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1. What grade of coal does India produce? Why does it need imported coal? What is the status of the country's transition away from the fossil fuel?

Why in News?

A recent report by the Organized Crime and Corruption Reporting Project, a venture backed by billionaire hedge fund manager and philanthropist, George Soros, furnished new documents to allege that in 2014, the Adani Group claimed 'low grade' coal, imported from Indonesia, to be 'high-quality' coal, inflated its value and sold it to Tamil Nadu's power generation company, TANGEDCO (Tamil Nadu Generation and Distribution Company).

What is 'high grade' and 'low grade' coal?

The Gross Calorific Value (GCV), or the amount of heat or energy that can be generated from burning the coal, determines the gradation of coal. Coal being a fossil fuel is a mixture of carbon, ash, moisture and a host of other impurities. The higher the available carbon in a unit of coal, the greater is its quality or 'grade.' There are 17 grades of coal by this metric from grade 1, or top quality coal, with a kilo of it yielding higher than 7,000 kcal, and the lowest producing anywhere between 2,200-2,500 kcal, as per a classification by the Coal Ministry.

Grade of coal	Gross calorific Value per kilo calories/ per kilogram			Run of Mine Coal price (in Rs.)	Cost of heat (FOB) (Rs./Gcal)
	min	max	mean		
G1	7000		7000	3542	506
G2	6700	7000	6850	3393	495.33
G3	6400	6700	6550	3244	495.27
G4	6100	6400	6250	3032	485.12
G5	5800	6100	5950	2886	485.04
G6	5500	5800	5650	2360	417.70
G7	5200	5500	5350	1840	343.93
G8	4900	5200	5050	1700	336.63
G9	4600	4900	4750	1500	315.79
G10	4300	4600	4450	1400	314.61
G11	4000	4300	4150	1130	272.29
G12	3700	4000	3850	910	236.36
G13	3400	3700	3550	690	194.37
G14	3100	3400	3250	610	187.69
G15	2800	3100	2950	510	172.88
G16	2500	2800	2650	474	178.87
G17	2200	2500	2350	420	178.72

Table 1: Cost of coal (Rs./Gcal) as per Coal India prices

What are the characteristics of Indian coal?

Indian coal has historically been evaluated as being high in ash content and low in calorific value compared to imported coal. The average GCV of domestic thermal coal ranges from 3,500-4,000 kcal/kg compared to imported thermal coals of +6,000 kcal/kg of GCV.

Also the average ash content of Indian coals is more than 40% compared to imported coal which has less than 10% ash content. The consequence of this is that high-ash coal when burnt results in higher particulate matter, nitrogen and sulphur dioxide. Given this, the government, since 1954, has controlled the price of coal in a way that power companies were disincentivised to use high-grade coking coal for power generation.

Thus in the pursuit of balancing India's needs for coal production, power plants and pollution, the government has recommended the use of imported coal with lower ash and moisture content. The Central Electricity Authority (CEA) in 2012 recommended, and which still stands,

that about 10-15% blending of imported coal can usually be safely used in Indian power boilers, which are designed for low quality Indian coal.

What is clean coal?

Broadly, we get clean coal when the carbon content has been increased by reducing its ash content. Coal plants have 'washing plants' on site which can process the coal in ways that reduce ash and moisture content. They employ huge blowers or a 'bath' to remove fine, coarse ash. However, deploying such equipment is expensive and adds to the cost of power.

The other method to clean coal — again requiring significant investment — is coal gasification. Here, the need to directly burn coal is bypassed by converting it into gas. By relying on an integrated gasification combined cycle (IGCC) system, steam and hot pressurised air or oxygen combine with coal in a reaction that forces carbon molecules apart. The resulting syngas, a mixture of carbon monoxide, hydrogen, CO₂ and water vapour, is then cleaned and burned in a gas turbine to make electricity. Since IGCC power plants create two forms of energy (steam from the gasification process apart from syngas as fuel), they increase efficiency of the coal used.

What is the future of coal in India?

Official data says that India in 2023-24 produced 997 million tonnes of coal, an 11% growth over the previous year. Most of this was produced by the state-owned Coal India Ltd and its subsidiaries.

Despite stated commitments to transition India's electricity sector away from fossil fuel, coal is the mainstay of India's energy economy. Change, however, is in the air as for the first time this year, renewable energy accounted for 71.5% of the record 13.6 GW power generation capacity added by India in the first quarter of this year, while coal's share (including lignite) of total power capacity dropped below 50% for the first time since the 1960s.

Relevance: GS Prelims & Mains Paper III; Economics

Source: The Hindu

2. Behind Opposition postal ballot concern, Election Commission rule change in 2019

Why in News?

Ahead of the counting of votes in the Lok Sabha elections on June 4, the INDIA bloc asked the Election Commission to issue directions to Returning Officers to complete the counting of postal ballots before finalising the EVM counting.

Position upto 2019 elections

The Opposition's concern stems from a change in the EC's guidelines in 2019 for counting of postal ballots. Till the 2019 LS elections, the counting of postal ballots was taken up first and EVM counting began 30 minutes after that. And all postal ballots had to be counted before the EVM counting could be completed.

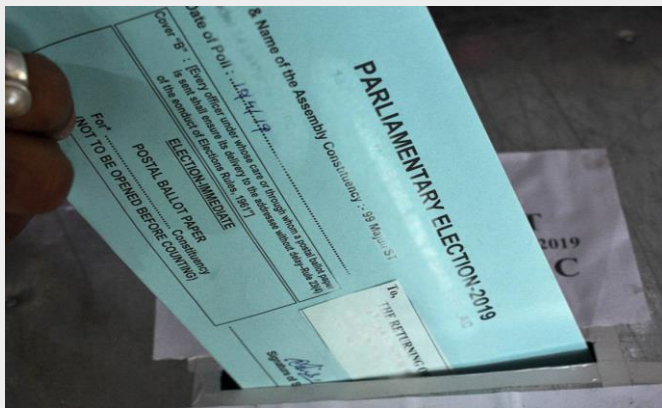
"Under no circumstances, should the results of all the rounds of the EVM counting be announced before finalising the postal ballot counting," stated the EC's Handbook for

Counting Agents in February 2019. Now, the postal ballot counting starts 30 minutes before the EVM counting, but does not have to be completed before the EVMs.

Position after 2019 elections

After the 2019 elections, the EC decided to tweak the guidelines as the number of postal ballots had gone up, especially after the introduction of the Electronically Transmitted Postal Ballot System (ETPBS), and the mandatory counting of VVPAT slips of five randomly selected polling stations per Assembly constituency or Assembly segment.

In directions to all Chief Electoral Officers on May 18, 2019, the EC withdrew its earlier guideline that the penultimate round of EVM counting should be taken up only after postal ballots counting is complete. Instead, it said, the EVM counting "can go on irrespective of the stage of postal ballot counting". Once the EVM counting is complete, the VVPAT slips can be counted.



It also revised the rule for mandatory re-counting of postal ballots. Earlier, postal ballots were recounted if the margin of victory was less than the total number of postal ballots. Now, the postal ballots that are rejected as invalid during counting would be re-verified if the margin is less than the number of such ballots.

Increasing Postal Ballots

While a total of 22.71 lakh postal ballots were received during the 2019 Lok Sabha elections or 0.37% of the total 60.76 crore valid votes, the number of postal ballots is expected to be higher this time. Apart from service voters like defence forces, who are deployed outside their home states, the EC in October 2019 introduced postal ballots for essential service workers, those above 80 years of age and persons with disabilities. Since then, the age limit has been increased to 85 years for seniors and Covid-19 patients have been included in the list of those eligible for postal ballots.

As the guidelines stand today, as per the 2023 Handbook for Counting Agents, "After 30 minutes of commencement of postal ballot counting, the EVM counting can start and continue irrespective of the stage of postal ballot counting. Once the EVM counting is completed, the VVPAT slip counting can also start."

With the number of postal ballots expected to increase, the Opposition parties have expressed concern over the counting process. In their letter to the EC, they pointed out that the winning margin in the 2020 Bihar elections was 12,700 votes for the state, while the number of postal ballots was 52,000. "In fact, there was a huge outcry in Bihar as it was the first election (which was conducted after the onset of the Covid-19 pandemic) where the postal ballots were counted at the end of the counting of EVM votes," the INDIA parties said.

They asked the EC to withdraw the May 2019 letter and to issue directions in consonance with Rule 54A of the Conduct of Elections Rules, 1961, which says “the returning officer shall first deal with the postal ballot papers...”

Relevance: GS Prelims & Mains Paper II; Governance

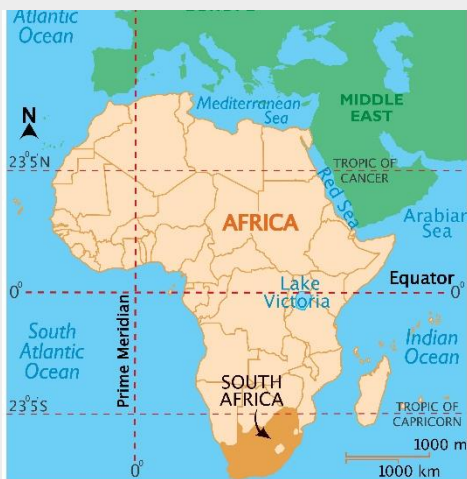
Source: Indian Express

3. What the end of African National Congress’s dominance means for South Africa

Why in News?

The African National Congress (ANC) has lost its 30-year-old parliamentary majority in South Africa, winning just over 40% of the national vote share in recent polls.

The Democratic Alliance (DA), South Africa’s principal opposition party, is in second place with almost 22% of the vote, followed by Jacob Zuma’s uMkhonto we Sizwe (MK) party, with almost 15%, and the Marxist-Leninist Economic Freedom Fighters (EFF), with over 9%.



ANC’s decline

Three decades ago, the ANC under Nelson Mandela, won South Africa’s first ‘all-race’ election, ushering in a new era for the deeply divided nation. The once-banned party which spearheaded the struggle to end apartheid, won a whopping 62.65% of the national vote in 1994.

Since then, the ANC has enjoyed a stranglehold over South African politics, with its vote share in national elections never dropping below the 50% mark. This is much like the popularity the Indian National Congress enjoyed in the first few decades after Independence. In

recent years, however, the ANC has seen a slow, albeit steady decline.

Coalition complications

This election marks a new low for the ANC, which will have to, for the first time, seek out a coalition partner[s] to form the government and elect its leader as President.

South Africans do not directly vote for the President. Instead, their votes determine the constitution of the National Assembly (NA) by proportional representation. The NA in turn elects the President by a simple majority (201 or more votes in the 400-member NA).

Almost 10% short of the majority, the ANC will have to woo one of the DA, MK Party, or EFF to form the government.

The MK party, founded only in December 2023, has emerged as arguably the biggest winner in the elections. It is led by Jacob Zuma. Zuma, once a stalwart of the anti-apartheid movement, held South Africa’s presidency from 2009-18, when he was removed from office on the back of corruption allegations. His populist proposals and rhetoric have nonetheless helped him

retain a loyal voter base among poor Black South Africans. During the election campaign, he made bold promises to end unemployment and poverty.

Relevance: GS Prelims & Mains Paper II; International Relations

Source: Indian Express

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