Editorial

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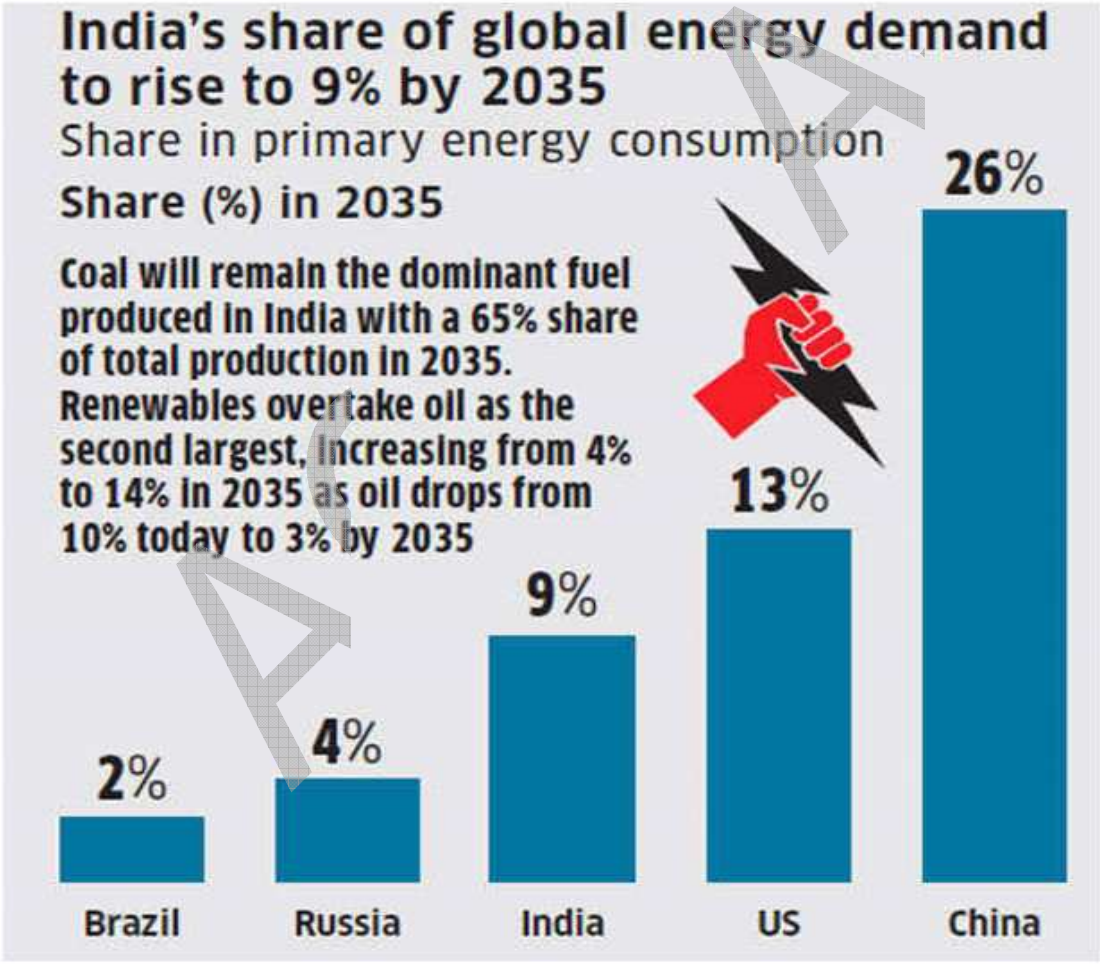
How quickly can India move away from coal?



In News:

Recently, Tamil Nadu Chief Minister wrote to Prime Minister Modi, requesting him to ensure **adequate supply of coal** to the power-generating units in the State.

In Maharashtra, Deputy Chief Minister said the State government planned to import coal to cope with the power crisis.

The other top power-consuming State in the country, Gujarat, is also planning to import coal, according to reports.

Decline in coal stocks and the resulting ***power outages in several States*** have spurred queries of renewable energy's potential to fill in for the conventional resource.

Earlier in recent weeks, coal stocks in more than 100 thermal power plants in India **fell below the critical mark** (less than 25% of the required stock) while it was less than 10% in over 50 plants across India.

Is there a coal crisis?

1. Coal accounts for 55% of the country's energy needs, according to Mr. Joshi.
2. The **India Energy Outlook 2021 report** of the **International Energy Agency (IEA)** said energy use in India has doubled since 2000, with 80% of demand still being met by coal, oil and solid biomass.
3. Pandemic-related disruptions, however, prevented the stock-up of coal. Mining operations were halted to curb the spread of the virus.
4. Despite the gradual easing into operations, mining activities were hampered during the monsoons, delaying arrival of stocks.
5. With household demand for power picking up and the arrival of summer, combined with the sudden acceleration in economic activity, it has **resulted in a demand-supply mismatch.**
6. The country had experienced a similar situation last October, but with peak summer approaching, the coal stock situation is more worrisome now because demand for power will be high.
7. The energy demand will go up as urbanization and the population increase.
8. The IEA estimates that despite the shock from COVID-19, India's demand is expected to grow by almost 5% a year till 2040.

What is the consumption pattern?

Coal is abundantly available, has **shorter gestation periods** and coal-based plants have **lower capital costs** than hydel and nuclear plants, therefore, making it the **most viable enabler of energy security** in the country.

The conventional resource's capacity addition is further helped by the increased participation of the private sector in power generation.

In Washington recently, Finance Minister said India's move away from coal will be hampered by the war in Ukraine.

At the recently concluded Budget session, Ministry of power said, "Despite push for renewables, the country will require base load capacity of coal-based generation **for stability** and also for **energy security**."

Where does India stand on renewable energy sources?

1. The report of the Central Electricity Authority on optimal generation capacity mix for 2029-30 estimates that the share of renewable energy in the gross electricity generation is expected to be around 40% by that financial year.
2. The Union government has spent ₹3,793 crore until March 14 in 2021-22 for implementing **varied renewable energy-related schemes and programmes.**
3. A total of 152.90 GW of renewable energy capacity has been installed in the country as on February 28, as per government figures.
4. This includes 50.78 GW from solar power, 40.13 GW from wind power, 10.63 GW from bio-power, 4.84 GW from small hydel power and 46.52 GW from large hydel power.
5. In accordance with the Prime Minister's announcement **at COP26** (the 2021 United Nations Climate Change Conference), the Ministry of New and Renewable Energy aspires **to install 500 GW of electricity capacity from non-fossil fuel sources by 2030.**
6. As per **IEA reports**, Over the next 10 years, the strong growth of renewables is not sufficient in the stated policies scenario to keep up with the projected pace of electricity demand growth, and coal-fired power generation makes up the difference.

What are the challenges?

1. The capacity of a plant does not necessarily translate into the actual power it generates for the grid, some of it is lost owing to external factors such as heat or transmission losses. This applies for both renewable and conventional sources.
2. **Solar and wind energy** are variable resources **with 'variability'** being particularly exposed during periods of peak demand.
    1. For example, solar energy is abundantly available during daytime in summers. However, the domestic consumption peaks in the

evenings when we turn on the air-conditioner after returning from work.

3. With no sunlight outside then, **energy requirement and supply face a mismatch.**
4. Another dimension to it is the seasonal variation. In monsoons, solar energy is barely available with wind energy available in abundance.
5. Another factor is **spatial variability**. Regions near coastal areas enjoy more wind and therefore, possess greater ability to produce wind energy, like Gujarat, in comparison to States which are drier and experience more sunlight, like Rajasthan.

Use of renewable energy, therefore, would essentially require a balancing act.

What about transmission and storage?

1. **Transmission and storage** are central to addressing variability issues. They help cope with the 'duck curve' power demand among consumers in India.
2. Resembling a duck, the curve is a graphical representation exhibiting the difference between the demand and availability of energy through the day.
3. With both wind and solar being variable sources – it becomes **imperative to establish a complementing model.**
4. This would require **import and export technologies** between States as well as **optimizing the trade** between those with differing demand and production profiles.
5. According to the IEA, **Thermal plants in the eastern region**, by contrast, provide **flexibility for demand centres** to the south and west, which have high industrial and agricultural loads and may call on imports during periods of low renewables availability.
6. **India's national infrastructure** has not been designed to account for so much variability in energy generation.
7. The **grid is accustomed to consistent supply** from thermal power plants, which is diametrically opposed to the erratic generation from solar-PV, wind turbines, and other renewables.

How will the cost factor work?

1. Transition to renewable energy would depend a lot on **inculcating energy-efficient behaviour** such as operating ACs, both for commercial and

domestic usage, more flexibly through the day and opting for energy-efficient products.

2. **Cooling systems** emerge as a utility during summers, the usage however is divided between higher and lower income households with the former being more economically secure opting to run them all through the day.
3. A **demand response programme** in the direction would help address such issues keeping external factors constant.
4. Further, lifestyle changes to reduce energy demand too would be essential; an example here could be **Japan's 'Cool Biz Campaign'** permitting employees to wear **light and casual clothes** at work instead of the conventional jackets and tie in order **to reduce the need for air-conditioning.**
5. As per government data, India has seen record low tariffs of ₹1.99 per KWh for solar power and ₹2.43 per KWh for wind power much cheaper in comparison to electricity produced from conventional sources.

Conclusion:

The scope of energy security has also expanded, with a growing emphasis on dimensions such as **environmental sustainability and energy efficiency**.

The government of India has already set an ambitious target of developing 5 GW of offshore capacity by 2022, and a further ***30 GW by 2030***.

To achieve the above targets, **a single unified ministry of energy** should come into picture to play an active role in India's developmental goals.

Mission Antyodaya and Rural Upliftment

The Indian Constitution mandates local governments to prepare and implement plans for **'economic development and social justice' (Articles 243G and 243W).**

Several complementary institutions and measures such as the **Gram Sabha** to facilitate people's participation, the **District Planning committee (DPC)** to prepare bottom up and spatial development plans, and the **State Finance Commission (SFC)** to ensure vertical and horizontal equity were introduced to promote this goal.

Given the right momentum, the **'Mission Antyodaya**' project of the Government of India launched in 2017-18 bears great promise to revive the objectives of these great democratic reforms. TheMinistry of Panchayati Raj (MoPR) and the Ministry of Rural Development act as the nodal agents to take the mission forward.

What is Mission Antyodaya?

- **Mission Antyodaya** is a mission mode project envisaged by the Ministry of Rural Development. It is a convergence framework for measurable effective outcomes on **parameters that transform lives and livelihoods.**
- The main objective of Mission Antyodaya is to **ensure optimum use of resources** through the convergence of various schemes that address multiple deprivations of poverty, making **gram panchayat the hub of a development plan**.
    - This planning process is supported by an annual survey that helps to assess the various development gaps at the gram panchayat level, by collecting data regarding the 29 subjects (health & nutrition, social security, good governance, water management etc.) assigned to panchayats by the **Eleventh Schedule of the Indian Constitution.**

What led to the Launch of Mission Antyodaya?

- The traditional poverty line linked to the calorie-income measure, religiously pursued by the **Planning Commission** proved inane and **failed to serve as a purposive policy tool.**
- The stats brought into the public domain by the **SocioEconomic and Caste Census (SECC) 2011** were **'demanding' remedial intervention**. It revealed that:
    - 8.88 crore households are deprived and poor from the perspective of **multi-dimensional deprivations such as shelterlessness, landlessness,** households headed by single women, SC/ST household or disabled member in the family
    - 90% of rural households have **no salaried jobs**
    - 53.7 million households are **landless**
    - 6.89 million **female-headed households** have **no adult member** to support
    - 49% suffer from **multiple deprivations**
    - 51.4% derive sustenance from **manual casual labour**
    - 23.73 million are with **no room or only one room to live**
- Paradoxically, this happened in **a country that spends more than ₹3 trillion every year for the rural poor** from the Central and State Budgets and bank-credit linked self-help programmes.

What Challenges Exist in the Rural Upliftment?

Gaps in Gram Panchayats

- The 'Mission Antyodaya' survey in 2019-20 for the first time collected data that shed light on the **infrastructural gaps from 2.67 lakh gram panchayats**, comprising 6.48 lakh villages with 1.03 million population.
- The maximum score values assigned in the survey add up to 100 and are presented in class intervals of 10.
    - While **no State in India falls in the top score bracket of 90 to 100**, 1,484 gram panchayats fall in the bottom bracket.
    - Even in the score range of 80 to 90, **10 States and all Union Territories do not appear.**
- The total number of gram panchayats for all the 18 States that have reported adds up only to **260, constituting only 0.10% of the total** 2,67,466 gram panchayats in the country.
    - Kerala tops the chart (with a score range 70-80) but **accounts for only 34.69% of total gram panchayats of the State.**
        - The corresponding all-India average is as low as 1.09%.
    - Even for Gujarat which comes next to Kerala, **gram panchayats in this bracket are only 11.28%.**

Poor Performance of Gram Panchayats in Composite Index of MA:

- Although **only 15 gram panchayats** (of the total reported) in the country **fall in the bottom range below 10 scores,** more than a fifth of gram panchayats in India are **below the 40 range.**
    - Only the gram panchayats in Kerala are above this in contrast to the rest of the States.
    - The gap report and the composite index show in unmistakable terms that building **'economic development and social justice' remains a distant goal** even after 30 years of the decentralisation reforms and nearly 75 years into Independence.

Missing Link between GPDPs and MA Surveys

- The missing link or connection between the **Gram Panchayat Development Plans (GPDPs)** prepared and the gaps emerging from the Mission Antyodaya

(MA) Survey findings has **hindered the process of preparing comprehensive GPDP.**

- As per the MoPR guidelines, the findings and the gap report assessments from **MA Survey should serve as the baseline for the preparation of GPDP;** but this is **not taking place.**

- Each Panchayat is mandatorily required to link the activities taken up in the GPDP with the gaps identified in the MA Survey, but the **gaps identified in MA Survey are not addressed in majority of the GPDPs.**
  - Even those GPs that completed MA Survey have **not incorporated Gap Reports in the final GPDP.**

What can be the Way Forward?

- **Integration of Resources:** The scope to reduce the growing rural-urban disparities is tremendous. Given the **'saturation approach'** (100% targets on select items) of the **Ministry of Panchayati Raj**, the possibilities of realising universal primary health care, literacy, drinking water supply and the like are also immense.
  - What is required now is a serious effort to converge the resources - the **Mahatma Gandhi National Rural Employment Guarantee Act**, the **National Rural Livelihood Mission, National Social Assistance Programme, Pradhan Mantri Awas Yojana,** etc.
- **Role of Gram Sabha and Leaders:** Gram Sabha is a forum for people's participation in grassroot level governance. It provides opportunity to the rural people to get involved in the development programmes of their village and make the administration transparent.
  - It is the responsibility of the elected functionaries, frontline workers, and local citizens to see that the Gram Sabha functions as per the rules and expectations.
    - Gandhi ji once said **"The Greater the Power of the Panchayats, the better for the People".**
  - The facilitators appointed shall also **ensure community mobilisation including** vulnerable sections like SC/ST/Women.

- The village organisations/SHGs may be supported to present before the Gram Sabha **a poverty reduction plan, which, after deliberation, can be incorporated in the GPDP.**

- **Deployment of Fiscal Resources:** The failure to deploy the data to **India's fiscal federalism**, particularly to **improve the transfer system and horizontal equity** in the delivery of public goods in India at the sub-State level, is one of the major setbacks.
  - The constitutional goal of planning and implementing economic development and social justice can be achieved only through **strong policy interventions and adequate supply of finances to the grassroot levels.**
  - The policy history of India has been witness to the phenomenon of announcing big projects and failing to take them to their logical consequence.
    - However, there is no need to repeat history, rather lessons need to be taken and improvements need to be made.