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INDIA MARKET UPDATE

Q3 2025 (July - Sept 2025)

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NTPC Green Energy seeks developers for green chemical projects at India's first hydrogen hub

NTPC Green Energy Ltd (NGEL) has issued expressions of interest (EoIs) for global and domestic developers to set up green hydrogen or green chemical facilities at the Pudimadaka Green Hydrogen Hub in Andhra Pradesh. The Pudimadaka Hub is now planned with 7 GW electrolyser capacity, along with common infrastructure such as 7.5 GW GIS substations, transmission lines, desalinisation, port/jetty, storage and logistics. It aims to produce 2.5 million metric tonnes per annum (MMTPA) of green chemicals including ammonia, methanol, sustainable aviation fuels (SAF), and green urea. Selected developers must source renewable energy, water and inputs exclusively from NGEL, and will enter into long term agreements or joint ventures.

SECI issues tender for preparing project reports on green hydrogen hubs

SECI (Solar Energy Corporation of India Limited) has invited proposals to select an executing agency for preparing detailed project reports (DPRs) for green hydrogen hubs under Component B1 of the National Green Hydrogen Mission, with bids due by October 16, 2025. Each DPR will assess hub locations with a minimum planned capacity of 100,000 MTPA of green hydrogen, covering renewable energy and water availability, demand-supply mapping, grid, storage, port, and bunkering infrastructure; preference will be given to higher-capacity hubs. Central Financial Assistance is capped at INR 30 million per DPR, with a total allocation of INR 280 million, and delays will attract a 0.5% weekly penalty (max 5%).

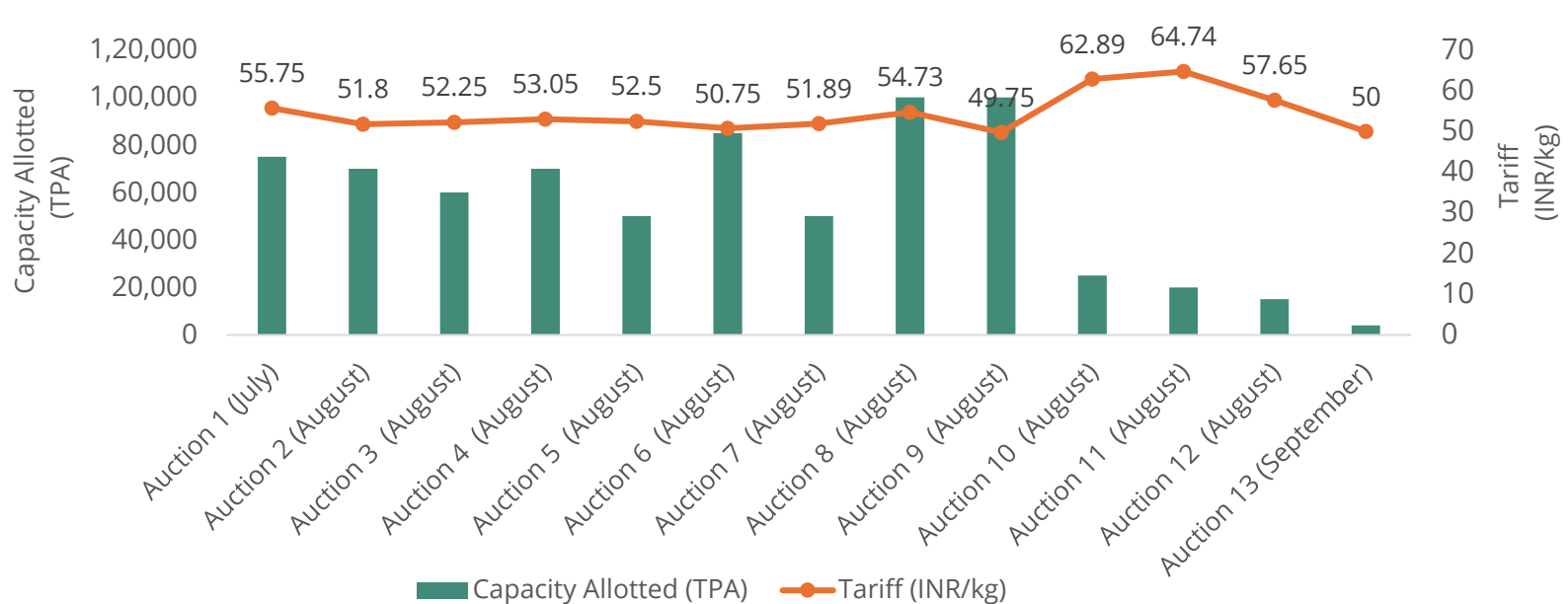
AUCTION COMPLETED – GREEN HYDROGEN

Tendering Authority	Tender Scope	Capacity Tendered	Capacity Awarded	Winner	Tariff	Location
	<p>HPCL invited tender for Procurement of Green Hydrogen for Visakh Refinery , 5 KTPA</p>	5 KTPA*	5 KTPA		INR 328/kg	Vishakhapatnam Refinery, Andhra Pradesh

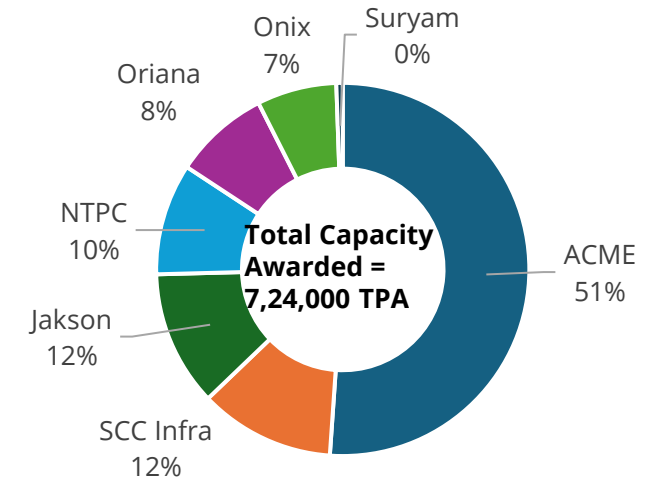
*Note: KTPA : Kilo Tonnes Per Annum

Source: JMK Research

Auction Results for SECI's 7,24,000 TPA Green Ammonia Auction across 13 fertilizer plants across India



Player-Wise Share of Capacity Awarded



- In June 2025, Solar Energy Corporation of India (SECI), issued **tender for offtake of 7,24,000 TPA Green Ammonia for India's Fertilizer sector across 13 fertilizer plants, under Strategic Interventions for Green Hydrogen Transition (SIGHT) Scheme – Mode 2A, Tranche 1.**
- Starting from July 2025 to September 2025, the series of auctions were **awarded in form of 13 contracts to 7 green ammonia producers with a cumulative awarded capacity of 7,24,000 TPA.** The details of the winners and the off-takers are mentioned in the table on the next slide.
- Out of **13 awarded contracts, ACME Cleantech won 6 auctions-** with a cumulative **awarded capacity of 3,70,000 TPA, winning more than 50% of the capacity,** while **SCC Infrastructure won 2 auctions -85,000 TPA, winning 11.74% capacity** and the **remaining 2,69,000 TPA was awarded to 5 other producers.** Some awardees like Onix renewables and SCC Infrastructure are new entrants in the green ammonia sector.
- The discovered tariff ranged from INR 49.75/kg to INR 64.74/kg,** with ACME Cleantech discovering the lowest tariff of INR 49.75/kg. This price discovered is 10.1% higher than current grey ammonia price in India INR 45/kg. With green ammonia prices nearing parity with grey ammonia, a significant transformation in the ammonia supply chain is anticipated.

Auction Results for SECI's 7,24,000 TPA Green Ammonia Auction across 13 fertilizer plants across India

Auction No.	Company	Capacity Tendered (TPA)	Capacity Awarded (TPA)	Tariff (INR/kg)	Off- Taker
1.	ACME Cleantech Solutions	7,24,000	75,000	55.75	Paradeep Phosphates, Odisha
2.	NTPC Renewable Energy		70,000	51.80	Krishana Phoschem, Madhya Pradesh
3.	Oriana Power		60,000	52.25	Madhya Bharat Agro Products, Sagar Plant, Madhya Pradesh
4.	SCC Infrastructure		70,000	53.05	Madhya Bharat Agro Products, Dhule Plant, Maharashtra
5.	Onix Renewables		50,000	52.50	Gujarat Narmada Valley Fertilizer & Chemicals
6.	Jakson Green		85,000	50.75	Coromandel International Ltd, Kakinada, Andhra Pradesh
7.	ACME Cleantech Solutions		50,000	51.89	Coromandel International, Vishakhapatnam facility
8.	ACME Cleantech Solutions		1,00,000	54.73	IFFCO, Kandla
9.	ACME Cleantech Solutions		1,00,000	49.75	IFFCO, Paradeep
10.	ACME Cleantech Solutions		25,000	62.89	Paradeep Phosphates, Zuarinagar, Goa
11.	ACME Cleantech Solutions		20,000	64.74	Indorama India, Haldia, West Bengal
12.	SCC infrastructure		15,000	57.65	Mangalore Chemicals & Fertilizers, Karnataka
13.	Suryam International		4,000	50	Madras Fertilizers Ltd., Chennai, Tamil Nadu
Total		7,24,000	7,24,000		

KEY PARTNERSHIPS ANNOUNCED



HydrogenPro

- In August 2025, **Thermax Ltd.**, an Indian engineering firm, partnered with Norway's **HydrogenPro ASA** to localize alkaline water electrolysis technology for large-scale green hydrogen projects in India.
- Thermax gains exclusive rights for supply, installation, commissioning, and after-sales of HydrogenPro's alkaline electrolyser systems in India, with provisions for future technology upgrades and a test station in Pune.



 ITOCHU Corporation

- In August 2025, Larsen & Toubro (L&T), through its wholly owned subsidiary, **L&T Energy GreenTech** (LTEG) inked a Joint Development Agreement with **ITOCHU Corporation** to develop a 300 KTPA green ammonia project in Kandla, Gujarat.
- The collaboration aims to provide a zero-emission fuel alternative for the maritime sector.

Company Name	Capacity	Project Type	Date of Commissioning	State	Other Details
<u>Hygenco</u>	200 TPA	Green Hydrogen Production Facility	July 2025	Maharashtra (Chhatrapati Sambhaji Nagar)	<ul style="list-style-type: none"> The facility, named, Project Photon Leap will supply green hydrogen and oxygen to STL – Sterlite Technologies Limited.
<u>Torrent Group</u>	72 TPA	Green Hydrogen Production Facility	August 2025	Uttar Pradesh (Gorakhpur)	<ul style="list-style-type: none"> Torrent Group has inaugurated Uttar Pradesh's first Green Hydrogen Production Facility. The facility is jointly developed by Torrent Power and Torrent gas. The Green Hydrogen will be used for blending into natural gas pipelines at 2% concentration.

Note: TPA: Tonnes Per Annum

PROJECT UPDATES

[Greenzo Energy delivers 1 MW electrolysers to Oswal Energies](#)

Oswal energies has received Greenzo Energy's inaugural 1 MW electrolyser stack, marking the launch of a 20 MW Build Operate-Transfer (BOT) green hydrogen project comprising of several modular plants. The BOT plants will range from 0.5-5 MW capacity and are scheduled to be commissioned within 12-18 months. The project is aimed towards supplying green hydrogen to the chemical and fertilizer industries.

[Greenzo Energy wins R&D order from Engineers India for Modular Hydrogen Electrolyser](#)

Greenzo Energy Limited has secured a research and development order from Engineers India Limited (EIL) for a modular hydrogen electrolyser unit to be installed at EIL's R&D complex in Gurgaon. The scope of the project includes the supply of the unit, associated site work, and mandatory spares. EIL is a Navratna public-sector enterprise under the Ministry of Petroleum & Natural Gas. The project is expected to support the development of scalable indigenous hydrogen solutions for use in sectors such as fertilizers, refinery and steel.

Greenzo Energy bags order from Jindal Stainless for green hydrogen plant in Odisha

GreenzoEnergy India has secured a contract from Jindal Stainless (JSL) to set up a green hydrogen electrolyser project at JSL's Kalinga Nagar Industrial Complex in Jajpur, Odisha. The facility will be designed to produce 0.47 KTPA of green hydrogen, with potential scalability up to 1.5 KTPA. Scope of work includes supply of electrolyser system, balance-of-plant equipment, erection, installation, commissioning, plus 30 days of on-site training and 11 months of virtual support for JSL's team.

NLC India advances 4 MW green hydrogen pilot with electrolyser procurement

NLC India Limited (NLCIL) is in advanced stage of procuring electrolysers for a 4 MW solar-powered green hydrogen pilot project at Neyveli, Tamil Nadu. Once commissioned, the plant will produce 300 kg of hydrogen per day. The plant will be capable of producing 99.99% pure green hydrogen.

Note: KTPA : Kilo Tonnes Per Annum

INVESTMENTS ANNOUNCED

Developer Name	Deal Type	Investor	Deal Value	Stake Acquired	Other Details
<u>Greenko Energy Holdings</u>	Equity	AM Green BV	US \$ 1280 million	17.5%	<ul style="list-style-type: none"> AMG will acquire equity stake from ORIX group. Post this transaction, AMG along with its promoter group will own 25% stake in Greenko. The investment will focus on production of green hydrogen, green ammonia and biofuels.

SECI terminates call for proposals on green hydrogen hubs

The Solar Energy Corporation of India (SECI) has announced the termination of the call for proposals (CfP) for setting up Green Hydrogen Hubs in India under the National Green Hydrogen Mission. The CfP, originally issued on August 20, 2024, with reference number SECI/C&P/EOI/17/0002/24-25 is no longer active. The bidders who submitted the document fee or tender management fee will receive refunds as per the provisions outlined in the original CfP document.

Andhra Pradesh launches Green Hydrogen Valley initiative

The Government of Andhra Pradesh has launched the Green Hydrogen Valley initiative to position the state as India's Green Hydrogen capital by 2030. The key objectives of the initiative include setting up electrolyser manufacturing facility of 2 GW by 2027 and 5 GW by 2029, along with green hydrogen production capacity of 1.5 MMTPA by 2029. The initiative also aims to reduce the cost of green hydrogen from INR 460/kg today to INR 160/kg by 2029, along with the development of a Green Energy Corridor to evacuate 25GW of renewable energy by 2030. The state has built an ecosystem to attract investments worth INR 10 lakh crore and create 7.5 lakh job opportunities through the Integrated Clean Energy Policy.

L&T incorporates Panipat Green Hydrogen Pvt. Ltd. as a subsidiary

L&T has entered into green hydrogen segment with a new wholly-owned subsidiary, Panipat Green Hydrogen Pvt. Ltd. The company has won bid to build a 10,000 TPA green hydrogen plant at Indian Oil Corporation's Panipat refinery. L&T previously secured land parcel in Kandla, Gujarat, for the development of green hydrogen and green ammonia projects.

IISC Bangalore develops system to produce green hydrogen from agricultural waste

Researchers at IISC Bangalore have developed a system that produces 99% pure green hydrogen using agricultural waste. The system can generate 5 kg of green hydrogen per hour using farm residue. This innovation aligns with National Green Hydrogen Mission (HGHM).

In Q3 2025 (July-Sept), 4 Central Policies relating to Green Hydrogen were issued.

Policy Name	Summary
<p><u>MNRE revises guidelines for Hydrogen Valley Innovation Clusters (HVICs) and Green Hydrogen Hubs</u></p>	<ul style="list-style-type: none"> • The Ministry of New and Renewable Energy (MNRE) has released revised guidelines under the National Green Hydrogen Mission (NGHM) to accelerate the setup of Hydrogen Valley Innovation Clusters (HVICs) and Green Hydrogen Hubs. • A funding of INR 200 crore has been earmarked- INR 172 crore for four pilot HVICs under the Department of Science and Technology's (DST) supervision and INR 28 crore to support the preparation of Detailed Project Reports(DPRs) for state-level green hydrogen hubs. • Four HVICs will be set up across distinct regions to act as living labs showcasing the green hydrogen value chain, from production to end use. These will act as innovation labs, enabling experiential learning and insights. • HVICs will be led by not-for-profit Section 8 companies in consortium with R&D labs, startups, and industry players. Land acquisition is to be arranged by HVICs; funding does not cover land costs. • Identified regions (inland or port-based) with ≥ 1 lakh MTPA* planned green hydrogen capacity will be developed as hydrogen hubs. The INR 28 crore funding (max INR 3 crore per state) would be used for the preparation of DPRs (Detailed Project Reports). • The Hydrogen Hub must be mapped on PM Gati Shakti Portal, and integrate infrastructure such as pipelines, bunkering, refueling stations, and ports. • DST will oversee HVICs (component A), and MNRE will manage Hydrogen Hubs (Component B), with dedicated Steering and Project Appraisal Committees conducting quarterly reviews to ensure progress, impact, and fund utilization.

*Note: MTPA: Million Tonnes Per Annum

In Q3 2025 (July-Sept), 4 Central Policies relating to Green Hydrogen were issued.

Policy Name	Summary
<p><u>MNRE issues second call for green hydrogen R&D proposals under NGHM</u></p>	<ul style="list-style-type: none"> • The Ministry of New & Renewable Energy (MNRE) has invited the second round of R&D proposals under the INR 400 crore Research & Development component of the National Green Hydrogen Mission (NGHM). • The programme aims to accelerate the development of such projects that can enhance the affordability, safety, efficiency, and scalability of green hydrogen production, storage, transportation, and utilization. • Eligible applicants include academic institutions, R&D bodies, government institutions, PSUs, private research firms, and industries with R&D infrastructure. • Academic, governmental, and non-profit institutions can receive up to 100% funding. Private institutions and industries may receive up to 80% of the project cost, with specific ceilings and overhead limits. • Proposals must target Technology Readiness Levels (TRL) 4-7 or higher, and emphasize scalability, commercialization, and innovation. • Key focus areas include hydrogen production (non-biomass/biomass), hydrogen storage and transportation, hydrogen applications, and hydrogen safety.

In Q3 2025 (July-Sept), 4 Central Policies relating to Green Hydrogen were issued.

Policy Name	Summary
<p><u>MNRE issues second call for green hydrogen testing infrastructure proposals</u></p>	<ul style="list-style-type: none"> • The Ministry of New and Renewable Energy (MNRE) issues its second call for proposals under the National Green Hydrogen Mission to fund testing facilities and infrastructure, with a submission deadline of September 10, 2025. • Government organizations and government-private consortia can apply to set up or upgrade hydrogen testing facilities, with up to 100% Central Financial Assistance for equipment, installation, and commissioning and 15% for operational costs for four years post-completion. • New facilities must be completed within 18 months, while upgrades must finish within 12 months; funding is disbursed in instalments (20% on award, 40% at 25% completion, 30% at 75%, 10% on completion). • Proposals will be evaluated on technical parameters with 70% weightage from the assessment criteria and 30% from the Project Appraisal Committee(PAC) evaluation. • With an INR 2 billion (~\$22.81 million) budget, the program aims to enhance green hydrogen testing infrastructure, ensuring safety and quality compliance until 2026.

Policy Name	Summary
<p><u>MNRE issues revised guidelines for Pilot projects for Green Hydrogen in Residential and Commercial applications</u></p>	<ul style="list-style-type: none"> • MNRE has issued revised guidelines for implementation of Pilot projects for production and use of Green Hydrogen using innovative methods in residential, commercial, localized community, Decentralized/ Non-Conventional, applications including any new sector or technology not covered in previous Mission schemes. • The guidelines focus on deploying green hydrogen in off-grid, localized and community -based applications. • The key objective of the policy is production of green hydrogen including inter-alia floating solar based Green Hydrogen production, biomass based green hydrogen production and green hydrogen production using waste-water. • The scheme has a budgetary outlay of INR 200 crore till FY2025-26. • The systems will support uses such as cooking, heating, off-grid electricity generation, off-road mobility including construction and mining applications. • The projects will be implemented by the scheme implementing agencies (SIAs).

Odisha to form Green Hydrogen Export Strategy

MNRE and Odisha Govt outlined a roadmap to position the state as a key exporter of Green Hydrogen and derivatives via SEZ clusters near Paradip and Gopalpur ports. Other focus areas include scaling rooftop solar under PM Surya Ghar Yojana and feeder-level solarization for rural power under PM-KUSUM. Odisha's coastal location, industrial base, and upcoming policy incentives make it ideal for large-scale green hydrogen production and export. Some key challenges were identified such as land availability, grid readiness, infrastructure needs and export-readiness.

GST on electrolyzers reduced from 18% to 5% to lower green hydrogen costs

The GST council has slashed tax on electrolyzers and green hydrogen production from 18% to 5%. Electrolyzers and supporting equipment account for nearly 40 percent of the cost of producing green hydrogen, hence this move is expected to cut the levelized cost of green hydrogen production in India, making it more competitive with fossil-based alternatives.

Indian Govt. launches INR 100 crore green hydrogen innovation scheme

The Union Minister of New and Renewable Energy announced an INR 100 crore scheme to support green hydrogen startups, with financial assistance up to INR 5 crore per project for innovations in production, storage, transportation, and utilisation. The scheme was unveiled during the 1st Annual Green Hydrogen R&D Conference. Alongside the fund, the government launched a green hydrogen safety panel under the National Green Hydrogen Mission (NGHM) to set up standards, protocols, awareness, and training.

MNRE issues call for proposals for startups to pilot innovative Green Hydrogen Technologies

National Institute of Solar Energy (an autonomous institute of the Ministry of New and Renewable Energy) has issued a call for proposals for startups to pilot green hydrogen production and utilization technologies under part B of the National Green Hydrogen Mission. Total funding allocated is INR 100 crore, with a maximum grant of INR 5 crore per project. Eligible applicants are start-ups (incorporated < INR 100 crore, and projects should be at Technology Readiness Level (TRL) 3-4 with potential to scale to TRL 6-8. Focus areas include renewable-powered electrolyzers, biomass pathways, novel membrane/electrode technologies and hydrogen storage/transport innovations. Proposals must be submitted by October 13, 2025.

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