

India's Energy Overview

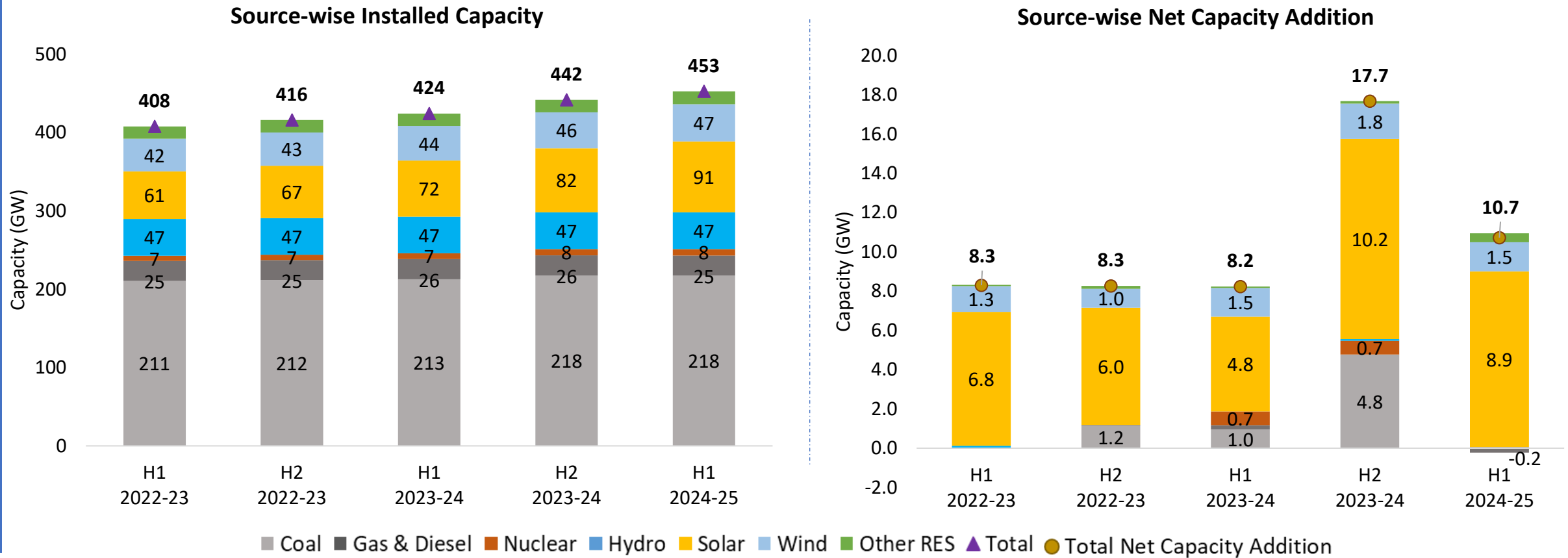
Half-Yearly Highlights of 2024-25



Contents

1. India's Electricity Capacity Mix (Utility-scale)
2. India's Electricity Generation Mix
3. Source-wise PLF/ CUF
4. Thermal Generation Loss and Reasons for Forced Outages
5. National and State-level Electricity Demand
6. Half-Yearly Coal Statistics
7. Petroleum Products Market Scenario
8. Region-wise Oil & Gas Import
9. Status of Electric Mobility in India
10. Key Policy Highlights and Announcements in H1 2024-25

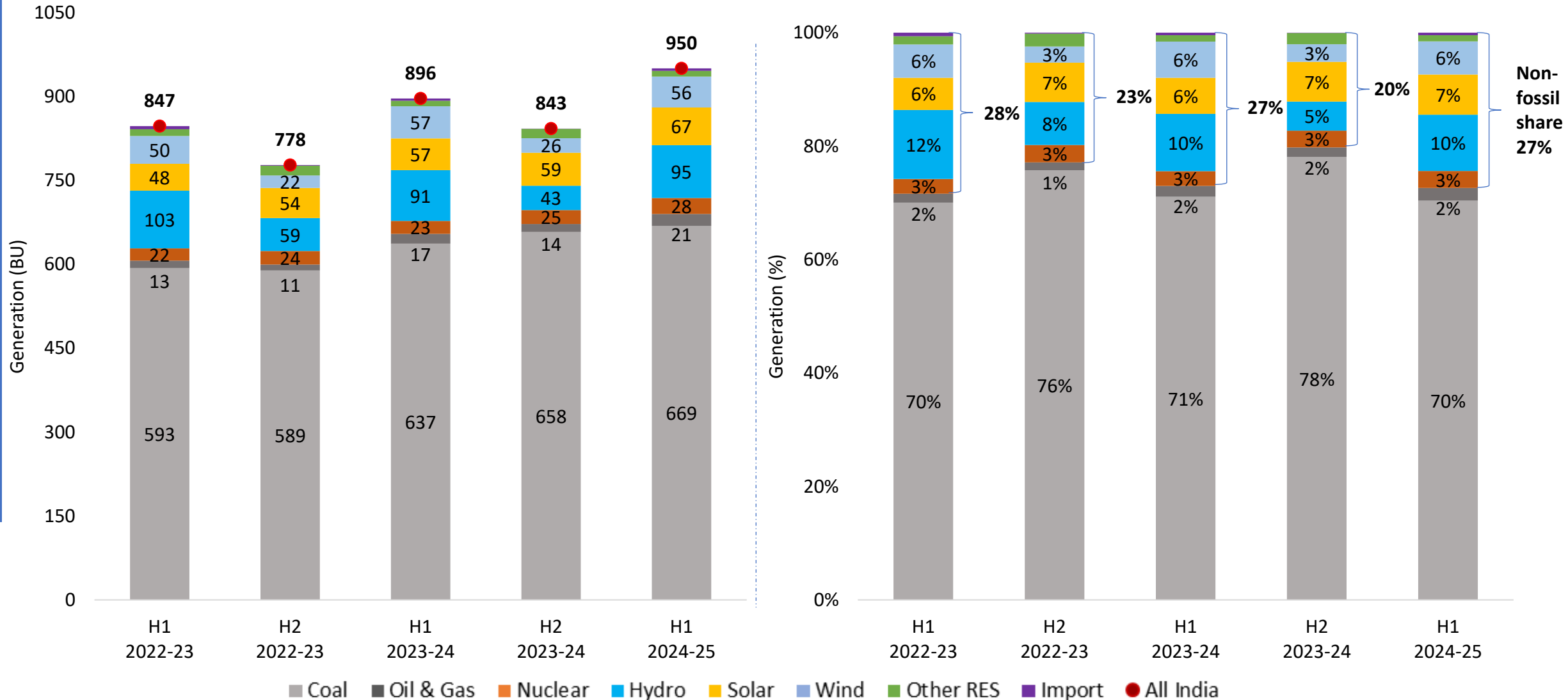
India's Electricity Capacity Mix (Utility-scale)



- The share of renewable energy (RE) generating capacity in the total installed capacity has increased from 40% in H1 2022-23 to 45% in H1 2024-25.
- The solar installed capacity in H1 2024-25 has increased by 27% compared to its capacity in H1 in 2023-24, while wind capacity has increased by 7% during the same period.

India's Electricity Generation Mix

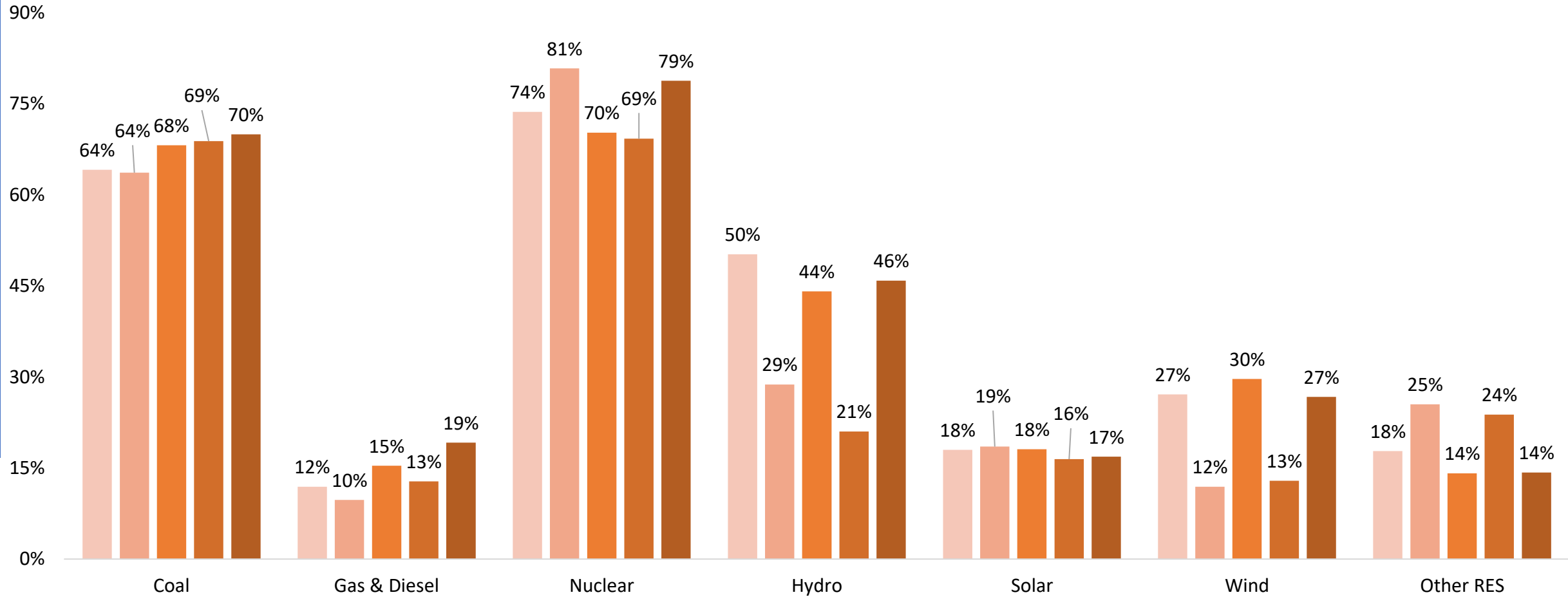
Source-wise Generation Mix



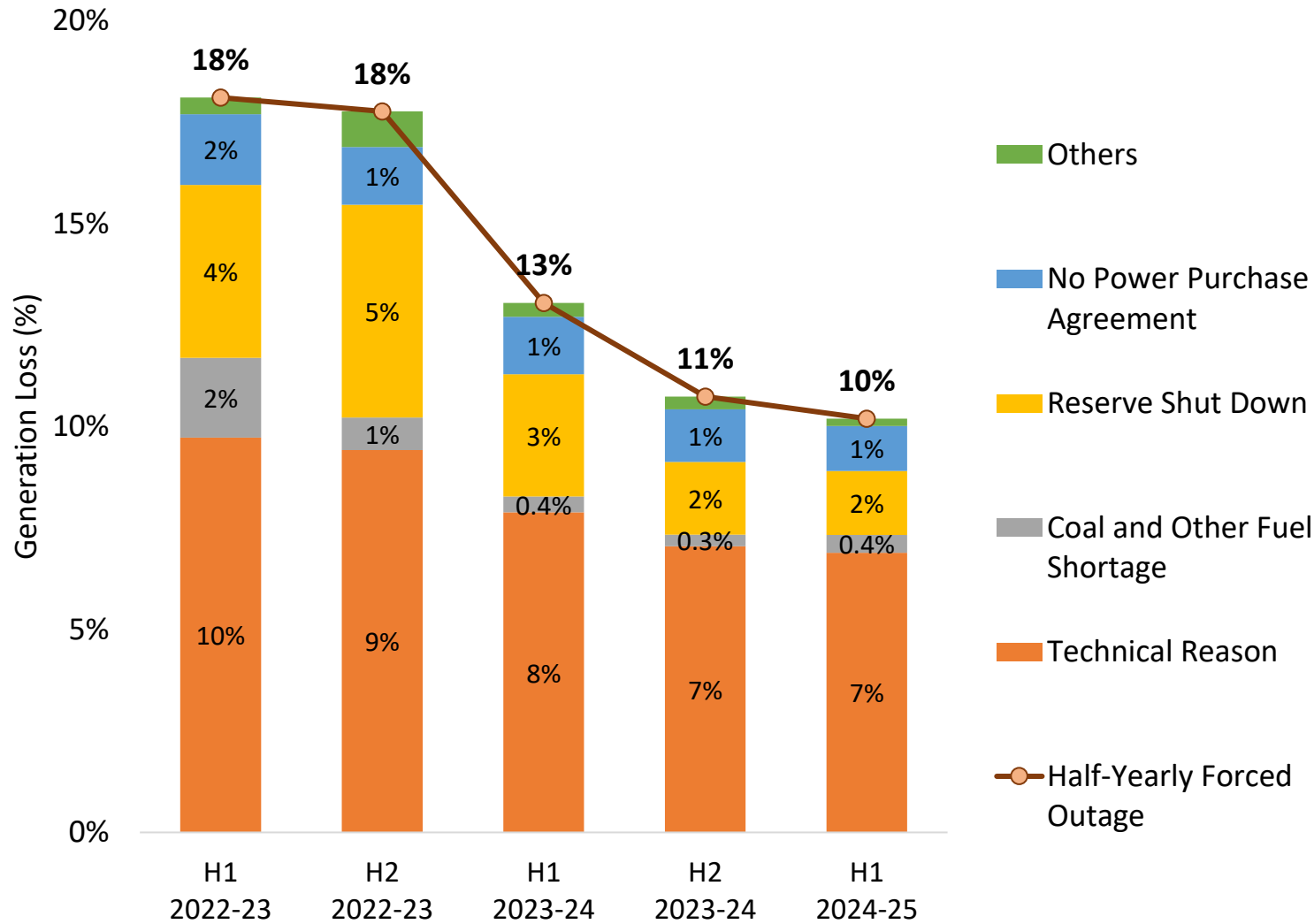
Source-wise PLF/CUF

Source-wise PLF/ CUF Comparison (%)

■ H1 2022-23
 ■ H2 2022-23
 ■ H1 2023-24
 ■ H2 2023-24
 ■ H1 2024-25

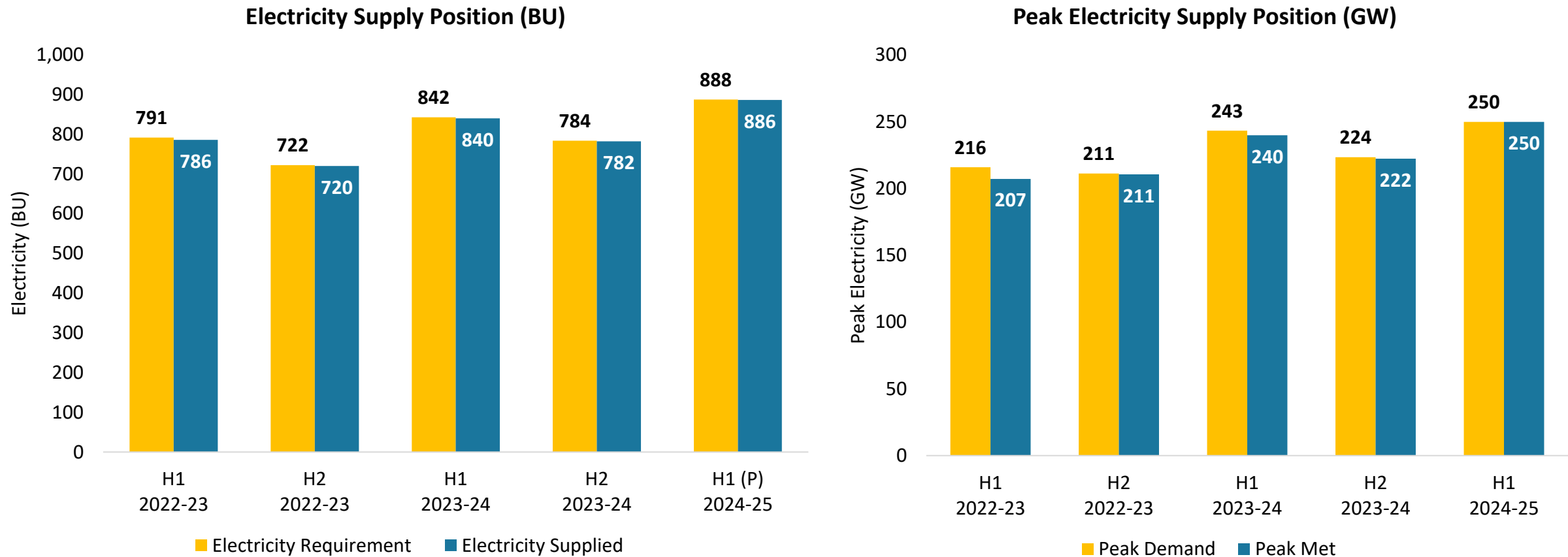


Thermal Generation Loss and Reasons for Forced Outages



Year/ Half-Yearly		Average Forced Outage Share
Yearly	FY 2022-23	18%
	FY 2023-24	12%
	FY 2024-25 (up to Sep'2023)	10%
Half-Yearly	H1 2022-23	18%
	H2 2022-23	18%
	H1 2023-24	13%
	H2 2023-24	11%
	H1 2024-25	10%

National Electricity Demand and Supply Position

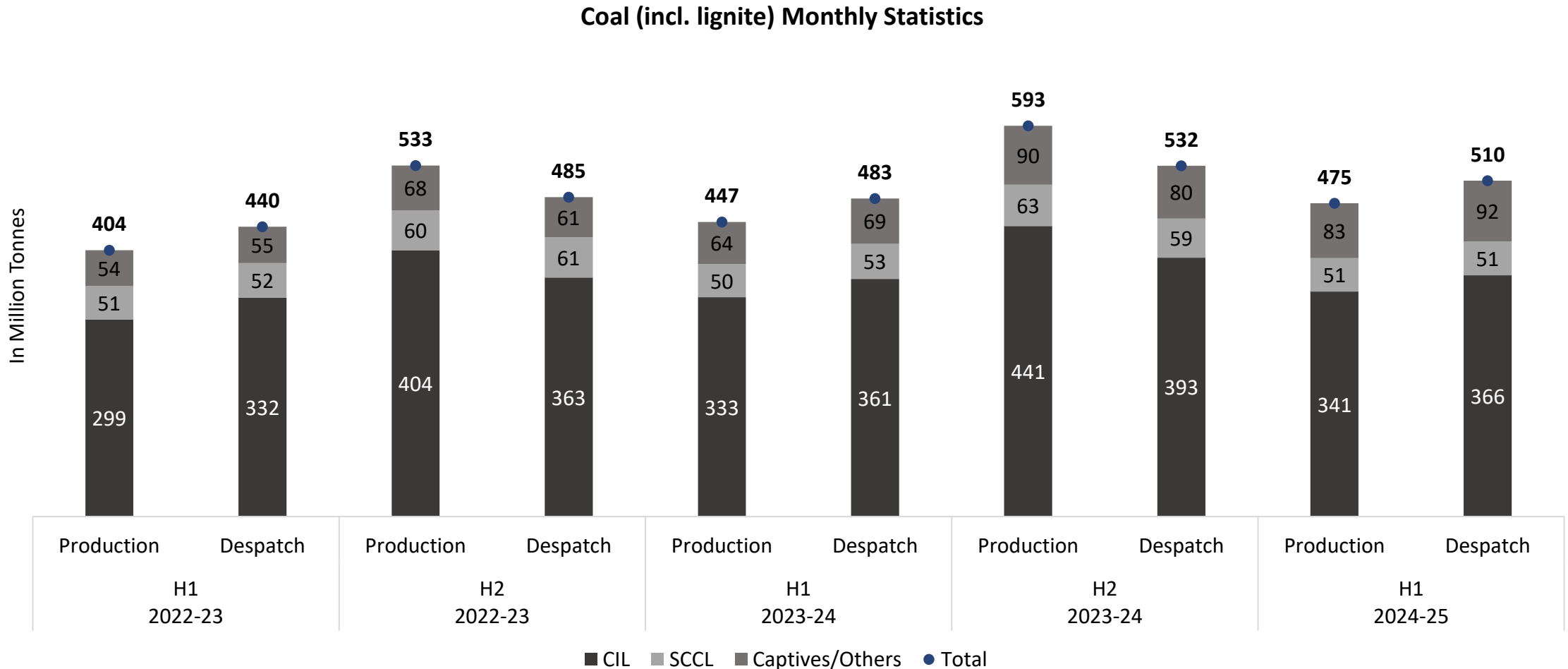


- India recorded its highest peak electricity demand of 250 GW on 30th May 2024.
- National peak electricity demand in H1 2024-25 has increased by 3% compared to the peak demand in H1 2023-24.
- National electricity demand in H1 2024-25 increased by 5% compared to the demand in H1 2023-24.

NOTE: H1- April to September, H2- October to March.
The demand represented above includes intra-state T&D losses.

Source: CEA

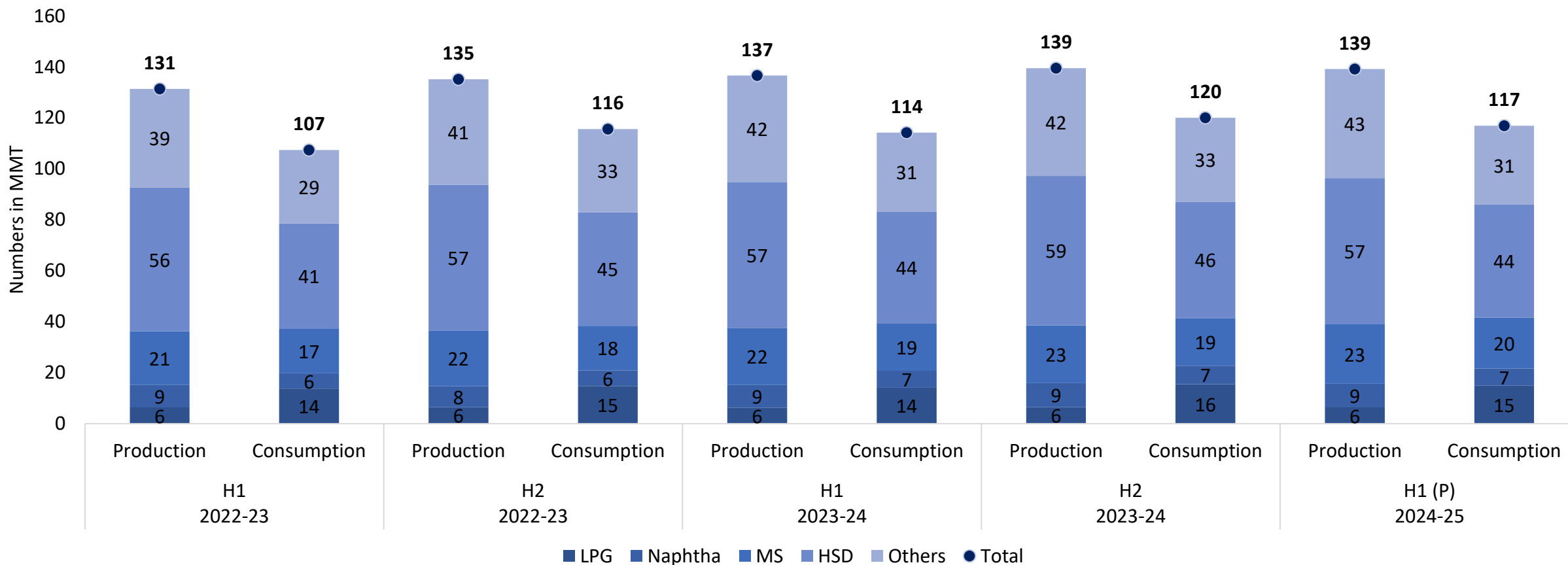
Half-Yearly Coal Statistics



India's coal production increased by 6% in H1 2024-25 (475 MT) compared to H1 2023-24 (447 MT). Similarly, the coal despatch increased by 6% in H1 2024-25 compared to the same period in 2023-24.

Petroleum Products Market Scenario (1/2)

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, P- Provisional

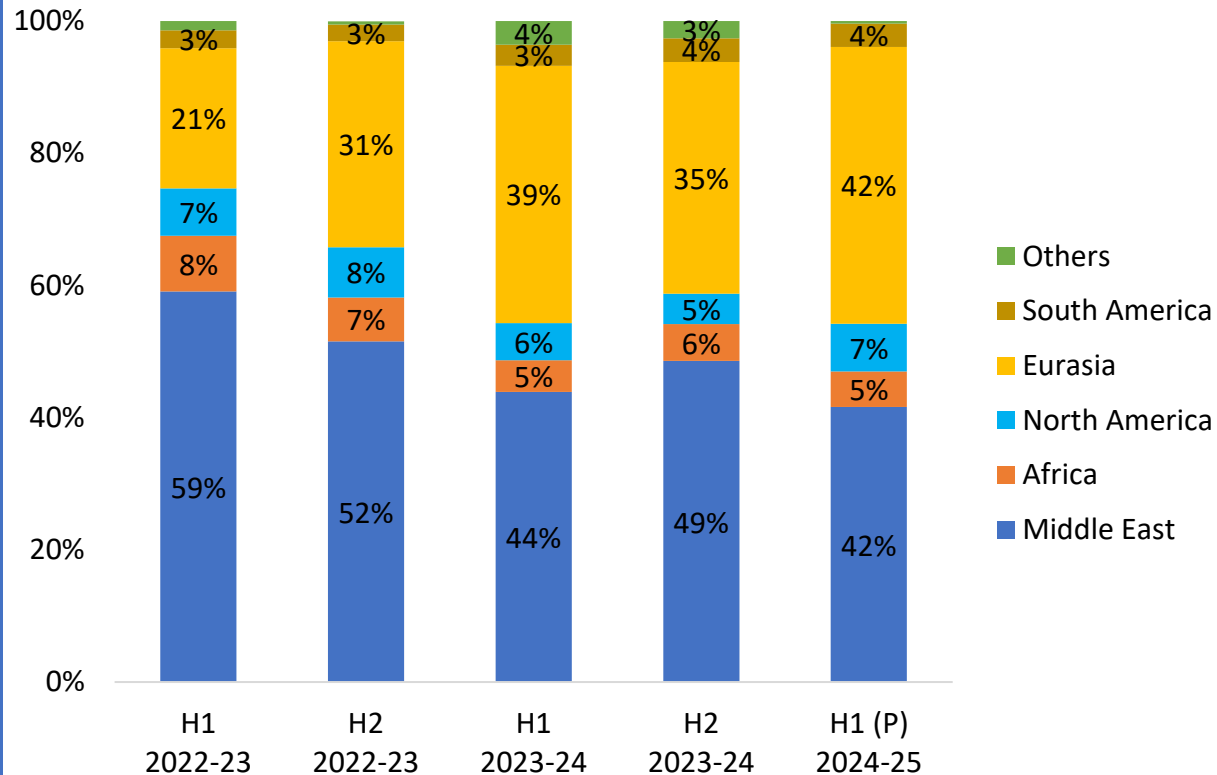
Petroleum Products Market Scenario (2/2)

Import/Export of Crude Oil and Petroleum Products ('000 Tonnes)						
Petroleum Products	Import/ Export	Half-Yearly				
		H1 2022-23	H2 2022-23	H1 2023-24	H2 2023-24	H1 (P) 2024-25
Crude Oil	Import	115514	117187	115887	117231	120906
	Export	0	0	0	0	0
	Net Import	115514	117187	115887	117231	120906
LPG	Import	8651	9684	8316	10159	9865
	Export	267	273	254	271	265
	Net Import	8385	9411	8062	9888	9601
Diesel	Import	274	48	16	27	23
	Export	15417	13077	13558	14635	12295
	Net Import	-15143	-13029	-13542	-14608	-12271
Petrol	Import	410	659	446	271	171
	Export	6489	6638	7158	6303	7077
	Net Import	-6079	-5980	-6712	-6032	-6906
Others	Import	11380	13492	14582	14852	15058
	Export	9299	9555	9706	10551	10379
	Net Import	2080	3937	4875	4300	4679

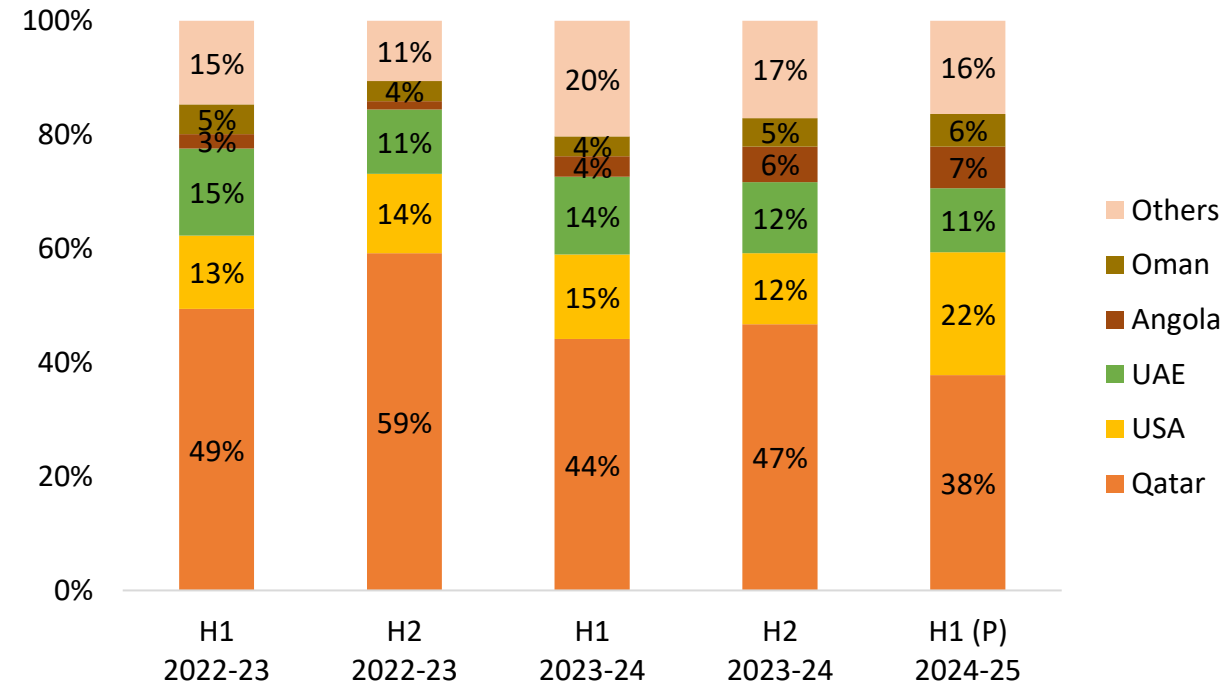
*Others include ATF, Naphtha, SKO, LDO, Lubes, FO, LSHS, Bitumen, pet coke, and others.

Region-wise Oil & Gas Import

Region-wise Share in Import of Crude Oil (%)



Region-wise Share in Import of LNG (%)



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

Total Import of Crude Oil (MMT)

Total Import	H1 2022-23	H2 2022-23	H1 2023-24	H2 2023-24	H1 (P) 2024-25
Crude Oil	115	117	116	117	121

Total Import of Liquefied Natural Gas (LNG) (MMT)

Total Import	H1 2022-23	H2 2022-23	H1 2023-24	H2 2023-24	H1 (P) 2024-25
LNG	10	10	12	12	14

Key Policy Highlights and Announcements in H1 2024-25

- The Ministry of Power has [constituted an independent Thermal Project Monitoring Group \(TPMG\) for the monitoring the execution of Thermal Power Projects that are under implementation](#). This group has been constituted to conduct site inspections and provide detailed report outlining the findings of the site visit and progress review of each site of the Thermal Power Project under implementation by a Central/State utility and IPPs. The report shall also include the latest photographs of the critical areas and achievements.
- The Government of India has approved [new Inter State Transmission System schemes worth ₹13,595 to evacuate 9 GW of RE power from Rajasthan and Karnataka](#).
 - The power evacuation scheme for the Rajasthan Renewable Energy Zone will evacuate 4.5 GW of RE power from the state, with a project cost of approximately ₹12,241 crore, expected to be completed within two years.
 - The system strengthening scheme for Karnataka will evacuate 4.5 GW of RE power, with an estimated cost of ₹1,354 crore, scheduled for completion by June 2027.
- On 19th June 2024, the Honourable Prime Minister Shri Narendra Modi [approved the Viability Gap Funding \(VGF\) scheme for offshore wind energy projects at a total outlay of Rs.7453 crore](#), including an outlay of Rs.6853 crore for installation and commissioning of 1 GW of offshore wind energy projects (500 MW each off the coast of Gujarat and Tamil Nadu), and grant of Rs.600 crore for upgradation of two ports to meet logistics requirements for offshore wind energy projects.
- The [Ministry of New and Renewable Energy \(MNRE\) has released an amendment to the guidelines for onshore wind project development, specifically targeting the micrositing of wind turbine generators](#). The guidelines aim to prioritize optimized output over the minimal distance between wind turbines.
- MNRE has unveiled the [guidelines for funding of testing facilities, infrastructure, and institutional support for development of Standards and Regulatory framework under the National Green Hydrogen Mission](#). The Scheme will support creation of new testing facilities and upgradation of existing Testing Facilities to ensure safe and secure operations with a total budgetary outlay of Rs. 200 Crores during the period 2024-26.

Key Policy Highlights and Announcements in H1 2024-25

- On 3rd July 2024, MNRE has issued a scheme guidelines for implementation of [“Strategic Interventions for Green Hydrogen Transition \(SIGHT\) Programme – Component II: Incentive Scheme for Green Hydrogen Production \(under Mode 1\)- Tranche-II” of the National Green Hydrogen Mission](#) with an outlay of Rs 13050 crores during 2025-26 to 2029-30. The capacity of Tranche-II will be 450,000 TPA of Green Hydrogen, with 40,000 TPA capacity reserved for biomass-based pathways (bucket-II) and the rest for technology agnostic pathways (bucket-I).
- The Ministry of New Renewable Energy (MNRE) has released the [Guidelines for implementation of Component “Model Solar Village” under PM-Surya Ghar: Muft Bijli Yojana](#). This initiative aims to establish one Model Solar Village in each district across the country. A total of ₹800 crore has been allocated for this component, with central financial assistance of ₹1 crore per model village. The village must be a revenue village with a population size of more than 5,000 as per the latest published Census. However, in northeastern states, union territories, and states like Uttarakhand, Himachal Pradesh, Jammu & Kashmir, and Ladakh, revenue villages with a population of over 2,000 will be eligible.
- The Ministry of Power has released an [“Amendment to the Guidelines for Import/Export \(Cross Border\) of Electricity, 2018”](#). The key amendments are:
 - The amendments empower the central government to permit additional fuel sources for export of coal and gas-based electricity, such as, imported coal or gas, spot e-auction coal, coal from commercial mining, or other sources specified by the Government of India.
 - The Government of India may now permit connection of generating stations to the Indian Grid (Inter-State or Intra-State) to enable power sale within India, even in cases of non-scheduling or payment delays under PPAs.
- Ministry of Power has released the [draft guidelines for Tariff based competitive bidding for procurement of storage capacity/stored energy from Pumped Storage Plants \(PSPs\)](#). The guidelines proposes two models of procurement of PSPs-
 - Build own Operate Transfer (BOOT) Model- with a power purchase agreement period of 25-40 years.
 - Finance Own Operate (FOO) Model- with a power purchase agreement period of 15-25 years.

Key Policy Highlights and Announcements in H1 2024-25

- The Ministry of Heavy Industry launched the [PM Electric Drive Revolution in Innovative Vehicle Enhancement \(PM E-DRIVE\)](#) scheme on September 29, 2024. The scheme will be implemented from 1st October, 2024 till 31st March, 2026 with an total outlay of ₹10,900 crore.
- The Ministry of Power has released the “[Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure 2024](#)”. The main objective of the guidelines are :
 - Standard procedure and timelines for grant of electricity connections for charging
 - Use of open communication protocols to enable interoperability of EV chargers
 - Criteria for optimal selection of locations for siting Public EV charging stations in urban areas and along highways
 - Transparency in charging fee structure: electricity tariff capped at Average Cost of Supply (ACOS) till FY 2028; tariff subsidy charging during solar hours increased from 20% of ACOS to 30%.



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