India’s Energy Transition Strategy

This editorial is based on “India’s just energy transition is more than a coal story” which was published in the Hindu on 06/02/2023. It talks about the issues that concern Just Energy transitions and ways to address it.

For Prelims: Paris Agreement, United Nations Conference on Climate Change (COP 27), Nationally Determined Contributions (NDC), Net zero, ethanol blending, National Hydrogen Mission, Energy Conservation Amendment Bill, 2022

For Mains: India’s Just Energy Transition Strategy, Renewable Energy, Government Policies & Interventions

Just Energy Transition Partnership (JET-P) is emerging as the key mechanism for multilateral financing by developed countries to support an energy transition in developing countries.

This has taken on particular significance following the insertion of the phrase ‘phase-down’ of coal in the **Glasgow Pact**. After South Africa, Indonesia, and Vietnam, India is considered the next candidate for a JET-Partnership and India’s G-20 presidency could potentially be an opportune moment to forge a deal.

However, India must **develop a coherent domestic Just Energy Transition (JET) strategy in order to negotiate a financing deal** that addresses its unique set of socio-economic challenges.

India's initial JET-P negotiations last year reportedly stalled over coal 'phase-down' and how to operationalize India's just transition. The emphasis by developed countries on coal phase-down, without adequate attention to country context, disregards the crucial difference in energy transition between industrialised and emerging economies.

What is Just Energy Transition?

- Just Energy Transition refers to the **shift from reliance on non-renewable, fossil fuel-based energy sources to renewable,** clean energy sources in order to mitigate the impacts of climate change and promote sustainability.
- The transition to a just energy system seeks to **ensure that access to energy is equitable and benefits all members of society,** rather than primarily benefiting corporations and the wealthy.
- This includes **promoting renewable energy sources** such as wind and solar, as well as energy efficiency measures and the development of energy storage solutions.
- Among the three JET-P deals signed so far, **only South Africa’s deal mentions a ‘just’ component** - funding reskilling and alternative employment opportunities in the coal mining regions.
    - The other two JET-Ps (Indonesia and Vietnam) are focused on mitigation finance for sector-specific transitions.

What are the Issues with the Just Energy Transition?

- **Affect Near-term Fossil-Dependent Jobs:**
  - The transition to a more sustainable energy mix can **impact workers who are currently employed in the fossil fuel industry.**
  - The shift away from fossil fuels **may result in job losses, which can be disruptive for affected communities and workers.**
- **Disrupt Forms of Future Energy Access:**
  - The transition to a cleaner energy mix **may disrupt traditional forms of energy access, particularly in developing countries** where access to reliable electricity remains limited.
  - The **cost and infrastructure requirements of new energy sources,** such as wind and solar power, may be challenging to implement in areas with limited resources.
- **Shrink the State's Capacity to Spend on Welfare Programmes:**
  - As the government invests in new energy infrastructure and technology, **there may be less funding available for programs such as healthcare, education, and housing assistance.**
  - This can result in **reduced support for vulnerable populations and potentially** worsen existing socio-economic disparities.
- **Cost:**
  - Despite the long-term benefits, the initial cost of transitioning to renewable energy can be higher, **making it a challenge for some communities, particularly those with limited financial resources.**
- **Energy Storage:**
  - Renewable energy sources, such as wind and solar, are **not always available** and must be stored for use during times when the sun isn't shining, or the wind isn't blowing.
- **Energy Infrastructure:**
  - Significant investments in energy infrastructure are needed to support the transition to renewable energy sources.

What are the Related Steps taken by India?

- India has signalled a commitment to clean energy with ambitious targets like **500GW of non-fossil, including 450 GW Renewable Energy (RE) capacity** addition and 43% RE purchase obligation by 2030.
  - These targets are supported through **complementary policy and legislative mandates** (Energy Conservation (Amendment) Act), missions (National Green Hydrogen Mission), fiscal incentives (production-linked incentives) and market mechanisms (upcoming national carbon market).
- **Net Zero Target:**
  - India has set itself an ambitious long-term goal of reaching net zero emissions by 2070.
  - In August 2022, India updated its **Nationally Determined Contributions (INDC)** under the Paris Agreement to reflect its aim of achieving 50% cumulative electric power installed capacity from non-fossil fuel based energy sources by 2030
- **Energy Conservation Amendment Bill, 2022:**
  - In August 2022, the Lok Sabha passed the **Energy Conservation Amendment Bill, 2022** which aims to mandate the use of non-fossil fuel sources including green hydrogen, green ammonia, biomass and ethanol for energy and feedstock in industries.
  - The Bill also gives the power to the Central Government to establish carbon markets.

What should be India's Strategy for a Fair Energy Transition?

- **Acceleration in RE Deployment Rates:**
  - To accelerate RE deployment that can have significant developmental co-benefits, a low-hanging option is shifting energy demand patterns in ways that **enable faster RE capacity addition:** solarisation of agricultural electricity demand; electrification of diesel-

powered **Micro, Small and Medium Enterprises (MSMEs);** and decentralised RE for residential cooking and heating.
    - **Stimulation of energy demand through rural productivity enhancement will further aid RE acceleration** as well as help to address the rural-urban economic divide, create rural jobs, and thereby address inter-generational and spatial inequities.
- **Domestic Manufacturing of Clean Energy Components:**
    - Domestic manufacturing of clean energy components is critical to sustain a JET, build energy self-sufficiency, and tap the green jobs promise of 21st century energy.
        - The challenge is in achieving cost competitiveness (Indian components are 20% costlier than Chinese components) and giving preference to domestic components without addressing cost competitiveness may slow down the pace of deployment.
    - The way around this is to **negotiate access to markets outside India as part of a JET-Partnership,** to reduce the cost gap through economies of scale.
- **Re-aligning the Current Use of Coal Resources:**
    - The current use of coal resources needs to be re-aligned to enhance efficiency until the phase-down period.
    - An alternative solution could be to **optimize coal-fired power plants near coal mines,** rather than positioning them according to energy demand in different states.
        - This would **enable coal to be used more efficiently** because transportation of coal is more energy-intensive than transmission of electrons (electricity), and also lead to fewer emissions.
        - It would also **lead to cheaper power, as transportation accounts for one-third of the cost of coal for power plants;** the resultant savings could also help finance much needed emission control retrofits.
        - It would indirectly **reduce emissions** due to more efficient use of coal.

Drishti Mains Question

What measures are being taken by India to ensure an energy transition to a sustainable and equitable economy?

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. The term 'Intended Nationally Determined Contributions' is sometimes seen in the news in the context of (2016)

(a) pledges made by the European countries to rehabilitate refugees from the war-affected Middle East

(b) plan of action outlined by the countries of the world to combat climate change

(c) capital contributed by the member countries in the establishment of the Asian Infrastructure Investment Bank

(d) plan of action outlined by the countries of the world regarding Sustainable Development Goals

Ans: (b)

Exp:

- Intended Nationally Determined Contributions is the term used under the UNFCCC for reductions in greenhouse gas emissions in all countries that signed the Paris Agreement.
- At COP 21 countries across the globe publicly outlined the actions they intended to take under the international agreement. The contributions are in the direction to achieve the long-term goal of the Paris Agreement; "to hold the increase in global average temperature to well below 2°C to pursue

efforts to limit the increase to 1.5°C, and to achieve net zero emissions in the second half of this century.” Therefore, option (b) is the correct answer.

Mains

Q. Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? **(2021)**