

## Executive Summary

Energy is an essential ingredient for almost all human activities, be it the power sector, the Industry, transportation or the household, the requirement of energy is indispensable and ubiquitous. In the Financial Year 2023-24, India has experienced a steady and healthy growth in both, energy supply and consumption by overcoming the shock of global Pandemic. The Indian economy, continued to have higher quench for energy to support the rapidly expanding urbanisation and industrialization and the vision of becoming the *Vikshit Bharat* by 2047. The key highlights of the overall performance of the energy sector of India during FY 2023-24 are as follows:

1. As on March 31, 2024, the reserves of Coal stood at 389.42 billion tonnes of which Odisha has the highest share of 25.47% followed by Jharkhand (23.58%), Chhattisgarh (21.23%), West Bengal (8.72%) and M.P.(8.43%). The *Proved Reserves* (i.e. economically mineable reserve) consists of around 55% of the total Coal reserve in India during FY 2023-24. The estimated Crude Oil reserves was 671.40 million tonnes of which Western Offshore accounted for around 32%, followed by Assam (21.66%), Rajasthan (19.59%) and Gujrat (17.70%). The Natural Gas reserves were recorded at 1,094.19 billion cubic meters (BCM) during FY 2023-24; which is primarily located at the Western Offshore (31.28%) followed by Eastern Offshore (24.07%) and Assam (15.03%).
2. The estimated potential for generation of energy from renewable re-sources have reached at 21,09,655 MW as on March 31, 2024. Highest potential for generation of Energy comes from *wind (@ 150 mtr)* which is at 11,63,856 MW (55.17%), followed by Solar Energy 7,48,990 MW (35.50%) and large Hydro 1,33,410 MW (6.32%).
3. The capacity of Coal washeries in India has displayed a staggered growth over the years from 131.4 MTY as on March 31, 2015 to 257.79 MTY as on March 31, 2024; in contrast there is a steep rise in the volume of production of Coal over the years (an increase of 389 MTs from FY 2014-15 to FY: 2023-24).
4. Coal remained the backbone of India's energy supply, accounting for nearly 79% of the total energy supplied domestically in FY 2023-24. Coal production grew by 11.71%,

reaching at 997.83 million tonnes, up from 893.19 million tonnes in the previous year. The Non-Coking Coal is having the dominating share of the total production of Coal, at around 93.3% during FY: 2023-24.

5. The gross generation of electricity from the Renewable resources (both Utility and Non-Utility together) has also emerged significantly over the years. From an amount of 2,05,608 GWH of electricity which was generated during FY 2014-15, has increased to 3,70,320 GWH during FY 2023-24, which is a CAGR of 6.76% over a period of 10 years.

6. To meet the domestic demand, India relies heavily on Import of Coal, Crude Oil and Natural Gas. During FY 2023-24 the Net-Import of Coal rose by 11.2% and reached at 262.99 million tonnes, while the Net-Import of Natural Gas surged by almost 21%, amounting to 31.8 BCM (Billion Cubic Meter) during FY 2023-24 over last year. The import of Crude Oil also grew from 232.70 Million Tonnes to 234.26 Million during FY 2023-24, over last year.

7. India's electricity availability showed a notable increase. The losses due to *Transmission and Distribution* stood at 17.08% during FY 2023-24 and the net electricity available for supply grew by 7.25%, over last FY reaching at 16,46,998 GWh during FY 2023-24.

8. India's Total Primary Energy Supply (TPES) continued its steady growth post-COVID-19, with a 7.8% increase in FY 2023-24, amounting to 9,03,158 KToe over the previous year. The major source of energy comes from Coal (60.21%) which is followed by Crude Oil (29.83%) and Natural Gas (6.99%).

9. Energy supplied from the Renewable energy resources have experienced a healthy and consistent growth over the years; from an amount of 17,682 KToE during FY: 2014-15 to 31,847 KToE during FY: 2023-24 i.e. it has registered a CAGR of 6.76% over 10 years. The energy generated from *Solar, Wind and Others (excluding Large Hydro)* has recorded a growth from a 6,555 KToE during 2014-15 to 20,289 KToE during 2023-24 i.e. close to 210% over the past 10 years.

10. The *Total Final Consumption (TFC)* of energy, into different end-use sectors, has also experienced a sound rise. TFC of energy surged by over 38% since 2014-15, reaching at 6,13,605 KToE in FY 2023-24. In the year 2023-24, among all the end use sectors, the industry

sector saw the highest growth at 13.2%, followed by transport (10.7%) and commercial/public service sectors (6.6%) as compared to previous year, all of which are the driving forces of an economy. The energy consumption against the Residential sector also rose steadily over years, reflecting India's rapid urbanization and testament to the steadfast progress of Indian economy.

11. The sector Agriculture/Forestry, has also witnessed a sound increase of energy consumption over years. From an amount of 15,347 KToE of energy during FY 2014-15 it rose to 22,564 KToE of energy during FY 2023-24, which is a CAGR of 4.38% over past 10 years.

12. The *per-capita-energy-consumption* (after excluding components like Industry Own Consumption, Losses etc.) in India has also experienced a growth over the years. From an amount of 14,682 Mega Joule/person during FY 2014-15, the same has risen by over 25% during the last 10 years and reached at 18,410 Mega Joule/person during FY 2023-24. The *per-capita-electricity-consumption* has gone up from 748 KWh/person during FY 2014-15 to 1,106 KWh/person during FY: 2023-24, i.e. an increase of around 48% over a span of 10 years.

13. The overall Energy intensity has witnessed a slight improvement during FY 2023-24. In FY 2023-24, it took 0.2180 Mega Joules of energy to generate 1 INR of GDP as compared to 0.2192 MJ per INR of GDP in FY 2022-23. The Energy Intensity for Industry has come down from 361.47 Mega Joule / '000 Rs. of GDP to 284.20 Mega Joule/'000 Rs. of GDP during 2023-24.

14. India's dependency on the energy Imports has remained significant. During FY 2023-24, the Import-dependency of Crude Oil was close to 89%, whereas the same was 46.60% for Natural Gas and 25.86% for Coal.