



ENERGY CELL
MONTHLY REPORT
MINISTRY OF COAL
September'2023



Shastri Bhavan, New Delhi-110001

This page is left intentionally blank.



Message

In India, coal is the main source of energy, contributing to around 73% of the energy mix, and around 75% of electricity is generated by coal. Even though there is immense pressure from the global community to move away from coal, in the near future, it will not be easy for developing countries like India, which is highly dependent on coal, to move away from coal. As per our analysis, coal demand is likely to rise to 1.5 BT by 2029- 30 and 2 BT by 2047. A surging economy drives the energy demand to meet the country's aspirations. The coal sector has witnessed an unprecedented upswing, with production, dispatch and declining import trends. The Ministry of Coal remains committed to consistently maintaining energy security through coal production and dispatch, ensuring an uninterrupted supply for a reliable and resilient energy sector that contributes to the nation's continued growth and prosperity. The Ministry of Coal has achieved a substantial surge in overall coal production during September 2023, attaining 67.33 million tonnes (MT) production, surpassing the figures of 58.04 MT of the corresponding month in the previous year, representing an increase of 16.01%. The cumulative coal production (up to September 2023) has seen a quantum jump to 428.38 MT in FY' 23-24 compared to 382.16 MT during the same period in FY' 22-23, with a growth of 12.09 %. An emerging economy drives the energy demand to meet the country's aspirations. Overall coal imports from April to September declined by 8.22% to 124.53 MT in FY 2023-24, over 135.68 MT in FY 2022-23, which depicts the country's efforts towards self-sustainability in fossil fuels.

The publication contains the latest data available in respect of a brief analysis of the data on coal production, consumption, import, sector-wise coal consumption, generation and consumption of energy resources, Global electricity demand and generation, India's electricity demand and generation and share of coal in Global and India's electricity generation. This publication attempts to cater to the needs of planners, policymakers, and researchers by making all the coal/energy data available in a single place.

M. NAGARAJU
Additional Secretary,
Ministry of Coal.

This page is left intentionally blank.

LIST OF OFFICERS ASSOCIATED WITH THE REPORT

Shri Ajitesh Kumar
Director (P&S-I/P&S-II/NA)

Shri Marapally Venkateshwarlu
Director (Tech), NA

Shri Alok Kumar Verma
Under Secretary

Dr. Lingampally Sai Vinay
Mining Expert

TABLE OF CONTENTS

1	Role of Coal in the Indian Energy Scenario	7
1.1	Introduction	7
1.2	Coal Production.....	8
1.3	Coal Imports	8
1.4	Coal Consumption.....	9
1.5	Sector-wise coal consumption.....	9
1.6	Generation of Energy Resources	10
1.7	Consumption of Energy Resources	11
2	Role of Coal in the Electricity Sector	11
2.1	Global Electricity Demand.....	11
2.2	Global Electricity Generation.....	12
2.3	Share of Coal in Global Electricity Generation	12
2.4	India Electricity Demand	13
2.5	Indian Electricity Generation	13
2.6	Share of Coal in India's Electricity Generation.....	14
3	Conclusion	14
	References	15

1 Role of Coal in the Indian Energy Scenario

1.1 Introduction

Coal is India's most affordable energy source, with substantial reserves of 361.41 billion tonnes as of 01.04.2022. Coal will remain a major source of energy in the foreseeable future. Coal demand in the country is yet to peak. As per Economic Survey 2022-23, coal demand is estimated to be around 1.3-1.5 billion tonnes by 2030. It is also estimated that demand will likely continue to peak between 2030 and 2035. Electricity generated by coal-based power plants increased by 10% between 2021-22 and 2022-23. It is also observed that there is no decline in coal-based electricity generation in the FY 2022-23 over the FY 2021-22. There is no report of any coal-based power plant shutdown due to coal shortages during 2021-22 and 2022-23.

As per the India Climate Energy Dashboard (ICED) launched in July 2023 by NITI Aayog, India's primary energy supply has grown at 4.0% CAGR during 2012-22 (excluding exceptional COVID years of 2020 & 2021). As per India Energy Security Scenarios (IESS) 2047 - an Energy Modelling tool developed by NITI Aayog, the future energy supply is projected to grow from 3.3% to 3.5% under net-zero and BAU scenarios, respectively.

However, there is immense pressure from the global community to move away from coal. However, the transition from coal is not happening in the foreseeable future. It is difficult to move away from coal in developing countries like India, which is highly dependent on coal. Thus, as of now, there is no scenario of transition away from coal affecting any stakeholders involved in coal mining. However, the Ministry of Coal has constituted a Sub-Committee to look into holistic closure of abandoned/legacy mine sites and mines closing due to exhaustion of reserves, viability issues etc., and involving social aspects of mine closure on principles of just transition in addition to physical and environmental closure.

There is likely an increase in coal-based generation on account of the uncertainty in the realization of the expected/scheduled capacity addition from hydro, nuclear, renewable sources and climactic factors like drought conditions, etc. In India, coal is the main energy source; it contributes around 73% to the energy mix, and around 75% of the country's electricity is generated by coal.

1.2 Coal Production

India's Coal Production

The Ministry of Coal has achieved a substantial surge in overall coal production during September 2023, attaining 67.33 million tonnes (MT) production, surpassing the figures of 58.04 MT of the corresponding month in the previous year, representing an increase of 16.01%. The cumulative coal production (up to September 2023) has seen a quantum jump to 428.38 MT in FY' 23-24 compared to 382.16 MT during the same period in FY' 22-23, with a growth of 12.09 %. This trend is expected to increase further over the coming years to meet the country's increasing coal demand.

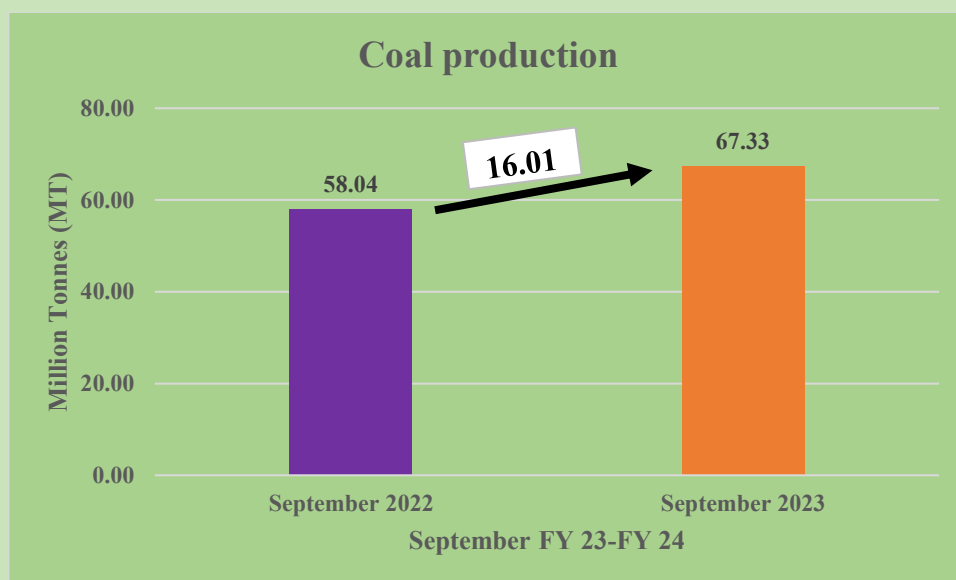


Figure 1 Monthly coal production in India during September FY23 -FY24

1.3 Coal Imports

Despite the country's effort towards declining coal imports, it has been observed that there is a slight increase in total coal imports by 4.35% to 20.61 MT in September FY 2023-24 over 19.75 MT in the corresponding month of the previous FY 2022-23. Of the total imports, non-coking coal imports were 13.89 MT in September FY24 against 12.08 MT in September FY23, and coking coal imports were at 4.59 MT in September FY24 against 4.88 MT in September FY23. Overall coal imports from April to September declined by 8.95% to 124.53 MT in FY 2023-24, over 135.68 MT in FY 2022-23, which shows the country's efforts towards self-sustainability in fossil fuels. This trend is expected to decline in the future unless there is a sudden spurt in demand and a significant softening in seaborne prices.

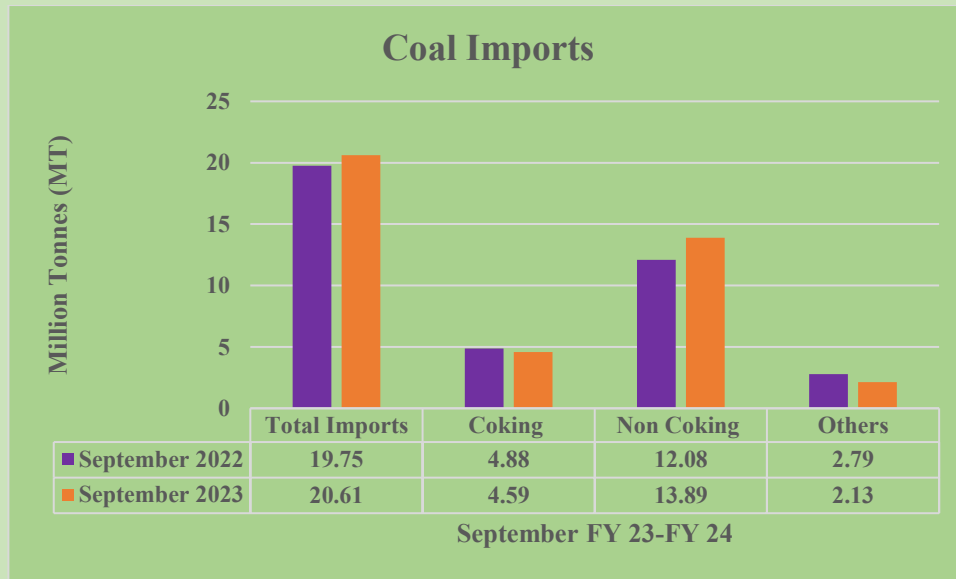


Figure 2 Coal Imports during September FY23-FY24

1.4 Coal Consumption

The coal consumption in September FY 2023-24 is 90.97 MT over 80.85 MT in the corresponding month of FY 2022-23, with a positive growth of 12.52%. Overall coal consumption from April to September has been raised by 5.88% to 586.8 MT in FY 2023-24 and over 552.32 MT in FY 2022-23.

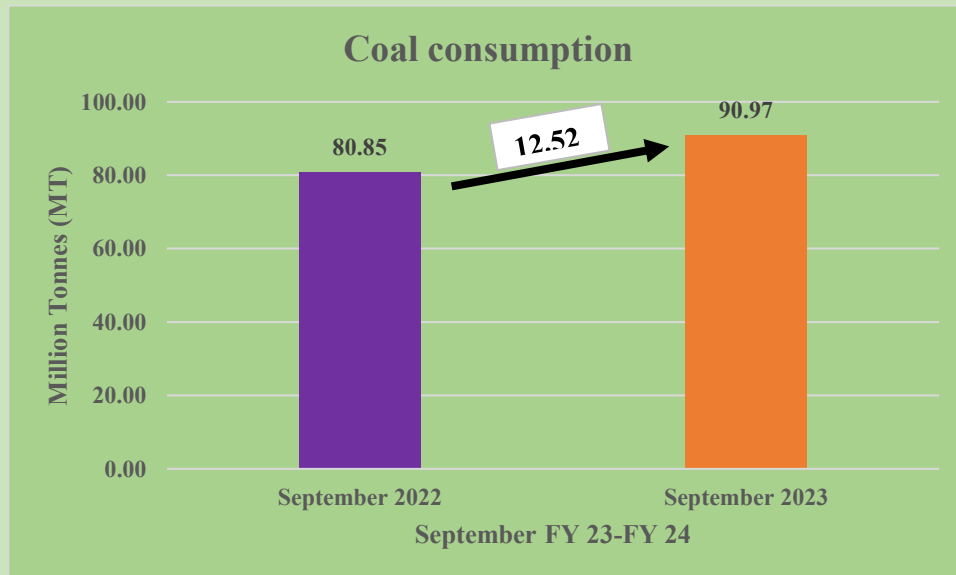


Figure 3 Monthly coal consumption in India during September FY 23-FY24

1.5 Sector-wise coal consumption

Coal is the most important and abundant fossil fuel in India. It is mainly utilized for power, CPP, iron and steel, cement and other sectors. In September FY24, coal utilized by various sectors are as follows power

ENERGY CELL

(63.13 MT), CPP (4.36 MT), iron & steel (7.83 MT), cement (2.5 MT) and others (13.16 MT) over corresponding month of the previous FY23 as power (53.31 MT), CPP (3.17 MT), iron & steel (7.39 MT), cement (1.91 MT) and others (15.09 MT).

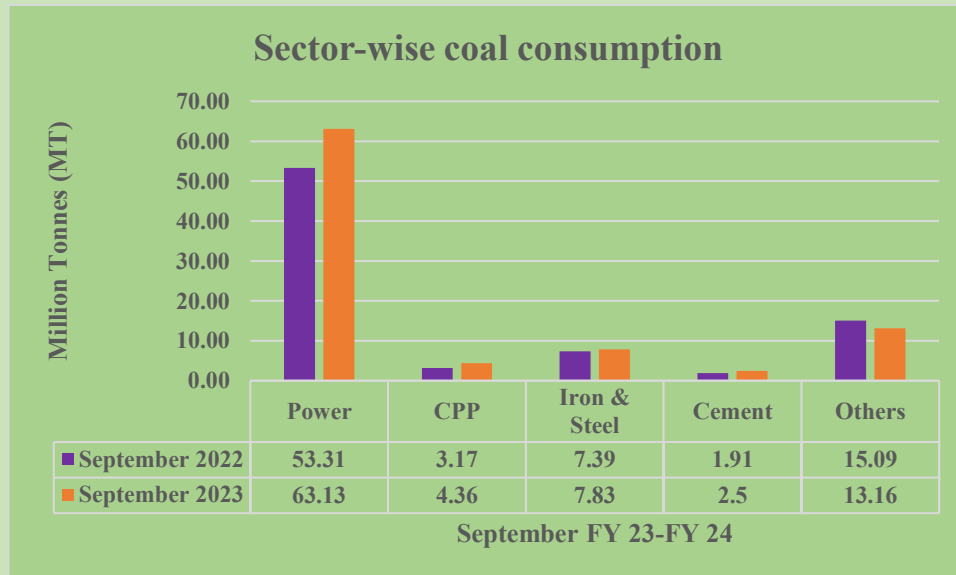


Figure 4 Sector-wise coal consumption during September FY23-FY24

1.6 Generation of Energy Resources

India still depends heavily on coal as the major source of energy. During the FY 2021-22, energy generated from coal accounted for about 72.92% of the total generation of energy, followed by electricity (from hydro, nuclear and other renewable energy sources) (8.24%), natural gas (8.16%), crude oil (7.87%) and lignite (2.81%).

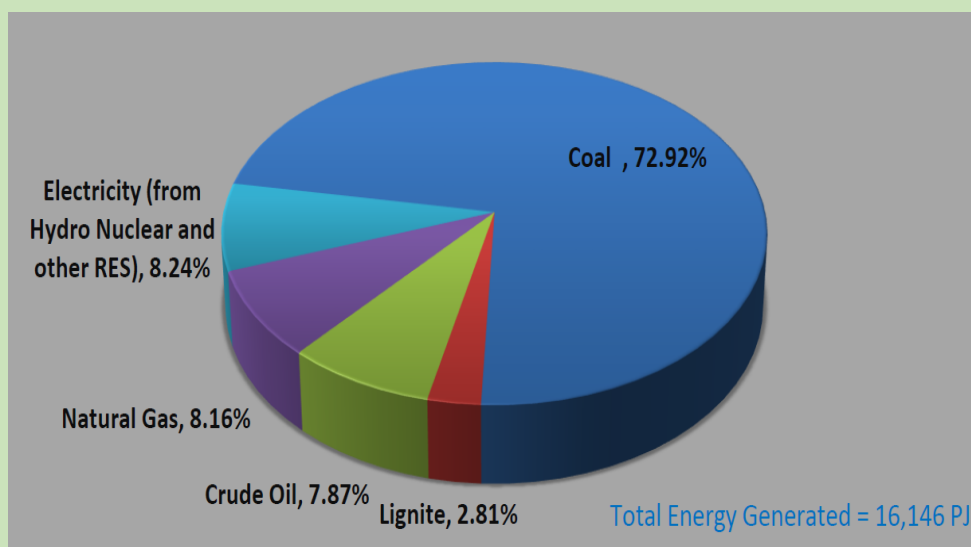


Figure 5 Generation of Energy Resources FY 2021-22

1.7 Consumption of Energy Resources

During FY 2021-22, the consumption of energy from coal and crude petroleum was the highest, accounting for about 47% and 31% of the total consumption, followed by electricity (from hydro, nuclear and other renewable energy sources) (14%), natural gas (7%) and lignite (1%), which indicates the dominance of coal in overall energy consumption in India.

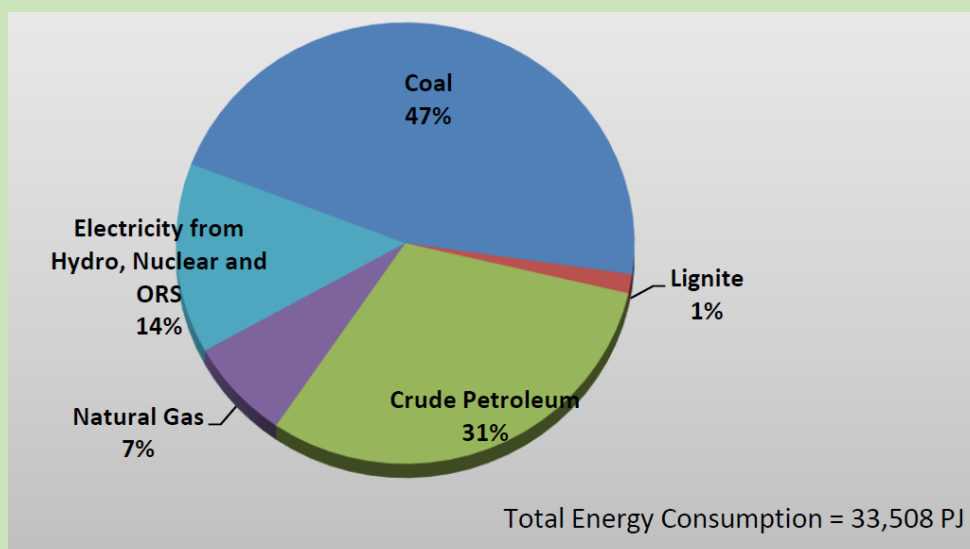


Figure 6 Consumption of Energy Resources FY 2021-22

2 Role of Coal in the Electricity Sector

Electricity is central to many parts of life in modern societies. It will become even more so as its role in transport and heating expands through the widening use of electric vehicles and heat pumps. Coal has been the main contributor to power generation for many decades. Power generation is currently the largest source of CO₂ emissions globally. Still, it is also the sector leading the transition to net zero emissions through the rapid deployment of renewables such as solar and wind. The main sources of electricity generation are coal, natural gas, hydro, nuclear, biomass and other renewable sources.

2.1 Global Electricity Demand

In September FY24, Global electricity demand observed a peripheral increase of 4.99% to 2365.88 TWh over 2253.44 TWh in the corresponding month of the previous FY23.

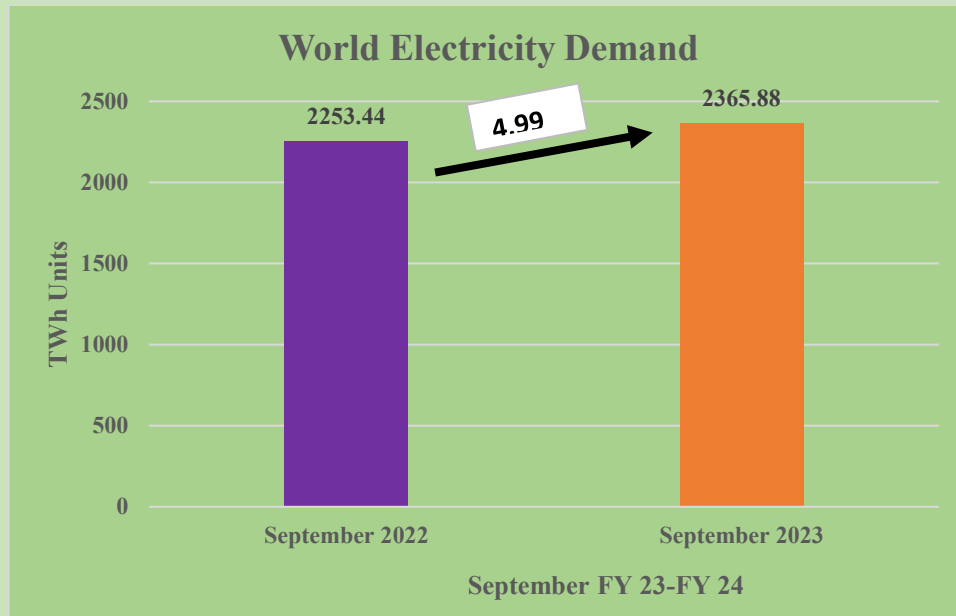


Figure 7 Global Electricity Demand

2.2 Global Electricity Generation

In September FY24, Global electricity generation observed a peripheral increase of 4.99% to 2365.88 TWh over 2253.44 TWh in the corresponding month of the previous FY23.

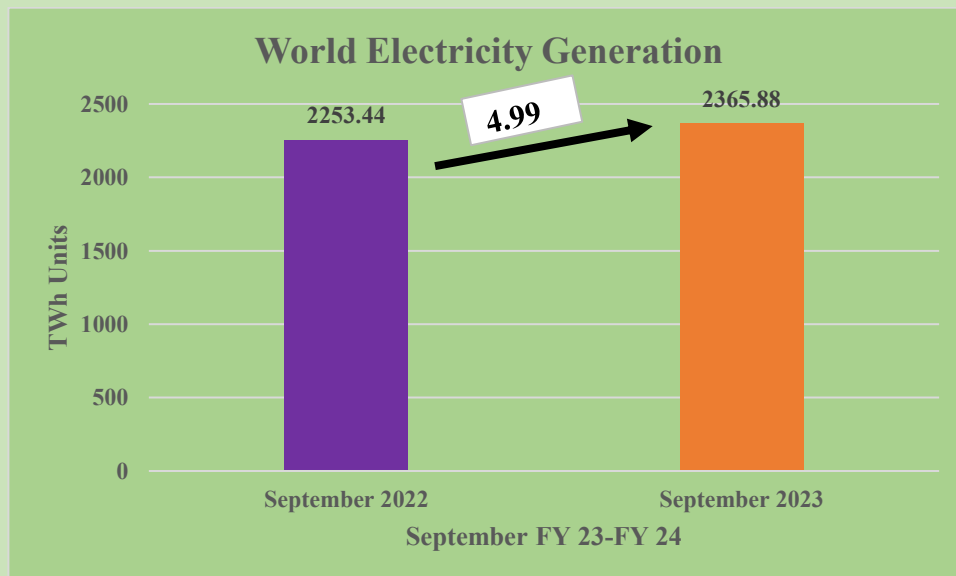


Figure 8 Global Electricity Generation

2.3 Share of Coal in Global Electricity Generation

In September FY24, the share of coal declined by 3.80%, contributing 34.67% in overall global electricity generation against 36.04% in the corresponding month of the previous FY23.

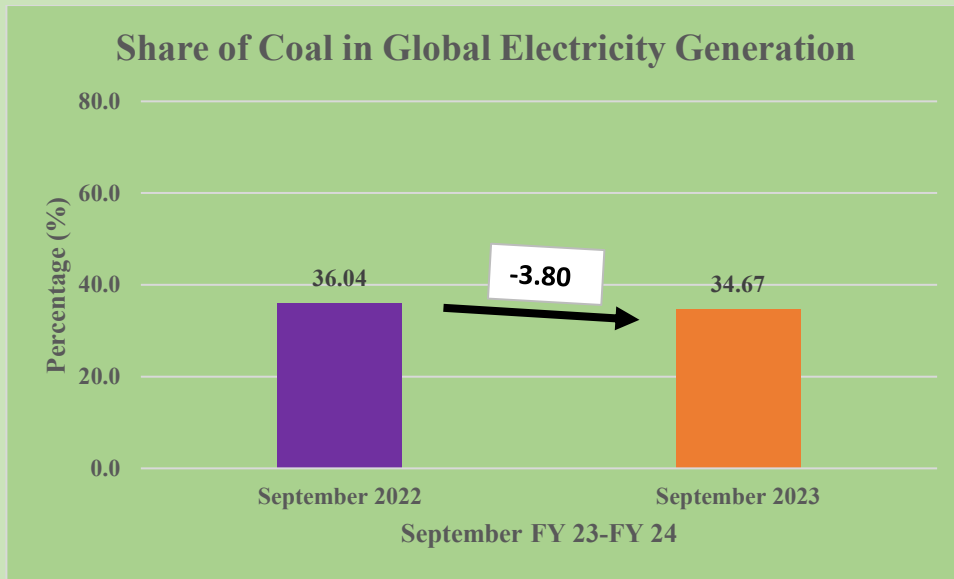


Figure 9 Share of Coal in Global Electricity Generation

2.4 India Electricity Demand

India's electricity demand has seen a significant increase of 9.09% to 148.83 TWh in September FY24 against 136.43 TWh in the corresponding month of the previous FY23.

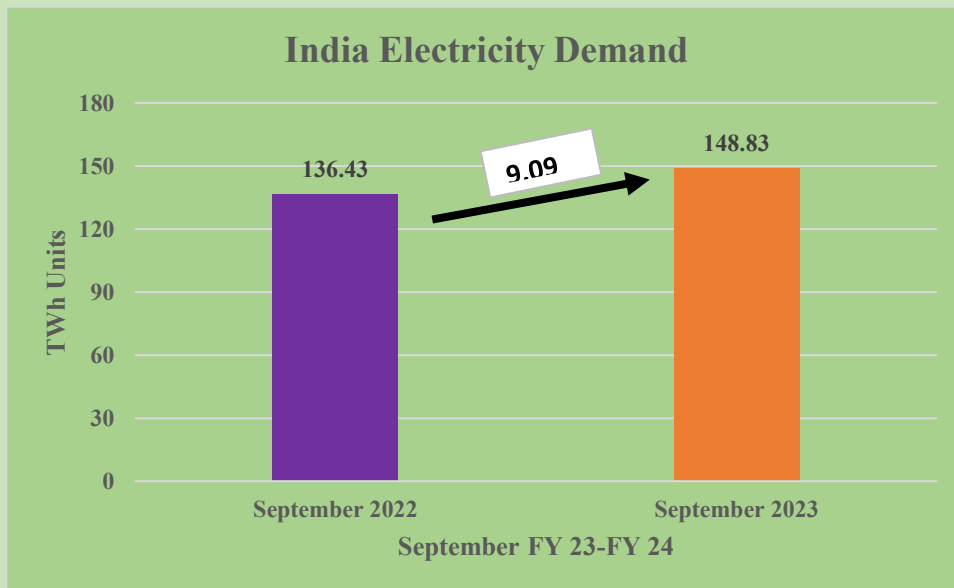


Figure 10 India Electricity Demand

2.5 Indian Electricity Generation

India's electricity generation has seen a significant increase of 9.7% to 149.57 TWh in September FY24 against 135.67 TWh in the corresponding month of the previous FY23.

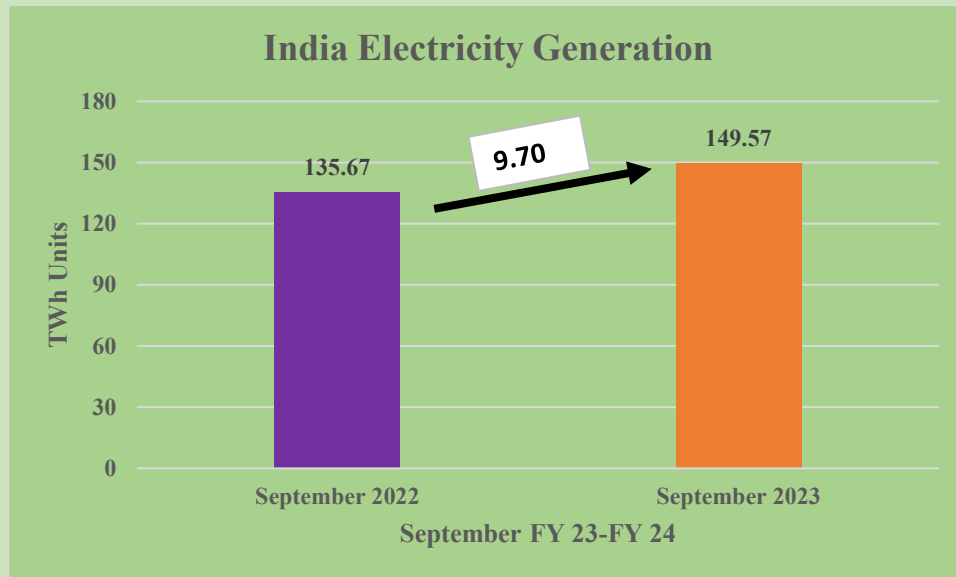


Figure 11 India Electricity Generation

2.6 Share of Coal in India's Electricity Generation

In India, Coal is the major contributor to power generation. The share of coal in India's electricity generation in September FY24 is 70.76 against 67.47 over the corresponding month of the previous FY23, with an increase of 4.88%.

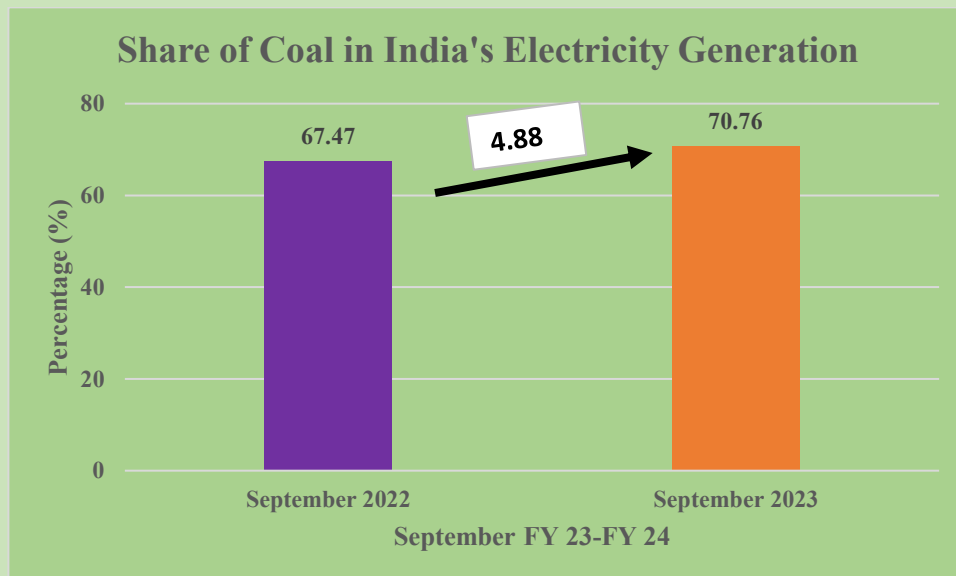


Figure 12 Share of Coal in India's Electricity Generation

3 Conclusion

In India, coal production and consumption in September FY 24 observed a positive growth of 16.01% and 12.52%, with a total volume of 67.33 MT and 90.97 MT, respectively. In contrast, total coal imports declined by 4.35% over September FY 23, which signifies coal demand in the nation. Of the total imports,

non-coking coal imports were 13.89 MT in September FY24 against 12.08 MT in September FY23, and coking coal imports were at 4.59 MT in September FY24 against 4.88 MT in September FY23. Overall coal imports from April to September declined by 8.95% to 124.53 MT in FY 2023-24, over 135.68 MT in FY 2022-23, which shows the country's efforts towards self-sustainability in fossil fuels. This trend is expected to decline in the future unless there is a sudden spurt in demand and a significant softening in seaborne prices.

Global electricity demand and generation in September FY24 have shown similar trends, with a peripheral increase of 4.99% to 2365.88 TWh over September FY23, where the share of coal declined 3.80%, contributing 34.67% in overall global electricity generation. Meanwhile, India's electricity demand and generation in September FY 24 has shown significant growth of 9.08% and 9.70%, respectively, over September FY23. In India, Coal is the major contributor to power generation. There is no significant difference in the share of coal in India's electricity generation, even though there is a global push towards just transition. The share of coal in India's electricity generation in September FY24 is 70.76%, with a positive growth of 4.88% over the corresponding month in the previous FY23. This trend signifies coal will remain a major energy source in India in the foreseeable future. There is also immense pressure from the global community to move away from coal. But in the foreseeable future, it will not be easy to move away from coal for developing countries like India, which is highly dependent on coal. There is likely an increase in coal-based generation on account of the uncertainty in the realization of the expected/scheduled capacity addition from hydro, nuclear, renewable sources and climactic factors like drought conditions, etc.

References

1. Provisional Coal Statistics
2. Geological Survey of India
3. Ministry of Coal
4. Ministry of Power
5. Ministry of New and Renewable Energy
6. Coal Controller's Organization
7. Coal Vision 2030
8. Central Electricity Authority
9. World Bank Commodity Markets
10. Enerdata

