

# CSB IAS ACADEMY

## THE ROAD MAP TO MUSSOORIE...

PRELIMS EDGE – 2025 – 06/11/2024

### SOLAR POWER IN INDIA

**Context:** At the recently held session of the International Solar Alliance (ISA) in New Delhi, the Union Govt. highlighted the steps taken by India to promote solar power.



#### Status of Solar Power in India :

- India is the **3<sup>rd</sup> largest solar power producer** in the world – with installed capacity of **81.8 GW** (Mar 2024).
  - **Rajasthan is 1<sup>st</sup> with 18.7 GW.** Gujarat is 2<sup>nd</sup> with 10.5 GW.
  - This accounts for **16% of total installed capacity** and **>50% total renewable energy installed capacity.**
- **Total rooftop solar installed capacity is around 11.08 GW** as of Dec 2023.
  - **Gujarat is 1<sup>st</sup> with 2.8 GW,** followed by Maharashtra by 1.7 GW
- As per **Panchamrit goals** presented at UNFCCC COP 26, India has a target of **500 GW installed capacity** of renewable energy by 2030 – this includes **280 GW from solar power.**

- Achieving target of 500 GW will necessitate **deploying 40 GW of solar power annually from 2024 till 2030.**
- India also aims to achieve a total of **40 GW of rooftop solar capacity by March 2026.**
- The govt. aims to make India a **net exporter of solar modules by 2026** and manufacture solar modules worth **100 GW annually** by 2026.

#### Import Dependency for Solar Power

- Almost **100% of silicon wafers** and **80% of solar photovoltaic (PV) cells** used in India are imported, with the majority of this coming from China.
- India does not have enough **manufacturing capacity – it is limited to 15 GW per year.**
- Out of this 15 GW manufacturing capacity, **only 3-4 GW are worthy of deployment in grid-based projects.**
- Indian industry is tuned to **production of M2 wafer size**, while **global industry is moving towards M10 and M12 sizes** (bigger sizes).

#### Govt. Initiatives for Solar Power:

- ✓ **National Solar Mission** launched in 2010 under the National Action Plan on Climate Change (NAPCC).
- ✓ **PM KUSUM:** Aims to replace use of diesel in farms with solar energy, especially in irrigation pumps.
- ✓ **Solar Charkha Mission:** Sets up 'Solar Charkha Clusters' which are operated using solar power and generate sustainable employment for artisans
- ✓ **PLI scheme for manufacturing of high efficiency solar PV modules** in India.

- ✓ **National Wind-Solar Hybrid Policy, 2018:** It provides a framework for promotion of large grid connected wind-solar PV hybrid systems.
- ✓ **Pradhan Mantri Suryodaya Yojana:** Aims to install rooftop solar systems on 1 crore residential rooftops.
- ✓ **Approved Models and Manufacturers of Solar PV Modules Order, 2019:** It requires module makers to submit to an inspection of their manufacturing facilities. Being on the list as an 'approved' manufacturing facility certifies a company as not importing solar PV modules.

#### International Solar Alliance (ISA):

- ✓ **Formation:** Launched in 2015 by India and France at the United Nations Climate Change Conference (COP21) in Paris to promote solar energy globally.
- ✓ **Objective:** Aims to mobilize over \$1 trillion in solar investments by 2030 to reduce reliance on fossil fuels and boost clean energy capacity worldwide.
- ✓ **Membership:** Open to all UN member countries, with a special focus on solar-rich countries located between the Tropics of Cancer and Capricorn. Over 100 countries have signed up as of now.

#### Major Initiatives under the ISA:

##### Global Solar Facility

- ✓ Aims to mobilize funding and investment for solar energy projects in developing countries.

##### Global Solar Atlas

- ✓ Created by the World Bank, it provides high-resolution maps of solar resources around the world.

##### One Sun One World One Grid (OSOWOG)

- ✓ Aims to connect countries with varying solar exposure and reduce dependency on fossil fuels through a transnational electricity grid.

*Solar Technology Application Resource Centre (STAR-C)*

- ✓ Establishes regional centres to provide training, research, and development in solar technology.

*Source: ISA Assembly: India on target to achieve 500 GW renewable energy target (Indian Express)*

#### National Research Foundation (NRF)

**Context:** An article in today's Hindu analyzes the state of science education in India and the potential of the NRF to bring improvements.

#### About National Research Foundation (NRF):



- NRF is a **proposed entity to replace Science & Engineering Research Board of India (SERB)** and catalyse interdisciplinary research for accelerating India's development agenda, through impactful knowledge creation and translation.
- It will function under the **Ministry of Science and Technology**.

#### The NRF's Goals:

- **Promote interdisciplinary research** that will address India's most pressing development challenges.
- **Minimize duplication of research.**
- Promote **translation of research into policy and practice.**

**Features of NRF:**

- **Presided by PM (ex-officio chairman)** and consists of 10 major directorates focusing on science, arts, humanities, entrepreneurship, etc.
- **Union Ministers of Education and of Science and Tech** will be ex-officio Vice Presidents.
- Will have an **18-member board** with eminent Indian and intl. scientists, senior govt functionaries and industry leaders.
- Will be registered as a society and have an **independent secretariat**.

**Expectations from NRF:**

- Increasing investment in **R&D from 0.7% of GDP to 2% of GDP by 2030**
- **Enhancing India's share of global scientific publications** from about 5% to 7% by 2030
- Create a **pool of talented researchers** across disciplines and sectors
- Developing innovative **solutions for India's development challenges**

**Budgetary Updates**

- **2021-22 Budget:** Govt announced that for the NRF, it would set aside Rs **50,000 crore over five years**.
  - 28% of it (14,000 crore) coming from govt and **72% (36,000 crore) from private sector**.
- **2022-23 Budget:** NRF was allocated a budget of just Rs 1 lakh.
- **2023-24 Budget:** Allocated Rs 2,000 crore for the NRF, which was then revised to Rs 258.60 crore.
- **2024-25 Budget:** Govt was silent on allocation for the institution or progress made so far.



India's R&D spend is only around 0.64% of its GDP, which is even lower than developing economies such as Brazil (1.16%) and

South Africa (0.84%). The contribution of the private sector to India's total R&D spend is only 36.4%.

Source: *Rising STEM research demands revitalized education (The Hindu)*

**TERMS IN NEWS****First Asian Buddhist Summit (ABS) :**

- The First Asian Buddhist Summit (ABS) is taking place on November 5th and 6th, 2024, in **New Delhi**.
- Hosted by: **Union Ministry of Culture** in collaboration with International Buddhist Confederation (IBC).
- The theme of the summit is: "Role of Buddha Dhamma in Strengthening Asia – exploring Buddhism's impact across Asia."
- India's initiatives to preserve Buddhist heritage was showcased at the event, which include:
  - **Buddhist Tourism Circuit:** To develop a tourism across key Buddhist sites in India.
  - **Global Buddhist Summit 2023:** It focused on and peace, emphasizing Buddha Dhamma's role in global challenges.
  - **SCO Conference on Shared Buddhist Heritage (2022-2023):** Discussed Buddhist art and

archaeological connections among member states.

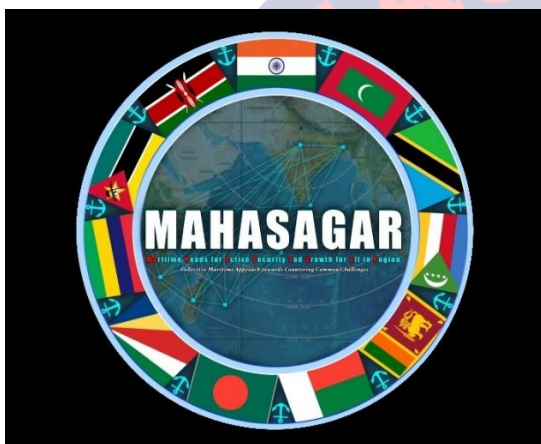
- **Recognition of Pali Language as Classical:** Pali, used in Buddha’s sermons, achieved classical status in Oct. 2024.
- **International Abhidhamma Diwas:** It was held on October 17, 2024, in New Delhi, celebrating Buddhist teachings and Pali’s role in preserving it.

- In 2015, India unveiled its vision for the Indian Ocean i.e. SAGAR, to improve ties with maritime partners on economic and security fronts.

### Thadou Community



### MAHASAGAR



- Recently, the 3<sup>rd</sup> edition of MAHASAGAR, the Indian Navy's initiative, brought together maritime leaders from diverse nations within the Indian Ocean Region (IOR).
- MAHASAGAR stands for **Maritime Heads for Active Security And Growth for All in the Region**. It aims to create a platform for high-level interactions fostering cooperation among IOR nations.
- Participants: Heads of Navies and Maritime Agencies from **Bangladesh, Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, and Tanzania**.
- MAHASAGAR resonates with the **Union Govt's SAGAR vision** (Security and Growth for All in the Region).

- The Thadou tribe, **one of the oldest and largest among the Kuki tribes** in Manipur, has expressed support to implement the National Register of Citizens (NRC) in the state.
- It is one of **29 officially recognized indigenous tribes in Manipur** with rich cultural practices and folklore.
- They are **recognized as a distinct tribe** in Manipur since the First Census of India (1881).
- They are primarily located in **Manipur**; but are also present in **Nagaland, Assam and Mizoram**.

### PLACES IN NEWS

#### Turtle Wildlife Sanctuary



- National Green Tribunal (NGT) has criticized the Uttar Pradesh govt. for granting **mining permissions in Turtle Wildlife Sanctuary**.
- The sanctuary is located in **Varanasi District, Uttar Pradesh**. It was declared as a protected area on 21<sup>st</sup> December 1989.
- It was created to ensure the survival of **turtles released into the Ganga**.
- It is the first turtle sanctuary in India. It is also the **world's only protected area dedicated to fresh water turtles**.
- It is located in a bio-geographic zone of water features trees, shrubs, grasses, and plants adapted to moist conditions.

## Qatar



- Qatar is having a referendum to decide whether to scrap their legislative assembly elections.
- Qatar is a country in Western Asia. It occupies the small **Qatar Peninsula** on the northeastern coast of the Arabian Peninsula.
- It shares its **sole land border** with Saudi Arabia to the south.
- **Gulf of Bahrain**, a part of the Persian Gulf, separates it from Bahrain.
- The capital is **Doha**, home to over 80% of the nation's population.
- It is a high-income economy backed by the **world's third-largest natural gas and oil reserves**.

## Practice Questions

**Q1. Consider the following statements regarding the status of solar power sector in India:**

1. India has the third largest producer of solar power in the world.
2. India aims to achieve a rooftop solar power installed capacity of 40 GW by 2026.
3. Rajasthan accounts for the highest share of solar power installed capacity in India.
4. Gujarat accounts for the highest share of rooftop solar power installed capacity in India.

**How many of the afore mentioned statements are correct?**

- (a) Only one statement
- (b) Only two statements
- (c) Only three statements
- (d) All four statements

**Q2. Consider the following countries located in West Asia:**

1. Yemen
2. Qatar
3. Iraq
4. United Arab Emirates (UAE)
5. Jordan
6. Oman

**Which of the afore mentioned nations share a border with the Persian Gulf?**

- (a) 1, 2, 4, and 5
- (b) 2, 3, 4, and 6
- (c) 2, 4, 5 and 6
- (d) 1, 3, 4, and 6

**Q3. Consider the following statements regarding the proposed National Research Foundation (NRF):**

1. It aims to increase India's spend on R&D expenditure as a portion of its GDP.
2. The Union Minister of Science and Technology will act as its ex-officio Chairman.
3. The union govt. aims to share the funding of NRF with the private sector on a 50:50 basis.

**Answers:**

1. D
2. B
3. A
4. C
5. A

**How many of the afore mentioned statements are correct?**

- (a) Only one statement
- (b) Only two statements
- (c) All three statements
- (d) None of the statements

**Q4. Consider the following tribes of India and the states where they are primarily found:**

1. Thadous: Ladakh
2. Hattis: Himachal Pradesh
3. Konyaks: Nagaland
4. Chenchus: Telangana

**Which of the above pairs are correctly matched?**

- (a) 1, 2 and 3
- (b) 1, 2 and 4
- (c) 2, 3 and 4
- (d) 1, 3 and 4

**Q5. The MAHASAGAR Initiative by India is related to which of the following objectives?**

- (a) Improving ties with nations in the Indian Ocean Region
- (b) Upgrading infrastructure in the ports and shipping industry
- (c) Fostering global co-operation to tackle marine pollution
- (d) Increasing indigenization in India's naval defence needs