



3rd Edition of the World Solar Report Series

[Source: PIB](#)

Why in News?

Recently, at the **7th Assembly of the [International Solar Alliance \(ISA\)](#)**, the 3rd edition of the **World Solar Report Series** was released. This year's **series comprises four key reports**: the World Solar Market Report, the World Investment Report, the World Technology Report, and the Green Hydrogen Readiness Assessment for African Countries.

- Each report highlights **advancements and challenges** in the [solar energy sector](#), underlining the growing role of [renewable energy](#) in addressing global [climate targets](#).

Note:

- The World Solar Report series, **launched by the ISA in 2022**, offers a concise overview of global solar technology advancements, key challenges, and investment trends, providing valuable insights into the industry's growth.

What are the Key Highlights of the World Solar Report Series?

- **World Solar Market Report:** Global solar capacity has grown exponentially from just 1.22 GW in 2000 to an impressive **1,418.97 GW in 2023**, reflecting a remarkable 40% annual growth rate.
 - Global solar capacity is projected to reach 5, 457-7, 203 GW by 2030, driven by [Paris Agreement goals](#), requiring a massive infrastructure push to meet climate targets.
 - The clean energy industry **now supports 16.2 million jobs**, with solar accounting for 7.1 million.
 - Global solar manufacturing is set to exceed 1,100 GW by 2024, double the demand, making solar more affordable.
- **World Investment Report:** Global energy investments to rise from USD 2.4 trillion in 2018 to USD 3.1 trillion by 2024, with **clean energy investments nearly doubling that of fossil fuels**.
 - Solar investments accounted for 59% of total Renewable Energy investments, driven by lower panel costs. [Asia-Pacific \(APAC\)](#) leads in solar investments followed by **Europe, the Middle East and Africa (EMEA)**.
- **World Technology Report: Monocrystalline solar PV modules** (solar panel) have achieved 24.9% efficiency, while **multijunction perovskite cells** (a type of solar cell) promise higher efficiency and lower costs, potentially outpacing traditional silicon panels.
 - Solar manufacturing has **reduced silicon usage by 88% in 2023** and a 90% drop in utility-scale solar PV costs, highlighting improvements in material efficiency and potential cost and environmental benefits.
- **Green Hydrogen Readiness Assessment for African Countries:** The report identifies **Egypt, Morocco, Namibia, and South Africa** as potential leaders for developing a [green hydrogen](#) economy due to their renewable energy resources.

- The report highlights the Green hydrogen, produced using renewable energy, is key for industries dependent on fossil fuels, such as steel and fertilisers.

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NATIONAL GREEN HYDROGEN MISSION

NODAL MINISTRY

- ▶ Ministry of New and Renewable Energy

OBJECTIVE

- ▶ Decarbonise energy/industrial/mobility sector
- ▶ Develop indigenous manufacturing capacities
- ▶ Create export opportunities for GH₂ and its derivative

COMPONENTS OF NGHM

- ▶ Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)
- ▶ Strategic Hydrogen Innovation Partnership (SHIP) (PPP for R&D)

Expected Outcomes by 2030

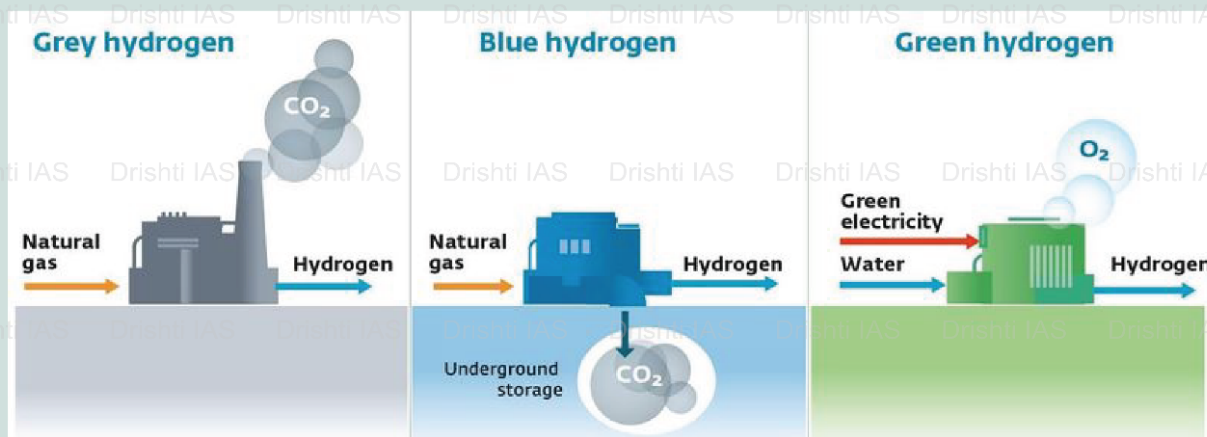
- ◆ Atleast 5MMT GH₂ annual production
- ◆ Rs 1 lakh crore fossil fuel import savings
- ◆ 6 lakh jobs
- ◆ 50MMT CO₂ annual emissions averted
- ◆ ₹ 8 lakh crore investment

GH₂ is not commercially viable at present; current cost in India is around ₹350-400/kg.
The National Hydrogen Energy Mission aims to bring it down under ₹100/kg.

HYDROGEN AND GREEN HYDROGEN

Hydrogen is the most common element in nature but exists only in combination with other elements. It has to be extracted from naturally occurring compounds (like water).

Green Hydrogen (GH₂) is made by splitting water through an electrical process called electrolysis, using an electrolyser powered by renewable energy (RE).



International Solar Alliance (ISA)

- The ISA is an **international organisation** with 120 Member and Signatory countries. It works with governments to improve energy access and security worldwide and promote solar power as a sustainable transition to a carbon-neutral future.
- ISA's mission is to unlock **USD 1 trillion of investments in solar by 2030** while reducing the cost of the technology and its financing.
- ISA was formed at the **21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC)** held in Paris in 2015 and partners with **multilateral development banks (MDBs)**, development financial institutions (DFIs), public and private sectors, to deploy cost-effective solar energy solutions, especially in **least Developed Countries (LDCs) and the Small Island Developing States (SIDS)**.
 - ISA became the **first international intergovernmental organization to be headquartered in India.**
- ISA drives solar adoption through policies, investments, and new business models, providing clean energy and fostering sustainable growth.

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. Consider the following statements: (2016)

1. The International Solar Alliance was launched at the United Nations Climate Change Conference in 2015.
2. The Alliance includes all the member countries of the United Nations.

Which of the statements given above is/are correct?

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

Ans: (a)