



Quarterly Roundup: Clean Energy

OCTOBER 2024 TO JANUARY 2025

Executive Summary

The latest Issue of our Quarterly Roundup Series on Clean Energy covers the period between the months of October 2024 and January 2025. The period under review witnessed various regulatory changes in India with respect to clean energy, both at the central and state level. This Issue tracks and analyzes key developments in connection with the following:

- Solar generation
- Wind generation
- Green hydrogen/ ammonia production
- Electric vehicles (EVs)
- Tariff
- Connectivity
- Miscellaneous

Within such themes, major developments included the following:

- Amendments to the order related to the approved list of manufacturers and models (ALMM), *inter alia* for the purpose of issuing a separate list for solar photovoltaic (PV) cells with effect from June 1, 2026. Consequently, all solar projects falling under ALMM will be required to source solar PV modules from list-I, which solar PV modules will be required to use solar PV cells from list-II
- New orders issued on quality control and compulsory registration in respect of solar PV inverters and modules, as well as storage batteries
- New operational guidelines for implementing (i) innovative projects, (ii) service charges, and (ii) the payment security mechanism for renewable energy service companies (RESCOs) and utility/ state-led aggregation models, under government schemes
- Clarifications about providing historical data related to solar PV modules for the purpose of verifying domestic content requirements on a government portal
- New scheme guidelines for the implementation of pilot projects for green hydrogen production and use in residential, commercial, localized community, and decentralized/ non-conventional applications
- Proposed amendments of regulations governing cross-border electricity trade
- New amendments of regulations related to deviation settlement mechanism
- New order to clarify and address scheduling challenges and infirm power in the Indian electricity grid
- Proposed regulations to extend the eligibility and revise the criteria for waivers on transmission charges related to offshore wind, hydro-pumped storage plants, and energy storage systems
- New guidelines for EV battery swapping and charging stations
- An APTEL order clarifying the 'consumption test' under the Electricity Rules in respect of captive generating plants
- Updated procedures for implementing rules on late payment surcharge

- New exemptions from environmental consent requirements under the Water and Air Acts, respectively, for certain types of renewable energy projects
- Proposed regulations on trading in carbon credit certificates
- New rules to increase financial disclosure requirements for discoms

Nuclear Energy

Consistent with past [plans](#) involving [nuclear power for energy security](#), as announced in India's July 2024 budget, including with respect to [developing small modular reactors](#) ("SMRs"), the Indian government has continued to focus on the nuclear sector in the [latest budget](#) (Union Budget 2025-26), where it announced the launch of a Nuclear Energy Mission with an outlay of INR 200 billion for the purpose of achieving at least [100 GW of nuclear energy generation by 2047](#). Further, the government aims to operationalize at least five [indigenously developed SMRs](#).

Importantly, in the budget announcement on February 1, 2025, the Finance Minister also stated that amendments to the [Atomic Energy Act, 1962](#) and the [Civil Liability for Nuclear Damage Act, 2010](#) will be taken up by Parliament to facilitate the implementation of the Nuclear Energy Mission. Such legislative amendments are expected to encourage private sector investments in nuclear power projects.

In this regard, recent media reports suggest that a [parliamentary consultative committee on power](#) and/or an [inter-ministerial committee on India's nuclear energy targets](#) are currently engaged in discussion.

UPDATES

- Regulatory and legislative updates have been provided (1) thematically (i.e., under the heads of Solar generation, Wind generation, Green Hydrogen/ Ammonia production, etc.), and (2) reverse chronologically.
- Within every theme, Central and State Government updates are listed separately. Further, state updates have been alphabetically ordered.
- Links to primary sources are embedded in headings and/or have been provided in-line.

OTHER PUBLICATIONS

- For a discussion on SEBI's new framework for sustainable finance including Environmental, Social, and Governance (ESG)-related debt securities, see our note [here](#).
- For a broad summary of the EU's Carbon Border Adjustment Mechanism (CBAM), see our note [here](#).
- For an overview of 'greenwashing', see our note [here](#).
- For a discussion on the legal framework for nuclear energy in India, see our note [here](#).

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Solar Generation

CENTRAL

ALMM

Updated list-I under ALMM Order for solar PV modules

January 23, 2025: Pursuant to an office memorandum dated January 23, 2025, the Ministry of New and Renewable Energy (“MNRE”) updated list-I of the approved list of models and manufacturers (“ALMM”) for solar photovoltaic (“PV”) modules. Only such models of solar PV module manufacturers are enlisted under ALMM which comply with the relevant standards of the Bureau of Indian Standards (“BIS”) and have a specified minimum module efficiency.

Pursuant to office memoranda issued in October 2024, November 2024, December 2024, and January 2025, respectively, the MNRE has revised the ALMM list-I providing for provisional enlistment, as notified by letters dated as follows:

1. January 23, 2025
 - Emmvee Energy Private Limited
 - Raajratna Ventures Limited
 - ORB Energy Private Limited
 - Renewsys India Private Limited
 - ReNew Photovoltaics Private Limited
2. January 6, 2025
 - Waaree Energies Limited
 - Mundra Solar Private Limited
3. December 26, 2024
 - Redren Energy Private Limited
 - Mundra Solar Private Limited
 - Icon Solar En Power Technologies Private Limited
 - FS Green Energies Private Limited
 - ADM Solar Power & Infrastructure Private Limited
4. December 2, 2024
 - H R Solar Solution Private Limited
 - Emmvee Energy Private Limited
 - SAEL Solar Mfg Private Limited

5. November 11, 2024
 - SAEL Solar P6 Private Limited
6. October 28, 2024
 - Redren Energy Private Limited
7. October 14, 2024
 - Ganesh Green Bharat Limited
 - Unique Sun Power LLP

MNRE issues amendment to ALMM Order for implementation of ALMM for solar PV cells

December 9, 2024: Pursuant to an office memorandum dated December 9, 2024, the MNRE amended the approved list of models and manufacturers order dated February 2, 2019 (“ALMM Order”). While the ALMM Order had specified list-I for solar PV modules and list-II for solar PV cells, list-II had not been issued earlier due to insufficient domestic manufacturing capacity. However, a substantial increase in solar PV cell manufacturing capacity is anticipated by next year. Accordingly, it has been now proposed that list-II for solar PV cells should be issued under the ALMM Order with effect from June 1, 2026.

Consistent with the ALMM Order, all projects falling under ALMM will be required to source their solar PV modules from list-I, and such solar PV modules, in turn, will be required to use solar PV cells from list-II.

Further, additional specifications and requirements include the following:

1. Existing projects: Projects with bid submission deadlines on or before the issuance of the ALMM Order must use solar PV modules from ALMM list-I but are exempt from using solar PV cells from ALMM list-II, even if commissioned after June 1, 2026.
2. New Projects: Projects with bid submissions after the issuance of the ALMM Order must use both list-I modules and list-II cells, regardless of commissioning dates.
3. Other Projects: In case of tenders which have been issued prior to the date of issuance of the ALMM Order, but where the last date of bid submission is after the

issuance of such order, the concerned bidding agency will be required to issue an amendment to the tender document to include provisions which state that bidders must take into account the provisions of ALMM for solar PV cells while submitting their bids.

Compliance Rules

- From June 1, 2026, only such solar PV modules that use solar PV cells from ALMM list-II will remain in ALMM list-I. Those PV module manufacturers which fail to comply with such requirement will be delisted from ALMM list-I.
- After May 31, 2026, a separate ALMM 'list-I(a)' for solar PV modules will be maintained, which will contain such solar PV modules that are enlisted in ALMM but do not use solar PV cells from ALMM list-II (for solar PV cells). Such ALMM list-I(a) (for solar PV modules) will be applicable only for such projects that are mandated to use solar PV modules from ALMM but are exempt from using solar PV cells from ALMM list-II.
- All net-metering projects and open access renewable power projects which get commissioned on or after June 1, 2026 will be required to source their solar PV modules from ALMM list-1 and solar PV cells from ALMM list-II.
- Thin-film technology-based solar PV modules enlisted in ALMM List-I and manufactured in integrated solar PV module manufacturing units enlisted in list-I will be deemed to be compliant with the requirement of using solar PV cells from ALMM list-II.

MNRE issues clarification to the ALMM Order

October 14, 2024: Pursuant to an office memorandum dated October 14, 2024, the MNRE issued a clarification with respect to the ALMM Order ("**October 14 Clarification**") reiterating its previous clarification issued pursuant to an office memorandum dated October 7, 2022 ("**Original Clarification**").

The Original Clarification had stated that certain amendments to the ALMM Order issued pursuant to office memoranda January 13, 2022 and March 28, 2022 would not be applicable for open access and net-metering renewable energy projects where the first application, for grant of either of the following, was made before October 1, 2022 pursuant to (i) the provisions of the concerned central, state or union territory policy, or (ii) the rules and regulations of the electricity regulatory commission administering such policy, and which applied to relevant entities, including distribution licensees ("**discoms**"); state and/or central transmission utilities; state, regional and/or national load dispatch centers; the Grid Controller of India Limited (GCIL); and state nodal agencies for renewable energy (i.e., the appropriate department of the state or union territory dealing with power, energy, and/or renewable energy):

- In-principle approval;
- No objection certificate;
- Government order; or
- Any other of such approvals as may be required for open access and net-metering of such renewable energy projects.

The October 14 Clarification confirmed and reiterated the Original Clarification.

Quality Control Order

MNRE extends implementation of quality control order for solar PV inverters up to December 31, 2025

January 27, 2025: Pursuant to a notification dated January 27, 2025, the MNRE extended the deadline (originally December 31, 2024) for implementation of the Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017 ("**Quality Control Order**"), as issued pursuant to a standing order dated September 5, 2017, with respect to solar PV inverters (items 4-5 of the Schedule to the Quality Control Order) which have a capacity in excess of 100 kW, until the earlier of December 31, 2025 or further orders, based on self-certification.

Given that test facilities were available only for limited capacities, the deadline extension was granted to provide more time for compliance. However, the deadline extension is subject to the condition that the concerned manufacturer has a valid Importer-Exporter Code (IEC) certificate corresponding to specified standards and test reports from accredited labs for the purpose of smooth implementation of the Quality Control Order.

MNRE issues solar systems, devices and components goods order, 2025

January 27, 2025: Pursuant to an order published on January 27, 2025 ("**2025 Order**"), the MNRE issued the Solar Systems, Devices and Components Goods Order, 2025, which revises and supersedes the Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017 ("**2017 Order**").

The 2025 Order will come into effect 180 days from the date of its publication. It covers solar PV modules, inverters to be used in solar PV applications, and storage batteries, which must conform to the latest standards notified by the BIS and bear the standard mark under a license from the BIS. The 2025 Order applies to manufacturers, importers, distributors, retailers, sellers and lessors of solar PV systems and components. However, products which are meant exclusively for export have been exempted.

While the validity of existing licenses will not be affected and will continue to operate under the 2017 Order, new registrations and renewals will be required to comply with the 2025 Order. The 2025 Order lays down conditions for the grant of licenses based on minimum efficiency criteria for different types of solar PV modules. In this regard, the 2025 Order specifies that mono-crystalline silicon and thin-film PV modules are required to have a minimum efficiency of 18%, while poly-crystalline silicon PV modules must have a minimum efficiency of 17%.

While the BIS will oversee the grant of licences under, and the enforcement of, the 2025 order, and be responsible for market surveillance (including through an agency notified by it in consultation with the MNRE), any violation of the provisions of the

2025 Order will attract penalties under the Bureau of Indian Standards Act, 2016 ("**BIS Act**").

MNRE issues Solar Thermal Systems, Devices and Components (Quality Control) Order, 2024

October 8, 2024: Pursuant to a notification dated October 8, 2024, the MNRE issued the Solar Thermal Systems, Devices and Components (Quality Control) Order, 2024, which requires specified solar thermal systems and components to conform to Indian standards and bear the standard mark under a license from the BIS in accordance with Scheme-I of Schedule II to the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018.

Covered solar thermal systems, devices and components include the following:

- Solar flat plate collector for solar water heating systems ("**SWHS**");
- All glass evacuated tubes SWHS; and
- Storage water tank for all glass evacuated tubes SWHS.

The order will come into effect 180 days from the date of its publication and will exclude goods meant for export. The BIS will be the certifying and enforcing authority in respect of the covered goods/articles. The BIS or such agencies as notified by it in consultation with the MNRE will conduct market surveillance to ensure conformity with specified Indian standard. The order also outlines penalties for non-compliance under the BIS Act.

PM-SGMBY

MNRE issues operational guidelines for implementation of PSM and CFA components mechanism, for RESCO/utility led aggregation models of PM-SGMBY

December 28, 2024: The MNRE has issued operational guidelines for implementing the "Payment Security Mechanism" ("**PSM**") and "Central Financial Assistance" ("**CFA**") components for models related to Renewable Energy Service Company ("**RESCO**") and Utility/ State-Led

Aggregation (“**ULA**”) under the PM-Surya Ghar Muft Bijli Yojana (“**PM-SGMBY**,” and such guidelines, “**RESCO-ULA Guidelines**”). The PM-SGMBY scheme will continue to be in force until March 31, 2027.

Previously, guidelines related to the PM-SGMBY scheme for the release of CFA to residential consumers for installations undertaken by such consumers through registered vendors (‘capex mode’) were issued by the MNRE pursuant to its office memorandum dated June 7, 2024. However, such guidelines did not cover RESCO models (where a third-party entity other than the consumer makes the initial investment, either in whole or part) or ULA models (where a state entity invests in whole or part on behalf of consumers on an aggregate basis).

The RESCO-ULA Guidelines will operate if state governments, discoms, or State-designated entities adopt new models of procuring or generating power through rooftop solar (“**RTS**”) installations pursuant to the RESCO model under appropriate metering arrangements. Expanded RTS deployment may also be undertaken by discoms through utility-led models where the discom is responsible for demand assessment and aggregation, consolidation of procurement from RTS installations (gross, net or other variations in metering), and ownership of RTS plants (on its own or through contractual intermediaries).

The RESCO-ULA Guidelines also lay down the method of managing and utilizing the PSM under the PM-SGMBY scheme. The PM-SGMBY scheme created a separate component for PSM for the purpose of de-risking investments in RESCO-based models in RTS. The aim of utilizing such payment security fund will be to (i) ensure timely payments to RESCO developers, and (ii) insulate them from payment delays from discoms or contracting parties.

Eligibility

For the purpose of CFA, the residential RTS plant would be the grid-connected solar power system tagged to a particular residential power connection of the local discom and will only include installations on a roof/ terrace/ balcony or on top of elevated structures. Special RTS installations such as

building-integrated PV (“**BiPV**”) systems will also be considered eligible for CFA support.

Installations under metering mechanisms such as group net metering and virtual net metering will be eligible for CFA, and if the metering arrangement is approved by the relevant discom. CFA for ULA proposals will be released against those households which have an installed capacity up to 3 KW.

RESCO Mode

The RESCO mode is one where the consumer (i) itself does not fund the initial investment into the RTS system, and (ii) is not the owner of the asset for at least five years of operations. Instead, a RESCO procures, installs, operates, and maintains the RTS system. The consumer pays the RESCO operator for the electricity consumed from the RTS system on a tariff basis and/or may be compensated by the RESCO operator for roof utilization rights. The plant ownership may be transferred to the consumer after the project period pursuant to the terms and conditions agreed upon between the consumer and the RESCO. Alternatively, the RESCO may enter into an arrangement with the discom for the sale of balance power (i.e., the power which is left over after the original consumer’s consumption) to the grid under a power purchase agreement (“**PPA**”).

ULA Models

For the purpose of the RESCO-ULA Guidelines, ULA models include business models where the discom, the State Government, or some other designated State-owned entity (e.g., state nodal agencies, state generation companies, autonomous bodies, etc.), by itself or in some combination, install RTS projects on behalf of individual residential households. In this regard, the utility may mobilize resources from the respective state government, its own internal resources, contributions made to it for this purpose under Corporate Social Responsibility (CSR), or any other resources mobilized for providing RTS to households under the ULA model. ULA models may be of two types, with additional sub-variants possible under each, as follows:

- Model I (utility-owned assets): The installed RTS systems are not owned by the residential household for the project period (at least five years). The ownership may subsequently be

transferred to the concerned household after the completion of such project period pursuant to the arrangements decided upon by the concerned utility.

- Model II (consumer-owned assets): The utility provides an additional grant component for the installation, and the installed RTS systems are owned by the consumer from the date of commissioning.

PSM for RTS

A corpus of INR 1 billion will be managed and administered by the national program implementation agency (“NPIA”) to ensure timely payments to RESCO developers. ULA proposals from state governments can access the PSM for RTS in order to provide payment security for projects in which RESCO partners have been contracted with through an open and transparent bidding process for the purpose of tariff discovery. Under this arrangement, ULA-selected RESCOs must contribute a one-time fee. The NPIA will enter into a bilateral agreement with the State-designated entity for the settlement of RESCO dues subject to the fulfilment of certain specified conditions. While utilities will be required to settle the claims of RESCO partners, the NPIA will make the necessary payments to the RESCO vendor pursuant to the agreement between the RESCO and the utility in the event of payment delays in excess of 15 days from the date of raising such claims.

MNRE issues clarification in guidelines for implementation of PM-SGMBY

November 19, 2024: Pursuant to an office memorandum dated November 19, 2024, the MNRE issued clarifications with respect to the implementation of operational guidelines for the PM-SGMBY scheme for the component “CFA to Residential Consumers” (“CFA Guidelines”), as previously issued by the MNRE pursuant to its office memorandum dated June 7, 2024. Key clarifications related to the CFA Guidelines include the following:

- Clause 5(f) of the CFA Guidelines states that the connection related to an eligible ‘Group Housing Society/ Resident Welfare Association’ (“GHS/RWA”) under the PM-SGMBY scheme will be dedicated only for

common facilities and should not be utilized for providing electricity to residential consumers within such GHS/RWA. The CFA support will generally be provided to entities created by residents for overall maintenance which are responsible for the upkeep of common facilities, including those with alternative terminologies such as Apartment Owner Associations, Cooperative Housing Societies, etc.

- Pursuant to representations received regarding subsidy disbursements for rooftop installations on residential projects where common areas are being serviced directly by real estate promoters/ developers in the absence of any constituted RWA/GHS, it has been clarified that CFA support under the GHS/RWA segment can be provided to such developers/ promoters directly, subject to the submission of an undertaking that the RTS asset supported under the CFA Guidelines will be handed over to the concerned GHS/RWA/ Apartment Owner Association/ Cooperative Housing Society or any other collective created by residents for overall maintenance, whenever such a collective is created.
- In this regard, such developers/ promoters are also required to submit an undertaking stating that the benefits from the RTS subsidy will be passed on to the residents through reduced charges/ tariffs for common facilities.
- Further, the nodal agency may establish additional documentary requirements to satisfy the CFA Guidelines and authenticate the subsidy claimant.

MNRE issues operational guidelines for implementation of component “Innovative Projects” under PM-SGMBY

October 8, 2024: Pursuant to an office memorandum dated October 8, 2024, the MNRE issued operational guidelines for implementing the “Innovative Projects” component under the PM-SGMBY scheme. The objectives of the “Innovative Projects” component are to: (i) identify and fund new innovations in business models and technical deployments of RTS, (ii) support interventions that

can provide new pathways for the deployment of distributed renewable energy for households and companies, and (iii) create technological and management tools for discoms to better manage distributed energy resources within their grids, and (iv) support the incorporation of cutting-edge technology in real-life RTS/distributed renewable energy deployments.

Examples of innovative projects under the PM-SGMBY scheme include blockchain-based peer-to-peer RTS, digital solutions for RTS, smart building materials, RTS with EVs, grid-responsive RTS with battery storage solutions, and discom IT systems for RTS management. Such projects may also include the creation of special financing products along with financing intermediaries, as well as the expansion of RTS deployment across segments by enabling new and innovative business models such as virtual net-metering and group net-metering models, behind-the-meter storage, RTS with EVs, rent-a-roof models, and peer-to-peer sale of RTS electricity.

A total of INR 5 billion has been allocated for this component under the PM-SGMBY scheme. Any entity or individual can be eligible under such component, and international cooperation for the pursuit of joint research and design will also be supported. The financial assistance for innovative projects will be capped at 60% of the total project cost or INR 300 million, whichever is lower. The selection committee may decide to provide a lower level of financial assistance based on the specific nature of a project. The Secretary of the MNRE may specify the minimum project cost which will be funded under this component.

MNRE issues operational guidelines for implementation of component “Service Charge” under PM-SGMBY

October 8, 2024: Pursuant to an office memorandum dated October 8, 2024, the MNRE issued operational guidelines for implementing the “service charge” component under the PM-SGMBY scheme (“**Service Charge Guidelines**”).

INR 6.57 billion has been allocated under the PM-SGMBY scheme to cover service charges associated with the implementation of various components of such scheme. This fund is to be utilized primarily by the NPIA and State

Implementation Agencies (“**SIAs**”). While SIAs under the PM-SGMBY scheme are primarily discoms/ utilities in their respective jurisdictions, State Governments can nominate a different SIA for such scheme. Other agencies may also be supported through the “service charge” component pursuant to the Service Charge Guidelines.

Other

MNRE mandates filing of past data on DCR verification portal

November 11, 2024

Background

- Previously, pursuant to an office memorandum dated August 7, 2024, the MNRE had amended the ALMM Order and included, among other things, a provision related to a verification portal operated by the National Institute of Solar Energy (“**NISE**”) for the purpose of ensuring traceability with respect to domestically manufactured solar PV cells and modules. Such portal would help with the verification of domestic content requirements (“**DCR**”).
- Accordingly, all existing ALMM-enlisted manufacturers were required to register their solar PV manufacturing facilities on this DCR verification portal and start feeding in necessary data in respect of the solar PV modules and cells being manufactured by them within one month from the date of issuance of such office memorandum.
- This DCR verification portal was stated to be the exclusive mechanism for verifying DCR in the future. Accordingly, if a solar PV module claiming to be DCR-compliant fails in terms of the verification process through such portal, the concerned manufacturer may have to face actions listed under the MNRE’s office memorandum dated October 16, 2023.
- All future applications for enlistment, renewal, addition of models, or provisional enlistment under ALMM were required to be accompanied by a letter certifying that data related to solar PV modules and cells being

manufactured in the facilities for which the application was being made had already been filled on the DCM verification portal, failing which the ALMM application would be rejected.

At present, the MNRE has issued an office memorandum dated November 11, 2024 in relation to (i) the mandatory filling of past data (*i.e.*, January 1, 2024 onwards) on the DCR verification portal, and (ii) the non-acceptance of solar modules which are not verifiable through such DCR portal under the MNRE's schemes mandating DCR.

Accordingly, if a solar PV module's DCR credentials cannot be verified through such portal, it will not be accepted under the MNRE's relevant schemes in this regard, including PM-SGMBY and PM-KUSUM, from December 1, 2024 onwards.

MNRE issues new solar power scheme (for Tribal and PVTG Habitations/ Villages) under PM JANMAN and PM JUGA

October 18, 2024: Pursuant to an order dated October 18, 2024, the MNRE issued implementation guidelines for the revised New Solar Power Scheme for habitations and villages related to tribal and particularly vulnerable tribal groups ("**PVTG**," and such scheme, "**New PVTG Scheme**") under the Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan ("**PM JANMAN**") and Pradhan Mantri Janjatiya Unnat Gram Abhiyan ("**PM JUGA**") schemes, replacing the previous New Solar Power Scheme (for PVTG Habitations/ Villages) under PM JANMAN.

The New PVTG Scheme aims to electrify 0.1 million un-electrified households in tribal and PVTG areas identified by the Ministry of Tribal Affairs by providing off-grid solar systems, including solar home lighting systems and solar mini-grids. The New PVTG Scheme also includes a provision to provide off-grid solar lighting in 1,500 multi-purpose centers in PVTG areas, as approved under the PM JANMAN scheme. Further, the New PVTG Scheme includes a provision to solarize 2,000 public institutions through off-grid solar systems, as approved under the PM JUGA scheme, where electrification will be carried out by installing off-grid solar power packs with battery banks. The off-grid solar systems will be

provided only where electricity supply through the grid is not techno-economically feasible.

The implementation guidelines for the New PVTG Scheme includes relevant provisions on implementation agencies; sanctions; tenders; release of funds; project timelines; inspection and monitoring; repair and maintenance; service centers, training and availability of spares; complaint redressal mechanism; as well as technical specifications and testing.

MNRE proposes to update the Standard/ Specification of the solar PV water pumping system under PM KUSUM

October 1, 2024

Background

Previously, in March 2023, the MNRE had issued standards and specifications related to solar water pumping systems under the PM-KUSUM scheme. Such standards and specifications are periodically updated by the MNRE to incorporate innovations and technological improvements in equipment.

Updated Standards and Specifications

Pursuant to a notice dated October 1, 2024, the MNRE proposed to update certain standards and specifications under the PM-KUSUM scheme, including those related to (i) solar water pumping systems using positive displacement pumps and related technology, where the intent is to introduce performance, safety features, and testing requirements for such systems which are designed to handle clear cold water and (ii) solar PV water pumping systems with micropumps and/or for micro pumping applications, where a solar PV water pumping system consists of: (a) a PV array, (b) a surface or submersible motor pump set, (c) electronics, (d) interconnect cables, and (e) an on-off switch.

The MNRE sought suggestions from stakeholders with respect to its proposed updated standards and specifications under the PM-KUSUM scheme.

STATE

Jharkhand

JSERC issues amendment to RTS PV grid interactive system and net/ gross metering regulations

November 26, 2024/ December 16, 2024: Pursuant to a gazette notification dated December 16, 2024, the Jharkhand State Electricity Regulatory Commission (“**JSERC**”) notified the JSERC (Rooftop Solar PV Grid Interactive System and Net/ Gross Metering) (Fifth Amendment) Regulations, 2024 (“**JSERC RTS Amendment**”), as issued through a JSERC notification dated November 26, 2024, for the purpose of amending the JSERC (Rooftop Solar PV Grid Interactive System and Net/ Gross Metering) Regulations, 2015 (“**Principal JSERC RTS Regulations**”).

The JSERC RTS Amendment deleted and replaced clause 8.2 of the Principal JSERC RTS Regulations as follows:

“The voltage level at which the rooftop solar PV system installed at the premises of the consumer shall be connected with the distribution system according to Clause 4.3 of JSERC (Electricity Supply Code) Regulations, 2015 and amendments thereon.”

Wind Generation

STATE

Assam

AERC issues draft amendments to the Renewable Energy Purchase Obligation Regulations

December 4, 2024: Pursuant to a draft notification dated December 4, 2024, the Assam Electricity Regulatory Commission (“AERC”) issued the draft AERC (Renewable Energy Purchase Obligation and its Compliance) Regulations, 2010 (Fourth Amendment) 2024 (“Draft AERC RPPO Regulations Amendment”).

The Draft AERC RPPO Regulations Amendment proposes to revise the minimum quantum of consumption from various renewable energy sources by an obligated entity in a given year as follows:

Year	Wind renewable energy
FY 2024-25	0.67%
FY 2025-26	1.45%
FY 2026-27	1.97%
FY 2027-28	2.45%
FY 2028-29	2.95%
FY 2029-30	3.48%

The wind renewable energy component is required to be met by energy produced from wind power projects (“WPPs”) commissioned after March 31, 2024. Further, any shortfall in achieving the stipulated wind renewable energy consumption in a given year may be met with hydro renewable energy which is in excess of such energy component for that year and vice versa. The balance excess energy consumption under the wind or hydro renewable energy components, respectively, in such year may be considered as part of the other renewable energy component. Further, any excess energy consumption under other renewable energy components in a given year may be utilized to meet the shortfall in achieving the stipulated wind or hydro renewable energy consumption, respectively.

Karnataka

KERC clarifies transmission charges for wind-solar hybrid power plants

November 25, 2024: Pursuant to a *suo moto* order dated November 25, 2024 the Karnataka Electricity Regulatory Commission (“KERC”) clarified that the transmission charges for co-located wind-solar hybrid power plants will be levied as follows:

- If solar or wind capacity is added to existing power plants, the charges will be limited to the existing transmission capacity contracted with the transmission licensee, subject to the condition that the installed capacity of either solar or wind energy is not more than the existing transmission capacity contracted.
- For new hybrid power plants, the transmission charges will be levied for the higher installed capacity among either of wind or solar energy.

The order also clarified that co-located wind-solar plants will be recognized as hybrid plants if the rated power capacity of one of the resources is at least 25% of the rated power capacity of the other resource.

KERC issues draft (Implementation of Rooftop Aero Turbine with Solar or without Solar) Regulations, 2024

October 9, 2024: Pursuant to a notification dated October 9, 2024, the KERC issued the Draft KERC (Implementation of rooftop aero turbine with solar or without solar) Regulations, 2024 (“Draft KERC Aero Turbine Regulations”), inviting comments and suggestions from stakeholders.

Among other things, the Draft KERC Aero Turbine Regulations provide for the following:

- Grant of license by KERC to discoms which will provide metering arrangements to eligible consumers on a non-discriminatory and first-come-first-served basis;
- Conditions for installing Rooftop Aero Turbines (“RATs”), including the minimum capacity and maximum load of such RATs;

- Procedure for implementing RATs and reporting;
- Technical parameters;
- Proceedings and parameters for determining tariffs;
- Metering systems;
- Energy accounting and settlement;
- Standard format PPA; and
- Redressal mechanism.

energy consumption in a given year may be met with hydro renewable energy which is in excess of such energy component for that year and vice versa. The balance excess energy consumption under the wind or hydro renewable energy components, respectively, in such year may be considered as part of the other renewable energy component. Further, any excess energy consumption under other renewable energy components in a given year may be utilized to meet the shortfall in achieving the stipulated wind or hydro renewable energy consumption, respectively.

Meghalaya

MSERC notifies amendments to the Renewable Energy Purchase Obligation & its Compliance) Regulations, 2018

November 26, 2024: Pursuant to a notification dated November 26, 2024, the Meghalaya State Electricity Regulatory Commission (“**MSERC**”) issued the MSERC (Renewable Energy Purchase Obligation & its Compliance) (3rd Amendment) Regulations, 2018 (“**MSERC RPO Amendment**”). The MSERC RPO Amendment supersedes the earlier two amendments to the principal regulations and will be effective from April 1, 2025.

The key change to the principal regulations under the MSERC RPO Amendment is the revision of the minimum quantum of consumption from various renewable energy sources (i.e., renewable purchase obligation (“**RPO**”)) by an obligated entity in a given year.

In relation to wind energy, the minimum year-wise percentages are as follows:

Year	Wind renewable energy
FY 2025-26	1.45%
FY 2026-27	1.97%
FY 2027-28	2.45%
FY 2028-29	2.95%
FY 2029-30	3.48%

The wind renewable energy component is required to be met by energy produced from WPPs commissioned after March 31, 2024. Further, any shortfall in achieving the stipulated wind renewable

Green Hydrogen/ Ammonia Production

CENTRAL

MNRE issues scheme guidelines for implementation of pilot projects for Green Hydrogen production and use in residential, commercial, localized community and non-conventional applications

November 8, 2024: Pursuant to a letter dated November 8, 2024, the MNRE conveyed the sanction of the President of India to implement the scheme related to pilot projects for the production and use of Green Hydrogen (“GH”) using innovative methods/ pathways in the Residential, Commercial, Localized Community, Decentralized/ Non-Conventional applications, including any new sector or technology not covered in previous schemes under the National Green Hydrogen Mission (“NGHM”) with a budgetary outlay of INR 2 billion until the financial year 2025-26 (such scheme, the “Scheme”). Accordingly, the MNRE issued guidelines to implement such pilot projects under the Scheme.

Decentralized modes of GH production for localized applications include RTS, small/ micro hydel plants, floating solar, use of wastewater, and biomass utilization. Use of GH and its derivatives at a community-level include application in heating, cooking and off-grid electricity generation or storage. In addition, the scheme aims to offer sustainable solutions to reduce emissions from energy-intensive sectors including off-road vehicles, such as those used in construction and mining, through the utilization of GH-based fuels.

The Scheme will support eligible projects under the NGHM to evaluate innovative production pathways for GH and its derivatives and assess the feasibility of utilization in decentralized residential and commercial applications. These projects will be implemented by the SIAs designated for specific sectors.

Objectives of the Scheme

1. To support innovative models/ technologies/ pathways for GH production, including from floating solar, biomass and wastewater.
2. To support the utilization of GH and its derivatives as a fuel for decentralized applications on a pilot basis in cooking, heating, off-grid electricity generation, and off-road vehicles.
3. To validate the technical feasibility and performance of GH as a fuel for household/ residential and commercial appliances, including city gas and local community applications.
4. To demonstrate the safe and secure use of GH and its derivatives in other new sectors.

Background and Rationale

In January 2023, the [Union Cabinet approved the NGHM](#) with an outlay of INR197.44 billion until FY 2029-30, including INR 14.66 billion earmarked for pilot projects. The NGHM committed to exploring innovative models to source GH (see 4.2 of NGHM, at p. 5) and creating demand in domestic markets by blending hydrogen in existing natural gas networks, among other things (see 7.1 of NGHM, at p. 11).

For more background and context related to the [NGHM](#), see pp. 1-4 of our Quarterly Roundup: Clean Energy, Issue 1 of 2023, January – March 2023 [here](#).

The Scheme is targeted at furthering the NGHM’s objectives as follows:

- To help understand operational issues and gaps in terms of current technology readiness, regulations, implementation challenges, infrastructure, and supply chains.
- To prepare future-ready plans through valuable inputs for scaling and commercial deployment of different production pathways and utilization models in the residential, commercial, and other new sectors.
- By setting up a GH ecosystem in new sectors by establishing necessary facilities, including

refuelling stations, storage, and distribution networks.

Salient Features of the Scheme

- Projects with an intention to develop a pilot scale/ demonstration project for innovative technologies or applications will be supported.
- SIAs (which could be either of the NISE, the National Institute of Bio Energy (“NIBE”), or the Solar Energy Corporation of India (“SECI”)), will be entitled to a fee of 0.5% of the total amount sanctioned, ensuring that the expenditure for the Scheme, including service charges, does not exceed INR 2 billion.
- SIAs will issue calls for proposals (“CfPs”) for projects through a transparent process.
- Besides CfPs, interested institution/ individuals may also submit proposals in relevant areas at any time to the MNRE, which will be evaluated on a case-to-case basis according to their relevance to the MNRE’s objectives.
- The MNRE will issue administrative sanctions based on the recommendations of a Project Appraisal Committee (“PAC”).
- The executing agencies (“EAs”) selected for the pilots will implement such projects, as well as share knowledge, viability, and outcomes through project completion reports, monitoring reports, workshops, and publications to disseminate findings, best practices, and lessons learned.
- The Scheme aims to leverage existing resources and infrastructure, as available with Government ministries/ departments/ institutions for production, manufacturing, testing, and other required work towards the utilization of GH and its derivatives.
- The Scheme aims to fund the expenditure related to equipment and/or retrofitting for the production of GH and its derivatives through innovative models/ pathways and their applications. However, operating expenses on account of the production of renewable

electricity or its sourcing, land and water sourcing, etc. will not be funded under the Scheme.

- Financial support will be evaluated and granted taking into consideration the specific needs, merits, and feasibility of each project.

Implementation

The Scheme outlines an implementation methodology overseen by an SIA. Projects/ proposals suitable for new development/ retrofitting will be identified by the SIA. Factors such as innovation, the financial support sought, the scope for future scaling up, as well as the commercial deployment and quantum of GH production, will be considered. Subsequently, the SIA will issue a CfP, which may also include necessary guidelines to be issued by the MNRE for safeguarding any intellectual property rights (“IPRs”) generated.

Proposals being submitted by a consortium/ partnership should mention a lead agency to act as the EA. Eligible EAs include central/ state public sector undertakings (“PSUs”), State Corporations, non-government organizations (NGOs), Indian research and development (“R&D”) institutions, research labs, academic institutions, as well as joint ventures or partnerships/ consortiums of such entities. These EAs must possess the capabilities to advance completed pilot projects towards commercial scaling-up.

Evaluations pursuant to the criteria specified in the CfP will be undertaken *first*, by a screening committee of the SIA, and *second*, by a PAC, and will then be subsequently approved by the NGHM’s Advisory Group. Finally, upon receiving administrative sanction from the MNRE, the SIA will issue the Letter of Award (“LoA”) to the EA. Additionally, the SIA has been tasked with ensuring project completion in all aspects and on time through all necessary efforts.

The proposed projects should be executed in accordance with the approved scope of work. The EA is solely responsible for obtaining the design, retrofitting, safety, environmental, and regulatory approvals. Additionally, the EA is responsible for ensuring necessary compliance with testing and

certification requirements, as required to be obtained from concerned agencies.

Funding

Disbursement of the CFA related to the Scheme will be completed in stages, as provided below. Funds will be released by the MNRE to the SIAs upon recommendations from the PAC.

S. No.	Stages of Disbursement	Percentage of CFA to be released
1	Issue of LoA	20%
2	Milestone-based disbursements	70%
3	On completion	10%
	Total	100%

Monitoring

Overall monitoring of the Scheme will be undertaken by a Steering Committee (“**SC**”) chaired by the Secretary of the MNRE. Evaluation and monitoring of individual projects will be undertaken by a PAC chaired by the Mission Director of the NGHM, for which sectoral experts may also be engaged depending on the project concerned.

The PAC will monitor all sanctioned projects for the allocation of funds on a quarterly basis, and issue recommendations to the MNRE with respect to the release of CFA accordingly. Funds released for various projects will be earmarked exclusively for such projects, and EAs failing to either (i) utilize them accordingly, or (ii) complete the project as per the detailed project report, will be required to refund, with interest, the entire amount released to them. Utilization certificates will also need to be provided by the SIA.

In addition, the SIAs will devise a monitoring mechanism to track the progress of projects, and quarterly monitoring reports need to be submitted to the MNRE. Project completion timelines will be specified in CfPs. A six-month extension may be granted upon approval from the SIA’s SC. Any additional extension will attract a penalty and require approval from the Union Minister of the MNRE.

Further, within one month of project completion, the SIA needs to submit to the PAC a project completion report which contains the following: (i) technical aspects of the project, including the design concept

hardware, software, and technologies; (ii) the technical challenges encountered and how they were overcome; (iii) the outcome of the project, including technical knowhow and techno-economic viability, along with data collected during execution; and (iv) future recommendations.

The MNRE may amend the Scheme guidelines as and when required. It also has the right to retract project sanctions or cancel projects if the EAs fail to comply with the Scheme. In case of any ambiguity with respect to the Scheme’s interpretation, the MNRE’s decision in that regard will be final. Nevertheless, the SC may also recommend measures to resolve any difficulties.

MNRE issues CfPs for setting up CoE under R&D scheme of NGHM

November 4, 2024: Pursuant to a letter dated November 4, 2024, the MNRE issued CfPs for setting up Centers of Excellence (“**CoEs**”) under the R&D Scheme of the NGHM, with respect to which proposals were required to be submitted by December 19, 2024.

A specific allocation of INR 4 billion has been dedicated to R&D under the NGHM. The MNRE proposes to establish CoEs for GH in India to support integrated research for the purpose of driving innovation, sustainability, and energy independence. The research is aimed to cover various areas in the GH value chain, including production, transport, storage, applications, and safety.

The CoEs are contemplated to serve as pivotal hubs for advancing the GH sector through cutting-edge research, skill development, information dissemination, and industry collaboration. Additionally, CoEs are expected to provide strategic guidance and foster synergies among stakeholders, thereby implementing innovative research projects to enhance process and system efficiencies, as well as develop new products. Further, CoEs will aggregate and channelize expertise and resources across various components of the GH ecosystem.

To ensure the seamless transfer and commercialization of developed technologies, a network approach involving academia, industry, and

government has been proposed, such that CoEs work closely with industry with respect to the transfer and commercialization of developed technologies.

Objectives

1. Developing and establishing CoEs as hubs for strengthening the GH ecosystem in India.
2. Building and leveraging industry-academia-government partnerships to achieve the NGHM's targets.
3. Identifying novel solutions for the production, storage, and transportation of GH and its derivatives, which have the potential to achieve high Technology Readiness Levels ("TRLs").
4. Accelerating the scaling up of technologies that have already reached a certain level of development (TRL 5-7).
5. Helping develop and demonstrate pilot projects with novel and innovative solutions in the GH value chain for nationwide deployment.
6. Enhancing skillsets and facilitating technical trainings with respect to the workforce.
7. Increasing public awareness, acceptance, and adoption of clean hydrogen solutions.
8. Acting as a knowledge partner for industries and other stakeholders in the GH ecosystem.

Background and Rationale

Pursuant to a letter dated [March 15, 2024](#), the MNRE had issued detailed scheme guidelines for the implementation of the R&D scheme under the NGHM, in line with the R&D roadmap for GH ecosystem in India launched on [October 7, 2023](#), with a budgetary outlay of INR 4 billion until the financial year 2025-26.

For more background and context related to the [R&D Scheme](#), see pp. 29-30 of our Quarterly Roundup: Clean Energy, Issue 1 of 2024, January – March 2024 [here](#).

The R&D scheme aims to make the production, storage, transportation and utilization of GH more affordable. It also aims to improve the efficiency, safety and reliability of the relevant processes and technologies involved in the GH value chain. Further, the scheme aims to foster partnerships among industry, academia and the government in order to establish an innovation ecosystem for GH technologies. Relatedly, the R&D scheme is expected to help with the scaling up and commercialization of GH technologies by providing necessary policy and regulatory support.

The CoEs are being established for the purpose of enhancing the production, storage, transportation, and application of GH through technological advancements and indigenization efforts, which may be achieved by fulfilling the following focus areas:

- **Hydrogen Production:**
 - Improvement in efficiency and durability of conventional alkaline and other electrolysis technologies, including the development of high-performance electrolyzer membranes and solid oxide electrolysis materials.
 - Development of seawater electrolysis technology with improved performance parameters.
 - Bio-pathways for GH production, focusing on equipment design, process efficiency, purification methods, and feedstock compatibility.
- **Hydrogen Storage and Transportation:**
 - Demonstration of alternative high-density Hydrogen carriers (capacity >4wt%) for storage and transportation, including the investigation of chemical hydrogen carriers and novel molecules for improved energy density and regeneration.
 - Development of advanced hydrogen compression technologies, aiming for improvements in efficiency, reliability, and energy consumption during compression for the purpose of transportation.

- **Hydrogen Applications:**
 - Development of improved hydrogen-based internal combustion engines with better efficiency and reliability.
 - Development of fuel cell engines for niche green mobility applications, such as high endurance drones and unmanned vehicles, and benchmarking their performance.
 - Indigenization of hydrogen refuelling system components to reduce costs.
 - Indigenous development of components for various kinds of fuel cells and utilization of GH in industrial applications or its derivatives.

Eligibility, Evaluation and Monitoring

Proposals to develop CoEs under this CfP can be submitted by academic institutions, R&D institutions, government institutions, PSUs, or private research institutions (“**Eligible Entities**”). Alternatively, industries having adequate experience and infrastructure can also participate. However, such participation must be in partnership with Eligible Entities. A consortium or JV involving two or more Eligible Entities can also submit a proposal.

The proposals will be evaluated through a three-stage process. *First*, they will be assessed for completeness and relevance by an internal screening committee of the MNRE. *Second*, screened-in proposals will be assessed in accordance with certain prescribed criteria (see *Part A of table below*) by an MNRE-constituted expert committee. *Third*, the Principal Investigators (“**PI**”) and Co-Principal Investigators (“**Co-PI**”) of the shortlisted proposals will be invited to make a presentation before the Advisory Group of the NGHM. Proposals will be awarded based on the total marks achieved by bidders. Sanction(s) will be issued by the MNRE based on recommendation of the Advisory Group.

Part A	Initial-Short Listing		70%
	Relevance, quality, quantified objectives and deliverables	15 marks	
	Background and availability of experienced manpower in relevant area	15 marks	

	Extent of collaboration among academic/research institutions and industries	15 marks	
	Financial contribution by each collaborative partner (substantiated with documents)	10 marks	
	Availability of necessary infrastructure for the CoE (in terms of space, laboratory, etc.)	15 marks	
Part B	Presentations before the Advisory Group of NGHM		30%
	Shortlisted entities will be evaluated based on presentations	30 marks	
	TOTAL	100 marks	100%

The MNRE will review the progress of sanctioned projects on a quarterly basis. Additionally, progress reports will be required to be submitted by supported CoEs to the MNRE on a monthly basis.

Funding

Selected entities will be eligible for financial support up to 50% of the project cost. However, entities that have received funding from other sources are ineligible for funding under the CfP. The responsibility to protect IPRs generated through the work of CoEs lies on the grantee institution.

Subsequent Developments

Pursuant to a letter dated [December 13, 2025](#), the MNRE extended the deadline to submit quality proposals from December 19, 2024 to January 18, 2025 in response to representations from stakeholders.

Connectivity

CENTRAL

Cross Border Trade

CERC issues draft amendment to regulations governing cross border trade of electricity

December 31, 2024: Pursuant to a draft notification dated December 31, 2024, the Central Electricity Regulatory Commission (“CERC”) issued a draft of the CERC (Cross Border Trade of Electricity) (Second Amendment) Regulations, 2024 (“**Draft Cross Border Trade Regulation Amendment**”). The Draft Cross Border Trade Regulation Amendment proposes to introduce changes related to General Network Access (“GNA”) and Temporary General Network Access (“T-GNA”) by replacing the words ‘long-term access, medium-term open access and short-term open access’ with GNA and T-GNA in the [CERC \(Cross Border Trade of Electricity\) Regulations, 2019](#). Among other things, the Draft Cross Board Trade Regulation Amendment also proposes to allow (i) Indian electricity trading licensees to participate in cross-border trade, and (ii) cross border trade of electricity between India and neighboring countries through Indian power exchanges.

Deviation Settlement

CERC issues amendment to Deviation Settlement Mechanism Regulations

December 17, 2024: Pursuant to a notification dated December 17, 2024, the CERC issued the CERC (Deviation Settlement Mechanism and Related Matters) (First Amendment) Regulations, 2024. Pursuant to such notification, the CERC amended regulations 3 and 8 of [the CERC \(Deviation Settlement Mechanism and Related Matters\) Regulations, 2024](#) to address certain challenges in implementation and streamline operational procedures.

Grid

CERC issues order to address scheduling challenges and infirm power in Indian electricity grid code

December 22, 2024: Pursuant to an order issued on December 22, 2024, the CERC sought to remove difficulties in giving effect to certain provision of the CERC (Indian Electricity Grid Code) Regulations, 2023. Pursuant to the order, the CERC has clarified, among other things, that: (i) solar projects having an installed capacity of 250 MW or more can undertake trial runs in any number of instalments provided that a trial run in each instalment is carried on with a minimum capacity of 50 MW; and (ii) notwithstanding any provisions to the contrary in the PPA, any scheduling of power will be allowed only after the issuance of a successful trial run certificate (“TRC”) from the regional load dispatch center (“RLDC”) for renewable energy-generating stations and energy storage systems. It was further clarified that, prior to the issuance of a TRC, a generating station is required to seek permission of the RLDC on each occasion of interchange of infirm power.

NPC approves the Uniform Protection Protocol for users of the Indian Grid for implementation on Pan India basis

November 14, 2024: At the 15th meeting of the National Power Committee (“NPC”) held on November 14, 2024, the NPC approved the Uniform Protection Protocol to ensure grid stability, reliability, security, and safe integration of 450 GW renewable energy into the national grid by 2030 and a target of 2100 GW of renewable energy by the year 2047.

CERC issues draft regulations to expand ISTS Charges Waiver Applicability

October 9, 2024: Pursuant to a draft notification dated October 9, 2024, the CERC issued a draft of the CERC (Sharing of Inter-State Transmission Charges and Losses) (Fourth Amendment) Regulations, 2024 (“**Draft ISTS Regulation Amendment**”). Among other things, the Draft ISTS Regulation Amendment proposed to: (i) extend the eligibility for a waiver on transmission charges to Renewable Energy Generation Systems (“REGS”) based on offshore wind, and (ii) revise the criteria for a waiver on transmission charges for Hydro Pumped

Storage Plant (“PSP”) Energy Storage Systems (“ESS”). The Draft ISTS Regulation Amendment also proposed a methodology for calculating the waiver of transmission charges.

STATE

Assam

AERC issues draft intra state transmission system connectivity regulation

January 2025: Pursuant to a notification issued in January 2025, the AERC released a draft of the AERC (Grant of Connectivity to the Intra State Transmission System) Regulations, 2025 for the purpose of establishing a framework to outline the processes, criteria, and conditions for granting connectivity to the intra-state transmission system pursuant to applications received by the state transmission utility in the state of Assam.

AERC issues draft Ancillary Services Regulations

November 14, 2024: Pursuant to a draft notification dated November 14, 2024, the AERC issued a draft of the AERC (Ancillary Services) Regulations, 2024, which seeks to provide for a regulatory mechanism for ancillary services in the interest of reliability, safety, and security of the grid.

AERC releases a draft of deviation settlement mechanism regulations

October 21, 2024: Pursuant to a notification issued in October 2024, the AERC released a draft of the AERC (Deviation Settlement Mechanism and related matters) Regulations, 2024 (“Draft AERC DSM Regulation”). The Draft AERC DSM Regulation seeks to provide a commercial mechanism to ensure that grid users do not deviate from, and adhere to, their schedule of drawal and injection of electricity for the purpose of enhancing grid reliability and effectively integrating renewable energy sources into the power system of the state of Assam.

Bihar

BERC reduces green energy open access eligibility to 100kW

November 25, 2024: Pursuant to an order dated November 25, 2024, the Bihar Electricity Regulatory Commission (“BERC”) issued the BERC (Green Energy Open access) Regulations, 2024 (“BERC GEOA Regulations”), which, among other things, allows open access to consumers with a minimum limit of 100kW to purchase renewable power through open access in line with the provisions of the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 (“GEOA Rules”), as issued by the Ministry of Power (“MoP”). The BERC GEOA Regulations provide for the levying of certain charges on green energy open access (“GEOA”) consumers, such as the following: (i) transmission charges; (ii) wheeling charges; (iii) cross-subsidy surcharge; (iv) additional surcharge; (v) standby charges, wherever applicable; (vi) banking charges; and (vii) other fees and charges such as reactive energy charges, scheduling charges, etc., as per relevant regulations. The quantum of such charges will be determined by relevant authorities.

Chhattisgarh

CSERC issues draft of deviation settlement mechanism regulations for the State of Chhattisgarh

December 28, 2024: Pursuant to a draft notification dated December 28, 2024, the Chhattisgarh State Electricity Regulatory Commission (“CSERC”) issued the CSERC (Intra-State Deviation Settlement Mechanism and Related Matters) Regulations, 2025. Through a commercial mechanism (i.e., by providing for the levy of deviation charges, among other things), the proposed regulations seek to ensure that users of the grid do not deviate from, and adhere to their schedule of drawal and injection of electricity, thereby maintaining the security and stability of the grid in the state of Chhattisgarh.

Delhi

DERC notifies green energy open access regulations

October 7, 2024: Pursuant to a notification dated October 7, 2024, the Delhi Electricity Regulatory Commission (“**DERC**”) issued the DERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 (“**DERC GEOA Regulations**”) for the purpose of outlining specific terms and conditions for GEOA in the National Capital Territory of Delhi. The DERC GEOA Regulations allow open access to electricity generated from green energy sources and provide the criteria, categories, charges, and procedure for GEOA.

The DERC GEOA Regulations define a “green energy open access consumer” to mean any person who has contract demand or sanctioned load of 100kW or more, either through a single connection or through multiple connections aggregating 100kW or more, connected at 11kV or above.

Haryana

HERC releases draft of deviation settlement regulations

January 16, 2025: Pursuant to a draft notification issued on January 16, 2025, the Haryana Electricity Regulation Commission (“**HERC**”) released a discussion paper and a draft of the HERC (Deviation Settlement Mechanism and related matters) Regulations, 2025 (“**Haryana Draft DSM Regulations**”) inviting comments and suggestions from stakeholders. The Haryana Draft DSM Regulations aims to foster grid discipline and grid security by introducing a commercial mechanism for deviation settlement for the purpose of controlling drawal and injection of electricity by grid users in the state of Haryana.

Himachal Pradesh

HPERC notifies the green energy open access regulations

December 17, 2024: Pursuant to a notification dated December 17, 2024, the Himachal Pradesh Electricity Regulatory Commission (“**HPERC**”)

notified the HPERC (Terms and Conditions for Green Energy Open Access and Banking) Regulations, 2024, which outline specific terms and conditions for GEOA in the state of Himachal Pradesh. The regulations allow open access to electricity generated from green energy sources and provide the criteria, categories, and procedures for such access.

Karnataka

KERC issues draft open access regulations in compliance with the Karnataka High Court Order

January 16, 2025: Pursuant to a notification dated January 16, 2025, the KERC issued a draft of the KERC (Terms and Conditions for Open Access) Regulations, 2025 (“**Draft KERC OA Regulation, 2025**”) inviting comments and suggestions from stakeholders.

Earlier, pursuant to its [order dated December 20, 2024](#) in the case of *Brindavan Hydropower Private Limited v. Union of India and Ors.*, the Karnataka High Court struck down the GEOA Rules issued by the MoP, along with the KERC (Terms and Conditions for Green Energy Open Access) Regulations, 2022 (which were based on the GEOA Rules), citing lack of legislative competence.

The Draft KERC OA Regulation, 2025 were issued by the KERC in view of such order of the Karnataka High Court, the National Electricity Policy, and the tariff policy issued by the Government of India, and in light of the latest developments in the sector, including large-scale integration of renewable sources to the grid.

KERC issues draft of Ancillary Services Regulation to maintain the state grid

January 1, 2025: Pursuant to a notification dated January 1, 2025, the KERC issued a draft of the KERC (Ancillary Services) Regulations, 2024 with the aim of maintaining the state grid and strengthening its reliability and operational efficiency by establishing a robust ancillary services mechanism.

Rajasthan

Rajasthan issues draft regulation for green energy open-access consumers

October 1, 2024: Pursuant to a public notice dated October 1, 2024, the Rajasthan Electricity Regulatory Commission (“**RERC**”) issued a draft of the RERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 (“**Draft RERC GEOA Regulation**”). The Draft RERC GEOA Regulation seeks to (i) provide a clear framework for the generation, purchase, consumption, and open access to green energy in the state of Rajasthan, and (ii) promote the use of renewable sources like solar and wind power in the state of Rajasthan to support its commitment to a future involving green energy.

EVs

CENTRAL

Charging Infrastructure

MoP issues guidelines for battery swapping and charging stations

January 10, 2025: Pursuant to a notification dated January 10, 2025, the MoP issued the Guidelines for Installation and Operation of Battery Swapping and Battery Charging Stations (“**Battery Charging Guidelines**”), which were earlier put up for stakeholder consultation pursuant to an office memorandum dated [October 4, 2024](#), with the aim of meeting the requirements of Electric Vehicles (“**EV**”) with integrated batteries.

The Battery Charging Guidelines seek to:

1. promote the use of swappable batteries as an alternative energy solution to run EVs;
2. promote battery-as-a-service (“**BaaS**”) (*i.e.*, a business model where the manufacturer of battery swapping equipment or a third-party provider owns and manages swappable EV batteries, which are leased or rented out to EV owners or fleet operators); and
3. develop the battery swapping ecosystem for EVs in India.

The Battery Charging Guidelines are applicable to swappable battery providers, and owners and operators of battery charging and battery swapping stations across the country.

Other than BaaS, the Battery Charging Guidelines also provide critical definitions like for terms such as battery swapping, battery swapping ecosystem, battery charging station (“**BCS**”), battery swapping station (“**BSS**”), battery-to-grid (“**B2G**”), battery provider, and swappable battery.

‘Battery swapping’ refers to a method of quickly replacing the fully or partially discharged swappable battery of an EV with a charged one, while ‘battery swapping ecosystem’ refers to the network of infrastructure and services which enable the quick

and efficient replacement of swappable EV batteries. While a BCS has been defined as a facility that recharges discharged swappable EV batteries, a BSS has been defined as a facility that does both, *i.e.*, charges and recharges such discharged swappable batteries for EVs. Some BCS and BSS may be captive, *i.e.*, exclusively serving specific user groups, such as fleet operators or organizations, and not open to the public.

BCS or BSS owners may use existing electricity connections with or without seeking an increase in the connected load for charging swappable batteries. Additionally, they have been permitted to deploy liquid-cooled swappable batteries for larger vehicles, such as trucks and buses. However, BCS and BSS are subject to existing safety requirements.

The Battery Charging Guidelines have also introduced the concept of B2G, *i.e.*, a system which allows swappable batteries, typically from EVs or BSS, to not only store energy for use but also supply electricity back to the grid when required. A ‘swappable battery’ has been defined as a modular battery designed for use in EVs that can be quickly and easily detached and replaced with another battery to extend the vehicle range and allow for efficient recharge of the depleted battery.

Further, certain key provisions of the [Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure – 2024](#), as previously issued by the MoP pursuant to a notification dated September 17, 2024, have been made applicable to BCS, BSS, and ‘battery providers’ (*i.e.*, entities which provide swappable EV batteries or BaaS to EV owners). Such provisions include those related to general requirements, safety, user experience, operation, and infrastructure management.

MoP issues draft amendments to charging infrastructure guidelines

November 28, 2024: Pursuant to an [office memorandum dated November 28, 2024](#), the MoP issued draft amendments to the existing Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024 (“**Charging Infrastructure Guidelines**”) for comments. The Charging Infrastructure Guidelines were previously issued by the MoP pursuant to a [notification dated September 17, 2024](#).

The draft amendments to the Charging Infrastructure Guidelines were proposed to streamline and harmonize provisions of the existing Charging Infrastructure Guidelines with the then-proposed Battery Charging Guidelines, which were still being finalized at the time.

E-mobility

Union Budget 2025: Increased funding for e-mobility schemes

February 1, 2025: The allocation for schemes promoting electric mobility (e-mobility) in the Union Budget 2025 has increased substantially compared to last year.

The [allocation](#) for the PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM E-DRIVE) Scheme, a two-year scheme which aims to support EVs – including electric two-wheelers, three-wheelers, trucks, buses, and ambulances, as well as EV public charging stations and the upgrading of testing agencies, has been increased from INR 18.71 billion in FY25 (revised estimate (“RE”)) to INR 40 billion in FY26 (budget estimate (“BE”)).

The allocation for the PM e-Bus Sewa Scheme has also been increased from INR 5 billion in FY25 (RE) to INR 13.1 billion in FY26 (RE). The PM e-Bus Sewa – Payment Security Mechanism Scheme was notified on October 28, 2024 with an outlay in excess of INR 34.35 billion (*see below*).

Further, the RE in respect of the Scheme to Promote Manufacturing of Electric Passenger Cars in India (“SMEC”) was nearly doubled in the Union Budget 2025 to INR 12 crore for FY26 relative to that of FY25. SMEC aims to attract investments from global EV manufacturers and promote India as a manufacturing destination for e-vehicles. Under SMEC, approved applicants can set up manufacturing facilities in India with a minimum investment of USD 500 million to manufacture EV passenger cars (*i.e.*, electric four-wheelers). Such manufacturer is required achieve a minimum Domestic Value Addition (DVA) of: (i) 25% within a period of three years, and (ii) 50% within a period of 5 years, from the date of issuance of the approval letter by the Ministry of Heavy Industries (“MHI”).

CESL launches ‘EV as a Service’ program

November 10, 2024: The Union Minister of Power and Housing & Urban Affairs launched the ‘EV-as-a-Service’ (“EaaS”) program of Convergence Energy Services Limited (“CESL”), a newly established subsidiary of state-owned Energy Efficiency Services Limited, a joint venture of public sector companies under the MoP.

The aim of CESL’s EaaS program is to address the rising demand for EVs within the government sector, with a goal of deploying 5,000 e-cars over the next two years. Such deployment has been proposed to support the government’s vision of environmental sustainability vision and align with India’s goal of achieving net-zero emissions by the year 2070.

MHI notifies the PSM scheme

October 28, 2024: Pursuant to a notification dated October 28, 2024, the MHI issued the PM e-Bus Sewa – Payment Security Mechanism (“PSM”) Scheme. The PSM scheme aims to establish a Payment Security Mechanism Fund (“PSM Fund”) for the purpose of enabling the procurement and operation of electric buses (e-buses) under government-sponsored schemes by public transport authorities (“PTAs”). Other key aims of the PSM scheme are to support the deployment of more than 38,000 e-buses, and provide payment security to e-bus operators in case of default by PTAs. Accordingly, the PSM Fund has been introduced to mitigate the risk of payment delays and enhance bankability for original equipment manufacturers (“OEMs”) and operators which enter into concession agreements with PTAs.

Other objectives of the PSM scheme include the following:

1. Recouping Mechanism: To provide a mechanism for OEMs and operators to recoup amounts due from the government’s PSM Fund in the event of non-repayment by PTAs.
2. Capacity-building: To provide support with respect to capacity-building, training requirements, and the adoption of innovative technologies by PTAs for e-bus operations.

The salient features of the PSM scheme are as follows:

1. Coverage: The scheme aims to cover 38,000 e-buses or more.
2. Target Beneficiaries: The beneficiaries of the PSM scheme will be PTAs and the OEMs/operators which operate e-buses under such scheme.
3. Eligibility Criteria: Specific eligibility criteria have been prescribed for: (i) PTAs; and (ii) OEMs/operators under the scheme.
4. Duration: The PSM scheme will provide payment security coverage for a period of up to 12 years for each bus deployed under such scheme.

To avail of the PSM Fund, PTAs are required to open and maintain an escrow account for processing the payments due to OEMs/operators. In turn, OEMs/operators are required to submit regular bills/invoices to PTAs within specified timelines. If insufficient funds in the escrow account trigger delays or non-payments by PTAs, OEMs/operators are entitled to invoke the PSM under the PSM scheme by reporting on CESL's platform. Fund disbursements to OEMs/operators will be made by CESL, the implementing agency for the PSM scheme.

PTAs are required to repay the entire amount disbursed from the PSM Fund, including any late payment surcharges if applicable, within 90 days from the date of disbursement. If the repayment is not made within such timeline, the MHI will request the Reserve Bank of India ("RBI") to invoke the Direct Debit Mandate, enabling automatic recovery from the accounts of the respective state governments or union territories.

The MHI has separately issued [detailed guidelines](#) with respect to the operation and implementation of the PSM scheme.

Tariff

CENTRAL

APTEL

APTEL holds that Consumption Test under Rule 3 of Electricity Rules, 2005 is 'power plant centric' and not 'owner centric'

November 18, 2024: In an order delivered by the Appellate Tribunal for Electricity (“**APTEL**”) on November 18, 2024 in the case of *Tamil Nadu Generating and Distribution Corporation Ltd. v. Tamil Nadu Electricity Regulatory Commission and Ors.* (“**APTEL Order**”), the APTEL held that consumption from each captive generating plant (“**CGP**”) must be considered separately for necessary compliance with the ‘consumption test’ under Rule 3 of the Electricity Rules, 2005 (“**Electricity Rules**”), i.e., the consumption of a captive user from various CGPs cannot be aggregated to establish compliance with the Electricity Rules. While the APTEL Order was issued in the context of coal-based CGPs, the decision is significant for renewable energy plants as well, since commercial and industrial (C&I) consumers in the renewable energy sector have been increasingly pivoting towards the group captive model to meet their respective power requirements.

Background

Pursuant to a [letter dated June 28, 2023](#) issued by the MoP, the draft Electricity (Amendment) Rules, 2023 were forwarded to select stakeholders for comments on proposed changes to the Electricity Rules.

Subsequently, pursuant to a [notification dated June 30, 2023](#), the MoP notified the Electricity (Amendment) Rules, 2023 (“**Electricity Amendment Rules**”). The Electricity Amendment Rules became effective from the date of their publication in the official gazette, i.e., July 1, 2023.

Among other changes, the Electricity Amendment Rules amended Rule 3(a)(i) of the Electricity Rules – which specifies the requirements for a plant to qualify as a CGP. Pursuant to the Electricity Amendment Rules, the amended Rule 3(a)(i) of the

Electricity Rules stated that a power plant will be considered a CGP if not less than 26% of the ownership is held by the captive ‘user’ (as opposed to captive ‘users’). Nevertheless, if the CGP is set up by an affiliate company, not less than 51% of the ownership is required to be held by the captive user (as opposed to captive ‘users’) in that affiliate company. At the time, it was thought that this change from captive ‘users’ (plural) to ‘user’ (singular) suggested that each captive user is required to own 26% of a CGP. Such changes were expected to have a significant impact on group captive projects.

The Electricity Amendment Rules had also revised the definition of a ‘captive user’, as provided in the explanation to Rule 3(2) of the Electricity Rules, to mean an end-user of the electricity generated in a CGP, while the term ‘captive use’ is required to be construed accordingly. Nevertheless, electricity consumption by the captive user may be either direct or through energy storage systems. Moreover, the consumption by a subsidiary – as defined in Clause (87) of Section 2 of the Companies Act, 2013 – with respect to a company that is an existing captive user will also be admissible as captive consumption by the captive user.

Subsequently, pursuant to a [notification dated September 1, 2023](#), the MoP issued the Electricity (Third Amendment) Rules, 2023 (“**Third Amendment Rules**”) to clarify the changes brought about to the Electricity Rules by the Electricity Amendment Rules. Such changes had led to doubts regarding the status of CGPs.

Accordingly, the Third Amendment Rules further amended or clarified the following:

- The word ‘user’ in Rule 3(a)(i) of the Electricity Rules was substituted with the word ‘user(s)’, thereby reversing the position, in effect, to the original formulation.
- The proviso to Rule 3(a)(i) which stated that a company setting up a CGP through an affiliate is required to hold at least 51% in such affiliate, was omitted.
- The second proviso to the definition of ‘captive user’ in the explanation to Rule 3(2) of the Electricity Rules (which had been inserted by the Electricity Amendment Rules to include

the consumption of electricity by a subsidiary company as captive consumption), was further amended to include the power consumption by the holding company (as defined under Section 2(46) of Companies Act, 2013) of a captive user as well within the calculation of such captive consumption.

- The Third Amendment Rules further introduced a new sub-rule in Rule 3 to state that the captive status of a generating plant where the CGP and its captive user(s) are located in more than one state will be verified by the Central Electricity Authority (“CEA”) pursuant to the procedure issued by the CERC with the approval of the Central Government.

Pursuant to a [judgment dated October 9, 2023](#), the Supreme Court sought to resolve certain conflicting interpretations of Rule 3 of the Electricity Rules. Among other things, the Supreme Court sought to clarify the following:

- Eligibility criteria for a CGP/captive user under Rule 3(1)(a) of the Electricity Rules;
- Interpretation of the second proviso under Rule 3(1)(a) of the Electricity Rules;
- Whether a company set up as a Special Purpose Vehicle (“SPV”) for generating electricity is an “association of persons” in terms of the second proviso to Rule 3(1)(a) of the Electricity Rules.

[51% Consumption Test](#)

The Electricity Rules do not provide adequate guidance on how annual power consumption should be analyzed and/or calculated to examine compliance with necessary qualification requirements. In this context, the Supreme Court judgment laid down that every user of a CGP set up by an SPV will qualify to be a captive user if: (i) such user annually consumes at least 1.96% (+/-10%) of power produced for each 1% of ownership of such user in the SPV (“**1.96 Test**”); and (ii) all such users which meet such test collectively meet the 26% ownership requirement as well as the 51% consumption test. Users which do not meet the 1.96 Test will not qualify to be captive users. Further, all

power consumption by captive users (*i.e.*, users which satisfy the tests in (i) and (ii) above), even beyond the 1.96 Test, will qualify to be captive power.

[APTEL Order](#)

In the APTEL Order, while the concerned entity satisfied the first requirement of holding a minimum of 26% equity to fulfil the test of being a CGP, the dispute related to whether it also satisfied the minimum consumption test related to 51% of the electricity generated from the CGP. Accordingly, one of the key issues which arose for consideration in the context of the APTEL Order was whether generation and consumption from different power plants, set up for captive use by the same user, can be aggregated for the purpose of ascertaining compliance with Rule 3 of the Electricity Rules.

[Other](#)

[CERC rejects SECI’s proposed tariff for BESS project due to delays](#)

January 2, 2025: SECI had filed a petition under Section 63 of the Electricity Act, 2003 (“**Electricity Act**”) for the adoption of tariff with respect to pilot projects of 500 MW/1,000 MWh standalone battery energy storage systems (“**BESS**”) in India under tariff-based global competitive bidding process pursuant to guidelines for the procurement and utilization of BESS. Pursuant to an order [dated January 2, 2025](#), the CERC rejected the adoption of the tariff proposed by SECI.

On April 13, 2022, SECI issued the Request for Selection (RfS) for the purpose of selecting a BESS developer to set up of two BESS projects of 250 MW/500 MWh each for a total bidding capacity of 500 MW/1,000 MWh pursuant to guidelines dated March 10, 2022 along with subsequent amendments. Out of the total capacity of 500 MW, 200 MW was earmarked to be used by the developer as merchant capacity, while the residual 300 MW was allocated to SECI for purchase from the developer and back-to-back sales to end-users.

The bidding documents also included the standard battery energy storage purchase agreement (“**BESPA**”) and battery energy storage sale agreement (“**BESSA**”). The BESPA’s were to be

executed immediately subsequent to the signing of the BESSAs with purchasing utilities.

The CERC observed that there was a delay of 145 days in the issuance of LoAs by SECI to the successful bidder, *i.e.*, JSW Renew Energy Five Limited. Further, a BESSA was executed on June 26, 2023 with Gujarat Urja Vikas Nigam Limited (“**GUVNL**”), *i.e.*, after 160 days of issuance of the LoA. Subsequently, SECI signed a BESPAs for 150MW contracted capacity with the successful bidder identified through the competitive bidding process, on February 27, 2024, which was 245 days after the BESSA signed with GUVNL.

The CERC noted that the rates discovered in subsequent rounds of bidding for similar projects were considerably lower than the price discovered in the current project due to a rapid decline in material cost and the growing competitiveness of BESS projects.

The CERC held that although the bid evaluation process had been complied with as per the bidding guidelines, the tariff proposed to be adopted was not aligned with the prevailing market prices in view of the delay in signing the BESSA and the BESPAs. The CERC observed that Section 63 of the Electricity Act confers powers on the CERC to reject the tariff when such tariff is not aligned with the market and is not in the interest of the public at large. Accordingly, the CERC rejected the tariff proposed to be adopted on the ground that it would give an undue advantage to the BESS developer (by taking advantage of further reduction in the price of the battery storage system) and would thus militate against public interest.

STATE

Karnataka

KERC stays imposition of grid support charges on captive power plants

January 15, 2025: Pursuant to an order [dated January 15, 2025](#), the KERC held that no grid support charges would be imposed on captive power plants, including solar rooftop photovoltaic (“**SRTPV**”) plants, until the KERC had determined the broader matter related to the imposition of grid support charges on CGPs, including SRTPV plants. Further, the KERC instructed discoms and

transmission licensees to refrain from imposing grid support charges on CGPs until the KERC had rendered its final decision.

Miscellaneous

CENTRAL

Other

Grid Controller of India Updates Rules for Electricity Late Payment Surcharge

November 25, 2024: Pursuant to a letter dated November 25, 2024, the National Load Dispatch Center of Grid Controller of India Limited (“**GCIL**”) issued an updated procedure for the implementation of the Electricity (Late Payment Surcharge and Related Matters) Rules, 2022 (“**LPSRM Rules**”). Among other things, this procedure provides mechanisms for payment security, power scheduling, and addressing non-payment scenarios, and also introduces requirements for payment security mechanisms such as letters of credit or letters of credit backed by escrow accounts. Further, such procedures outline the process for reducing supply to defaulters and permits the sale of surplus power in power exchanges.

MoEFCC exempts environmental consent requirements for certain renewable energy projects below 25 MW ([here](#) and [here](#))

November 12, 2024: Pursuant to two separate notifications both dated November 12, 2024, the Ministry of Environment, Forests and Climate Change (“**MoEFCC**”) categorized, among other sectors, the following types of projects of less than 25 MW in the ‘White’ category:

1. solar power generation projects through solar PV cells,
2. WPPs, and
3. mini hydel power projects.

Pursuant to such classification, the listed project types have been exempted from the requirement to obtain consents under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981, respectively.

CERC issues a draft for selling and purchasing carbon credit certificates

November 13, 2024: Pursuant to a [public notice dated November 13, 2024](#), the CERC released a draft notification through which it issued a draft of the CERC (Terms and Conditions for Purchase and Sale of Carbon Credit Certificates) Regulations, 2024 (“**Draft CCC Regulations**”), inviting comments and suggestions from stakeholders. The deadline for public comments was [extended](#) from December 15, 2024 to December 31, 2024. An [explanatory memorandum](#) dated December 11, 2024 with respect to the Draft CCC Regulations is available on the CERC website.

The Draft CCC Regulations aim to establish a framework for trading Carbon Credit Certificates (“**CCCs**”) on electronic trading platforms (“**Power Exchanges**”), as defined under Regulation 2(1)(a) of the CERC (Power Market) Regulations, 2021, as amended (“**Power Market Regulations**”), thereby making CCCs accessible to both obligated and non-obligated entities.

The Energy Conservation Act, 2001 (the “**EC Act**”) contains the framework for the issuance of CCCs. The Draft CCC Regulations apply to CCCs offered for transactions on Power Exchanges, including contracts in CCCs as approved by the CERC pursuant to the Power Market Regulations. Further, the Draft CCC Regulations seek to outline the responsibilities and functions of the GCIL and the Bureau of Energy Efficiency (“**BEE**”) as the registry and the administrator of the Indian carbon market (“**ICM**”), respectively. The ICM involves a national framework established with the objective of reducing, removing or avoiding GHG emissions from the Indian economy by pricing such emission through the trading of CCCs.

[Background](#)

[CCTS](#)

On March 27, 2023, the MoP released a [copy](#) of a draft carbon credit trading scheme (“**CCTS**,” and such draft CCTS, “**Draft CCTS**”) among key industry bodies, pursuant to the its authority under the EC Act, as amended by the [Energy Conservation \(Amendment\) Act, 2022](#) (the “**EC Amendment**”).

Further to the EC Amendment, which came into force on January 1, 2023, the EC Act empowered the Central Government to specify a CCTS through notification in consultation with the BEE. The ultimate objective was to decarbonize the Indian economy by pricing 'greenhouse gas' ("GHG") emissions through the trading of CCCs. GHGs represent those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation. Accordingly, GHGs include, but are not limited to, carbon dioxide ("CO₂"), methane, nitrous oxide, hydrochlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.

[EC Act and the EC Amendment](#)

Section 14 of the EC Act authorizes the Central Government to enforce efficiency with respect to the use and conservation of energy. Among other things, the EC Amendment added certain provisions which expressly authorize the MoP to issue CCCs to such registered entities that comply with the requirements of a CCTS. For a brief overview of the regulatory history and previous amendments of the EC Act, along with the significance of the EC Amendment, see pp. 1 – 3 of the 'Overview and Analysis' under Issue 2 of 2023 of our Quarterly Roundup on Clean Energy ("**Newsletter**") [here](#).

Along with sub-section (w), the EC Amendment added sub-section (x) to Section 14 of the EC Act, pursuant to which the MoP, in consultation with the BEE, was authorized to specify a minimum share of consumption with respect to non-fossil sources by designated consumers ("DCs") as energy or feedstock. A different share of consumption may be specified for different types of non-fossil sources for different DCs.

The EC Amendment also inserted a new Section 14AA ('*Issuance of carbon credit certificate*') to the EC Act. Pursuant to Section 14AA(1) of the amended EC Act, any agency authorized by the MoP (other than the MoP itself) may issue CCCs to such registered entities that comply with the requirements of the specified CCTS. Under Section 14AA(2), such registered entities will be entitled to buy or sell CCCs pursuant to the government-specified CCTS under Section 14(w) of the amended EC Act.

[The Notified CCTS](#)

Pursuant to a [gazette notification](#) dated June 28, 2023, the MoP, in consultation with the BEE, issued the 'Carbon Credit Trading Scheme, 2023' ("**Notified CCTS**"). The Notified CCTS, which came into force on June 30, 2023, defines a 'carbon credit' to mean a value assigned to a reduction, removal or avoidance of GHG emissions amounting to one ton of CO₂ equivalent ("tCO_{2e}").

The Notified CCTS also stated that a detailed procedure – which would be later developed for the purpose of operationalizing the ICM – will contain, among other things, the criteria for CCC issuances.

While the Draft CCTS had contemplated both a compliance and a voluntary regime, the Notified CCTS initially did not. However, the Notified CCTS was later amended.

[Obligated and Non-Obligated Entities](#)

'Obligated entities' are those, including DCs, which are required to register for the Notified CCTS under its compliance mechanism. 'Non-obligated entities' are those which can purchase CCCs on a voluntary basis.

[Amended CCTS](#)

Pursuant to a [gazette notification](#) dated December 19, 2023, the MoP amended the Notified CCTS (such amendment, "**CCTS Amendment**"). On account of the CCTS Amendment, the amended CCTS ("**Amended CCTS**") now provides for an offset mechanism (in addition to the compliance mechanism), pursuant to which non-obligated entities can voluntarily register their projects in identified sectors, including for the purpose of accounting for the reduction, removal or avoidance of GHG emissions in order to acquire tradable CCCs through prescribed modes of issuance. For a discussion on the CCTS Amendment, see pp. 4 – 6 under Issue 4 of 2023 of our Newsletter [here](#). For an overview of the Notified CCTS, see pp. 3 – 5 of the 'Overview and Analysis' under Issue 2 of 2023 of our Newsletter [here](#).

[Recent Developments](#)

According to the Notified CCTS, certain authorities have been authorized to develop detailed

procedures for operationalizing the ICM, including elements such as: (i) the criteria for issuance of CCCs; (ii) validity of CCCs; (ii) the floor and forbearance price of CCCs; (ii) the requirements, formats and timelines for submissions; as well as (iii) monitoring, reporting and verification requirements.

In this regard, in July 2024, the BEE issued the [accreditation procedure and eligibility criteria for accredited carbon verifiers](#) (“ACVs”) and the [detailed procedure for the compliance mechanism](#) under the Notified CCTS (“CCM Procedure”). An ACV is a BEE-accredited agency. CCCs can only be issued pursuant to evaluative exercises conducted by ACVs.

Further, pursuant to an office memorandum dated September 20, 2024, the BEE released the [list of approved sectors in the offset mechanism](#) under the Notified CCTS in two phases.

[CCM Procedure](#)

Among other things, the CCM Procedure provides detailed instructions in respect of the following:

- trajectory and targets related to GHG emissions intensity
- the monitoring and reporting process
- verification and performance assessment
- the check verification process
- issuance and surrender of CCCs
- trading and banking of CCCs
- the obligations of obligated entities
- the long-term action plan for GHG emissions reduction which obligated entities need to prepare for the purpose of achieving compliance with intensity targets of the trajectory period.

If an obligated entity fails to meet the target GHG emissions intensity in a compliance year, it must surrender CCCs. The required number of CCCs is calculated by the difference between the actual and the target GHG emission intensities, multiplied by the production for that year. If such entity lacks the

necessary certificates for surrender, it must purchase additional CCCs, while banked CCCs may also be surrendered for the purpose of compliance.

Upon completion of a compliance year, the remaining CCCs from that year may be banked for use in subsequent compliance years. Further, the banked CCCs that were issued to the obligated entity may either be sold within the ICM or utilized to meet compliance in the future.

[Draft CCC Regulations](#)

Among other things, the Draft CCC Trading Regulations address certain details with respect to the sale and purchase of CCCs, including as follows:

1. [Market for CCCs](#) – The CCC market has been bifurcated into the compliance and offset segments, respectively. The compliance market and the offset market will be independent of each other, and will operate for obligated and non-obligated entities, respectively.
2. [Value of CCCs](#) – The denomination of each CCC represents the value of a ‘carbon credit’ as defined under the Notified CCTS (i.e., a reduction, removal or avoidance of one tCO₂e of GHG emissions).
3. [Validity of CCCs](#) – The validity of CCCs issued under the compliance and offset mechanisms, respectively, will be as specified in the detailed procedures for such respective mechanisms.
4. [Categories of CCCs](#) – CCCs will be categorized by the BEE for obligated and non-obligated entities. Obligated and non-obligated entities will be dealing in their respective market segments.
5. [Dealing in CCCs](#) – The Draft CCC Regulations provide for dealing in CCCs only through the Power Exchanges unless otherwise permitted by the CERC. Transactions will occur on a monthly basis or in such periodicity as approved by the CERC. All entities which intend to participate in CCC trading need to register with the Power Exchanges.

6. **Banking and Extinguishment of CCCs** – The banking and extinguishment of CCCs will be as specified in the detailed procedures for the compliance and offset mechanisms, respectively.
7. **Price Discovery** – The market price of CCCs will be determined through a price discovery process pursuant to bidding at the respective Power Exchanges. CCCs will be exchanged within the floor price and the forbearance price, respectively, as approved by the CERC pursuant to a proposal submitted by the BEE.
8. **Limitation on Bids** – During any bidding session, entities must ensure that their sale bids do not exceed the total number of CCCs held in their registry account. The GCIL will cross-check the cumulative sale bids to ensure such compliance. A breach of this requirement will lead to a default, and any bid submitted by such entity will not be considered by the Power Exchange for the purpose of price discovery. If there are more than three cases of such default by an entity, it may be barred from dealing in CCCs for the next six months and be further subjected to a financial penalty under the EC Act.

Draft Electricity (Late Payment Surcharge and Related Matters) (Amendment) Rules, 2024

October 25, 2024: Pursuant to a letter dated October 25, 2024, the MoP released a draft of the Electricity (Late Payment Surcharge and Related Matters) (Amendment) Rules, 2024 inviting comments and suggestions from stakeholders. These draft rules sought to provide clarity in terms of dealing with delayed payments, particularly those arising from court orders. Further, the draft rules sought to provide flexibility by extending the applicability of the LPSRM Rules to outstanding dues of generating companies, transmission licensees, and electricity trading licensees.

MoP issues new rules to strengthen distribution licensees financial disclosure

October 10, 2024: Pursuant to a notification dated October 10, 2024, the MoP issued the Electricity Distribution (Accounts and Additional Disclosure) Rules, 2024 with the aim of providing a framework to

increase transparency in financial disclosures and bolster regulatory compliance for discoms by requiring them to prepare the 'Additional Disclosure Statements' and a statement of compliance for each financial year in addition to the statutory disclosures mandated under the Companies Act, 2013.

CERC Proposes Withdrawal of Intraday Contracts from Power Exchanges

October 4, 2024: Pursuant to a public notice dated October 4, 2024, the CERC issued a draft order inviting comments and suggestions from stakeholders. Pursuant to the draft order, the CERC proposed, among other things, to (i) withdraw Intra-Day Contracts from all power exchanges, and (ii) shift the price discovery mechanism in Day Ahead Contingency (DAC) market contracts from continuous matching to a Uniform Price Step Auction. In this regard, the CERC proposes to make appropriate amendments to the Power Market Regulations.

Previously, the DAC market had been introduced to address unexpected changes or contingencies that may occur after the closing of the Day Ahead Market (DAM).

STATE

Andhra Pradesh

Andhra Pradesh issue Integrated Clean Energy Policy

October 30, 2024: Pursuant to an order dated October 30, 2024, the state government of Andhra Pradesh issued the Andhra Pradesh Integrated Clean Energy Policy, 2024 ("**ICE**"), which will be valid for five years. The aim of the ICE is to drive large-scale investment in clean energy projects, including by utilizing the state's significant renewable energy potential in wind, solar, and hybrid sources. The main focus of the ICE lies in achieving net-zero targets, optimizing energy costs through renewable energy, promoting a manufacturing ecosystem, developing a circular economy, and employment generation.

The ICE also intends to promote investments by simplifying underlying processes and giving incentives to a variety of clean energy and

renewable energy manufacturing projects. It also aims to turn the state of Andhra Pradesh into a clean energy hub and a preferred destination for clean energy investments.

The ICE specifies eligibility criteria for various renewable energy projects, besides land facilitation, power evacuation and allotment. It provides for grid connectivity and power evacuation facilities such that renewable energy projects are accommodated in the state's electricity grid with the least inconvenience. Charges like transmission and distribution/ wheeling charges, cross-subsidy surcharge, additional surcharge, and electricity duty, have been specified.

In terms of incentives for solar, wind, wind-solar hybrid, and other renewable energy projects, the ICE provides for capital subsidies, tax exemptions, and other financial benefits. The ICE also contains provisions on banking, which are expected to enable energy banking, settlement, and balancing of the grid, especially where renewable energy generators can bank surplus energy with discoms. Further, the ICE facilitates open access for renewable energy projects where it can sell power directly to consumers or through the grid.

In addition, the ICE contains special provisions related to GH and its derivatives, biofuels, and energy storage projects, and also encourages the development of renewable energy zones to attract investments and make better use of renewable resources.

AERC issues amendment to renewable purchase obligation regulations

December 4, 2024: Pursuant to a notification dated December 4, 2024, the AERC issued a draft of the AERC (Renewable Purchase Obligation and its Compliance) Regulations, 2010, (Fourth Amendment), 2024 ("**AERC RPO Amendment**").

The AERC RPO Amendment determines the minimum share of consumption of various types of renewable energy sources, such as wind, hydro, distributed renewable energy, and other types of renewable energy for different years ranging from 2024-25 to 2029-30. It also contains certain provisions for hilly and North-Eastern states, include

by making adjustments to the distributed renewable energy component.

The AERC RPO Amendment states, among others, that SLDC shall continue to act as the nodal agency for monitoring compliance of RPO by the obligated entities in the State and the Bureau of Energy Efficiency shall maintain data related to compliance of renewable energy utilization by the designated consumer(s) from Nodal agency and submit report to the Central Government.

Gujarat

GERC issues draft of new renewable energy procurement regulations

September 30, 2024: Pursuant to a notification dated September 30, 2024, the Gujarat Electricity Regulatory Commission ("**GERC**") issued a draft of the GERC (Procurement of Energy from Renewable Sources) Regulations, 2024 ("**Draft GERC RPO Regulations**"), including with the aim to replace the [GERC \(Procurement of Energy from Renewable Sources\) Regulations, 2010](#). The Draft GERC RPO Regulations propose to introduce a comprehensive renewable power purchase obligation framework for obligated entities and aims to align the target with the renewable power purchase obligation trajectory, as issued by the MoP pursuant to a [notification dated October 20, 2023](#).

Haryana

HERC issues framework for resource adequacy regulations

November 11, 2024: Pursuant to a notification dated November 11, 2024, the HERC issued the HERC (Framework for Resource Adequacy) Regulations, 2024 ("**HERC RA Regulations**"), which were published in the Haryana Government Gazette on November 19, 2024.

Among other things, the HERC RA Regulations provide for the following:

1. a resource adequacy framework, which involves the planning of generation and transmission resources for reliably meeting the projected demand in compliance with

specified reliability standards for serving the load with an optimum generation mix;

2. demand assessment and forecasting, which is an important step for resource adequacy assessment and will entail sub-hourly or at least hourly assessment and forecasting of demand within the distribution area of discoms for multiple horizons (short/ medium/ long-term) using comprehensive input data, policies, drivers, and scientific mathematical modelling tools;
3. generation resource assessment and planning, which is the second step after demand assessment and forecasting, and entails the following:
 - assessment of the existing and contracted resources considering their capacity credit, and
 - identification of incremental capacity requirement to meet forecasted demand, including the planning of a reserve margin;
4. procurement planning, which involves:
 - determining the optimal power procurement resource mix,
 - deciding on the modalities of procurement type and tenure, and
 - engaging in capacity trading or sharing to minimize risk of resource shortfall, and to maximize the rewards of avoiding stranded capacity or contracted generation.

Meghalaya

Meghalaya introduces Meghalaya power policy

December 1, 2024: The Power Department of the Government of Meghalaya [released](#) the Meghalaya Power Policy, 2024 in December 2024 to (i) encourage and promote the development of renewable energy, and (ii) empower the state of Meghalaya through sustainable, inclusive, and efficient energy development.

Among other things, the Meghalaya Power Policy, 2024 also aims to:

1. form a state power trading company with the objective to execute PPAs and manage power efficiently in the state;
2. improve the distribution system in the state; and
3. develop power projects through hydro, thermal, pumped storage, solar, wind, etc., in a sustainable manner within the state.

MSERC issues amendment to renewable energy purchase obligation regulations

November 26, 2024: Among other things, the MSERC RPO Amendment (see above) provides for the Meghalaya Non-Conventional and Rural Energy Development Agency (“**MNREDA**”) as the state agency for accrediting and recommending renewable energy projects, and to undertake the following functions:

- frame a procedure consistent with the procedure framed by central agency to meet the requirement of the principal regulations;
- undertake accreditation of eligible entities at the state level and recommend them to the central agency for registration at the central level.

Further, the Meghalaya State Load Dispatch Center will formulate procedures for RPO compliance monitoring and reporting. It may also suggest appropriate action to the MSERC, if required, for RPO compliance.

Rajasthan

Rajasthan issues integrated clean energy policy

December 1, 2024: Rajasthan Renewable Energy Corporation Limited (RRECL), under the Energy Department of the Government of Rajasthan, [issued](#) the Rajasthan Integrated Clean Energy Policy, 2024 (“**Rajasthan ICEP Policy**”) with a target of 125 GW of renewable energy in the state by 2029-30.

Among other things, the Rajasthan ICEP Policy aims to add a capacity of 90,000 MW of solar power, 25,000 MW of wind and hybrid energy, and 10,000

MW of hydro, pumped storage, and BESS in the state.

Telangana

Telangana issues clean energy policy for 10 years

January 11, 2025: Pursuant to an order dated January 11, 2025, the Government of Telangana approved the state energy department's Telangana Clean and Green Energy Policy, 2025 ("**Telangana CGE Policy**").

Among other things, the Telangana CGE Policy seeks to establish the following by FY35:

- solar energy capacity of (approx.) 26,000 MW across grid-scale, floating and distributed renewables,
- wind energy capacity of around 4,400 MW,
- geothermal capacity of about 3,000 MW,
- energy storage solutions, including BESS,
- pumped storage projects of (approx.) 6300 MW,
- around 12,600 EV charging stations, and
- a capacity of 554 kilo-tonnes per annum (KTPA) of GH.

Glossary

Term	Meaning
1.96 Test	Test laid down by the Supreme Court in its judgement dated October 9, 2023 according to which every user of a CGP set up by an SPV will qualify to be a captive user if such user annually consumes at least 1.96% (+/-10%) of power produced for each 1% of ownership of such user in the SPV.
2017 Order	Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017
2025 Order	Solar Systems, Devices and Components Goods Order, 2025
ACVs	Accredited Carbon Verifiers
AERC	Assam Electricity Regulatory Commission
AERC RPO Amendment	Draft AERC (Renewable Purchase Obligation and its Compliance) Regulations, 2010 (Fourth Amendment), 2024
ALMM	Approved List of Manufacturers and Models
ALMM list-I	List-I of the Approved List of Manufacturers and Models
ALMM list-II	List-II of the Approved List of Manufacturers and Models
ALMM Order	Approved List of Models and Manufacturers order dated February 2, 2019
Amended CCTS	Carbon Credit Trading Scheme amended until December 19, 2023
APTEL	Appellate Tribunal for Electricity
APTEL Order	Order delivered by the APTEL on November 18, 2024 in the case of <i>Tamil Nadu Generating and Distribution Corporation Ltd. v. Tamil Nadu Electricity Regulatory Commission and Ors</i>
B2G	Battery-to-Grid
BaaS	Battery-as-a-Service
Battery Charging Guidelines	Guidelines for Installation and Operation of Battery Swapping and Battery Charging Stations issued by the MoP on January 10, 2025
BCS	Battery Charging Station
BE	Budget Estimate
BEE	Bureau of Energy Efficiency
BERC	Bihar Electricity Regulatory Commission
BERC GEOA Regulations	BERC (Green Energy Open Access) Regulations, 2024
BESS	Battery Energy Storage System

Term	Meaning
BESPA	Battery Energy Storage Purchase Agreement
BESSA	Battery Energy Storage Sale Agreement
BIS	Bureau of Indian Standards
BIS Act	Bureau of Indian Standards Act, 2016
BiPV	Building-integrated PV
BSS	Battery Swapping Station
C&I	Commercial and Industrial
CCCs	Carbon Credit Certificates
CCM Procedure	Detailed procedure for the compliance mechanism under the Notified CCTS issued by the BEE in July 2024
CCTS	Carbon Credit Trading Scheme
CCTS Amendment	Amendment to the Notified CCTS issued by the MoP on December 19, 2023
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CESL	Convergence Energy Services Limited
CFA	Central Financial Assistance
CFA Guidelines	Operational guidelines for the PM-SGMBY scheme for the component “CFA to Residential Consumers” issued by the MNRE
CfPs	Call(s) for Proposals
Charging Infrastructure Guidelines	Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure-2024 issued by the MoP on September 17, 2024
CGP	Captive Generating Plant
Co-PI	Co-Principal Investigators
CO2	Carbon Dioxide
CoEs	Centers of Excellence
CSERC	Chhattisgarh State Electricity Regulatory Commission
DCR	Domestic Content Requirements
DCs	Designated Consumers
DERC	Delhi Electricity Regulatory Commission
DERC GEOA Regulations	DERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024
discoms	Distribution Companies
Draft AERC DSM Regulation	Draft AERC (Deviation Settlement Mechanism and related matters) Regulations, 2024

Term	Meaning
Draft AERC RPPO Regulations Amendment	Draft AERC (Renewable Energy Purchase Obligation and its Compliance) Regulations, 2010 (Fourth Amendment) 2024
Draft CCC Regulations	Draft CERC (Terms and Conditions for Purchase and Sale of Carbon Credit Certificates) Regulations, 2024
Draft CCTS	Draft carbon credit trading scheme issued by the MoP on March 27, 2023
Draft Cross Border Trade Regulation Amendment	Draft CERC (Cross Border Trade of Electricity) (Second Amendment) Regulations, 2024
Draft GERC RPO Regulations	Draft GERC (Procurement of Energy from Renewable Sources) Regulations, 2024
Draft KERC Aero Turbine Regulations	Draft KERC (Implementation of rooftop aero turbine with solar or without solar) Regulations, 2024
Draft KERC OA Regulation, 2025	Draft KERC (Terms and Conditions for Open Access) Regulations, 2025
Draft ISTS Regulation Amendment	Draft CERC (Sharing of Inter-State Transmission Charges and Losses) (Fourth Amendment) Regulations, 2024
Draft RERC GEOA Regulation	RERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024
EaaS	EV-as-a-Service
EAs	Executing Agencies
EC Act	Energy Conservation Act, 2001
EC Amendment	Energy Conservation (Amendment) Act, 2022
Electricity Act	Electricity Act, 2003
Electricity Amendment Rules	Electricity (Amendment) Rules, 2023
Electricity Rules	Electricity Rules, 2005
Eligible Entities	Academic institutions, R&D institutions, government institutions, PSUs, or private research institutions eligible to submit proposals to develop CoEs under the CfP issued by the MNRE on November 4, 2024
ESS	Energy Storage Systems
EV	Electric Vehicles
GCIL	Grid Controller of India Limited
GEOA	Green Energy Open Access
GEOA Rules	Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022
GERC	Gujarat Electricity Regulatory Commission
GH	Green Hydrogen

Term	Meaning
GHG	Greenhouse Gas
GHS/RWA	Group Housing Society/Resident Welfare Association
GNA	General Network Access
GUVNL	Gujarat Urja Vikas Nigam Limited
Haryana Draft DSM Regulations	HERC (Deviation Settlement Mechanism and related matters) Regulations, 2025
HERC	Haryana Electricity Regulatory Commission
HERC RA Regulations	HERC (Framework for Resource Adequacy) Regulations, 2024
HPERC	Himachal Pradesh Electricity Regulatory Commission
ICE	Andhra Pradesh Integrated Clean Energy Policy, 2024
ICM	Indian carbon market
IPRs	Intellectual Property Rights
JSERC	Jharkhand State Electricity Regulatory Commission
JSERC RTS Amendment	JSERC (Rooftop Solar PV Grid Interactive System and Net/Gross Metering) (Fifth Amendment) Regulations, 2024
KERC	Karnataka Electricity Regulatory Commission
LoA	Letter of Award
LPSRM Rules	Electricity (Late Payment Surcharge and Related Matters) Rules, 2022
MHI	Ministry of Heavy Industries
MNRE	The Ministry of New and Renewable Energy
MNREDA	Meghalaya Non-Conventional and Rural Energy Development Agency
MoEFCC	Ministry of Environment, Forests and Climate Change
MoP	Ministry of Power
MSERC	Meghalaya State Electricity Regulatory Commission
MSERC RPO Amendment	MSERC (Renewable Energy Purchase Obligation & its Compliance) (3 rd Amendment) Regulations, 2018
New PVTG Scheme	Implementation guidelines for the revised New Solar Power Scheme for habitations and villages related to tribal and particularly vulnerable tribal groups issued by the MNRE on October 18, 2024
NGHM	National Green Hydrogen Mission
NIBE	National Institute of Bio Energy
NISE	National Institute of Solar Energy
Notified CCTS	Carbon Credit Trading Scheme, 2023 notified by the MoP on June 28, 2023
NPC	National Power Committee
NPIA	National Program Implementation Agency

Term	Meaning
October 14 Clarification	Clarification dated October 14, 2024 with respect to the ALMM Order issued by the MNRE
OEMs	Original Equipment Manufacturers
Original Clarification	Clarification to the ALMM Order issued by the MNRE pursuant to an office memorandum dated October 7, 2022
PAC	Project Appraisal Committee
PI	Principal Investigators
PM JANMAN	Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan
PM JUGA	Pradhan Mantri Janjatiya Unnat Gram Abhiyan
PM-SGMBY	PM-Surya Ghar: Muft Bijli Yojana
Power Exchanges	Electronic trading platforms for trading of CCCs
Power Market Regulations	CERC (Power Market) Regulations, 2021
PPA	Power Purchase Agreement
Principal JSERC RTS Regulations	JSERC (Rooftop Solar PV Grid Interactive System and Net/ Gross Metering) Regulations, 2015
PSM	PM e-Bus Sewa – Payment Security Mechanism
PSM Fund	Payment Security Mechanism Fund to be established under the PSM scheme
PSP	Pumped Storage Plant
PSU	Public Sector Undertakings
PTAs	Public Transport Authorities
PV	Photovoltaic
PVTG	Particularly Vulnerable Tribal Groups
Quality Control Order	Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017
R&D	Research and Development
Rajasthan ICEP Policy	Rajasthan Integrated Clean Energy Policy, 2024
RATs	Rooftop Aero Turbines
RBI	Reserve Bank of India
RE	Revised Estimate
REGC	Renewable Energy Generation Systems
RERC	Rajasthan Electricity Regulatory Commission
RESCO	Renewable Energy Service Company
RESCO-ULA Guidelines	Operational guidelines for implementing the “Payment Security Mechanism” and “Central Financial Assistance” components for models related to Renewable

Term	Meaning
	Energy Service Company and Utility/State-Led Aggregation under the PM-SGMBY issued by MNRE on December 28, 2024
RLDC	Regional Load Dispatch Centers
RPO	Renewable Purchase Obligation
RTS	Rooftop Solar
SC	Steering Committee
Scheme	Scheme related to pilot projects for the production and use of GH using innovative methods/pathways in the Residential, Commercial, Localized Community, Decentralized/Non-Conventional applications, including any new sector or technology not covered in previous schemes under the NGHM issued by the MNRE
SECI	Solar Energy Corporation of India
Service Charge Guidelines	Operational guidelines for implementing the “service charge” component under the PM-SGMBY scheme issued by the MNRE on October 8, 2024
SIAs	State Implementation Agencies
SMEC	Scheme to Promote Manufacturing of Electric Passenger Cars in India issued by the MHI on March 15, 2024
SMRs	Small Modular Reactors
SPV	Special Purpose Vehicle
S RTPV	Solar Rooftop Photovoltaic
SWHS	Solar Water Heating Systems
T-GNA	Temporary General Network Access
tCO₂e	One Ton of Carbon Dioxide Equivalent
Telangana CGE Policy	Telangana Clean and Green Energy Policy, 2025
Third Amendment Rules	The Electricity (Third Amendment) Rules, 2023
TRC	Trial Run Certificate
TRLs	Technology Readiness Levels
ULA	Utility/State-Led Aggregation
WPPs	Wind Power Projects

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