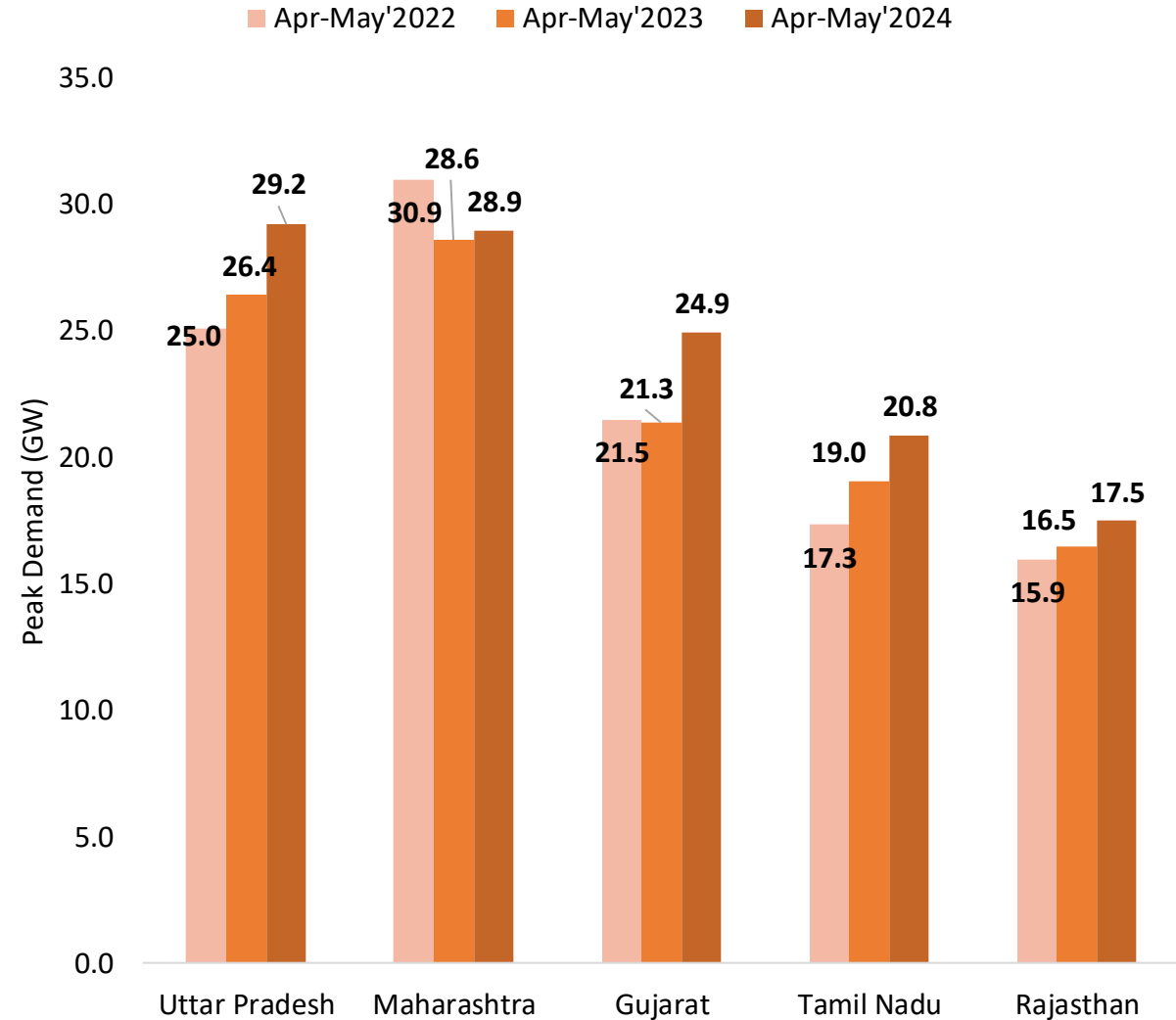


# Monthly Peak Electricity Demand of the top 5 states

## States with Highest Peak Electricity Demand in May (GW)



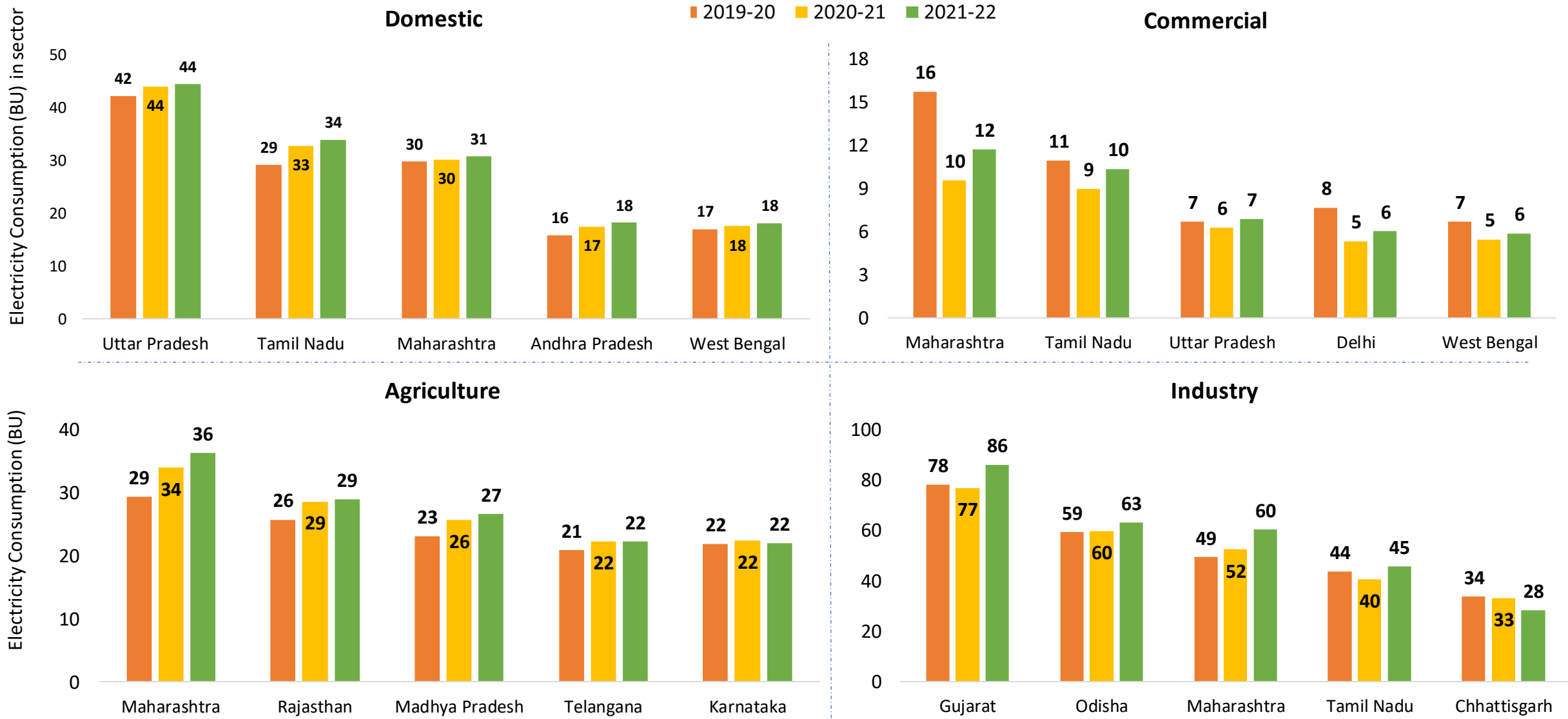
## States with Highest Peak Electricity Demand (GW)



Note: The peak electricity demand data for May'24 is Provisional.

Source: CEA

# Electricity Consumer-category wise top 5 States

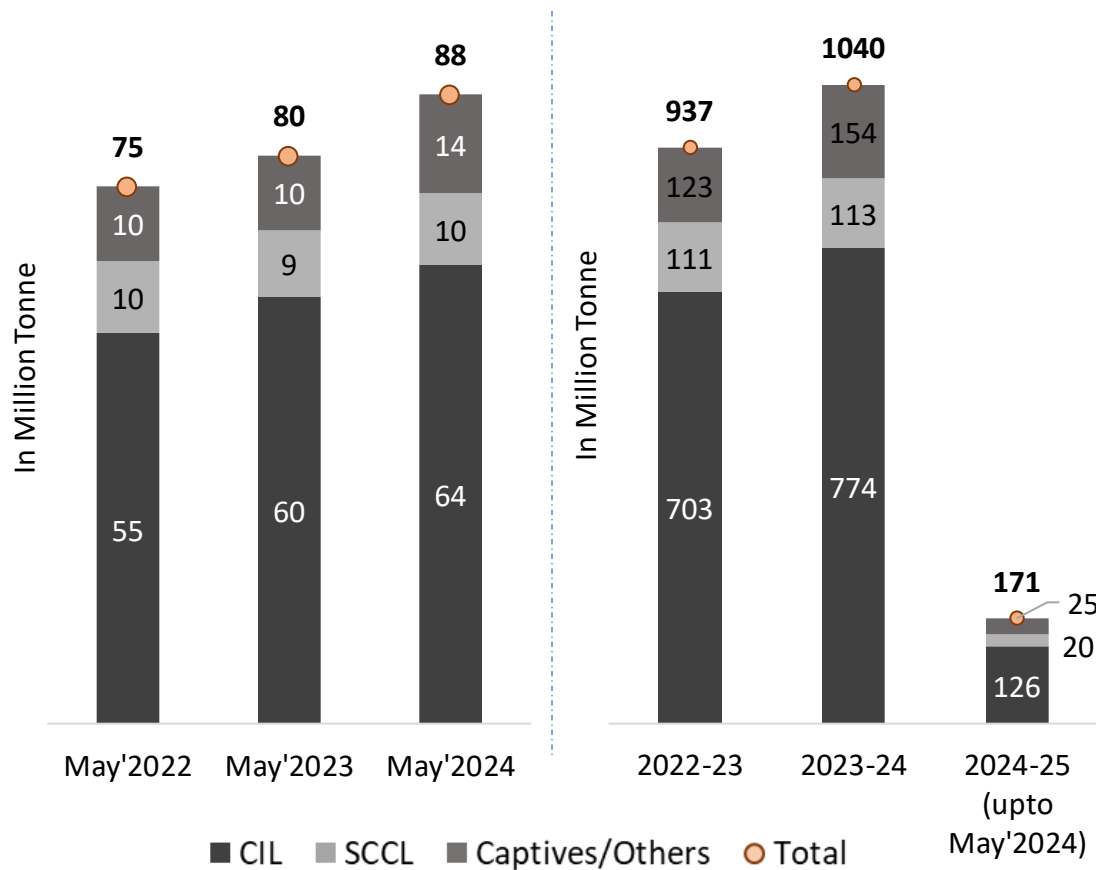


NOTE: Top 5 States under consumer-categories are selected on the basis of 2021-22

Source: CEA

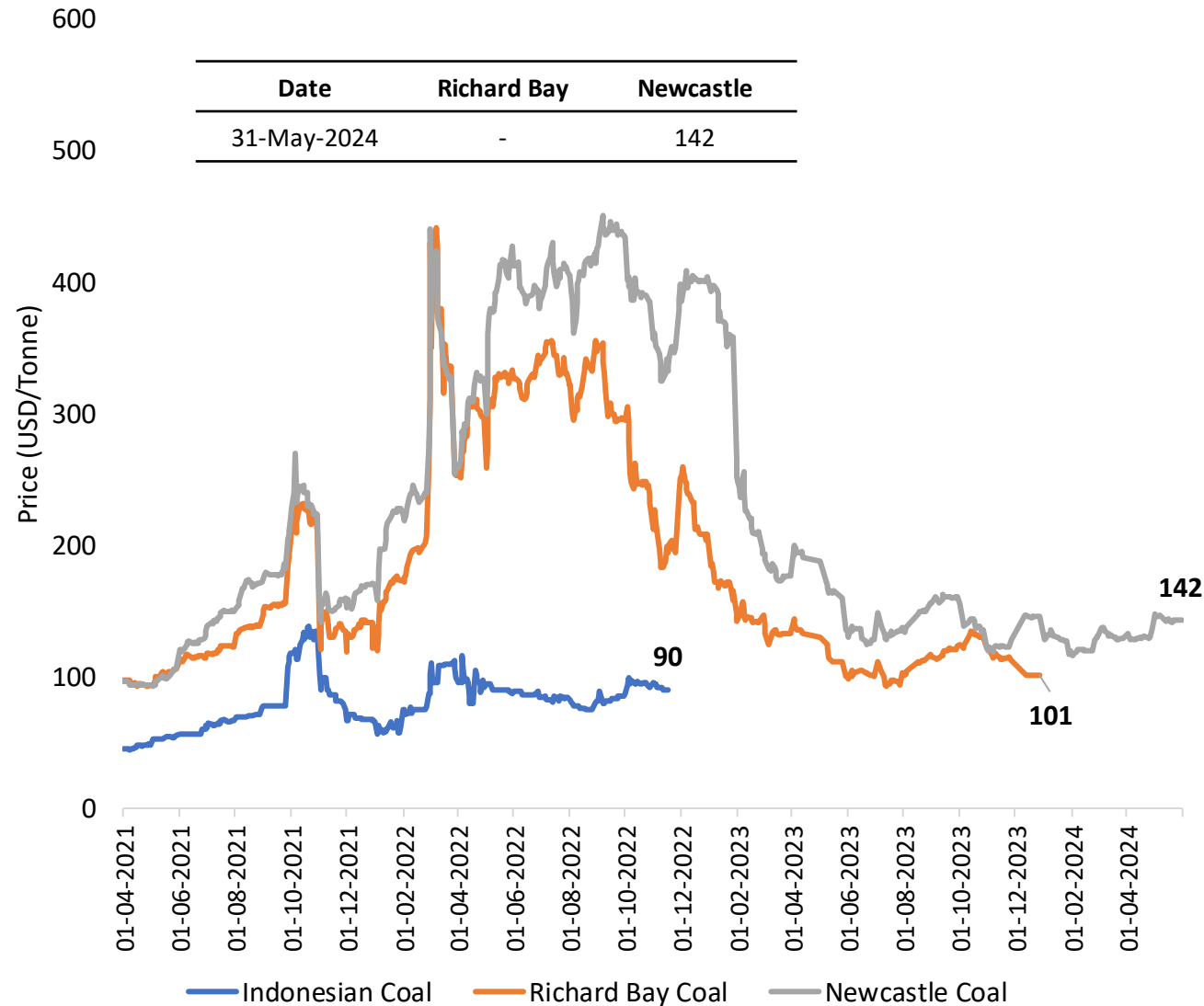
# Monthly Coal Statistics

### Monthly/ Annual Coal Production (in Million Tonnes)



India's coal production increased in May'2024 (88 MT) by 11% as compared to May'2023 (80 MT).

### International Coal Prices

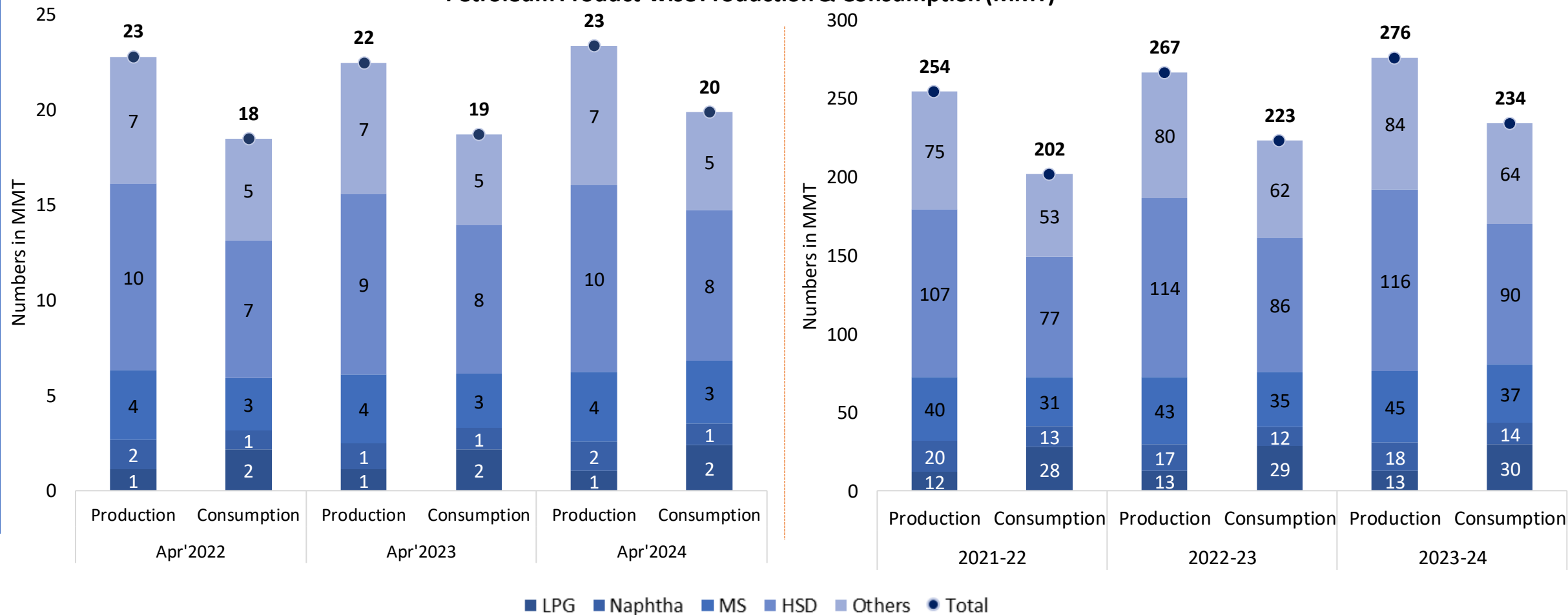


Source: Ministry of Coal



# Petroleum Products Market Scenario (1/3)

## Petroleum Product-wise Production & Consumption (MMT)



Others include ATF, SKO, LDO, Lubes, FO, LSHS, Bitumen, pet coke, and others.

**Abbreviations:** ATF- Aviation Turbine Fuel, FO- Furnace Oil, HSD- High-Speed Diesel, LDO- Light Diesel Oil, MS- Motor Spirit (Petrol), SKO- Superior Kerosene Oil, LSHS- Low Sulphur Heavy Stock, LPG- Liquefied Petroleum Gas, MMT- Million Metric Tonne

# Petroleum Products Market Scenario (2/3)

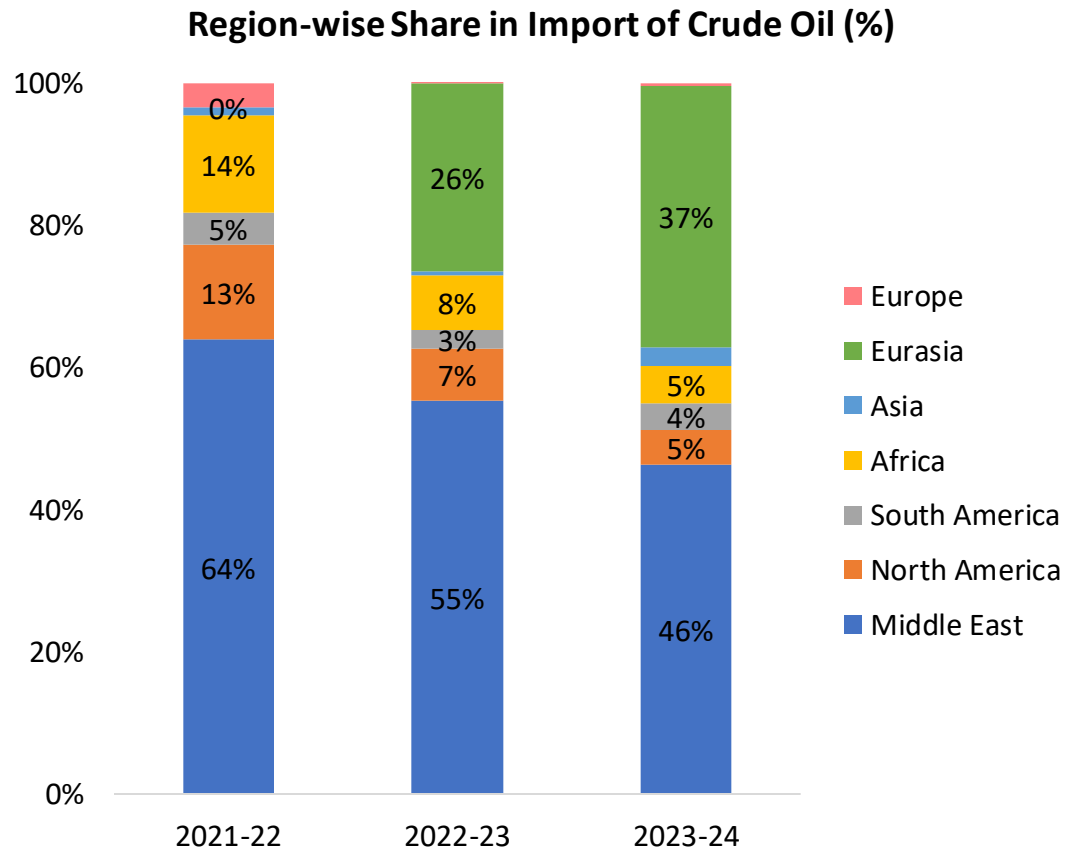
Import/Export of Crude Oil and Petroleum Products ('000 Tonnes)							
Petroleum Products	Import/ Export	Monthly			Yearly		
		Apr'22	Apr'23	Apr'24	2021-22	2022-23	2023-24
Crude Oil	Import	21626	20040	21442	212382	232700	233118
	Export	0	0	0	0	0	0
	<b>Net Import</b>	<b>21626</b>	<b>20040</b>	<b>21442</b>	<b>212382</b>	<b>232700</b>	<b>233118</b>
LPG	Import	1594	1004	1812	17043	18335	18476
	Export	47	40	44	513	540	525
	<b>Net Import</b>	<b>1547</b>	<b>964</b>	<b>1767</b>	<b>16530</b>	<b>17796</b>	<b>17951</b>
Diesel	Import	3	2	3	43	322	42
	Export	2698	1910	1999	32407	28494	28193
	<b>Net Import</b>	<b>-2695</b>	<b>-1908</b>	<b>-1995</b>	<b>-32364</b>	<b>-28172</b>	<b>-28151</b>
Petrol	Import	0	0	30	671	1069	717
	Export	1403	1257	1178	13482	13127	13461
	<b>Net Import</b>	<b>-1403</b>	<b>-1257</b>	<b>-1148</b>	<b>-12812</b>	<b>-12058</b>	<b>-12743</b>
Others	Import	2569	2145	2419	21259	24871	28990
	Export	1290	1158	1563	16352	18854	20258
	<b>Net Import</b>	<b>1279</b>	<b>987</b>	<b>856</b>	<b>4907</b>	<b>6017</b>	<b>8732</b>

\*Others include ATF, Naphtha, SKO, LDO, Lubes, FO, LSHS, Bitumen, pet coke, and others.

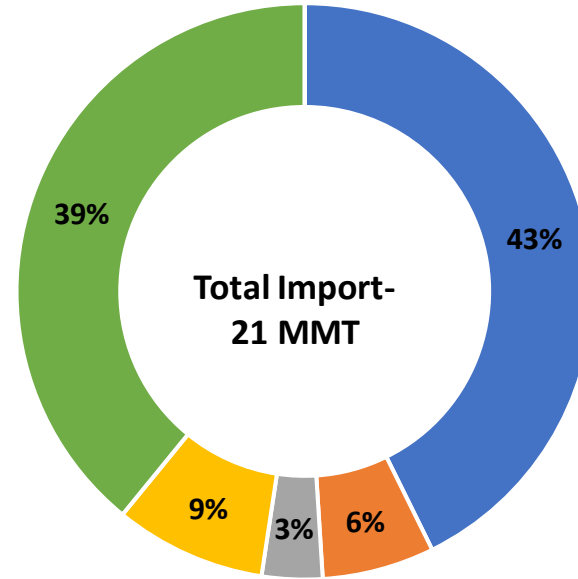
NOTE: The data is available latest up to April'2024

Source: PPAC

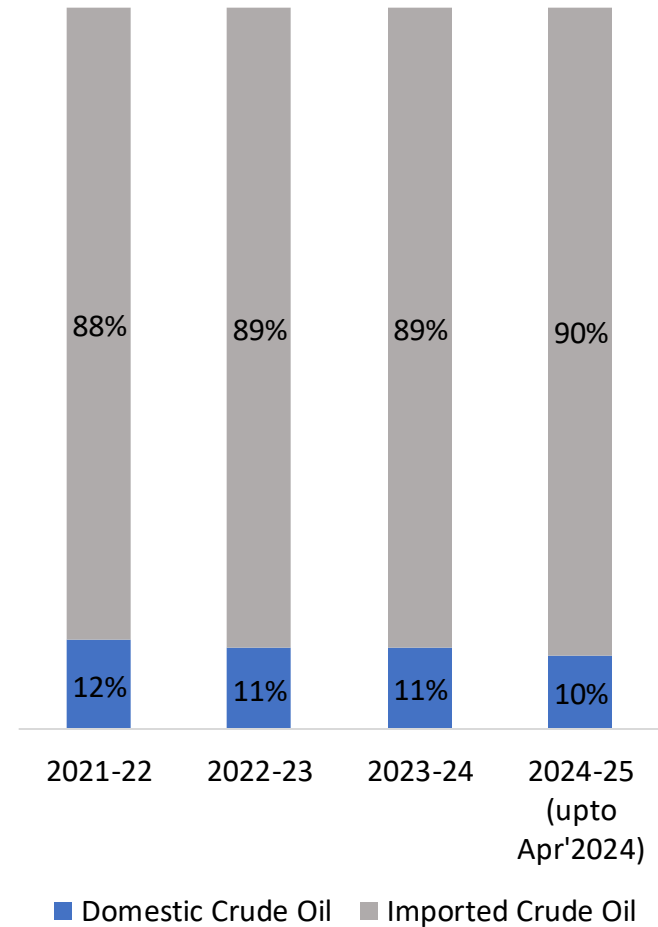
# Petroleum Products Market Scenario (3/3)



### Regional share of Imported Crude oil in April 2024



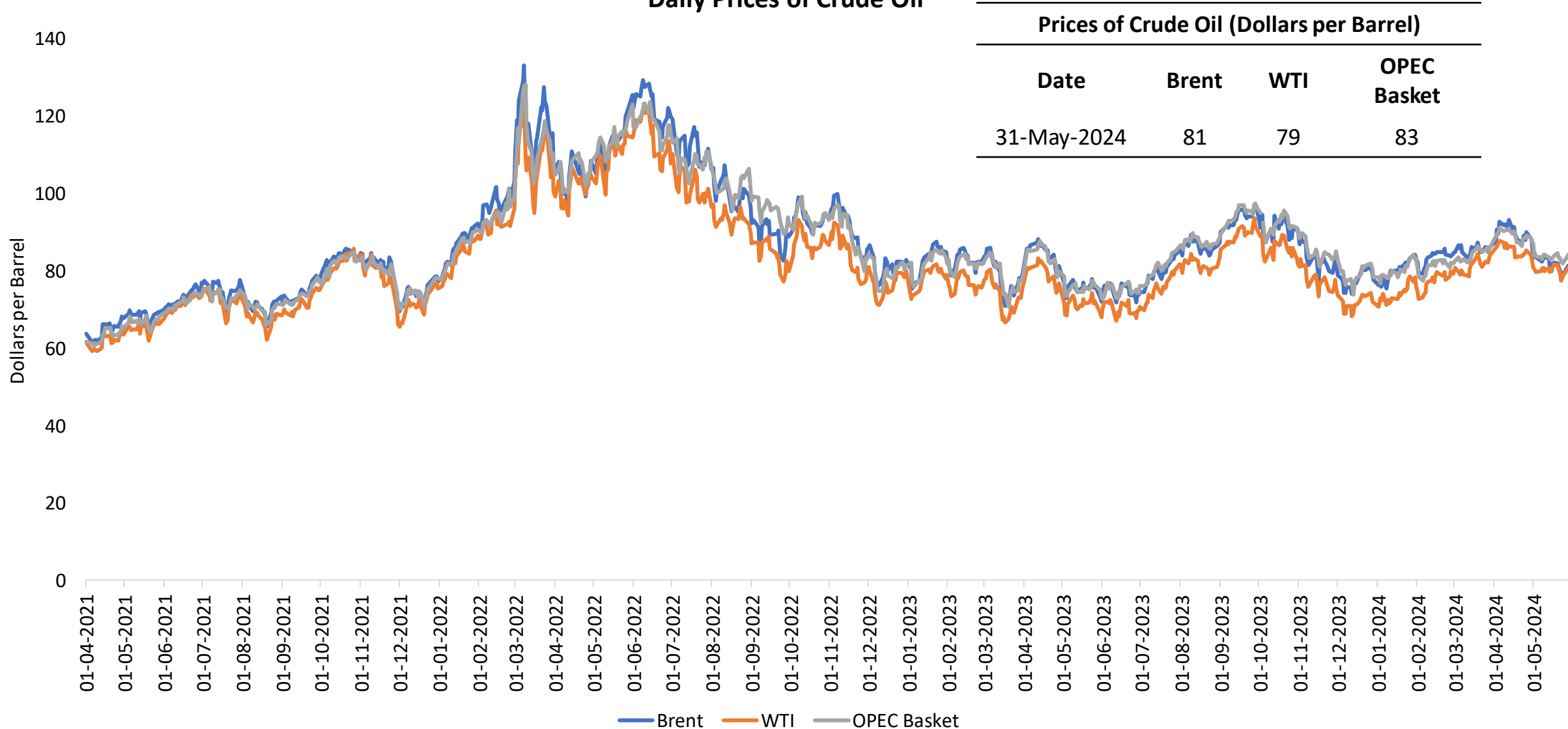
### Domestic and Imported Crude Oil share in India (%)



Total Import of Crude Oil (MMT)			
Total Import	2021-22	2022-23	2023-24
<b>Crude Oil</b>	<b>212</b>	<b>233</b>	<b>233</b>

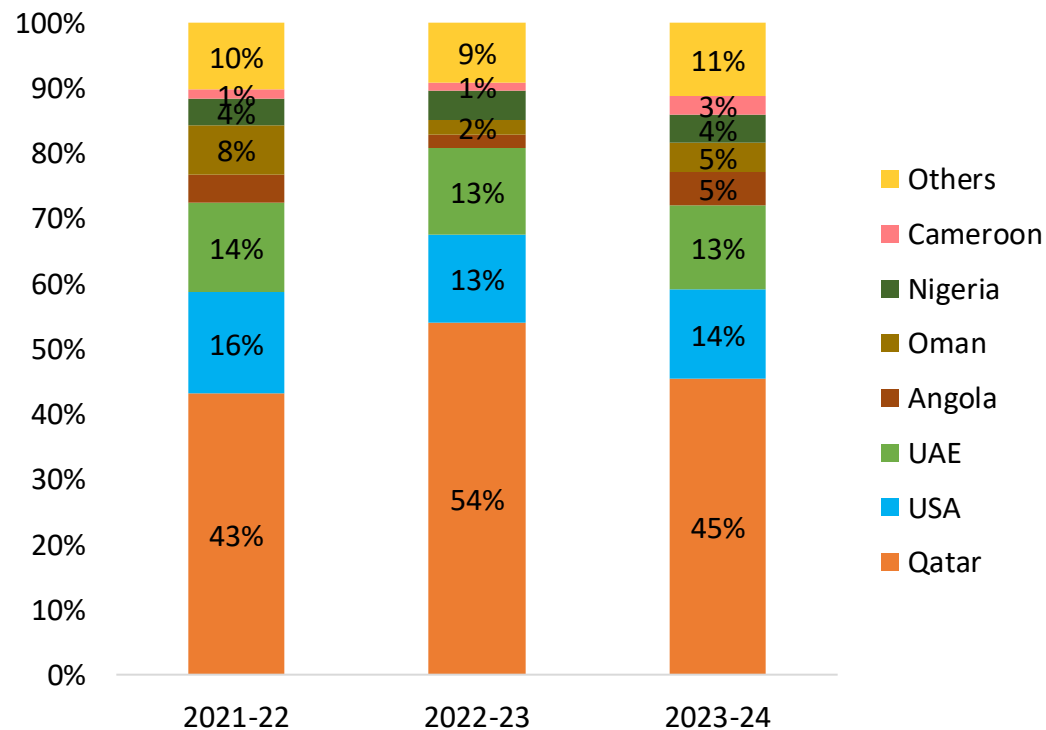
# Daily Prices of Crude Oil

Daily Prices of Crude Oil

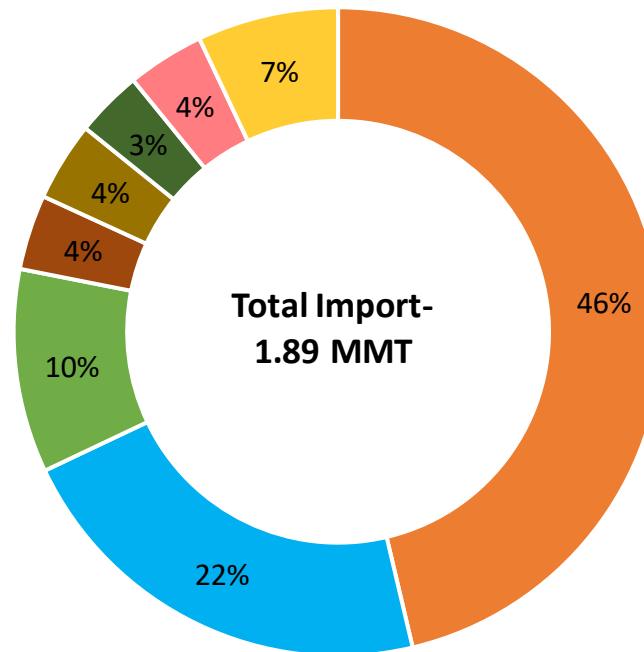


# Gas Market Scenario

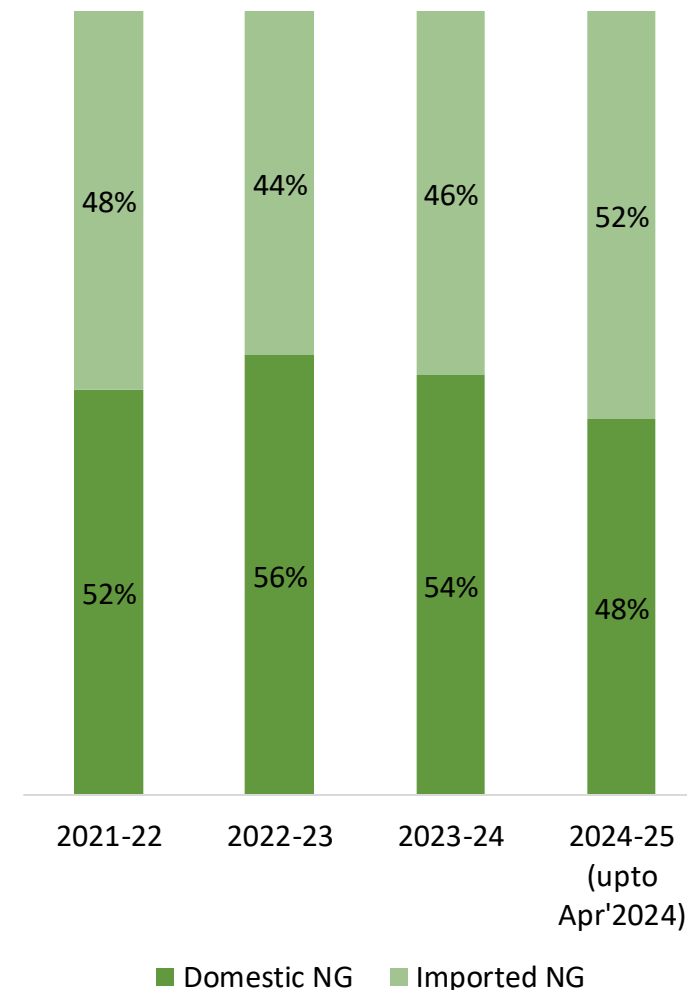
### Region-wise Share in Import of LNG (%)



### Country Share of Imported LNG in April'2024



### Domestic and Imported Natural Gas share in India (%)



Others include- Equatorial Guinea, Trinidad, Cameroon, Egypt, France, Algeria, Belgium, Indonesia, Turkey, Russia, Spain, Malaysia, Brunei, Netherlands, Norway, and others.

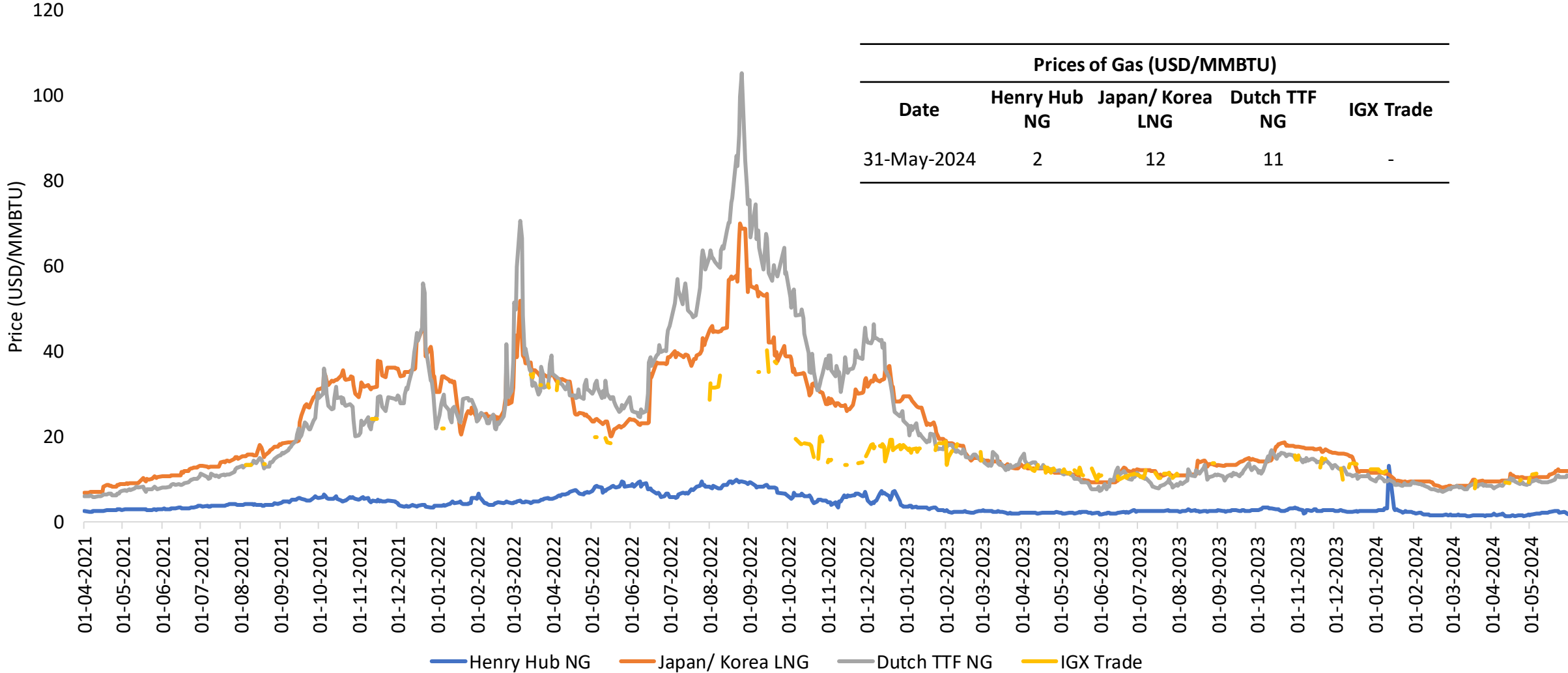
Total Import of Liquefied Natural Gas (LNG) (MMT)			
Total Import	2021-22	2022-23	2023-24
<b>LNG</b>	<b>23.42</b>	<b>19.85</b>	<b>24.00</b>

NOTE: The data is available latest up to April'2024

Source: MoCI and PPAC

# Daily Prices of Gas

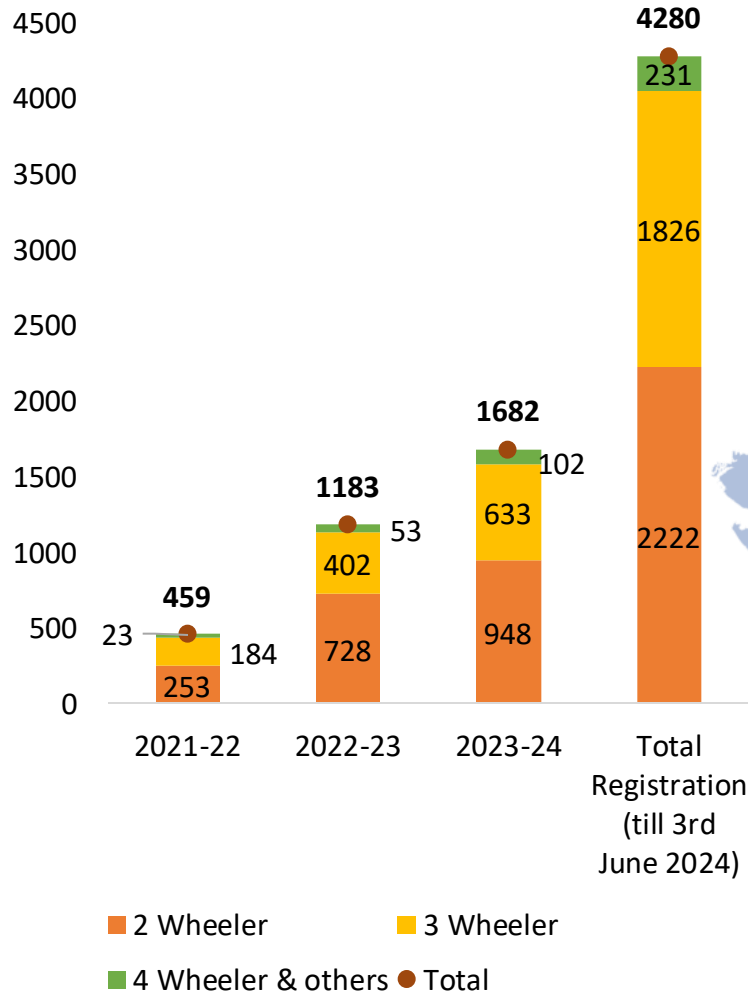
Gas Daily Market Price



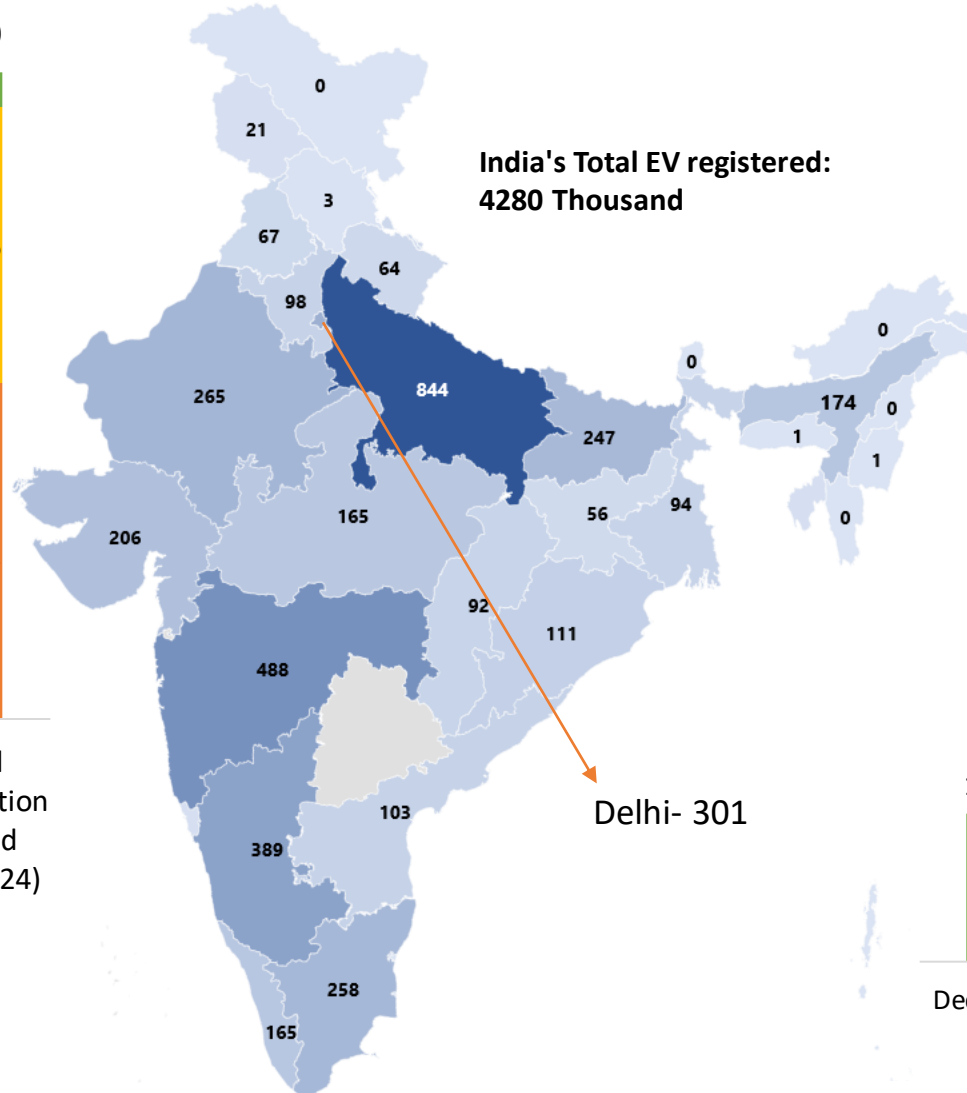
Prices of Gas (USD/MMBTU)				
Date	Henry Hub NG	Japan/ Korea LNG	Dutch TTF NG	IGX Trade
31-May-2024	2	12	11	-

# Status of Electric Mobility in India

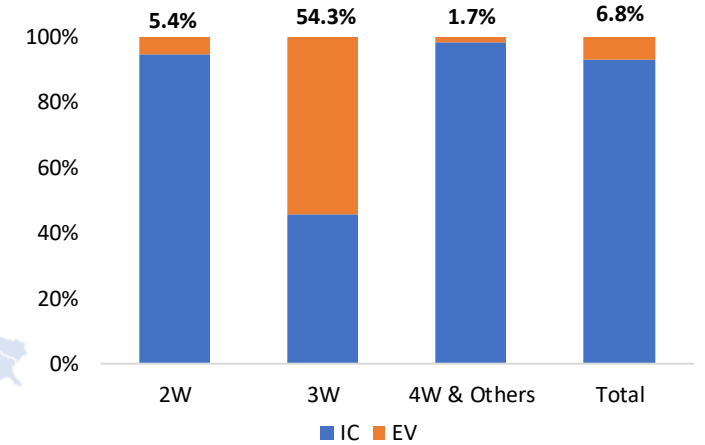
### National EV registration (in Thousands)



### Cumulative State-wise EV registration as on 3<sup>rd</sup> June 2024 (in Thousands)

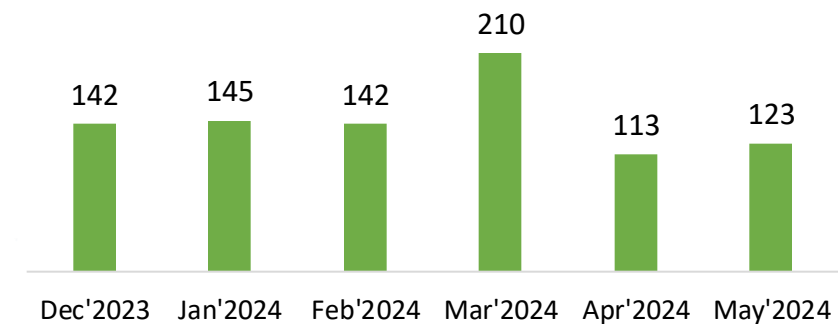


### EV and ICE sale composition in 2023-24



Under 3-wheeler (54.3%) EV registration, 45.6% is L3 and 8.7% is L5 vehicles.

### Provisional Monthly EV registered (in Thousands)

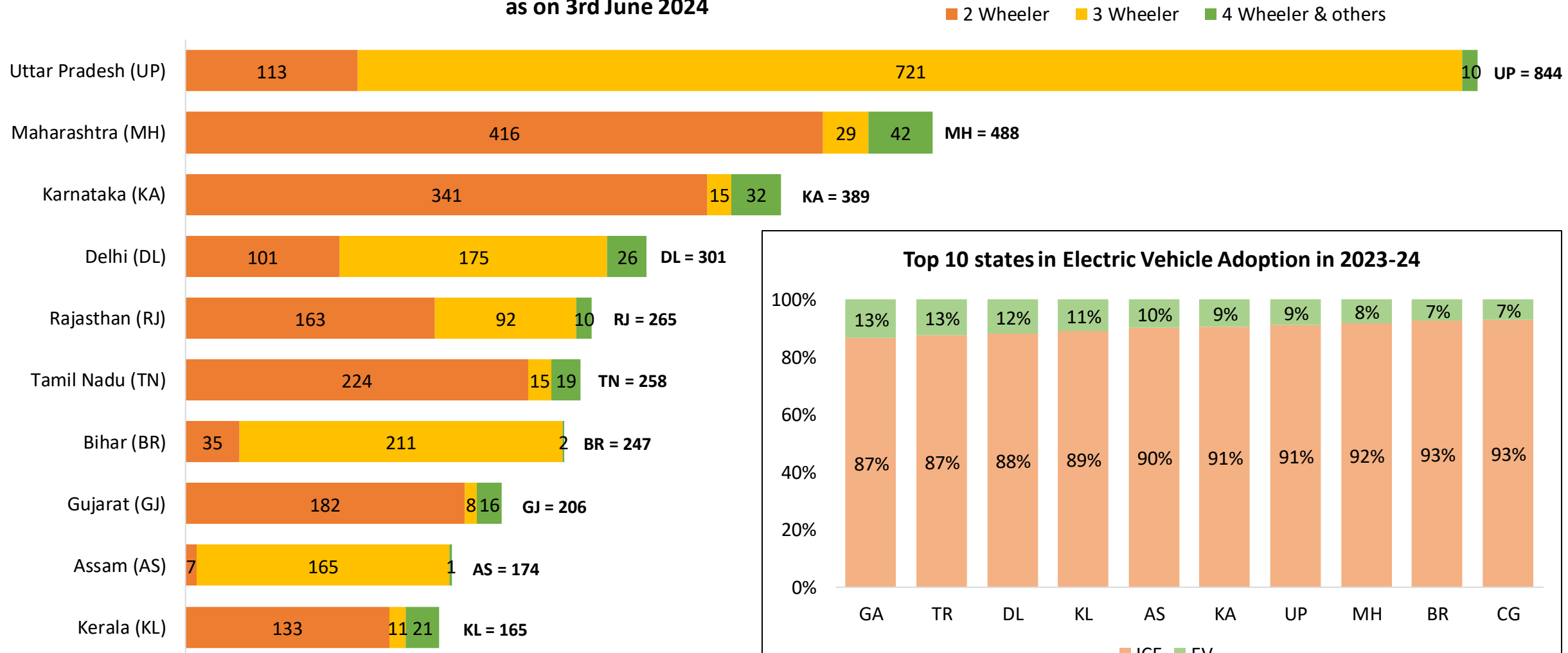


Source: VAHAN Dashboard

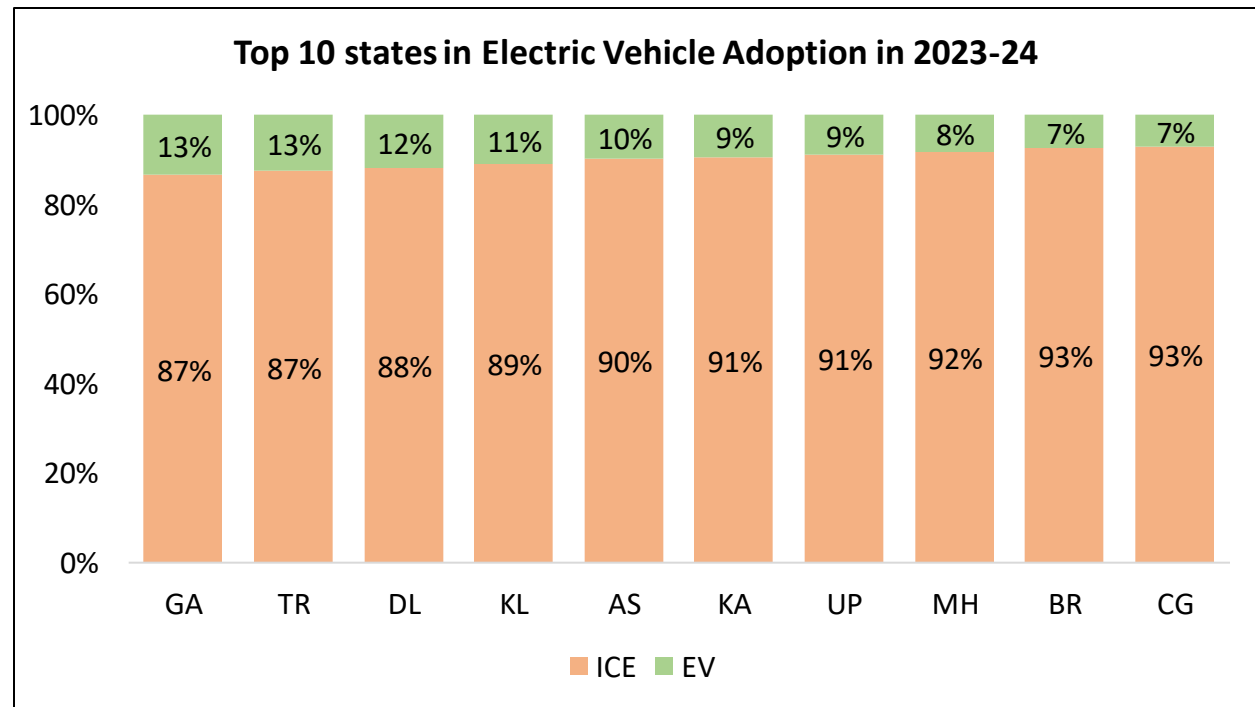


# Status of Electric Mobility in India

**Top 10 States for Electric Vehicles (in Thousands)  
as on 3rd June 2024**



**Top 10 states in Electric Vehicle Adoption in 2023-24**



NOTE: GA- Goa, TR- Tripura, CG- Chhattisgarh Source: VAHAN Dashboard

# Recent Interventions to promote Renewable Energy

## Solar

Under the [PLI scheme](#), the GOI has announced INR 19,500 crores to incentivize the manufacturing of domestic solar PV modules.

[PM-Surya Ghar: Muft Bijli Yojana](#) released with a total outlay of Rs. 75,021 crore for installing rooftop solar (RTS) for one crore households. The scheme provides a CFA of Rs 30,000 for a 1 kW RTS system, Rs 60,000 for a 2kW RTS system, and Rs 78,000 for a 3kW RTS system.

The [inter-state transmission charges](#) are waived for 25 years for the projects being commissioned before 30<sup>th</sup> June 2025.

The [updated RPO](#) compliance supports solar integration of up to 33.57% of the electricity purchased by DISCOMs/states till the year 2029-30.

[PM KUSUM scheme](#) has been extended till Mar'26 to install pump sets up to 15 HP in selected areas.

## Wind

[Reverse auctions have been scrapped](#) for wind projects. A traditional two-part (technical and financial) bid system has been put in place.

To support [off-shore wind](#), SECI will invite bids for up to 4GW to set up offshore wind plants off the coast of Tamil Nadu and Gujarat.

The ISTS charges are waived for 25 years for the [onshore projects](#) being commissioned before 30<sup>th</sup> June 2025 and for [off-shore projects](#) on or before 31<sup>st</sup> December 2032.

The [updated RPO](#) compliance supports WIND integration of up to 6.94% of the electricity purchased by DISCOMs/states till the year 2029-30.

The [National Repowering & Life Extension Policy for Wind Power Projects- 2023](#), for wind power projects is released for the optimum utilization of wind energy resources by maximizing energy (kWh) yield per sq. km of the wind project areas.

The GOI has decided to invite bids for 50 GW of RE annually, which includes up to [10 GW of wind](#) capacity.

## Energy Storage

Ministry of Power has released the [guidelines for the development of PSP](#) with the target of 26.7 GW of PSP and 47.2 GW of BESS to integrate with RE capacity till 2032.

[PLI scheme](#) unveiled for setting up 50 GWh ACC battery storage with an outlay of ₹18,100 crores.

Under the [Waste Management Rules 2022](#), the disposal of waste batteries in landfills and incineration is prohibited and the recycling of waste batteries is made mandatory.

[CERC](#), under RRAS regulation, has allowed the use of energy storage in secondary and tertiary ancillary support.

[The Energy Storage Obligation](#) of DISCOMs is pegged at 4.0% up to 2029-30.

Under the aegis of MNRE, SECI has successfully commissioned [India's largest BESS plant, featuring a 40 MW/120 MWh](#) BESS alongside a solar PV plant with a installed capacity of 152 MWh, located in Rajnandgaon, Chhattisgarh.

## Green Hydrogen (H<sub>2</sub>)

[National Green Hydrogen Mission](#) (NGHM) was approved by the Cabinet in January 2023. The mission aims to meet the target of 5 million metric tonnes of green hydrogen production by 2030. The initial outlay for the Mission will be INR 19,744 crores.

MNRE has released the scheme guidelines for the implementation of pilot projects for the use of Green Hydrogen in the [shipping](#), [steel](#), and [transport](#) sectors under the NGHM.

MOP has extended the [waiver of ISTS charges](#) from 30<sup>th</sup> June 2025 to 31<sup>st</sup> December 2030.

Indian Railways to run [35 Hydrogen trains under "Hydrogen for Heritage"](#) at an estimated cost of ₹ 80 crores per train and ground infrastructure of ₹ 70 crores per route on various heritage/hill routes.

Jindal Stainless Ltd., in collaboration with Hygenco commissioned [India's 1<sup>st</sup> green hydrogen plant in the stainless steel sector](#) at Hisar, Haryana, which aims to reduce CO<sub>2</sub> emission by 2,700 metric tonnes per annum.

# Key Highlights or Announcements of May 2024

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- India has recorded an all-time high peak electricity demand of [250 GW on 30th May 2024](#), with an increase of 3% as compared to the last year peak of 243 GW in September month.
- Delhi recorded its highest ever peak electricity demand, reaching [8 GW on 29<sup>th</sup> May 2024](#).
- India's first utility-scale, standalone Battery Energy Storage System [project has received regulatory approval from the Delhi Electricity Regulatory Commission](#). This 20 MW / 40 MWh project is being implemented by BSES Rajdhani Power Limited in collaboration with IndiGrid and the Global Energy Alliance for People and Planet.
- [SECI has released the tender for production and supply of Green Ammonia in India](#) under SIGHT Scheme (Mode-2A-Tranche-I). The selection of developers for the total available green ammonia capacity of 5,39,000 metric tonnes per annum will be carried out through e-bidding followed by e-reverse auction process.



VASUDHA  
FOUNDATION  
Green ways for a good earth!

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