Increasing Demand of Coal

For Prelims: Fossil fuel, Coal.

For Mains: Reasons for surging Coal Demand in India and related concerns.

Why in News?

Despite the country's efforts to switch to renewable energy, **coal will remain India's dominant energy source.**

What is the State of Energy Capacity of the Country?

- According to the projections by Climate Action Tracker, fossil fuel makes up for over half the installed energy capacity in the country and is expected to touch around 266 gigawatts by 2029-2030.
- **Domestic coal requirement is expected to rise to 1,018.2 million tonnes by 2031-32** from 678 MT in 2021-2022.
  - This means **coal consumption will increase 40% in India.**

What is the Reason for Increasing Coal Demand?

- Iron and steel production uses coal and there are not **many technologies to replace the fuel immediately.**
- **Continued expansion of India's economy is expected during 2022-2024**, with annual average GDP growth of 7.4%, fuelled partially by coal.
- India's push to domestic coal mining through both Coal India and auction of coal blocks to private companies, coal usage in India will increase as it **plateaus in other parts of the world, including China.**
- The central government has opened **up coal mining for the private sector, claiming it as one of its most ambitious coal sector reforms.**
  - The government anticipates that it will bring efficiency and competition in coal production, attract investments and best-in-class technology, and help create more jobs in the coal sector.

What is Coal?

- **About:**
  - It is a type of fossil fuel found in the form of sedimentary rocks and is often known as **'Black Gold'.**
  - It is a conventional source of energy and is widely available. It is used as a domestic fuel, in industries such as iron and steel, steam engines and to generate electricity. Electricity from coal is called thermal power.
  - The leading coal producers of the world include China, US, Australia, Indonesia, India.
- **Distribution of Coal in India:**

- **Gondwana Coal Fields (250 million years old):**
  - **Gondwana coal makes up to 98 % of the total reserves** and 99 % of the production of coal in India.
  - Gondwana coal forms India's metallurgical grade as well as superior quality coal.
  - It is found in Damodar (Jharkhand-West Bengal), Mahanadi (Chhattisgarh-Odisha), Godavari (Maharashtra), and Narmada valleys.
- **Tertiary Coal Fields (15 – 60 million years old):**
  - Carbon content is very low but is rich in moisture and Sulphur.
  - Tertiary coalfields are mainly confined to extra-peninsular regions
  - Important areas include Assam, Meghalaya, Nagaland, Arunachal Pradesh, Jammu and Kashmir, Himalayan foothills of Darjeeling in West Bengal, Rajasthan, Uttar Pradesh, and Kerala.
- **Classification:**
  - **Anthracite** (80 - 95% carbon content, found in small quantities in J&K).
  - **Bituminous** (60 - 80% carbon content and is found in Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh).
  - **Lignite** (40 to 55% carbon content, high moisture content and is found in Rajasthan, Lakhimpur (Assam) and Tamil Nadu).
  - **Peat** (less than 40% carbon content and it is in the first stage of transformation from organic matter (wood) to coal).

Way Forward

- A key step in **establishing a post-coal economy is re-training the coal-dependent society.**
- Recognising the **need to train the workers who have been displaced by their profession** is the **need of the hour for employment opportunities in the renewable energy sector.**
  - The American federal transition programmes like solar training and education for professionals and the Partnerships for Opportunity, Workforce and Economic Revitalisation dislocated worker grant can establish precedence for India to design and develop its own schemes.
- The **clean energy transitions for India could be financed by the development financing institutions**, with investments made by the Climate Change Finance Unit for the promotion of policies, green financing and capacity building.
  - The Climate Change Finance Unit is **responsible for serving as the Ministry of Finance's nodal point on climate finance matters,** participating in the discourse on climate finance issues within the multilateral climate change regime as well as other international forums such as the **G20** and providing analytical inputs to the **National Climate Policy Framework.**

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q1. Consider the following statements: (2019)

1. Coal sector was nationalized by the Government of India under Indira Gandhi.
2. Now, coal blocks are allocated on lottery basis.
3. Till recently, India imported coal to meet the shortages of domestic supply, but now India is self-sufficient in coal production.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 and 3 only
(c) 3 only
(d) 1, 2 and 3

Ans: (a)

Exp:

- Coal sector was nationalised in two phases under Indira Gandhi Government in 1972. **Hence, statement 1 is correct.**
- The coal blocks are allocated through auctions and not on a lottery basis. **Hence, statement 2 is not correct.**
- The coal sector is the monopolistic sector in India. India holds 5th biggest coal reserves in the world, but due to the incapacity of coal production by monopolistic firms, it imports coal to meet the shortages of domestic supply. **Hence, statement 3 is not correct.**
- Therefore, option (a) is the correct answer.

Q2. Which of the following is/are the characteristic/characteristics of Indian coal? (2013)

1. High ash content
2. Low sulphur content
3. Low ash fusion temperature

Select the correct answer using the codes given below:

(a) 1 and 2 only
(b) 2 only
(c) 1 and 3 only
(d) 1, 2 and 3

Ans: (a)

Mains

Q. Despite India being one of the countries of Gondwanaland, its mining industry contributes much less to its Gross Domestic Product (GDP) in percentage. Discuss. **(2021)**

Q. "In spite of adverse environmental impact, coal mining is still inevitable for development". Discuss. **(2017)**

Source: DTE

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