



## Global Energy Crisis and India's Energy Dynamics

This article is based on the [“How India is filling its fuel tank amid ongoing global energy crisis”](#) which was published in Economic Times on 25/12/2022. It talks about the Global Energy Crisis and challenges associated with it.

**For Prelims:** International Energy Agency (IEA), Current Account Deficit (CAD), Coal-based thermal power plants, Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA), Green Energy Corridor (GEC), National Solar Mission (NSM), National Biofuels Policy and SATAT, Sustainable Development Goals, Green Energy Transition.

**For Mains:** Status of India's Oil Imports, Major Concerns Related to India's Energy Security, Initiatives Shaping India's Energy Transition.

At times when the **world is in the midst of a [global energy crisis](#)**, the [International Energy Agency \(IEA\)](#) states that India's energy demand could rise over 3% annually until 2030 due to urbanisation and industrialisation.

Though, India continues to make great strides with renewables deployment and efficiency policies. **[Climate change](#), supply logistic issues, geopolitical tension ([Russia-Ukraine War](#)), slow revival of the economy** after the Covid-19 -induced lockdown have had a domino effect on the **energy dynamics in India**.

Therefore, to mitigate the continued risks to energy security, **accelerating a shift to renewable sources** and hastening the **end of the dominance of fossil fuels** should be a keystone of **India's Energy Security**.

### What is Energy Security and Status of India's Oil Imports?

- Energy security means [access to energy resources](#) and **fuel in the required quantity and quality at reasonable prices**. Energy security aims for adequate amount of energy resources in terms of-
  - Accessibility
  - Affordability
  - Availability
- India imports **80% of its oil needs** and is the **third largest oil consumer in the entire world**. Also, India's energy consumption is expected to grow 4.5% every year for the next 25 years.
- Recently due to high **International Crude Oil Prices**, [Current Account Deficit \(CAD\)](#) inflated because of higher cost of oil import, raising concerns about long term economic stability in India.

### What are the Major Concerns Related to India's Energy Security?

- **Climate Change Induced Demand Surge:** Stockpiles at the [coal-based thermal power plants](#) fell short despite this increase in domestic coal production, as the utilities were not prepared for the **unprecedented heat wave caused by climate change** in the country and the sharp surge in demand, **which touched 201 gigawatts in April 2022.**
- **Common Coal Pool and Price Hike:** The growing demand for coal was further exacerbated by the Russia-Ukraine conflict that resulted in **diverting [Europe's attention to procure coal](#) from Indonesia, Australia and South Africa** which so far had been **major coal suppliers for China and India.**
  - This dependency on the **common resource pool led to a spike in the price of coal** in the international market from \$70 per tonne to \$421 per tonne in March.
- **Risk to Health:** The burning of **traditional energy fuels**, including **wood, dung, and crop residue**, causes [indoor air pollution](#), which is detrimental to human health.
  - There are approximately **1 out of every 4 premature deaths** caused by **household air pollution (HAP)** in India each year.
    - **90% of them are women**, who work close to these fuels in poorly ventilated kitchens.
- **Concern Over Affordability and Retail Inflation:** Despite high subsidies to oil, India ranks low in affordability of petrol and diesel
  - **Petrol prices directly affect retail inflation.** Diesel prices account for **60-70% of India's freight costs.** High freight costs due to rise in diesel prices increase prices for products across the board.
- **Import Dependence and Geopolitical Disruptions:** In the first half of **2022-23**, [India's crude oil import bill](#) increased by **76% to USD 90.3 billion** and total import quantity increased by **15%.**
  - Increasing dependence on imported oil has placed India's energy security under severe strain, and **geopolitical disruptions have exacerbated the problem.**

## What are the Initiatives Shaping India's Energy Transition?

- [Pradhan Mantri Sahaj Bijli Har Ghar Yojana \(SAUBHAGYA\)](#)
- [Green Energy Corridor \(GEC\)](#)
- [National Solar Mission \(NSM\)](#)
- [National Biofuels Policy and SATAT](#)
- [Small Hydro Power \(SHP\)](#)
- [Pradhan Mantri Ujjwala Yojana \(PMUY\)](#)
- [International Solar Alliance \(ISA\)](#)

## What Should be the Way Forward?

- **Diversifying India's Energy Mix:** India needs to **gradually, but significantly, diversify its sources of energy generation**, including more [renewable sources](#) of energy (solar, biogas, etc.) that are cleaner, greener, and more sustainable.
  - The **use of renewable energy can contribute to the development of low-carbon development strategies** and generate employment opportunities for the country's working population.
- **Energy Planning to Curb Energy Inequality:** Increasing power demand and recurrent coal crises require **advance planning that enables the entire power generation** and supply chain to withstand these shocks.
  - In order to facilitate this, policy makers and other stakeholders should collect **data that reveals intra-family and collective differences in energy, income, and [gender disparity](#)** in order to bridge the energy gap between different social groups and protect them from any geopolitical shocks.
- **Making Sustainable Development Goals a Reality:** To achieve sustainable development goals like [zero hunger, zero malnutrition, zero poverty, and universal well-being](#), **energy security** will be crucial.
  - Tackling these issues under a common umbrella with stringent **monitoring mechanisms**

at the local level to oversee implementation of policies can help India realise the goal of Energy Security.

- **Interlinking Women Empowerment with Energy Security:** Promoting clean energy through [women's empowerment](#) and leadership could accelerate the transition to a **low-carbon economy and energy security**.
  - As responsible **mothers, wives, and daughters, women** play a crucial role in **social awareness of [green energy transition](#)**.
- **Transitioning Towards Responsible Renewable Energy: Renewable energy shouldn't stand for just renewable energy, but for responsible energy as well.**
  - The emerging renewable energy sectors in India should recognise:
    - Committing to participatory governance principles,
    - Actively promoting universal labour, land, and human rights, and
    - Protecting, restoring and nurturing resilient, thriving ecological systems.

### **Drishti Mains Question**

Diversifying sources of energy generation is a keystone for India's Energy Security. Discuss.

## **UPSC Civil Services Examination, Previous Year Question (PYQ)**

### **Prelims**

**Q. With reference to the Indian Renewable Energy Development Agency Limited (IREDA), which of the following statements is/are correct? (2015)**

1. It is a Public Limited Government Company.
2. It is a Non-Banking Financial Company.

**Select the correct answer using the code given below:**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans: (c)**

### **Mains**

**Q. "Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs)". Comment on the progress made in India in this regard. (2018)**