

Syllabus Essentials



English

Weekly Compilation
[29th September-
4th October, 2025]

Solar Power and India

Overview

- India ranks 4th globally in solar power and renewable energy capacity.
- Installed solar capacity grew 24.4 times in 9 years reaching 66.7 GW(May 2023).
- **Target:** 500 GW renewable energy capacity by 2030.
- **57 solar Parks** approved with 39.28 GW capacity across 14 states.
- Solar rooftop capacity is about 7.9GW.
- **By 2030**, nearly 50% of India's energy will be from non-fossil sources, source will contribute 60% of that.

Challenges & Issues

- Low **domestic manufacturing** capacity for solar cells.
- Heavy dependence on **China** for photovoltaic cells and equipment.
- **Domestic Content Requirement (DCR)** policy faces legal challenges at WTO.
- Limited land availability due to **high population density** hinders solar plant expansion.

Public Interest Litigation (PIL)

About PIL:

- Known as **Social Action Litigation (SAL)**, **Social Interest Litigation (SIL)** and **Class Action Litigation (CAL)**.
- Legal Action filed for enforcement of **Public interest**, affecting legal rights/liabilities of the public.

Origin and Development:

- Originated in the USA during the 1960's to represent **unrepresented groups**.
- Introduced in India in the early 1980s through **judicial activism**.
- Pioneered by the Justices **V.R. Krishna Iyer** and **P. N Bhagwati**.

Where PIL can be filed:

- In any **High court under 226**.
- Directly in the **Supreme Court under Article 32**.

Objectives of PIL

- Bring Justice to the **poor and disadvantaged**.
- Different from traditional litigation, it **focuses on public interest**, not individual rights.
- Targets violations of **constitutional/Legal rights** affecting large groups.
- **Petitioner acts co-operatively** for the vulnerable sections.
- Aims to **enforce public duties, protect collective rights, and redress public injury**.

Cryosphere

What is the Cryosphere?

- The cryosphere includes all frozen water parts of Earth's water system.
- Found in polar regions and high mountain snow caps (e.g., Himalayas, Arctic, Antarctic).

Ice Loss

- **Greenland Ice Sheet:** Lost ~278 billion tons of ice per year.
- **Antarctic Ice Sheet:** Lost ~155 billion tons of ice per year.
- **Glaciers (e.g., Himalayas):** Lost ~220 billion tons of ice per year.
- **Order of Ice Loss:** Arctic > Himalayas > Antarctic.

Impact on Asia

- Himalayan glaciers feed **10 major rivers** including Ganges and Yangtze.
- Without emission cuts, **glacier shrinkage may severely impact water supply across Asia.**

Thawing Permafrost

- **Permafrost in Alaska, Siberia** is beginning to thaw.
- This can release **massive amounts of greenhouse gases.**
- May trigger **climate feedback loops**, accelerating global warming.

Carbon Capture Utilisation and Storage (CCUS)

What is CCUS?

- CCUS stands for **Carbon Capture, Utilisation, and Storage**.
- It **captures CO₂ emissions** and either **utilises** them or **stores** them underground (carbon sequestration).

Importance for India

- Critical for **halving CO₂ emissions by 2050**, per NITI Aayog.
- Supports India's **net-zero emissions target by 2070** (COP 26 pledge).

Role in Sunrise Sectors

- It boosts new industries like **coal gasification** and the **hydrogen economy**.
- It helps transition from **blue hydrogen** (fossil-based + carbon capture) to **green hydrogen** (renewable-based).
- It aids in developing **hydrogen infrastructure**: production, storage, and transport.

CO₂ Valorisation

- CO₂ can be converted into **value-added products** such as:
 - **Green urea, green ammonia**
 - **Concrete and construction aggregates**
 - **Methanol, ethanol**
 - **Polymers and bio-plastics**
- Supports a **circular economy**: make, use, reuse, recycle, reduce.

Current Account Deficit (CAD)

About Current Account Deficit (CAD)

- The current account is the sum of the trade gap (exports minus imports), net income from abroad, and net current transfers.
- It occurs when a country's imports and transfers exceed its exports and income from abroad.

How is CAD financed?

- A country can finance its CAD by borrowing from abroad, attracting foreign direct or portfolio investments, or by using its foreign exchange reserves.

Implication of CAD

- A rising CAD may signal that the country has become less competitive in global markets, making it less attractive to foreign investors.
- However, a CAD is not always harmful, especially if it is driven by the private sector, where economic agents are engaged in mutually beneficial trade.

Transfer Payments

What Are Transfer Payments?

- Transfer payments are monetary payments with no exchange of goods or services.
- Typically made by governments to individuals via social programs (welfare, student grants, Social Security).
- Government payments to corporations are not usually considered transfer payments.

Types of Transfer Payments

- **Social Insurance Programs**
 - Benefits regardless of income level.
 - **Examples:** Social Security (retirement), unemployment benefits, free health insurance for elderly.
- **Welfare Programs**
 - Aid vulnerable groups in society.
 - **Examples:** PM-KISAN direct payments, food program credits.
- **Business Subsidies**
 - Mainly given to farms.
 - **Types:**
 - Export subsidies (encourage selling crops abroad).
 - Domestic subsidies (support specific crops, assist farmers during losses, promote sustainable farming, offset weather damage).



Stay Tuned!