SOLAR WEEKLY

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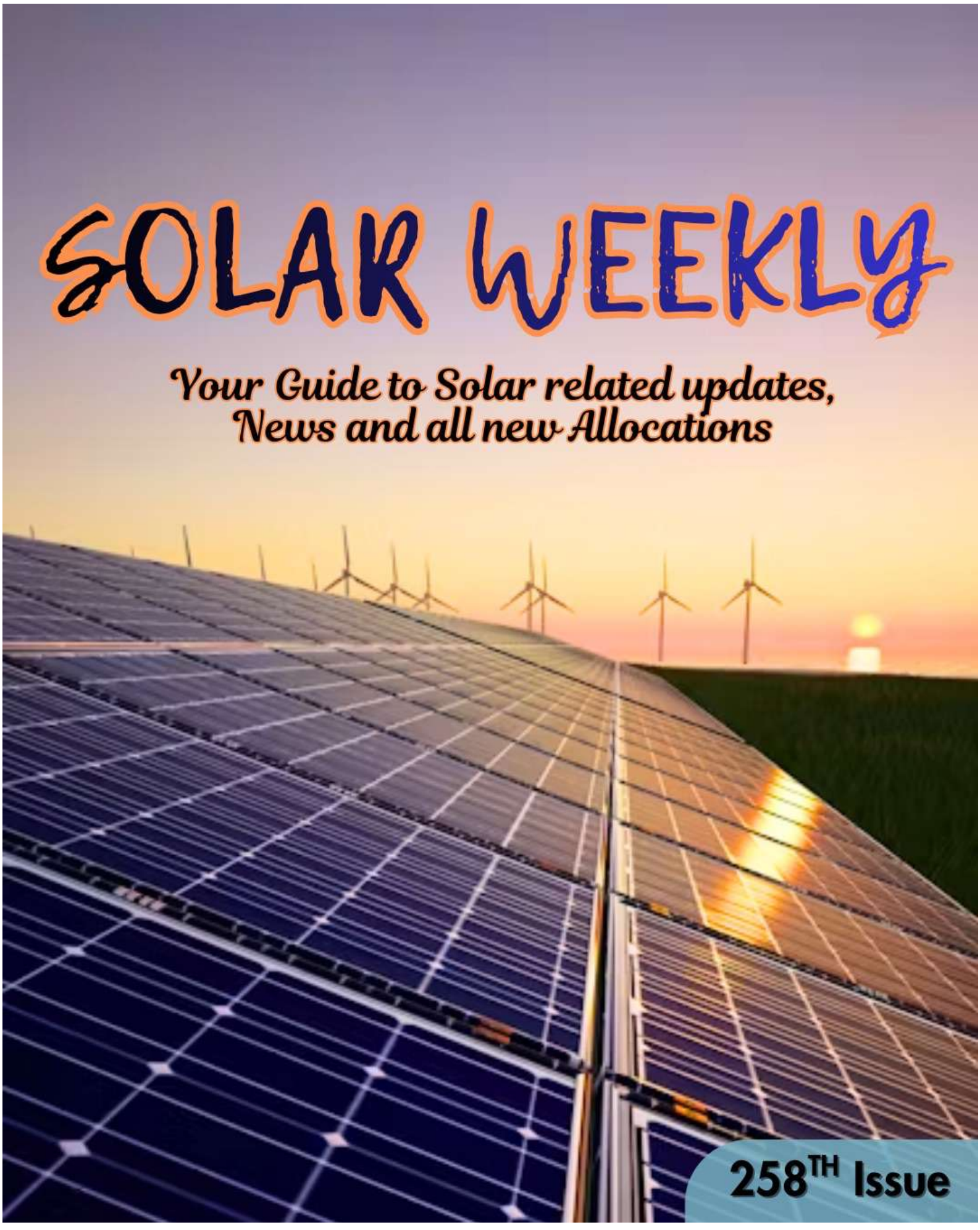
News and all new Allocations



258TH Issue

About the Author

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He is a member of the Institute of Chartered Accountant of India since 1991 and since then, he is working as a Practicing Chartered Accountant. Government has appointed him as Non-Official Director in Indian Bank. He has been associated with RSS & ABVP for the past 35 years & was previously holding the position of Prabhari in BJP CA Cell, Delhi Pradesh. He is also a prolific speaker on Solar, Leadership and Project Financing and is a guest speaker on debate shows on TV channels like Lok Sabha TV, DoorDarshan.

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CONTENT

- Kerala University researchers develop high-efficiency, lead-free solar cell
- Gail to invest 3800 crore in 700 MW solar projection across UP and Maharashtra.
- World Largest PV-CSP Plant under construction In China
- NTPC Green Commissions 150 MW of 300 MW Solar Project in Rajasthan
- India Solar Power Surpasses US, Becomes World's No. 2 Market

Kerala University researchers develop high-efficiency, lead-free solar cell

Researchers at the Kerala University have developed a new blueprint for the next-generation solar power by replacing toxic lead in perovskite solar cells for a mixture of tin and rare earth metals. At the University's Photovoltaics Research Laboratory, a team of young researchers has developed a 21.18% efficient, lead-free solar cell. It is an innovation that is both cost-effective and environmentally safe. The lab was founded in 2020 by professor Jayakrishnan R, the Head of the department of physics with the Kerala University.

While solar energy is a cornerstone of clean power, the most efficient perovskite solar cells currently used in labs often contain lead, which poses environmental risks if the panels are damaged. The new study, published in peer-reviewed journal ACS Applied Engineering Materials, is expected to provide a realistic pathway to eliminate the toxicity without sacrificing performance.

In contrast, the new perovskite cells developed in the university's Photovoltaics Research Laboratory use a safe combination of tin, rubidium and cesium. The 'safe solar' approach ensures that Kerala's transition to renewable energy will not leave behind a toxic legacy.

Land scarcity has always been a hurdle for large solar parks in Kerala. By achieving efficiencies higher than many imported silicon panels, these cells can generate more electricity from rooftops and smaller plots of land. They aid in achieving Kerala's ambitious net-zero carbon emission goal by 2040," he said.

Gail to invest 3800 crore in 700 MW solar projection across UP and Maharashtra.

GAIL (India) Limited has approved an investment of Rs 3,800 crore to set up 700 MW of solar power capacity across Uttar Pradesh and Maharashtra, as part of its push to expand its renewable energy portfolio.

The plan includes a 600 MW solar project at the TUSCO Solar Park in Jhansi, Uttar Pradesh, which will be paired with a 550 Mwh battery energy storage system (BESS) to ensure stable power supply. The project will mainly cater to the energy needs of GAIL's petrochemical plant at Pata in Auraiya district, ANI reported. In Maharashtra, the company will develop a 100 MW solar project in Chhatrapati Sambhaji Nagar district, along with a 22 Mwh BESS. This facility is intended to supply power to the PDH-PP plant at Usar in Raigad district.

GAIL recently signed a long-term agreement with Alpha Gas for an LNG carrier, further strengthening its energy supply chain. The agreement was executed with Pantheon Maritime Services, a Singapore-based affiliate of Alpha Gas, for the vessel "Energy Fidelity," which has a cargo capacity of 174,000 cubic metres and features fuel-efficient and low-emission technologies.

World Largest PV-CSP Plant under construction In China

China Energy Engineering Corp. (CEEC) has officially started construction of the photovoltaic component of its Hami 1.5 GW solar demonstration project in Xinjiang, China. The project is part of a large multi-energy base combining solar PV with tower-based concentrated solar power (CSP) and molten-salt thermal storage.

The project combines 1.35 GW of photovoltaic capacity with 150 MW of molten-salt tower concentrated solar power. It is located in Xinjiang and requires an investment of $950 million.

It is described as the world's largest single-phase solar-thermal-storage project under construction, as well as the largest molten-salt tower CSP project currently being built in Xinjiang.

The hybrid plant will ultimately become the largest single-phase PV–CSP facility upon completion. At present, the largest operating hybrid plant is the China Three Gorges Hami PV–CSP plant in China, with a total capacity of around 1,000 MW, including approximately 900 MW of PV and 100 MW of CSP. It is followed by Noor Energy 1 in the United Arab Emirates, which has a total capacity of about 950 MW, combining 700 MW of CSP with 250 MW of PV.

With a total investment of approximately CNY 6.5 billion ($951.9 million) and a site area of about 33 km^2, the CEEC Hami project is expected to generate about 2.9 TWh annually, including around 200 GWh from CSP and about 2.7 TWh from PV.

CEEC said the project was designed for extreme desert conditions including high winds, cold weather, and saline soils. Protective structures have reportedly been added to heliostats to reduce mirror breakage by 90%, while the 219-m tower is described as a benchmark design for large-capacity tower CSP projects in China.

NTPC Green Commissions 150 MW of 300 MW Solar Project in Rajasthan

NTPC Green, an energy arm of NTPC Renewable Energy (NTPC REL), has commissioned a 150 MW Solar project out of the total installed capacity of 300 MW of Rajasthan's Solar Project.
The project in Rajasthan is of Project Sixteen Renewable Power Private Limited, a subsidiary of its joint venture (JV) ONGC NTPC Green Private Limited, which declared Commercial Operation. The latest project commissioning takes NTPC Green Energy Limited Group's current commercial capacity to 10,126.40 MW. With the addition of the above, the total installed capacity of the NTPC Green Energy Limited Group increases to 10,276.40 MW. The Chief Executive Officer (CEO) of NTPC Green Energy Ltd (NGEL) said the company is on track to meet its annual renewable energy capacity addition target of 5 GW, with around 5,200 MW expected to be added on a year-on-year (YoY) basis.

The company has already added about 2,000 MW and expects to complete the remaining capacity additions within the next two months. Looking ahead, NGEL plans to add 8 GW of capacity in FY27 and has already commenced work on projects that will support this pipeline. The company is also targeting another 8 GW capacity addition in FY28.

India Solar Power Surpasses US, Becomes World's No. 2 Market

India is poised to become the World's second-largest solar market in 2026 in term of annual installation according to National Solar Energy Federation of India (NSEFI).

The nation has hit a 150 GW milestone, adding its fastest 50 GW in just 14 months. This growth outpaces competitors like the US and EU, which may see slowdowns. Key drivers include government programs (PM Surya Ghar, PM KUSUM 2.0), strong growth in the Commercial & Industrial (C&I) sector, domestic manufacturing gains, and a push into energy storage. Despite supply chain issues, India's rapid renewable energy growth signals a major shift in global energy.

Global trends point to a potential slowdown in capacity additions across major markets, such as the United States and the European Union, which are currently competing for 2nd position in terms of annual installed capacity.

Looking ahead, 2026 is set to be a year of integrated clean energy growth for India. Alongside solar and wind, energy storage will play a critical role, with projections for double-digit energy storage capacity within the next 18 months. Battery Energy Storage Systems (BESS) are becoming more common, supporting grid stability and peak shifting.

India aims to attract about $350 billion in investments over the next five years to meet its 500 GW clean energy target by 2030.