



Quarterly Roundup: Clean Energy

JULY TO SEPTEMBER 2024

Executive Summary

This is the third issue of 2024 of S&RAssociate's Quarterly Roundup Series on Clean Energy. This issue covers the period between the months of July and September 2024.

The period under review witnessed various regulatory changes in India with respect to clean energy at the central and state levels. Accordingly, Issue 3 of 2024 tracks and analyzes key developments in connection with the following:

- Solar generation
- Wind generation
- Green Hydrogen/ Ammonia production
- EVs
- Tariff
- Connectivity
- Pumped storage

Within such key themes, major developments reviewed include the following:

- Proposed inclusion of solar photovoltaic cells (List – II) to the approved list of manufacturers and models (ALMM), where only listed manufacturers and models can be used for solar projects in India
- Release of a draft Green Hydrogen Certification Scheme of India
- Decision to allow Indian generating stations that supply electricity exclusively to a neighboring country to connect to the Indian grid for the purpose of selling power within India
- Proposed changes to existing rules related to the grant of lease with respect to offshore areas for the development of wind energy projects involving the seabed within India's territorial waters and exclusive economic zones
- Proposed changes involving general network access to the inter-state transmission system
- Key developments in connection with open access, including green energy open access
- Revised guidelines and standards on charging infrastructure related to electric vehicles
- Implementation of peer-to-peer solar energy transactions in the state of Karnataka
- Developments involving pumped storage projects, repowering existing wind power projects, and resource charges for future wind power projects, in the state of Tamil Nadu
- New scheme guidelines for implementing Viability Gap Funding for offshore wind energy projects
- New scheme guidelines under the National Green Hydrogen Mission
- New operational guidelines involving various components of India's grid-connected rooftop solar scheme

UPDATES

- Regulatory and legislative updates have been divided thematically (i.e., under the heads of Solar generation, Wind generation, Green Hydrogen/ Ammonia production, and so on) and chronologically.
- Within every theme, central and state government updates have been listed separately. State updates are ordered alphabetically (i.e., the states to which such updates relate are listed in alphabetical order).
- In the event of multiple developments on the same topic/subject within each theme, corresponding updates have been set forth in chronological order.
- Links to primary (or secondary) sources in respect of each update across all categories – including with respect to laws, regulations, notifications, letters and announcements – have been embedded/inserted in-line.

OTHER PUBLICATIONS

- For a discussion on the climatic and resource implications of artificial intelligence (“**AI**”) deployment, including the importance of (i) AI regulation to make increased AI development sustainable, and (ii) companies investing in ‘green’ AI to enhance their environmental, social and governance (“**ESG**”) profiles, see our note [here](#).
- For an overview of the regulatory landscape with respect to green hydrogen in India, see our note [here](#).

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Solar Generation

CENTRAL

ALMM

MNRE updated ALMM List – I

July 8, 2024, August 28, 2024, September 27, 2024: The Ministry of New and Renewable Energy (“MNRE”) has issued various office memoranda during the subject quarter for the purpose of revising the List-I of the [approved list of manufacturers and models](#) (“ALMM,” and such list, as first published on March 10, 2021, the “ALMM List-I”).

The content of such office memoranda is summarized below:

Pursuant to an office memorandum dated [September 27, 2024](#), the MNRE revised the ALMM List-I and provided the details of provisional enlistments granted to certain specified entities under such list in respect of solar photovoltaic (“PV”) module models. Such details were provided in the pages following Annexure-1 (where the revised ALMM List-I had been enclosed), including through a letter dated September 27, 2024 issued by the MNRE to Sunbound Energy Private Limited.

Earlier, pursuant to office memoranda dated [August 28, 2024](#) and [July 8, 2024](#), the MNRE had revised the ALMM List-I providing for provisional enlistment, as notified by letters dated:

1. [August 28, 2024](#), issued to
 - Vikram Solar Limited, and
 - Novasys Greenenergy Private Limited, respectively;
2. [August 1, 2024](#), issued to
 - Bluebird Solar Private Limited, Grew Energy Private Limited, and
 - Icon Solar En Power Technologies Private Limited, respectively; and
3. [July 8, 2024](#), issued to
 - Renewsys India Private Limited (for Raigad and Telangana, respectively),
 - Spark Solar Technologies Private Limited,

- Sova Solar Limited,
- Aatmanirbhar Solar Private Limited, and
- Goldi Sun Private Limited, respectively.

[Context and History](#)

The ALMM List-I relates to solar PV modules under the Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirements for Compulsory Registration) Order, 2019 (“ALMM Order”), as issued on January 2, 2019.

The MNRE periodically approves solar PV models and manufacturers and updates the ALMM List-I.

For background and context to the ALMM procedure, see our Quarterly Roundup: Clean Energy, Issue 1 of 2024, January – March 2024 [here](#).

[Background](#)

In general, the ALMM Order states that only listed solar PV/cell models and module manufacturers can be used for solar projects in India. Such projects include government projects, government-assisted projects, projects under the government, government schemes and programs, as well as open access and net metering projects.

In other words, the ALMM List-I applies to government-tendered utility-scale solar projects, rooftop solar (“RTS”) projects (net metering), the corporate power purchase agreement (“PPA”) market, and government schemes like [PM-KUSUM](#) (which was launched on March 8, 2019 for the benefit of farmers).

For a discussion on corporate PPAs based on renewable energy (“RE”) in India, see our note [here](#).

[Context](#)

The ALMM initiative plays a significant role in the Indian solar energy sector. It consists of two lists. The ALMM List-I specifies MNRE-approved models and manufacturers of solar *PV modules*. The second list under the ALMM Order (the “ALMM List-II”) is intended to specify MNRE-approved models and manufacturers of solar *cells*. While the ALMM List-I for solar modules was issued in March 2021, the

ALMM List-II for solar PV cells had not been issued until September 7, 2024 (*see below*).

To get enlisted, manufacturers require a product and performance certificate from the Bureau of Indian Standards (“**BIS**”), the national standards body of India. Such enlistment is valid for two years. While the BIS ensures product quality certification, the ALMM covers certification for the process, manufacturer, and the manufacturing facility.

Since one of the key objectives of the ALMM process is to ensure the quality of solar panels as well as the reliability of manufacturers involved, the enlisted models and manufacturers are subject to quality assurance procedures that include random quality checks and tests, such as inspections of manufacturing facilities.

Accordingly, if enlisted manufacturers fail to: (i) meet necessary standards, or (ii) comply with applicable regulations, they will be removed from the ALMM process. Enlisted units must reimburse the costs incurred for such inspections or audits within one month. Failure to do so will result in removal from the ALMM lists.

Although currently the ALMM Order applies to all solar projects in India, previously certain relaxations were provided under various office memoranda issued by the MNRE, that are important to note.

[Previous Developments](#)

February 2024

Pursuant to an [office memorandum dated February 15, 2024](#), the MNRE had put in abeyance its earlier office memorandum dated February 9, 2024 (the “**February 9 Memo**”) until further orders were made in this regard.

The February 9 Memo had provided for the re-imposition of the ALMM Order with effect from April 1, 2024 – with exemptions for open access and captive power plant (“**CPP**”) projects in cases where projects were in advanced stages of construction, as well as for those assets where orders for solar modules had been placed before March 31, 2024.

Further, the February 9 Memo had also specified as follows:

The ALMM Order would apply to:

- Only those projects which are sponsored or subsidized by the government;
- The government or its agencies procuring power for its own consumption or for distribution among people through state-owned/licensed power distribution companies (“**discoms**”);
- Solar rooftop photovoltaic (“**SRTPV**”) projects and PM-KUSUM, which are subsidized.

The ALMM Order would not apply to:

- Projects set up under open access or as captive by private parties. In other words, ALMM would not be applicable for people who set up their own capacity.

Further, the February 9 Memo had indicated that the relaxation in ALMM would apply to all cases where the projects were in advanced stages of construction, and the order for modules had been placed before March 31, 2024 (both subject to verification).

However, it appears that the ALMM Order was put in abeyance (pursuant to the MNRE’s office memorandum dated February 15, 2024) due to concerns about:

1. inadequate domestic module manufacturing capacity,
2. the lower quality of domestic modules compared to foreign (including tier-I Chinese) manufacturers, and
3. the higher prices of domestic modules.

Further, such abeyance was presumably imposed to provide adequate time to:

1. manufacturers to secure the certifications necessary; and

2. the wider industry for the purpose of developing necessary domestic supply chain capabilities.

Nevertheless, the MNRE's decision to put the ALMM Order in abeyance was expected to negatively affect those domestic manufacturers which might have sought to expand their market share in India. On the other hand, RE project developers which were expecting to procure imported modules would benefit from such abeyance. Given that no foreign manufacturers had been enlisted under the ALMM process as of such date, those foreign manufacturers which commanded a significant market share in India would also stand to benefit from such abeyance.

March 2024

Subsequently, pursuant to an [office memorandum dated March 29, 2024](#) (the "**March 29 Memo**"), the MNRE clarified that the ALMM Order for solar PV modules (i.e., the ALMM List-I) would come into effect from April 1, 2024.

However, the March 29 Memo specified that certain projects would be examined separately – specifically, those projects which:

- (a) were unable to get commissioned by March 31, 2024 on account of reasons beyond the control of the RE developer, and
- (b) received the solar PV modules at the project site by March 31, 2024.

Unlike the February 9 Memo, the March 29 Memo allowed no exemption for projects which were set up as captive or under open access by private parties. Previously, pursuant to the February 9 Memo, open access-based and captive solar power projects could have sourced PV modules from the most cost-competitive sources by availing of the exemption granted to them with respect to the requirement of procuring such modules only from MNRE-approved models and manufacturers under the ALMM List-I.

The re-imposition of the ALMM Order from April 1, 2024 was expected to help domestic original equipment manufacturers ("**OEMs**"). As of April 2024, the ALMM List-I comprised only domestic solar OEMs. It is possible that domestic module

manufacturing increased over the past year while the ALMM was in abeyance. If domestic manufacturing indeed rose under the government's 'Production Linked Incentive' ("**PLI**") scheme for the [National Program on High Efficiency Solar PV Modules](#), there may be fewer concerns about the availability of domestic solar modules in the future relative to periods in the past.

With respect to ALMM List-II of the ALMM Order, the solar energy sector remains largely dependent on imports with respect to sourcing solar PV cells, including on account of the fact that cell manufacturing capacity in India remains limited primarily due to paucity in the availability of raw materials.

Given current costs, buying imported solar PV modules – as opposed to relying solely on modules made by domestic OEMs – appears to be a cheaper option for captive RE projects, power generating companies ("**gencos**") and independent power producers ("**IPPs**"), even after import duties are factored in. In this regard, the reimposition of ALMM from April 1, 2024 is likely to affect private open access and captive solar power projects.

April 2024

Pursuant to office memoranda dated [April 10, 2024](#) (the "**April 10 Memo**") and [April 29, 2024](#) (the "**April 29 Memo**"), respectively, the MNRE further revised the ALMM List-I. The April 10 Memo and the April 29 Memo also list out the details of provisional enlistments under the ALMM List-I granted by the MNRE in respect of solar PV module models to specified entities. In addition, such memoranda specify, in usual fashion, that enlistment under the ALMM remains subject to valid registration under the BIS.

May 2024

Pursuant to an [office memorandum dated May 20, 2024](#), the MNRE clarified that the ALMM Order in respect of the ALMM List-I would not be applicable for projects where the last date of bid submission was prior to April 10, 2021.

Thereafter, pursuant to an [office memorandum dated May 27, 2024](#), the MNRE exempted certain RE-based power plants from the purview of the

ALMM Order for solar PV modules. The exempted RE plants are those which satisfy two conditions:

- They must be located inside a Special Economic Zone (“SEZ”) or an Export Oriented Unit (“EOU”); and
- They must be supplying power exclusively for production plants of green hydrogen (“GH”) (or derivatives of GH), where such plants are also located inside an SEZ or set up as an EOU (either the same or a different SEZ/EOU).

MNRE amends the ALMM Order

August 7, 2024: Pursuant to an office memorandum dated [August 7, 2024](#), the MNRE issued an amendment to the ALMM Order (“**August 7 Amendment**”). Among other things, the August 7 Amendment specifies the following:

- Factory inspection and final enlistment with respect to cases of provisional enlistment will need to be completed within two months from the receipt of application, failing which such provisional enlistment will be deemed to be the final enlistment in cases where the National Institute of Solar Energy (“NISE”) has completed the inspection of the plant but the recommendation from the NISE has not been received by the MNRE.
- However, in cases where the inspection has not yet been completed on account of a delay caused by reasons that are attributable to solar PV manufacturers, the provisional enlistment will be revoked.
- All deemed enlistments will need to be examined, and the NISE is required to submit a report on all such cases to the MNRE for the purpose of explaining the reasons for non-completion of inspection and other procedures within two months.
- A portal is being operated by the NISE to collect data related to production, sales and export from solar PV manufacturers. The link for such portal is: <https://mnre-pv.nise.res.in>
- All existing ALMM-enlisted manufacturers are required to feed in data on such portal in respect of their solar PV manufacturing facilities from April 2023 within four weeks from the date of issuance of the August 7 Amendment, failing which such non-compliant manufacturers (i.e., those which have not fed the data into the portal) are liable to be delisted from the ALMM.
- Further, all future applications for enlistment, renewal, addition of models, or provisional enlistment under the ALMM process, will need to be accompanied by a certificate on the letterhead of the solar PV manufacturer certifying that data related to production, sales and export in respect of manufacturing facilities for which the application is being made, has been filled out and fed in on such portal from April 2023 until the month prior to that when the ALMM application is submitted, failing which the ALMM application will be rejected.
- In addition, a portal is being operated by the NISE to ensure the traceability of domestically manufactured solar PV cells and modules, as well as to help with the verification of the Domestic Content Requirement (“DCR”) in solar PV modules deployed in the country. The link for such portal is: <https://solardcrportal.nise.res.in>
- All existing ALMM enlisted manufacturers will (i) need to register their solar PV manufacturing facilities on the portal, and (ii) be required to start feeding in data on the portal in respect of the solar PV modules and solar PV cells which are being manufactured by them within one month from the date of issuance of the August 12 Amendment. This is because, in the future, such portal will be the exclusive mechanism for verifying the DFR. In the event that any solar PV module, which has been claimed by the manufacturer to be DCR compliant, fails with respect to DCR verification through such portal, the concerned manufacturer may have to face actions/penalties for violating DCR provisions, as listed in relevant MNRE orders.

All future applications for enlistment, renewal, addition of models, or provisional enlistment under the ALMM mechanism, will need to be accompanied by a certificate on the letterhead of the solar PV manufacturer, certifying that the data in respect of solar PV modules and solar PV cells which are manufactured by the manufacturing facilities for which the application is being made, has been filled out and fed in on such portal from April 2023 until the month prior to that when the ALMM application is submitted, failing which the ALMM application will be rejected.

MNRE issues draft amendment to ALMM Order for solar PV cells

September 7, 2024: Pursuant to an office memorandum dated [September 7, 2024](#), the MNRE issued a draft amendment to the ALMM Order (“**ALMM Amendment**”) and invited comments and suggestions from stakeholders. The proposed ALMM Amendment provides for the implementation of the ALMM for solar cells PV cells.

In effect, the ALMM Amendment makes way for the issuing of the second list under the ALMM Order (the “**ALMM List-II**”) for the purpose of specifying MNRE-approved models and manufacturers of solar cells. According to the ALMM Amendment, the ALMM List-II under the ALMM Order involving solar PV cells will be effective from April 1, 2026.

Context

In general, the ALMM Order states that only listed solar PV/cell models and module manufacturers can be used for solar projects in India. Such projects include government projects, government-assisted projects, projects under the government, government schemes and programs, as well as open access and net metering projects.

In other words, the ALMM Order applies to government-tendered utility-scale solar projects, RTS projects (net metering), the corporate PPA market, and government schemes like [PM-KUSUM](#).

The ALMM initiative plays a significant role in the Indian solar energy sector. It consists of two lists. As discussed above, the first list under the ALMM Order, *i.e.*, ALMM List-I, specifies MNRE-approved models and manufacturers of solar PV modules. The second list under the ALMM Order, *i.e.*, ALMM List-

II, is intended to specify MNRE-approved models and manufacturers of solar cells.

In general, to get enlisted, manufacturers require a product and performance certificate from the BIS, the national standards body of India. Such enlistment is typically valid for a period of two years. While the BIS ensures product quality certification, the ALMM covers certification for the process, manufacturer, and the manufacturing facility. Since one of the key objectives of the ALMM process is to ensure the quality of solar panels as well as the reliability of manufacturers involved, the enlisted models and manufacturers are subject to quality assurance procedures that include random quality checks and tests, such as inspections of manufacturing facilities.

Accordingly, if enlisted manufacturers fail to: (i) meet necessary standards, or (ii) comply with applicable regulations, they will be removed from the ALMM process. Enlisted units must reimburse the costs incurred for such inspections or audits within one month. Failure to do so will result in removal from the ALMM lists.

ALMM Amendment

As of September 7, 2024, although the ALMM Order had provided for both List-I (solar PV modules) and List-II (solar PV cells), List-II had not been issued.

While the ALMM List-I for solar modules was issued in March 2021, the ALMM List-II for solar PV cells was not issued on account of the fact that the installed capacity of solar PV cells in India was lower than demand.

However, with the installed capacity of solar PV cells in India now expected to increase substantially over the next two years, the MNRE has found it advisable to issue the ALMM List-II under the ALMM Order related to solar PV cells pursuant to the ALMM Amendment, proposed to be effective from FY 2026-27.

The ALMM Amendment specifies that, consistent with provisions that have already been specified in the ALMM Order, all projects falling under the purview of the ALMM will have to mandatorily source their solar PV modules from models and manufacturers that are included in the ALMM List-I

(for solar PV modules). In turn, such solar PV modules will be required to use solar PV cells from among the models and manufacturers enlisted in the ALMM List-II for solar PV cells.

The ALMM Amendment also clarifies that all projects where the last date of bid submission is before the issuance of the ALMM Amendment will stand exempted from the mandatory requirement of using solar PV cells from the ALMM List-II.

Going forward, all projects covered under ALMM that will invite bids, including those projects that follow the guidelines issued by the Central Government under Section 63 of the Electricity Act, 2003 (“**Electricity Act**”) will now be required to include a clause in their tender documents or documents related to ‘Request for Selection’ (“**RfS**”) that the solar PV modules and solar PV cells used in such projects will need to be from the models and manufacturers included in the ALMM List-I and the ALMM List-II, respectively, unless the projects are commissioned prior to the effective date of the ALMM List-II for solar PV cells, i.e., April 1, 2026.

Further, the ALMM Amendment specifies that the solar PV modules which are presently enlisted in the ALMM List-I for solar PV modules and have an ALMM enlistment validity/expiry date beyond March 31, 2026, will also be obliged to use solar PV cells from the ALMM List-II for solar PV cells starting from April 1, 2026, failing which they will be liable to be delisted from the ALMM List-I.

PM-Surya Ghar: Muft Bijli Yojana

MNRE issues framework for a vendor rating system under the PSGMBY

July 24, 2024: Pursuant to an office memorandum dated [July 24, 2024](#) under its [Grid-Connected Rooftop Solar Program](#), the MNRE issued a framework for a vendor rating program under its scheme called the [PM-Surya Ghar: Muft Bijli Yojana](#) (“**PSGMBY**”), including for the purpose of enhancing the ability of consumers to assess vendors on the basis of credibility, performance, quality and service, especially given the absence of any standardized ratings in the market and the unorganized nature of the vendor ecosystem.

Accordingly, the framework covers the evaluation process necessary for the operation of the grid-connected RTS program, including to ensure an objective and transparent methodology for vendor rating with clear criteria and processes. Among other things, the vendor rating program is necessary to encourage better business and technical practices by registered vendors, such as (i) ensuring the engagement of qualified installers, (ii) adhering to industry best practices, and (iii) ensuring optimal performance, safety and compliance.

Previously, on February 29, 2024, the Government of India [announced the launch](#) of the PSGMBY scheme with the aim of installing RTS plants and providing free electricity of up to 300 units every month in 10 million households with a total financial outlay of INR750.21 billion across all of the scheme’s sub-components.

Thereafter, pursuant to an [order dated March 16, 2024](#), the MNRE clarified, among other things, that the second phase (Phase – II) of the grid-connected RTS program would be deemed subsumed under the PSGMBY scheme, along with the remaining financial outlay and liabilities, with effect from the launch of the PSGMBY scheme (such MNRE order, the “**MNRE PSGMBY Order**”).

For background and context, along with a discussion on the MNRE PSGMBY Order, see pp. 31-32 of our Quarterly Roundup: Clean Energy, Issue 1 of 2024, January – March 2024 [here](#).

MNRE issues operating guidelines for the implementation of various components under the PSGMBY scheme

July 18, 2024, August 9, 2024: The MNRE has issued operating guidelines for the implementation of various components under the PSGMBY scheme pursuant to separate office memoranda dated July 18, 2024 and August 9, 2024, issued under its [Grid-Connected Rooftop Solar Program](#). Such guidelines have been summarized below:

[Incentives to Discoms](#)

Pursuant to an office memorandum dated July 18, 2024, the MNRE issued operating guidelines for the implementation of the component called “[Incentives to Discoms](#)” under the PSGMBY.

Under the PSGMBY scheme, discoms have been designated as implementing agencies at the state level and are required to put in place several facilitative measures for the promotion of RTS in their respective areas, such as the availability of net meters, timely inspection and commissioning of installations, vendor registration and management, and others.

In order to enable discoms to undertake their tasks as state implementing agencies more effectively under the PSGMBY scheme, the PSGMBY includes incentives that may be availed by discoms.

Such incentives will be based on discoms achieving the installation of additional grid-connected RTS capacity in all sectors over and above the base level (as per the data available under the second phase (Phase – II) of the grid-connected RTS program), with incentives being limited to the first additional 18,000 MW of RTS capacity in the country (since beginning of operation of Phase – II of the grid-connected RTS program). The incentives are pegged at 5% of the applicable benchmark cost for capacity achieved above 10% and less than 15% of the installed base capacity, and 10% of the applicable benchmark cost for capacity achieved beyond 15% of the installed base capacity.

Incentives will be calculated on the basis of incremental RTS capacity installed by discoms in their respective distribution areas relative to the installed base capacity (at the end of the previous financial year) within a timeline of 12 months (financial year-wise). The incentive pattern will be a progressive one, with higher incentive rates for higher levels of achievement.

[Incentives to Local Bodies](#)

Pursuant to a separate office memorandum dated July 18, 2024, the MNRE issued operating guidelines for the implementation of the component "[Incentives to Local Bodies](#)" under the PSGMBY.

This component of the PSGMBY aims to incentivize urban local bodies and panchayati raj institutions at the Gram Panchayat level so that they are able to push the deployment of residential RTS within their respective jurisdictions and undertake local mobilization efforts to maximize the number of RTS installations under the PSGMBY.

[Capacity Building](#)

Pursuant to another office memorandum dated July 18, 2024, the MNRE issued operating guidelines for the implementation of the component "[Capacity Building](#)" under the PSGMBY.

This component of the PSGMBY aims to increase skilled manpower and promote capacity-building of field personnel, including installation teams, design teams and vendors in a structured and planned way.

[Model Solar Village](#)

Pursuant to an office memorandum dated August 9, 2024 the MNRE issued operating guidelines for the implementation of the component "[Model Solar Village](#)" under the PSGMBY scheme.

Among other things, this component of the PSGMBY aims to (i) create one model solar village in each district of the country, and (ii) promote the uptake of solar rooftops in India.

Other objectives of the PSGMBY's "Model Solar Village" component are as follows:

- Promote green and clean energy access to electricity in villages.
- Empower village communities to become self-reliant in terms of meeting their energy needs and help them save money on energy bills by generating electricity locally and reducing reliance on utility companies.
- Develop 24x7 solar-powered villages covering all households and public areas, including for the purpose of acting as a model for other villages to follow.
- Promote technologies like solar-based home lighting systems in households, solar energy-based water systems in villages, solar pumps for agricultural purposes and the installation of solar streetlights covering village roads and common village infrastructure.

MNRE clarifies that residential RTS with battery storage systems is eligible for CFA under the PSGMBY

September 20, 2024: Pursuant to an office memorandum dated [September 20, 2024](#), the MNRE issued a clarification in respect of the operational guidelines for the [PSGMBY](#) scheme with regard to the component related to Central Financial Assistance (“CFA”) to residential consumers (“CFA Guidelines,” and such clarification, “CFA Clarification”).

Clause 5(1) of the CFA Guidelines states, “The rooftop solar installation may include additional technology components such as small wind hybrids, battery storage, solar tracker systems, etc. However, the CFA calculation shall be based on the CFA structure under the scheme as per capacity of solar modules installed in the system.”

Among other things, with reference to such clause 5(1) of the CFA Guidelines, the CFA Clarification clarified that RTS systems with battery storage systems are also eligible for CFA under the PSGMBY scheme. Accordingly, hybrid inverters can also be installed, as per provisions of the regulations issued by respective SERCs (or union territory electricity regulatory commissions) for RTS plants under PSGMBY.

[Background](#)

Pursuant to an [office memorandum dated April 16, 2024](#) under its [Grid-Connected Rooftop Solar Program](#), the MNRE had issued draft guidelines for the CFA component (*i.e.*, ‘Component A’, and such guidelines, “**Draft CFA Guidelines**”) with respect to the implementation of the PSGMBY scheme for the residential sector.

[Draft CFA Guidelines](#)

The Draft CFA Guidelines relate to the implementation of ‘Sub-component 1: CFA to residential consumers’ with a financial outlay of INR657 billion pursuant to relevant administrative approval. The Draft CFA Guidelines are proposed to be applicable to all applications received on the national portal from the date of launch of the PSGMBY scheme (*i.e.*, February 13, 2024).

[CFA Guidelines](#)

Pursuant to an [office memorandum dated June 7, 2024](#), the MNRE had issued the CFA Guidelines as operational guidelines for the implementation of the sub-component related to CFA to residential consumers under the ‘capex mode’ for eligible consumer categories with respect to the PSGMBY scheme.

[Context](#)

[Capex Mode](#)

The ‘capex mode’ is considered to be one where the consumer itself, either through its own capital or through borrowings from financial institutions or otherwise, funds the initial investment into an RTS system. The CFA Guidelines do not cover ‘RESCO’ models (where a third-party entity other than the consumer makes the initial investment) or utility/state-led aggregation models (where a state entity invests on behalf of consumers on an aggregate basis). These modes will be dealt separately in other guidelines.

[RESCO](#)

‘RESCO’ – or an RE services/supply company – involves a solar power system that involves a third-party service-provider (*i.e.*, the RESCO itself), where the RESCO owns, installs, operates and maintains such system on behalf of the customer.

The consumer pays a pre-determined monthly tariff which is lower than the prevailing grid power tariff. Accordingly, the RESCO model proves especially useful for end-users which seek to utilize solar power but lack the ability to incur heavy capital expenditure.

Unlike a capex model, where the consumer owns the system and invests upfront, the RESCO model requires no investment, and the consumer only pays for the electricity generated – while ownership of the solar power system remains with the RESCO developer.

[Details of the CFA Guidelines](#)

Among other things, the CFA Guidelines specify that:

- The guidelines are applicable for all applications received on the PM Surya Ghar National Portal from the date of launch of the PSGMBY scheme (i.e., February 13, 2024).
- Any eligible consumer can avail the benefits of the PSGMBY scheme only through such portal.
- Any interested consumer with a valid consumer account number (or its equivalent consumer ID) for a discom (or in some cases, the power/energy department of the state, as applicable) may apply as an eligible consumer on the PM Surya Ghar National Portal.
- The CFA for the residential sector will be as per a prescribed table. No CFA will be provided to non-residential consumer segments (including government and C&I segments).
- The implementation period of the PSGMBY scheme will be until March 31, 2027.

Eligibility under the CFA Guidelines

For the purpose of CFA, an eligible residential RTS plant would be the grid-connected solar power system that is tagged to a particular residential power connection of the local discom. This will only include installations on a roof, terrace or 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.

Further, installations under metering mechanisms, such as ‘Group Net Metering’ and ‘Virtual Net Metering’, respectively, will also be eligible for CFA if the installations are on any roof, terrace or balcony, or on top of elevated structures, or as BiPV systems – where the metering arrangement is approved by the relevant discom.

STATE

Gujarat

GERC issues amendment to net metering SRTPV grid-interactive systems regulations

September 6, 2024: Pursuant to a notification dated September 6, 2024, the Gujarat Electricity Regulatory Commission (“**GERC**”) issued the GERC (Net Metering Rooftop Solar PV Grid Interactive Systems) (Fourth Amendment) Regulations, 2024 (“**GERC RTS Amendment**”).

Among other things, the GERC RTS Amendment provides for regulations relating to the recovery of system-strengthening charges for RTS of a capacity of above 6 kW from the applicant of such RTS, and a requirement for discoms to update distribution transformer capacity available for connecting SRTPV systems under net-metering arrangement on a yearly basis.

Background

Previously, pursuant to a public notice dated May 18, 2024, the GERC had invited objections/suggestions on various amendments proposed to be made to the GERC (Net Metering Rooftop Solar PV Grid Interactive Systems) Regulations, 2016 through the Draft GERC (Net Metering Rooftop Solar PV Grid Interactive Systems) (Fourth Amendment) Regulations, 2024 (“**Draft GERC RTS Amendment**”). Among other things, the Draft GERC RTS Amendment had sought to align with the Electricity (Rights of Consumers) Amendment Rules, 2024 (“**Consumer Rules Amendment**”).

Karnataka

KERC issues regulation for peer-to-peer solar energy transactions

August 6, 2024: Pursuant to a notification dated August 6, 2024, the Karnataka Electricity Regulatory Commission (“**KERC**”) issued the KERC (Implementation of Peer to Peer Solar Energy Transaction) Regulations, 2024 to promote rooftop solar and the efficient utilization of existing assets, as well as to facilitate transactions of rooftop solar energy through blockchain or any other technology-based peer-to-peer platform.

Background

Previously, pursuant to a [notification dated January 12, 2024](#), the KERC had invited objections, views and suggestions from stakeholders and interested persons with respect to the draft KERC (Implementation of Peer-to-Peer Solar Energy Transaction through blockchain based platform) Regulations, 2024 (“**Draft Blockchain Regulations**”).

The KERC had acknowledged that existing arrangements related to SRTPV projects only recognize the sale of energy between consumers and discoms. However, a new concept of energy sales between consumers had emerged, including in respect of SRTPV projects – where the sale of surplus power by a consumer or prosumer to another consumer at an agreed-upon tariff could be facilitated as peer-to-peer (“**P2P**”) solar transactions through a blockchain-based platform.

This concept is not only well-known and popular – but it has also gained recognition as a promising innovation in the energy sector – especially with respect to greater decentralization and integration of renewable power, cost savings, community engagement and grid resilience. Other than fostering flexibility, efficiency and empowerment (for prosumers), as well as having a positive impact on the environment, regulatory evolution, and technological innovation, such P2P transactions can enable a quicker recovery on investments made relative to existing arrangements.

Noting this reality, the KERC had issued the Draft Blockchain Regulations, including with the aim to promote both RTS and the efficient utilization of existing assets, as well as to implement innovative technologies that can facilitate RTS transactions through a blockchain-based P2P platform for the purpose of ensuring reasonable returns on investments.

KERC issues clarification on RTS net metering arrangement

September 12, 2024: Pursuant to an order dated [September 12, 2024](#), the KERC issued a clarification to the effect that if RTS consumers switched from a net-metering arrangement to a gross-metering arrangement in accordance with the KERC’s earlier

order dated July 18, 2022 (the “**KERC July 2022 Order**”) and carried out the necessary modifications in wiring as recommended while ensuring that all safety measures are followed, the discom should execute a supplemental PPA to formalize such change.

The KERC July 2022 Order stated that the consumers using power from other sources or captive sources through an open access mechanism have the option to choose between gross-metering arrangement or setting up a captive power plant for self-consumption, and that net-metering facility will not be available for such consumers.

Maharashtra

MERC issues amendment to enable virtual net metering in RTS

August 29, 2024: Pursuant to a notification dated [August 29, 2024](#), the Maharashtra Electricity Regulatory Commission (“**MERC**”) issued the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) (Second Amendment) Regulations, 2024. Previously, the principal regulations of 2019 had been amended in 2023. Among other things, the 2024 amendment has now introduced new provisions to the principal regulations enabling virtual net metering arrangement for residential consumers situated in multi-storeyed buildings.

Context

Recognizing the potential and advantages of grid-connected RTS systems – including with respect to decentralized generation, and for the purpose of facilitating wide-scale adoption of RTS, pursuant to an [office memorandum dated January 11, 2024](#), the MNRE had simplified the implementation of the ‘[Grid-Connected Rooftop Solar Program](#)’ by listing out certain uniform documents required to be filed by applicants for RTS through such program. The MNRE had also directed relevant discoms and implementing agencies to ensure that: (i) no other documents are sought from consumers during the application process (to ensure the ease of RTS installation); and (ii) they have sufficient stock of smart/net meters required for RTS, including for the purpose of avoiding delays in the commissioning of RTS projects.

Metering

Since storing electricity often proves expensive, systems can be connected to the grid so that the surplus can be exported to the grid, while the deficit can be imported from the grid. While framing regulations for solar rooftop systems, governments typically define two kinds of arrangements: (i) gross metering, and (ii) net metering.

Gross metering is an arrangement where a consumer is compensated at a fixed feed-in-tariff for the total number of units of solar energy generated and exported to the grid. Such consumer is required to pay the discom at the tariff related to retail supply tariff for the electricity it consumes from the grid. This is accounted for by a unidirectional 'gross meter'. Typically, the feed-in-tariff and the retail supply tariff vary.

On the other hand, the concept of net metering provides an arrangement where electricity exports are adjusted against imports. Accordingly, the electricity produced is deducted from the total electricity consumed over a fixed period of time. Such adjustment may be done on a monthly, half-yearly, or annual basis. A bidirectional 'net meter' may account for both electricity imports and exports. If the exported power is higher than that imported, a consumer may or may not be compensated for the excess electricity fed into the grid. Such compensation will depend on a state's net metering policy.

Under gross metering, the compensation to consumers (for exporting power to the grid) is typically lower than the retail supply tariff (i.e., the rate at which consumers purchase electricity from discoms). Under net metering, where electricity imports are adjusted against exports, the compensation is effectively the same as the retail supply tariff. Accordingly, discoms may prefer to adopt gross metering for grid-connected RTS systems.

Odisha

OERC exempts from technical feasibility for RTS systems up to 10 kW

July 2, 2024: Pursuant to a letter dated [July 2, 2024](#), the Odisha Electricity Regulatory Commission

("OERC") issued a directive exempting the requirement related to a technical feasibility study for RTS systems of up to 10 kW, in compliance with rule 7(A) of the Consumer Rules Amendment.

Context

Previously, for the purpose of amending the Electricity (Rights of Consumers) Rules, 2020 ("**Consumer Rights Rules**"), the Ministry of Power ("**MoP**") had issued the Consumer Rules Amendment pursuant to a [notification dated February 22, 2024](#).

Among other things, the Consumer Rules Amendment inserted new provisions to, and substituted certain other provisions in, the Consumer Rights Rules, including for the purpose of: (i) speeding up the grant of electricity connections; and (ii) promoting the adoption of EVs and SRTPV systems.

In this regard, the Consumer Rules Amendment had also added new definitions for the terms 'owner' and 'resident welfare association,' respectively.

Similar State Initiatives

Bihar

Pursuant to a [public notice dated May 22, 2024](#), the Bihar Electricity Regulatory Commission ("**BERC**") issued a draft of the BERC (Rooftop Solar Grid Interactive Systems Based on Net and Gross Metering) (First Amendment) Regulation, 2024 ("**Draft BERC Net Metering Regulation**") and invited comments and suggestions from stakeholders. The BERC sought to align the Draft BERC Net Metering Regulation with the Consumer Rules Amendment.

Gujarat

Pursuant to a [public notice dated May 18, 2024](#), the GERC invited objections/suggestions on various amendments proposed to be made to the GERC (Net Metering Rooftop Solar PV Grid Interactive Systems) Regulations, 2016 through the [Draft GERC \(Net Metering Rooftop Solar PV Grid Interactive Systems\) \(Fourth Amendment\) Regulations, 2024](#) (the "**GERC Rooftop Solar Amendment**"). Among other things, the GERC

Rooftop Solar Amendment was sought to be aligned with the Consumer Rules Amendment.

Himachal Pradesh

Pursuant to a [notification dated May 13, 2024](#), the Himachal Pradesh Electricity Regulatory Commission (“**HPERC**”) issued draft regulations for the proposed HPERC (Rooftop Solar PV Grid Interactive System) (Third Amendment) Regulations, 2024 and invited suggestions and comments from stakeholders. The proposed amendment sought to incorporate provisions on exempting the requirement of a technical feasibility study for SRTPV systems of up to 10 kW capacity, including for the purpose of aligning the HPERC (Rooftop Solar PV Grid Interactive System) Regulations, 2015 with the Consumer Rules Amendment.

Rajasthan

The Rajasthan Electricity Regulatory Commission (“**RERC**”) issued an [order dated May 31, 2024](#) to align the RERC (Grid Interactive Distributed Renewable Energy Generating Systems) Regulations, 2021 with the Consumer Rules Amendment.

Wind Generation

CENTRAL

Onshore Wind

MNRE issues and clarifies amendment to guidelines for the development of onshore wind power projects

July 4, 2024, August 23, 2024: Pursuant to an office memorandum dated [July 4, 2024](#), the MNRE issued an amendment to the guidelines for the development of onshore wind power projects, as issued on October 22, 2016 (such amendment, “**July 4 Amendment**”). The July 4 Amendment substituted the paragraph V titled ‘micro-siting’ to focus on optimized output through the correct placement of wind turbines.

Pursuant to an office memorandum dated [August 23, 2024](#), the MNRE issued a clarification (“**August 23 Clarification**”) related to the July 4 Amendment.

Pursuant to the August 23 Clarification, the MNRE clarified that, in order to provide a smooth transition and to ensure continuity of ongoing project development, the July 4 Amendment is only applicable for future wind power projects, which are to be registered by a State Nodal Agency *after*:

1. the notification of the July 4 Amendment; or
2. the date notified by state governments through an order, policy or guidelines on the matter –

whichever is later.

Offshore Wind

MNRE issues guidelines for implementation of VGF scheme for 1000 MW offshore wind energy projects till FY 2031-32

September 11, 2024: Pursuant to a letter dated [September 11, 2024](#), the MNRE issued scheme guidelines for implementing the ‘Viability Gap Funding Scheme for offshore wind energy projects’ (“**Wind VGF Guidelines**”) with an aim to commission 1,000 MW of offshore wind energy

projects until FY 2031-32 with a financial outlay of INR68.53 billion.

The Government of India has approved the Viability Gap Funding (“**VGF**”) scheme for offshore wind energy projects with a total outlay of INR74.53 billion, including VGF of INR68.53 billion for the installation of 1,000 MW of offshore wind energy projects off the coast of Gujarat and Tamil Nadu (including administrative charges payable to SECI, which is the implementing agency for the scheme) and a grant of INR6 billion for upgrading two ports to meet logistical requirements for offshore wind energy projects (such scheme, “**VGF Scheme**”). The incentives proposed under the VGF Scheme are aimed at kickstarting offshore wind energy projects in India.

While the Wind VGF Guidelines lay down a framework for such proposed incentives with respect to the development of offshore wind energy projects, the operational guidelines for upgrading ports to meet the logistical requirements for offshore wind energy projects will be issued by the Ministry of Ports, Shipping and Waterways.

The Wind VGF Guidelines also provide separate guidelines for a competitive bidding process for the award of offshore wind power projects under the VGF Scheme. The VGF Scheme will be implemented through a transparent selection process for awarding such VGF, including through SECI acting as the implementing agency to select bidders who may receive such incentives.

Context

Offshore wind is an RE source that offers several advantages over onshore wind and solar projects. Such advantages include higher adequacy and reliability, lower storage requirements and higher employment potential.

An offshore wind energy project consists of various systems and subsystems, such as offshore wind turbines which are linked to offshore substations(s), and undersea cables from offshore substations to onshore substations connecting to the national grid that enables the generation of power off the coast, and finally, its transmission to the mainland.

Accordingly, an offshore wind energy project requires the installation of offshore structures, foundations and turbines, as well as the laying of inter-array and export power cables and substations in a marine environment, i.e., offshore substations.

The National Institute of Wind Energy (“NIWE”), an autonomous body under the MNRE, has conducted studies and surveys for a site equivalent to 1,000 MW project capacity off the coast of Gujarat. In this regard, the NIWE has published wind assessment data collected over two years.

According to the Wind VGF Guidelines, the first offshore wind project site of 500 MW capacity off the coast of Gujarat has been identified. The second offshore site for 500 MW capacity off the coast of Tamil Nadu will be finalized later, once the NIWE has completed its study/survey with respect to such wind project.

MNRE issues draft amendment to the offshore wind energy lease rules

September 26, 2024: Pursuant to a notification dated [September 26, 2024](#) issued by the MNRE, a draft amendment to the Offshore Wind Energy Lease Rules, 2023 (“Lease Rules”) framed by the Ministry External Affairs (“MEA”) was released, inviting comments and suggestions from stakeholders.

Background

Previously, pursuant to a [notification dated December 19, 2023](#), the MEA had notified the Lease Rules under the Territorial Waters, Continental Shelf, Exclusive Economic Zones and Other Maritime Zones Act, 1976 to regulate the grant of lease of offshore areas for the development of offshore wind energy projects. In order to ease out the leasing process, the draft amendment to the Lease Rules has been proposed.

Among other things, the draft amendment to the Lease Rules proposes to amend the definition of ‘lease’ by defining it as an agreement to grants rights by the Central Government to a lessee over the seabed within India’s territorial waters and exclusive economic zones (“EEZ”) for a fixed term in exchange for a lease payment. The existing definition of an ‘offshore wind energy project’ is also intended to be substituted by one that defines it as a complete system consisting of wind turbines, offshore pooling

substation, arrays of offshore cables (including both intra- and inter-array cables), and power generating systems from other renewable sources utilized on offshore platforms to

meet the auxiliary power needs within India’s territorial waters and EEZs with a fixed or floating foundation to generate electrical power in a natural sea environment.

In addition, the draft amendment to the Lease Rules proposes to include a provision allowing the government to lease out offshore areas within India’s territorial waters and EEZs for both offshore wind energy and offshore wind transmission projects.

The draft amendment to the Lease Rules also specifies that for the construction and operation of an offshore wind energy project, the lease will be granted for 35 years, which can be extended on a case-to-case basis subject to the functional viability and safety of such project.

Further, the draft amendment to the Lease Rules replaces the existing provision related to transfer or assignment with a new clause that prohibits the lessee from assigning or transferring its right, title and interest in respect of the lease or in respect of the area within the territorial waters or EEZ of India that is covered by such lease, without the written consent of the Central Government.

STATE

Tamil Nadu

Tamil Nadu imposes INR 5 million per MW charge on CTU-connected wind projects

August 21, 2024: The Tamil Nadu Green Energy Corporation Limited (“TNGECL”) [sought to introduce](#) a new resource charge of INR5 million per MW for wind power projects located in the state of Tamil Nadu which are connected with, or linked to, the Central Transmission Utility (“CTU”)/Power Grid Corporation of India Limited (“PGCIL”). Such levy, which has been approved by the Tamil Nadu Electricity Regulatory Commission (“TNERC”), applies to all new and pending applications (in respect of which in-principle or location clearance approvals are yet to be issued) for future projects that aim for CTU connectivity.

The strategic goal behind the imposition of this fee is to incentivize the development of state transmission utility (“STU”)-connected wind power projects which can contribute directly towards meeting Tamil Nadu’s RPOs, as well as to facilitate additional revenue for the state of Tamil Nadu (including for TNGECL) from CTU-connected wind power projects in Tamil Nadu.

Context

Tamil Nadu has been promoting wind energy generation for a long time, earlier than most other Indian states, starting from the year 1986. As a result, most of the potential wind-rich areas in the state have been exhausted. In addition, on account of rapid urbanization of villages in wind-prone areas in Tamil Nadu, identifying appropriate land parcels for the purpose of establishing new wind power projects has become challenging.

Accordingly, in order to utilize the limited wind resources which are still available for meeting the state’s power and RPO requirements, it was considered necessary by TNGECL to encourage STU-connected wind power projects. Relatedly, for the purpose of facilitating STU-connected wind power projects in Tamil Nadu in order to produce more wind power to meet the state’s wind-related RPOs, as fixed by the MoP, as well as to implement the announcement made in the state assembly to achieve the ambitious target of 5000 MW of wind power in Tamil Nadu by the year 2030, collecting resource charges for CTU-connected wind projects in Tamil Nadu was considered an advisable step.

TNGECL issues policy for repowering, refurbishment and life extension of wind power projects

August 22, 2024: Pursuant to an order dated [August 22, 2024](#), the Energy Department of the State Government of Tamil Nadu approved the Tamil Nadu Repowering, Refurbishment and Life Extension Policy for Wind Power Projects – 2024 (“**Windmill Policy**”), as sent by TNGECL for approval, pursuant to a Budget announcement made in the Tamil Nadu State Assembly for the year 2023-24 with respect to a proposed new policy on repowering windmills in the state.

TGECL issued the Tamil Nadu repowering, refurbishment and life extension policy for wind

power projects, 2024 with an aim to promote optimum utilization of wind energy resources in the state.

Background

Tamil Nadu is one of the leading states in India’s RE sector, having a substantial RE generation capacity of 22,754 MW as on June 30, 2024. The major share of RE in Tamil Nadu comprises wind energy at 10,790 MW.

Wind energy generation in Tamil Nadu commenced in the year 1986 with machine capacities ranging from 55 kW to 600 kW. Although these machines had completed their full lifecycle, they were still in operation.

With the advancement in technology over the last three decades, there emerged a potential opportunity in Tamil Nadu to replace its older, lower-capacity turbines with new models that have higher capacity and a higher capacity utilization factor (“**CUF**”).

The current machine capacities available in the market are in the range of 225 kW - 5200 kW, reflecting the technology advancements in the wind energy sector. Accordingly, the State Government of Tamil Nadu felt that specific ways to optimize the wind energy potential at each discrete site may be better explored by replacing old wind turbines. Further, such replacement may help to increase the overall installed capacity and the volume of wind energy generation in Tamil Nadu.

The Windmill Policy

The objective of the Windmill Policy is to promote the optimal utilization of wind energy resources by providing a supportive framework to the wind energy generators for certain kinds of projects, including the following:

- **Standalone** (having a single or group of wind turbines owned by a single owner) **or** **Aggregation** (a group of wind turbines owned by multiple owners with shared common infrastructure) **Repowering Projects** – where the genco replaces its old wind turbines with newer ones or undertakes intercropping in its wind park or cluster area.

- **Refurbishment Projects** – where the genco carries out any suitable modifications in the turbine components, such as the gearbox, blades, generator, controller, hub height, rotor diameter, etc.
- **Life Extension Projects** – where the project undertakes the extension of the operational life period of wind turbines beyond their original design life or 20 years, whichever is earlier.

Each such category of projects will have to fulfil certain eligibility requirements and conditions to avail the benefits provided under the Windmill Policy. Other than such requirements themselves, the Windmill Policy also lays down prescribed arrangements with respect to implementation, evacuation, and sale of power, as well as applicable incentives.

Green Hydrogen/ Ammonia Production

CENTRAL

[MNRE issues scheme guidelines for the implementation of incentives for Green Hydrogen production under the SIGHT program of the NGHM \(Mode 1 Tranche-II\)](#)

July 3, 2024: Pursuant to an office memorandum dated [July 3, 2024](#), the MNRE issued detailed scheme guidelines for the implementation of Component II of the 'Strategic Interventions for Green Hydrogen Transition' ("**SIGHT**") program involving an incentive scheme for GH production under Mode 1 - Tranche-II of the National Green Hydrogen Mission ("**NGHM**").

To be eligible for incentives under the scheme, the bidder must ensure GH production in accordance with the detailed criteria laid down in the 'National Green Hydrogen Standard' as notified by the MNRE, and as estimated pursuant to a prescribed conversion/equivalence factor. In cases where the end-product is a derivative of GH, such as Green Ammonia ("**GA**"), the incentive would be made available based on the amount of GH (in kg) utilized to produce a given amount of GH derivative.

The equivalence factor that is applicable to the calculation of GH quantity for a specific quantity of GA and the resultant incentive is 0.1765 kg of GH per kg of GA. Thus, the following equivalence factor will be applicable for GA:

Derivative	Equivalent amount of GH
GA	0.1765 kg of GH per kg of GA

In case of any other derivative, MNRE shall declare an equivalence factor based on the amount of GH (in kg) utilized to produce a given amount of the derivative.

[National Green Hydrogen Standard](#)

Pursuant to an [office memorandum dated August 18, 2023](#), the MNRE had defined GH to mean hydrogen produced using RE, including, but not limited to, production through electrolysis or conversion of biomass.

In this regard, RE includes such electricity generated from renewable sources which is stored in an energy storage system ("**ESS**") or banked with the grid according to applicable regulations. For GH produced through electrolysis, the non-biogenic greenhouse gas ("**GHG**") emissions arising from water treatment, electrolysis, gas purification, and drying and compression of hydrogen, should not be greater than 2 kg of carbon dioxide ("**CO₂**") equivalent ("**CO₂e**") per kg of hydrogen, taken as an average over the last 12-month period.

Similarly, for GH produced through conversion of biomass, the non-biogenic GHG emissions arising from biomass processing, heat/steam generation, conversion of biomass to hydrogen, gas purification, and drying and compression of hydrogen, should not be greater than 2 kg of CO₂e per kg of hydrogen, taken as an average over the last 12-month period.

The Bureau of Energy Efficiency ("**BEE**") is the nodal authority for the accreditation of agencies for the purpose of monitoring, verification and certification of GH production projects.

Under the scheme, a direct incentive in terms of INR/kg of GH production will be provided for a period of three years from the date of commencement of GH production. Beneficiaries under the scheme will be selected through a competitive selection process.

The incentives will be capped at INR 50/kg, INR 40/kg and INR 30/kg of GH in the first, second and third year, respectively, of GH production.

[Previous Developments](#)

Pursuant to a [letter dated June 21, 2024](#), the MNRE had issued an amendment to the scheme guidelines for Component-II of the SIGHT program, which involves incentive schemes for the procurement of GH production under Mode-2A of the NGHM. The amendment involved a change in the erstwhile provision (paragraph 5.4.5 (i) of the scheme guidelines), which specified the capacity available for bidding under Tranche I of Mode-2A. Such available capacity had been revised upwards, from 5,50,000 metric tonnes ("**MT**") per annum ("**p.a.**") of GA to 7,50,000 MT p.a. of GA. Further, the amendment stated that such capacity may be further enhanced by the MNRE, if required. In addition,

based on demand, the MNRE may decide to issue subsequent tranches.

Context

Pursuant to a [letter dated January 16, 2024](#), the MNRE had issued detailed scheme guidelines for the implementation of Component II of the SIGHT program involving an incentive scheme for the procurement of GA production under Mode-2A of the NGHM.

Pursuant to a [separate letter dated January 16, 2024](#), the MNRE had issued detailed scheme guidelines for the implementation of an incentive scheme for the procurement of GH production under Mode-2B of the NGHM within Component II of the SIGHT program.

The objectives of these schemes are to: (i) maximize the production of GA and GH in India; (ii) enhance the cost-competitiveness of GA and GH vis-à-vis fossil-based alternatives; and (iii) encourage largescale utilization of GA and GH.

While the scheme on GA will be implemented by the MNRE through the Solar Energy Corporation of India (“SECI”) as the implementing agency, the scheme on GH will be implemented by oil and gas companies and the Center for High Technology (“CHT”), respectively – which are the implementing agencies nominated by the Ministry of Petroleum and Natural Gas (“MoPNG”).

Such implementing agencies will aggregate demand and call for bids with respect to the production and supply of GA and GH at the lowest cost (for a single refinery or multiple refineries in the case of GH) pursuant to a competitive selection process with the incentive being fixed.

Background

In January 2023, the [Union Cabinet had approved the NGHM](#) with an outlay of INR197.44 billion until FY 2029-30. The SIGHT program is a major financial measure under the NGHM, with an independent outlay of INR174.9 billion. With the aim of enabling rapid scaling up, technological development and cost reduction, the SIGHT program proposes two distinct financial incentive mechanisms to support domestic manufacturing of electrolyzers and GA/GH production. While there can be several modes for

implementing incentive schemes for GA and GH production, the two modes which have been identified as of now are as follows:

- Mode 1: Bidding on least incentive demanded over a three-year period, through a competitive selection process; and
- Mode 2: Aggregating demand and calling for bids for the production and supply of GH and its derivatives at the lowest cost through a competitive selection process.

Further, Mode 2 has been divided into two types, based on what is being sought to be produced and supplied (i.e., GA or GH), as follows:

- Mode 2A: The implementation agency/agencies will aggregate demand and call for bids for the production and supply of GA at the lowest cost through a competitive selection process with the incentive being fixed; and
- Mode 2B: The implementation agency/agencies will aggregate demand and call for bids for the production and supply of GH at the lowest cost for a single refinery or multiple refineries, as decided by the implementing agency, through a competitive selection process with the incentive being fixed.

Accordingly, the detailed scheme guidelines provided in the MNRE’s letters dated January 16, 2024 involving Component II of the SIGHT program under the NGHM lay down the framework for the production and supply of GA and GH under Mode 2A and Mode 2B, respectively, as described above.

NGHM

For 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](#).

In addition, see our Quarterly Roundup: Clean Energy, Issue 1 of 2024, January – March 2024 [here](#) for discussions on the following aspects of the NGHM:

- scheme guidelines for the implementation of Component II of the SIGHT program,

involving incentive schemes for the procurement of [GA](#) and [GH](#) production and supply under Mode-2A and Mode-2B, respectively (pp. 10-11);

- [scheme guidelines](#) for the implementation of pilot projects with respect to the use of GH in the shipping sector (p. 17);
- [scheme guidelines](#) for the implementation of pilot projects with respect to the use of GH in the steel sector (pp. 17-18);
- [scheme guidelines](#) for the implementation of pilot projects related to the use of GH in the transport sector (pp. 20, 24-25);
- [guidelines](#) for the implementation of a scheme related to the setting up of hydrogen hubs in India (p. 28);
- [scheme guidelines](#) for the implementation of Component I of the SIGHT program involving Tranche – II of an incentive scheme for electrolyzer manufacturing for the period starting from FY 2025-26 to FY 2029-30 (pp. 30-31); and
- [scheme guidelines](#) related to skilling, upskilling and re-skilling for the period between FY 2023-24 and FY 2029-30 (p. 31).

MNRE issues scheme guidelines for funding of testing facilities, infrastructure, and institutional support under the NGHM

July 4, 2024: Pursuant to a letter dated [July 4, 2024](#), the MNRE issued scheme guidelines on the funding of testing facilities, infrastructure and institutional support for the development of standards and a regulatory framework under the NGHM for implementation during the period 2024-26 at a total cost of INR2 billion.

The objectives of the scheme are as follows:

- To identify gaps in the existing testing facilities for components, technologies and processes in the value chain of GH and its derivatives.
- To create new testing facilities/infrastructure to test, validate and certify components,

technologies and processes being used in the value chain of GH and its derivatives.

- To upgrade existing testing facilities available with different testing agencies.
- To ensure safe and secure operations of equipment/instruments used in the GH value chain.
- To encourage participation from private and government entities for the establishment of world-class testing facilities in India.

Thrust areas under the scheme aimed at enabling a robust quality and testing ecosystem, commensurate with specified standards and guidelines in the GH sector, are as follows:

- Development of new testing infrastructure for various components/technologies/processes in the production, storage, transportation and utilization of GH and its derivatives.
- Upgradation of existing testing facilities for the testing of equipment/instruments to be used in the GH value chain.
- Technology mapping and information dissemination on the quality and performance of systems, components and processes under the GH ecosystem.
- Other activities to support the testing and quality assurance ecosystem for GH in the country.

The rationale of the scheme are as follows:

- Testing centres developed and upgraded under the scheme are expected to bridge gaps in the existing testing infrastructure for various components of the GH value chain in the country.
- The scheme aims to lead towards the establishment of new testing facilities and upgradation of existing ones so as to achieve self-sufficiency in the areas of testing and certification for the GH value chain.

- The testing infrastructure must be strengthened in line with the increasing production capacity and usage of GH and its derivatives in the country.

The salient features of the scheme are as follows:

- Projects with an intention to develop the testing and certification infrastructure for components of the GH value chain will be supported under the scheme. The scheme will also support the upgradation of existing testing facilities available with private and government entities.
- The NISE will be the scheme implementation agency (“SIA”). The SIA will be eligible for service charges at 0.5% of the financial support utilized for the projects sanctioned under the scheme.
- The SIA shall issue a Call for Proposals (“CfP”) for setting up of testing infrastructure under the scheme through a transparent process.
- The MNRE will issue administrative sanctions for projects under the scheme based on the recommendations of a Project Appraisal Committee (“PAC”).
- The SIA will monitor, facilitate and share knowledge gathered under projects through the project completion report, monitoring reports, workshop(s), and publications to disseminate findings, best practices and lessons learnt.
- The scheme aims to leverage existing testing resources and infrastructure available with different agencies.
- The scheme will fund capital expenditure required for the establishment of new testing infrastructure and upgradation of existing testing facilities.
- Financial support for the establishment of testing infrastructure will be evaluated and granted taking into consideration specific requirements and merits on a case-by-case basis.

- Testing facilities that are set up or upgraded under the scheme will be open to all potential users and will not be a captive unit of any one organization or a group of organizations.
- The scheme will also support the creation of Center(s) of Excellence covering a gamut of testing facilities on a case-by-case basis.

MNRE releases draft of GH certification program

September 4, 2024: Pursuant to an office memorandum dated [September 4, 2024](#), the MNRE released a draft Green Hydrogen Certification Scheme of India (“GHCI”) for stakeholder feedback with a deadline of September 27, 2024.

As part of India’s broader strategy under the NGHM to transition to a low-carbon economy and position itself as a global leader in GH production, the GHCI aims to provide a comprehensive framework to: (i) certify and regulate the production of GH in India, and (ii) enhance transparency, accountability, and environmental integrity in the sector to foster confidence among domestic and international stakeholders.

Objectives

The primary objectives of the GHCI are as follows:

- **Establishing Standards:** The scheme aims to create clear guidelines and a detailed methodology for calculating GHG emissions during GH production, ensuring that producers adhere to established environmental standards.
- **Certification Process:** The scheme aims to set up a rigorous certification process that guarantees the origin of GH, thereby enhancing its credibility in both domestic and international markets.
- **Monitoring and Reporting:** The scheme seeks to establish monitoring requirements for GH production and aims to create a robust verification-based approach, including by designating accreditation authorities, as well as by developing a reporting and data tracking system, respectively.

- **Facilitating Exports:** By ensuring adherence to high standards, the GHCI is expected to boost India's GH exports, providing assurance to international buyers regarding the quality and sustainability of hydrogen produced in India.
- **Encouraging Investment:** The scheme is designed to attract investments in GH production and related technologies, supporting India's goal of becoming an RE hub.

Nodal Authority and Governance Structure

- The BEE has been designated as the nodal authority for the GHCI. The BEE will accredit agencies responsible for monitoring, verifying and certifying GH projects. Such accredited agencies will play an important role in ensuring compliance with the certification standards.
- A technical committee, chaired by the Mission Director of the NGHMI, will provide strategic oversight and guidance for the implementation of the scheme.

Eligible Pathways

Currently, two primary pathways have been identified as eligible for certification:

1. Electrolysis; and
2. Biomass Conversion.

The scheme allows for proposing new pathways, subject to review by the technical committee.

Certification Process

The certification process under the GHCI will involve certain key steps, as below:

1. **Registration:** GH producers must register on a designated portal and provide information as per the measurement, reporting, and verification framework outlined by the scheme.
2. **Monitoring Plan:** Producers are required to develop a monitoring plan that details project

boundaries, data collection methods, and emission sources.

3. **Verification:** Accredited Carbon Verification ("ACV") agencies will conduct validation and verification activities. These agencies will perform annual checks on the claims made by GH producers and ensure compliance with the established standards. The scheme requires GH producers to engage an ACV agency for verification within one month of completing the evaluation cycle.
4. **Issuance of Certificates:** The scheme outlines two types of certificates, as described below.
 - i. **Concept Certificate:** A voluntary certificate confirming that the design of a GH production facility meets pre-requisite requirements.
 - ii. **Facility Level Certificate:** Mandatory for GH production facilities to apply for provisional or final certificates.

Additionally, two types of production certificates are proposed:

- a. **Provisional Certificate:** An auto-generated voluntary certificate based on actual production details, available for periods of 1-11 months.
- b. **Final Certificate:** Mandatory annual certificate guaranteeing that the hydrogen produced during the specified evaluation cycle is 'green' as per GHCI standards.

Certificate Details

The GH certificate serves as a Guarantee of Origin ("GO") label, containing:

- Unique identification for each ton of hydrogen produced
- Project details
- Production year
- Emission intensity values

The certificate is non-transferable and non-tradeable. It does not represent a mitigation outcome or emission reduction credit.

Compliance and Auditing

To ensure the integrity of the certification process, the GHCI includes provisions for compliance and auditing. The MNRE or its designated agency may conduct random audits during or after the financial year to verify compliance with the certification requirements.

Penalties

Producers found to be non-compliant with the certification requirements may face penalties, including the suspension of their certification status. Repeated violations could lead to more severe consequences, including disqualification from the certification scheme.

Penalties include the following:

1. Penalties for high emission intensity exceeding the 2 kg carbon dioxide equivalent/kg of GH threshold.
2. Penalties for mismatches between claimed and actual GH production.
3. Cancellation of provisional certificates for failure to apply for the final certificate.

Global Context and Strategic Importance

The GHCI is part of a broader global trend towards adopting GH as a clean energy source. By establishing a certification scheme with clear standards and processes, India aims to position itself as a reliable supplier of GH, catering to both domestic needs and international markets and investment.

If well-implemented, the GHCI could position India as a leader in GH production and potentially create a model for other countries to follow. The scheme draws inspiration from similar initiatives in the European Union and other countries. In that regard, the GHCI aims to contribute to global efforts to standardize hydrogen production criteria and develop an integrated market.

The demand for RE for GH production could drive further growth in India's RE sector. By specifying acceptable sources of RE, the GHCI ensures that the 'green' aspect of hydrogen production is maintained. However, the scheme does not explicitly require additionality for RE sources, which could lead to a reshuffling of existing renewable capacity rather than driving new RE development.

The detailed nature of the scheme may pose challenges for smaller producers or new entrants to the market. Specifically, smaller producers may find it challenging to adhere to the requirements of the certification process, including with respect to: (i) third-party verification; (ii) the one-month timeframe for engaging an ACV agency after the evaluation cycle; and (iii) maintaining data management systems.

EVs

CENTRAL

Charging Infrastructure

The MoP issues charging infrastructure guidelines

July 1, 2024: Pursuant to an [office memorandum dated July 1, 2024](#), the MoP, after consulting with the Central Electricity Authority (“CEA”), the BEE and other stakeholders, issued draft revised guidelines and standards on Electric Vehicle (“EV”) charging infrastructure (“EVCI,” and such guidelines, “**Revised Draft EVCI Guidelines**”) for comments.

The Revised Draft EVCI Guidelines, called the “Guidelines for Installation and Operation of Electric Vehicle Charging Infrastructure - 2024”, were issued with the aim to create a robust charging ecosystem in India and accelerate the adoption of EVs in the country. Further, the Revised Draft EVCI Guidelines included provisions allowing any individual or entity to set up EV charging stations, and provided for the BEE to act as the central nodal agency in this regard.

[Previous Developments](#)

Previously, the “Charging Infrastructure for Electric Vehicles – Guidelines and Standards” were issued by the MoP on January 14, 2018 and subsequently revised on October 1, 2019, June 8, 2020, January 14, 2022, November 7, 2022 and April 27, 2023, respectively.

Based on the progress made and pursuant to suggestions from stakeholders, a set of revised consolidated guidelines was decided to be issued for the purpose of accelerating the e-mobility transition in India, superseding all previous guidelines in this regard. Such revised consolidated guidelines were intended to be in respect of both installation and operation of EV charging infrastructure and will be effective from its date of issuance.

[Revised Draft EVCI Guidelines](#)

The provisions of the Revised Draft EVCI Guidelines were intended to be made applicable to owners and

operators of such EVCI that is installed in the following places:

1. privately owned parking spaces;
2. semi-restricted places, like office buildings, educational institutions, hospitals, group housing societies, and e-bus depots; as well as
3. public places, like commercial complexes, railway stations, petrol pumps, airports, metro stations, shopping arcades, municipal parking, and on highways, expressways, etc.

The objectives of the Revised Draft EVCI Guidelines included the following:

- To enable faster adoption of EVs in India by ensuring safe, reliable, and accessible EVCI and charging ecosystem.
- To provide rationality in service charges to be charged by owners and operators of EV charging stations.
- To proactively support the creation of EVCI.
- To facilitate preparedness in respect of the electrical distribution system to adopt EVCI.

Among other provisions, the Revised Draft EVCI Guidelines also included general provisions *inter alia* specifying that all EVCI is required to comply with certain prescribed minimum technical requirements. Such requirements included those that apply to EV charging stations with respect to safety, operations, and tariff for the supply of electricity.

Further, the Revised Draft EVCI Guidelines contained provisions for public EVCI, including those that apply to public charging stations for long-range and/or heavy duty EVs, respectively.

In addition, there were specific requirements in relation to the location, database, service charges, and provision of land at promotional rates, involving public EV charging stations.

Separately, the Revised Draft EVCI Guidelines contained provisions on:

1. EV charging stations relating to residential and/or individual EV owners;
2. community EV charging stations; as well as
3. EV charging stations with respect to workplaces and e-bus depots.

Lastly, a mechanism for the implementation of the Revised Draft EVCI Guidelines were established, where the BEE will monitor the implementation of the guidelines, and all relevant agencies, including discoms, the CEA, and state governments agencies, will provide necessary support to the BEE.

A steering committee under the Additional Secretary of the MoP will be constituted to review the progress made with respect to the implementation of the Revised Draft EVCI Guidelines on a quarterly basis.

[Revised EVCI Guidelines](#)

Based on comments, suggestions and feedback from stakeholders to the Revised Draft EVCI Guidelines, pursuant to a letter dated [September 17, 2024](#), the MoP issued the 'Guidelines for Installation and Operation of EV Charging Infrastructure-2024' with an aim to create a robust charging ecosystem in India and accelerate the adoption of EVs.

E-Mobility

Union Cabinet approves PSM scheme

September 11, 2024: The Union Cabinet, chaired by the Prime Minister of India, [approved](#) the PM-eBus Sewa-Payment Security Mechanism ("PSM") scheme for the procurement and operation of e-buses by public transport authorities across the country with an outlay of INR34.35 billion.

The PSM scheme aims to support the deployment of 38,000 electric buses between the period FY 2024-25 and FY 2028-29.

MHI issues PM E-Drive scheme

September 29, 2024: Pursuant to a notification dated [September 29, 2024](#), the Ministry of Heavy Industries ("MHI") issued the PM Electric Drive Revolution in Innovative Vehicle Enhancement ("PM E-Drive") scheme.

The PM E-Drive scheme has been issued with an outlay of INR109 billion for the period starting from October 1, 2024 to March 31, 2026 for:

1. the faster adoption of EVs,
2. setting up of charging infrastructure, and
3. development of an EV manufacturing ecosystem in India.

STATE

Karnataka

The KERC issues procedure for installation of EV charging units

July 30, 2024: Pursuant to an [order dated July 30, 2024](#) with respect to the streamlining of procedure for installation of EV charging units, the KERC clarified the procedure for installing EV charging units in buildings (such order, "**KERC EV Order**").

Several consumers, promoters, occupiers, owners, and/or associations had approached the KERC, stating practical difficulties related to the installation of EV charging stations – such as in respect of metering, extension of cabling/wiring in common areas, complying with safety standards, and obtaining connections for EV charging stations from electricity supply companies, especially in multi-storeyed buildings/complexes.

Accordingly, pursuant to such request from various stakeholders, the aim of the KERC EV Order is to provide a standard operating procedure for the safe installation and use of EV charging stations in multi-storeyed buildings and complexes that involves, among other things: (i) streamlining of procedures, (ii) adherence to safety norms, and (iii) facilitating users.

Tariff

STATE

Assam

[AERC issues draft regulations for tariff determination from RE sources](#)

July 5, 2024: Pursuant to a notification dated [July 5, 2024](#), the Assam Electricity Regulatory Commission (“**AERC**”) issued the draft AERC (Terms and Conditions for Tariff Determination from Renewable Energy Sources), Regulations, 2024 with the aim of repealing and replacing the AERC (Terms and Conditions for Tariff Determination from Renewable Energy Sources), Regulations, 2017.

The AERC intended the 2024 regulations to come into force on July 1, 2024, and, unless reviewed earlier or extended by it, to remain in force until March 31, 2027.

[AERC issues regulations and clarifications on fuel and power purchase price adjustment](#)

July 11, 2024, September 17, 2024: Pursuant to a [state gazette notification dated July 11, 2024](#), the AERC issued the AERC (Fuel and Power Purchase Price Adjustment) Regulations, 2024 (“**FPPPA Regulations**”).

Among other things, Regulation 3 of the FPPPA Regulations provided for a fuel and power purchase price adjustment (“**FPPPA**”) surcharge formula (such formula, “**FPPPA Formula**”).

[APDCL's Petition](#)

petition was filed by Assam Power Distribution Company Limited (“**APDCL**”) before the AERC seeking suitable orders for the removal of difficulties in the implementation of the FPPPA Regulations.

In particular, pursuant to such petition, APDCL submitted, among other things, that under the FPPPA Formula, the computation of one of the key components (involving the actual power purchased from all sources both within and outside the State, as well as the percentage of inter-state transmission

losses) would not result in the actual quantification of energy on account of losses being linked to geographic location.

Accordingly, APDCL submitted that this would lead to improper coverage of loss components attached to the quantum of energy sourced from Central Sector Generating Stations (“**CSGS**”) located within the state of Assam using the CTU network on account of the following two aspects: a) no inter-state (CTU) loss; and b) application of normative intra-state loss on a higher quantum.

Further, according to the AERC, power from CSGS like Kathalguri Power Station and Bongaigaon Thermal Power Station, which are located within the state of Assam, are evacuated through the PGCIL network on account of being central sector generators. Accordingly, it was necessary for the AERC to issue clarifications on the matters raised in APDCL's petition regarding the FPPPA Regulations.

APDCL also submitted that, while Regulation 5.11 of the FPPPA Regulations provided for fees to be charged by the AERC for verifying relevant documents related to the FPPPA surcharge as a percentage of the claimed amount, the FPPPA Regulations defined FPPPA in percentage terms without quantifying the claimed amount in monetary terms.

Lastly, APDCL had prayed that the AERC should consider the effective date of the FPPPA Regulations based on a consideration of the amendments proposed in the petition in the interest of justice.

[AERC's Order and Clarification](#)

Pursuant to an [order dated September 17, 2024](#), the AERC clarified, among other things, that any generating station located within the state of Assam which evacuated power using the inter-state transmission network, would be considered “a source outside the State”, and the formula for calculating the component under question (related to the FPPPA Formula) would be applied accordingly. Also, intra-state losses would be applied for all sources of power located both within and outside the state of Assam.

The AERC also clarified that the FPPPA surcharge would be calculated in percentage terms in accordance with the formula prescribed in the FPPPA Regulations, based on the overall Average Billing Rate (“**ABR**”) approved for APDCL for that year. Therefore, a separate formula for calculating the payable fee was not required. Such calculated percentage would then be applied on the approved energy charge of the respective category.

With respect to the effective date of the FPPPA Regulations pursuant to its consideration of the clarifications already provided, the AERC further clarified that the FPPPA Regulations would be considered applicable from the date on which the original FPPPA Regulations were published in the official gazette.

AERC issues draft MYT Regulations

August 22, 2024: Pursuant to a [notification dated August 22, 2024](#), the AERC issued the Draft AERC (Terms and Conditions for determination of MYT) Regulations, 2024 providing for the method of determining multi-year tariff (“**MYT**”) from April 1, 2025.

Pursuant to a separate [notice also dated August 22, 2024](#), the AERC invited comments from stakeholders.

Arunachal Pradesh

APSERC issues draft MYT Regulation

September 27, 2024: Pursuant to a [draft notification](#), the Arunachal Pradesh State Electricity Regulatory Commission (“**APSERC**”) issued a draft of the (Multi Year Tariff) Regulations, 2024 providing for the method of determining MYT from April 1, 2025 until March 31, 2028.

Pursuant to a [public notice dated September 27, 2024](#), the APSERC invited comments from stakeholders and made draft forms related to generation, transmission, state load dispatch centers (“**SLDCs**”), as well as distribution and retail supply, available [here](#).

Gujarat

GERC issues MYT Regulations, 2024

August 6, 2024: Pursuant to a [gazette notification dated August 6, 2024](#), the GERC issued the GERC (Multi-Year Tariff) Regulations, 2024 for the determination of aggregate revenue requirement, tariff, and charges of SLDCs from April 1, 2025 up to March 31, 2030, unless otherwise reviewed/extended.

The forms related to generation, transmission, SLDCs, and distribution are available [here](#).

GERC levies additional surcharge for open access consumers

September 24, 2024: Pursuant to an [order dated September 24, 2024](#), the GERC specified that an additional surcharge of INR0.93/kWh will be applicable with respect to the consumers of four state-owned discoms (i.e., Dakshin Gujarat Vij Company Limited (DGVCL), Madhya Gujarat Vij Company Limited (MGVCL), Pashchim Gujarat Vij Company Limited (PGVCL), and Uttar Gujarat Vij Company Limited (UGVCL)) who avail of power through open access from any source other than their respective discoms, for the period from October 1, 2024 to March 31, 2025.

Punjab

PSERC levies additional surcharge for full and partial open access

September 11, 2024: Pursuant to an [order dated September 11, 2024](#), the Punjab State Electricity Regulatory Commission (“**PSERC**”) determined an additional surcharge of:

1. INR1.29/kWh on full and partial open access consumers, including green energy open access (“**GEOA**”) consumers, for availing of open access beyond the contract demand maintained with the distribution licensee; and
2. INR0.89/kWh on partial open access consumers, excluding GEOA consumers, for availing of open access up to the contract demand maintained with the distribution licensee.

Tamil Nadu

TNERC issues tariff order for the financial year 2024-25

July 15, 2024: Pursuant to a *suo motu* tariff order (“T.O.”) dated [July 15, 2024](#) (“**July 15 T.O.**”), the TNERC determined the tariff for distribution with respect to FY 2024-25, effective from July 1, 2024.

The July 15 T.O. provides the following:

1. An overview of the methodology adopted for tariff revision linked to consumer price inflation (“CPI”);
2. The tariff schedule applicable for consumers for FY 2024-25;
3. Details of the TNERC’s directives for the purpose of compliance by the Tamil Nadu Generation & Distribution Corporation Limited (“TANGEDCO”).

Previous Developments

Pursuant to the scrutiny and review of a petition filed by TANGEDCO, the TNERC had passed the seventh T.O. (No. 7 of 2022) on September 9, 2022 (“**T.O. 7 of 2022**”). In such order, along with the determination of tariff for FY 2022-23, the TNERC had also approved a methodology for CPI-linked tariff revision for FY 2023-24 to FY 2026-27.

The methodology laid down by the TNERC in T.O. 7 of 2022 for TANGEDCO for the remaining years of the control period (“**TNERC Methodology**”) involved an inflation-indexed approach for tariff, considering the annual increases in the average cost of supply. By looking at past trends, the TNERC found the general CPI index to be a convenient fit, since the previous annual CPI inflation rates (between 2018 and 2022) were in the range of 4.9 - 6.3%. It was also noted that irrespective of CPI inflation, the actual annual increase was capped at 6%.

Accordingly, it was decided that the TNERC would adopt the CPI index of April 2023 compared with the CPI index of April 2022 to arrive at the escalation rate, or 6%, whichever was lower, and accordingly revise the tariff schedule. A similar process would be

continued for the remaining years of the control period.

Last year, on June 30, 2023, based on the methodology specified in the T.O. 7 of 2022 with respect to the CPI-linked tariff revision for FY 2023-24 to FY 2026-27, the TNERC passed a *suo motu* order, being T.O. No. 6 of 2023.

Present Status

This year, based on the T.O. 7 of 2022 and the methodology specified in such order, the TNERC passed the *suo motu* July 15 T.O. for TANGEDCO. As such, the TNERC granted the prayer of TANGEDCO for CPI-based tariff revision with effect from July 1, 2024 with respect to the remaining years in the control period.

Over and above the TNERC Methodology, the July 15 T.O. noted that for the consequent control period of FY 2024-25, the CPI index of April 2024 compared with the CPI Index of April 2023 had to be accounted for to arrive at the escalated rate or 6%, whichever was lower, and the tariff schedule needed to be revised accordingly.

After accounting for the escalation rate of the CPI for the period from April 2023 to April 2024, the percentage of increase was found to be 4.83% as a base for the revision of tariff with effect from July 1, 2024. Accordingly, a rate of 4.83% was applied to both energy and fixed charges to arrive at the new tariff schedule.

Such new tariff schedule applies to consumer categories across both low and high tension supply, respectively. Consumer categories under high tension supply include industries, factories and information technology (“IT”) services; commercial and miscellaneous categories; construction activities and other temporary purposes; EV charging stations; and others.

Pursuant to the July 15 T.O., the TNERC directed TANGEDCO to pay the relevant tariff determination fees as per the TNERC Fees and Fines Regulations, 2022 before June 1 of each of the remaining years in the current control period.

Uttarakhand

UERC issues draft proposal for determining RTS tariffs

September 5, 2024: Pursuant to an [order dated September 5, 2024](#) with respect to the review of the benchmark capital cost for solar PV, solar thermal and grid-interactive rooftop and small solar PV plants to be applicable for FY 2024-25 and onwards until further review/revision, the Uttarakhand Electricity Regulatory Commission ("**UERC**") issued a draft proposal to adopt certain tariffs and invited comments and suggestions from stakeholders.

[Context](#)

Previously, pursuant to a [notification dated August 16, 2023](#), the UERC had notified the UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2023 ("**UERC RE Regulations**"). The UERC RE Regulations will remain in force for a period of 5 years from the date of commencement until and unless reviewed earlier or extended by the UERC.

In the UERC RE Regulations, the UERC had specified the benchmark capital cost and generic tariff for solar PV and thermal plants, along with grid-interactive rooftop and small solar PV projects ("**UERC Solar Projects**"), after having considered the fact that such plants are mostly of smaller capacity. Accordingly, the UERC had specified the benchmark capital cost and levelized tariff for such solar energy-based power projects for FY 2023-24.

On account of the passage of time and upgradation of technologies in respect of such solar projects, the UERC had observed a change in capital cost. Accordingly, the UERC decided to lay down the norm for the benchmark capital cost for the UERC Solar Projects and the generic tariffs for the projects to be commissioned during FY 2024-25.

Connectivity

CENTRAL

Open Access

CERC issues draft third amendment regulations for connectivity and GNA to the ISTS

July 31, 2024: Pursuant to a [draft notification dated July 31, 2024](#), the Central Electricity Regulatory Commission (“CERC”) issued the proposed CERC (Connectivity and General Network Access to the inter-State Transmission System) (Third Amendment) Regulations, 2024 for the purpose of amending the CERC (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022 (the “**Principal GNA Regulations**”).

[Background](#)

Previously, after being published pursuant to a [gazette notification dated June 7, 2022](#), the Principal GNA Regulations have been amended twice before – on April 1, 2023 and with effect from July 15, 2024, respectively. In addition, the CERC had approved the detailed procedure for connectivity and GNA under the Principal GNA Regulations pursuant to an [order dated October 14, 2022](#).

[First Amendment](#)

The CERC (Connectivity and General Network Access to the inter-State Transmission System) (First Amendment) Regulations, 2023 (“**First GNA Regulation Amendment**”) were issued by the CERC pursuant to a [gazette notification dated April 1, 2023](#), which, among other things, had included provisions related to:

1. The introduction of new concepts such as ‘General Network Access-renewable energy’ (GNARE) and ‘Temporary General Network Access-renewable energy’ (TNA_{RE}), meaning open access and temporary General Network Access (“**GNA**”) open access, respectively, to the inter-State transmission system (“**ISTS**”) granted under the Principal GNA Regulations,

for the drawal of power only from renewable sources;

2. The reduction of the quantum of GNA; and
3. Addressing [issues related to the squatting of connectivity](#).

[Second Amendment](#)

The CERC (Connectivity and General Network Access to the inter-State Transmission System) (Second Amendment) Regulations, 2024 (“**Second GNA Regulation Amendment**”) were issued by the CERC pursuant to a [notification dated June 19, 2024](#) and were [notified to come into effect from July 15, 2024](#).

Among other things, the Second GNA Regulation Amendment introduced a new category for entities authorized to procure RE for their own consumption or resale. The Second GNA Regulation Amendment also introduced new timelines to decide any deficiency in the applications for the grant of connectivity or GNA and stipulated a new minimum capacity requirement of 25 MW to applicants in the North-Eastern Region and Sikkim.

[MoP issues clarification on banking provisions of the GEOA Rules](#)

August 21, 2024: Pursuant to a [letter dated August 21, 2024](#), the MoP issued a clarification on the banking provisions of the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 (“**GEOA Rules**”).

Pursuant to such letter, the MoP clarified that for the purpose of calculating the permissible quantum of banked energy, which represents a minimum of 30% of total monthly consumption (*see rule 8 of the GEOA Rules*), only the energy directly procured from the distribution licensee will be considered and not the electricity obtained through open access arrangements either from a third-party supplier or via captive generation utilizing the distribution network.

[Background](#)

The GEOA Rules were [notified by the MoP on June 6, 2022](#) and have been amended from time to time. Among other things, the GEOA Rules seek to

increase both the ease and scale of consumer access to green energy.

In the pre-open access era, Indian consumers could procure power mainly from state-owned discoms. Over time, the government has allowed consumers with a minimum load requirement to buy electricity directly from power producers. Importantly, the GEOA Rules seek to further democratize the regime (where large users can pick a supplier of choice among multiple options) by enabling increased private participation in the distribution business.

Through the GEOA Rules, the reduction of the open access transaction limit from 1 MW to 100 kW, along with appropriate provisions for cross-subsidy surcharge, additional surcharge and stand-by charge, were expected to incentivize common consumers to get 'green power' at reasonable rates.

Further, since the GEOA Rules addressed other issues which were perceived to have previously hindered the growth of open access, common consumers were expected to get access to RE-based power easily.

The main features of the GEOA Rules are as follows:

- The GEOA Rules were notified for the purpose of promoting the generation, purchase, and consumption of green energy, including energy from waste-to-energy plants.
- GEOA was allowed for all consumers and the limit related to open access transactions was reduced from 1 MW to 100 kW for green energy for the purpose of enabling small consumers to purchase renewable power through open access.
- Consumers were entitled to demand the supply of green power from discoms. Discoms would be obligated to procure and supply green power to eligible consumers.
- The GEOA Rules were also expected to streamline the overall approval process for the granting of open access. Time-bound processing, including by bringing uniformity and transparency in the application and approval process related to open access through a national portal, was mandated.

Approval for GEOA was required to be granted in 15 days, failing which such approval would be deemed to have been granted.

- Commercial and Industrial (“**C&I**”) consumers were allowed to purchase green power on a voluntary basis.
- The GEOA Rules were also expected to provide certainty with respect to those open access charges which were to be levied on GEOA consumers. Such charges include transmission charges, wheeling charges, cross-subsidy surcharge, and stand-by charges. Further, a cap was imposed with respect to increasing the cross-subsidy surcharge. In addition, the additional surcharge was removed to incentivize consumers to procure green power.
- There would be a uniform renewable purchase obligation (“**RPO**”) on all obligated entities in the area of a discom. GH and GA were included for the purpose of RPO compliance.
- Consumers would be given 'Green Certificates' if they consumed green power.

Context

Earlier, discoms were required to (i) source power from various sources (gencos or the open market), and then (ii) supply such power at regulated tariffs to their respective customers.

For the purpose of promoting competition and to increase efficiency in the power sector, the Electricity Act introduced significant changes to the manner in which electricity was generated, transmitted and distributed in the country. For instance, the Electricity Act mandates transmission utilities at both the central and state levels, as well as discoms at the state level, to provide non-discriminatory open access to their network upon the payment of certain specified charges (“**open access charges**”). Thus, the owner of a grid network (*i.e.*, wired channels for the transmission and supply of electricity) is obligated to allow other entities (that are involved in the power business) to use its channel

upon the payment of open access charges (e.g., with respect to cross-subsidy).

Open Access

The Electricity Act allows for open access in the context of both transmission and distribution of power. In case of transmission, for example, transmission licensees are required to provide other licensees (including traders and discoms) and gencos, respectively, non-discriminatory open access to its own transmission network.

Open access can be further classified into inter- and intra-state open access. Inter-state open access is governed by regulations framed by the CERC, where the purchasing and selling entities, respectively, operate in different states. Intra-state open access is governed by regulations framed by the appropriate state electricity regulatory commission (“**SERC**”), where the purchasing and selling entities, respectively, operate within the same state. Based on tenor, both inter- and intra-state open access may be further classified into short, medium and long term, respectively.

In effect, the open access mechanism provides power consumers the option to choose their supplier of electricity, and thus, allows consumers with a minimum contracted demand/sanctioned load to buy energy directly from gencos instead of purchasing from discoms. However, in return for providing non-discriminatory access through the use of their transmission lines or distribution systems (including the facilities associated with such lines or systems), corresponding transmission and distribution licensees impose certain charges on users. For instance, discoms levy open access charges on consumers that purchase electricity from any other source.

Key components of open access charges include those relating to central and state transmission. Further, open access charges also include those related to wheeling or distribution paid to discoms, as well as wheeling/distribution losses – *i.e.*, the technical losses with respect to a distribution system, as determined by SERCs for various voltage levels in a given year. This is because discoms encounter a major loss of electricity during transmission through grid networks.

In general, wheeling or distribution charges refer to the fees payable by a consumer or genco to a discom for using the latter’s infrastructure (*i.e.*, its distribution system and associated facilities) for the purpose of transporting electricity from a power plant to end-users. Since these charges are calculated by state discoms pursuant to the methodology prescribed by SERCs, wheeling or distribution charges vary across states.

In order to help discoms provide electricity to certain categories of consumers (e.g., financially weaker sections) at subsidized rates – which deficit could be balanced by providing electricity at comparatively higher rates to C&I and other high-paying consumers – the cross-subsidy surcharge (“**CSS**”) is a fee payable to discoms to help the latter meet the requirements of the current level of cross-subsidy within their area of supply. Essentially, the CSS is a compensatory payment made to discoms for the purpose of enabling them to recover the loss of the element of cross-subsidy (which is built into the tariff of certain consumers) on account of power procurement by C&I and other high-paying consumers through alternative sources of supply under open access.

Similarly, the additional surcharge is included under open access charges for the purpose of compensating discoms for the fixed costs of developing and maintaining their distribution systems, where such costs arise from their statutory obligation to supply electricity in cases where consumers are permitted to access the open access route. The Electricity Act requires discoms to supply power on demand to consumers. In the event that a consumer wishes to purchase electricity from an entity other than the discom of that area, such discom nevertheless remains obliged to supply that power to such consumer on demand. Thus, the additional surcharge is designed to cover the fixed costs incurred by discoms stemming from their statutory commitment under the Electricity Act to supply power on demand in an effort to balance (i) a customer’s right to obtain power from a source of their choice with (ii) the financial interests and operational viability of discoms.

Further, the majority of power procurement by discoms is long-term in nature. Discoms typically have long-term arrangements or PPAs with gencos based on their sales forecasts. Accordingly, discoms

pay a fixed/capacity charge and variable/energy charge to such gencos. Once an open access consumer shifts to an alternative source of supply, these fixed charges are still applicable to be paid by discoms to gencos. Accordingly, for the purpose of preventing an under-recovery of the fixed expenditure incurred by discoms for long-term power procurement in situations where consumers procure power through alternative sources of supply under open access, the additional surcharge needs to be calculated appropriately to recover stranded costs on account of stranded PPAs and stranded assets.

Other open access charges also include charges related to SLDCs, standby, banking, scheduling and deviation settlement, among others. SLDC charges includes a composite of operating charges (typically levied on a daily basis) and a one-time application fee.

Standby arrangements could be required by open access consumers to tide over electricity deficits in extraordinary situations, such as when power outages are suffered by gencos and/or transmission assets. In such situations, an open access consumer may be forced to procure power from an alternative source (e.g., a discom). However, the leviable charges for maintaining such standby arrangements need to account for the costs incurred by discoms for providing such support services on sudden demand. While standby charges for long-term open access consumers often stem from contractual arrangements with discoms, those for short-term open access are generally defined by SERCs from time to time.

[Banking Charges](#)

Banking charges are levied by discoms (usually as a percentage of the energy generated) to allow power plants to bank a portion of such generated energy which is not required by their open access consumer (i.e., storing such surplus energy for subsequent withdrawal, as and when needed).

[Amendments to the Electricity Rules](#)

Pursuant to a [notification dated January 10, 2024](#), the MoP issued the Electricity (Amendment) Rules, 2024 to amend the Electricity Rules, 2005 (the “**Electricity Rules**,” and such amendment, the “**First Rules Amendment**”). The First Rules Amendment

capped various open access charges, including in respect of charges related to additional surcharge, where the surcharge levied on any open access consumer cannot be more than the per unit fixed cost of power purchase of the concerned distribution licensee, subject to certain qualifications.

[The First Rules Amendment](#)

The First Rules Amendment requires the additional surcharge levied on any open access consumer to not be more than the per unit fixed cost of power purchase of the concerned discom. However, additional qualifications to which such requirement remains subject specify that the additional surcharge (i) will not be applicable for open access consumers to the extent that their contract demand with the appropriate discom is maintained; and (ii) will be applicable only for such open access consumers which are, or have been, consumers of the concerned discom.

Further, for a person availing GNA or open access, the additional surcharge is required to be linearly reduced from the value corresponding to the year in which GNA or open access was granted, such that it gets eliminated within four years from the date of that grant – if such person continues to avail of GNA or open access, as applicable.

Deviation Settlement

[CERC issues regulations on Deviation Settlement Mechanism](#)

August 5, 2024: Pursuant to a [notification dated August 5, 2024](#), the CERC issued the CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2024 (“**DSM Regs**”). The DSM Regs aim to ensure, through commercial mechanisms, that grid users do not deviate from, but instead adhere to, their schedule of drawal and injection of electricity in the interest of grid security and stability.

[Previous Developments](#)

Previously, pursuant to a [draft notification dated April 30, 2024](#), the CERC had issued a draft of the DSM Regs.

[Similar Developments in Other States](#)

[Himachal Pradesh](#)

Pursuant to a [notification dated May 20, 2024](#), the HPERC had issued the HPERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2024 for maintaining grid discipline and security.

[Tamil Nadu](#)

Pursuant to a [notification dated January 22, 2024](#), the TNERC had issued the TNERC (Forecasting, Scheduling and Deviation Settlement and Related Matters for Wind and Solar Generation) Regulations, 2024 (“**TNERC Forecasting Regulations**”), with a commercial implementation date of April 1, 2024.

The TNERC Forecasting Regulations aim to facilitate the grid-integration of wind and solar energy generated in the state of Tamil Nadu, while maintaining grid security and stability in accordance with the state grid code and other applicable legislation (like the Electricity Act) through forecasting, scheduling and a mechanism for the settlement of deviations by applicable gencons.

Further, the TNERC Forecasting Regulations specify that, for the purpose of maintaining system security, reliability and stability, the SLDC will consider forecasts for week-ahead, day-ahead and intra-day operations, as well as longer-term forecasts for planning purposes. In this regard, the SLDC is required to make use of the flexibility provided by conventional generating units and the capacity of inter-grid tie-lines to accommodate wind and solar energy generation to the largest possible extent, subject to grid security.

In addition, the TNERC Forecasting Regulations specify how deviation charges will be levied and collected. The TNERC Forecasting Regulations also address commercial (including with respect to deviation settlement for intra- and inter-state transactions) and implementation arrangements (such as in respect of metering, deviation accounting, the payment mechanism for deviation settlement and payment security, de-pooling of deviation charges, intimation of curtailment, and energy accounting).

The TNERC will review the TNERC Forecasting Regulations, including in respect of the formulation for absolute error, accuracy band and related deviation charges, after two years (or earlier if it considers necessary).

For a summary of the TNERC Forecasting Regulations, see page 15 of our Quarterly Roundup: Clean Energy, Issue 1 of 2024, January – March 2024 [here](#).

Cross-Border Trade

MoP issues amended guidelines for import/export of electricity from India

August 12, 2024: Pursuant to an [office memorandum dated August 12, 2024](#), the MoP issued an amendment to the “[Guidelines for Import/Export \(Cross-Border\) of Electricity – 2018](#)” (“**Exim Guidelines**,” and such amendment, “**August 12 Amendment**”).

Previously, the Exim Guidelines had been issued by the MoP on [December 18, 2018](#), and subsequently amended on [July 3, 2019](#) through an addendum.

Pursuant to the August 12 Amendment, clauses 5.2(a) and 8.9 of the Exim Guidelines now stand modified with the MoP’s approval.

[Background](#)

Cross-border trade of electricity has been taking place for a long time between India and its neighboring countries. Previously, such cross-border trade was undertaken through bilateral Memoranda of Understanding or Power Trade Agreements. However, in order to facilitate and promote the cross-border trading of electricity with greater transparency, consistency and predictability, including with respect to India’s regulatory approaches across multiple jurisdictions, as well as to minimize the perception of regulatory risk, the “[Guidelines on Cross Border Trade of Electricity – 2016](#)” were issued by the MoP through an [office memorandum dated December 5, 2016](#) in consultation with various stakeholders (such guidelines, “**2016 Guidelines**”).

Subsequently, after receiving inputs from multiple stakeholders, there was a perceived need to revise

the 2016 Guidelines. Accordingly, the [MoP issued the Exim Guidelines with the following objectives](#):

1. Facilitating the import and export of electricity between India and its neighboring countries;
2. Evolving a dynamic and robust electricity infrastructure for the import and export of electricity;
3. Promoting transparency, consistency and predictability in the regulatory mechanism related to the import and export of electricity in the country;
4. Ensuring reliable grid operations and the transmission of electricity for import and export.

[The August 12 Amendment](#)

The August 12 Amendment allows Indian discoms and gencos to export electricity generated from coal, RE or hydropower-based generating plants to entities of neighboring countries directly or through trading licensees of India, pursuant to [approval from the designated authority](#) (as designated by the MoP).

[Coal-based Generating Plants](#)

With respect to electricity generated from coal-based generating plants, the August 12 Amendment specifies that the export of such electricity from India by a genco or discom directly or through a trading licensee will be allowed only if such electricity is generated by utilizing (i) imported coal, or (ii) spot-auction coal, or (iii) coal obtained from commercial mining or from any other source as specified by the Government of India from time to time. However, such restrictions will not be applicable for collective transactions through power exchanges in India.

[Gas-based Generating Plants](#)

The August 12 Amendment also allows for the export of electricity generated from gas-based generating plants from India by a genco or discom directly or through a trading licensee – but only if such electricity is generated by utilizing (i) imported gas, or (ii) gas from any other source as specified by the Government of India.

[Constructing Transmission Lines](#)

Indian generating stations that supply electricity exclusively to a neighboring country may be allowed to build dedicated transmission lines for connecting to the transmission system of such neighboring country in light of technical and strategic considerations. However, the construction of dedicated transmission lines will be allowed subject to the approval of the designated authority, and in accordance with the provisions of the Electricity Act, at the cost which is built into the contract or agreement signed between the entities of India and its neighbouring countries, respectively.

[Supply to the Indian Grid](#)

Nevertheless, the Government of India may permit the connection of such generating stations (*i.e.*, Indian generating stations that supply electricity exclusively to a neighboring country) to the Indian grid (either the inter-State or intra-State grid, respectively) for the purpose of facilitating the sale of power within India in case of (i) sustained non-scheduling of full or part capacity, or (ii) a default notice issued by the genco for any default, including with respect to delayed payments under the applicable PPA.

[Context](#)

[Reportedly](#), the decision to allow governmental discretion in respect of permitting Indian generating stations (*i.e.*, those that supply electricity exclusively to a neighboring country) to connect to the Indian grid for the purpose of facilitating the sale of power within India, as described above, was taken against the backdrop of political turmoil in Bangladesh following protests that led to the fleeing of Prime Minister Sheikh Hasina to India.

According to [media reports](#), pursuant to a long-term PPA signed in November 2017 between Adani Power (Jharkhand) Limited (“**APJL**”) and the Bangladesh Power Development Board (“**BPDB**”), APJL agreed to sell electricity exclusively to the BPDB for a period of 25 years from APJL’s ultra-supercritical thermal power plant (“**USCTPP**”) at Godda in the state of Jharkhand through APJL’s independent transmission line. Accordingly, a dedicated high voltage direct current (“**HVDC**”) power transmission line (400 kV) was established to

facilitate power supply from the Godda power project to Bangladesh. APJL's USCTPP sourced coal from the diversified Adani Group's mines in Australia and began to sell electricity in Bangladesh [starting from 2023](#).

Reports further [claim](#) that, while there are other electricity exporters in India, no other entity enjoys an exclusive arrangement such as the one which APJL has in place with the BPDB. While state-owned NTPC Limited has entered into an agreement to supply 500 MW of power to Bangladesh, such power is pooled from various stations (*i.e.*, different plants). Similarly, in 2018, the Damodar Valley Corporation ("**DVC**") secured a contract to sell 300 MW to Bangladesh through short- and medium-term agreements. However, DVC, too, does not have an exclusive PPA.

At present, APJL appears to be the only 'exclusive' electricity provider to Bangladesh via a single facility. Accordingly, the August 12 Amendment was expected to benefit APJL.

[Past Developments](#)

Previously, pursuant to a [letter of approval dated October 26, 2018](#) issued under the 2016 Guidelines, APJL received the approval of the designated authority (the CEA and the MoP) to participate in cross-border trade of electricity involving the export of 1,496 MW of power to the BPDB through an independent transmission line for a period of 25 years starting in December 2021.

Pursuant to a [media release dated July 27, 2023](#) issued by Adani Power Limited ("**APL**," of which APJL is a wholly-owned subsidiary, and such media release, "**APL Media Release**"), APL announced that APJL had achieved its Commercial Operations Date ("**COD**") with respect to the second unit of its 2 X 800 MW Godda USCTPP on June 26, 2023.

Previously, on April 6, 2024, the first unit of the Godda power plant, with 800 MW capacity, had also achieved its COD. Accordingly, the APL Media Release stated that APJL would supply 1,496 MW net capacity power from the 2 X 800 MW Godda USCTPP under the PPA with the BPDB for a period of 25 years via a 400 kV dedicated transmission system connected to the Bangladesh grid.

[Key Takeaways](#)

According to earlier [reports](#), APJL's USCTPP was India's first commissioned transnational power project, where 100% of the generated output was being supplied to another country, to the extent that the Godda USCTPP served as a dedicated power station for Bangladesh and was not connected to the Indian grid.

More recent reports [suggest](#) that APJL is currently selling only 70% of its produced power to Bangladesh, while the remainder is available for use in India. Accordingly, the August 12 Amendment may serve as an enabling provision to allow all generating stations that supply electricity exclusively to a neighboring country to obtain connectivity to the Indian grid. By connecting such generating stations to the Indian grid, the overall availability of power in the Indian grid may increase, which is likely to help meet rising electricity demand across the country. Further, such increased power supply may address energy security and reduce prices in the domestic energy market.

Accordingly, by opening up selling avenues in India, it appears that one of the main aims of the August 12 Amendment was to help Indian companies insulate themselves from political risk and/or geopolitical crisis in other countries. For instance, since APJL's Godda USCTPP is located in India and has been financed by Indian lenders, such power plant should not be left stranded on account of a crisis in another country, and Indian stakeholders may be allowed to benefit from its energy production.

As such, the August 12 Amendment may encourage future investments by Indian power companies in neighboring countries (such as hydropower units in Nepal, or power projects in Bhutan) on account of the safety net provided to Indian generating stations.

STATE

Assam

[AERC issues draft open access regulations](#)

July 12, 2024: Pursuant to a [public notice](#) dated July 12, 2024, the AERC issued a draft of the proposed [AERC \(Terms and Condition for Open Access\) Regulations, 2024](#) and invited suggestions and

comments from stakeholders. Among other things, such draft regulations were issued with the aim of aligning Assam's GEOA regulations with the (central) GEOA Rules.

AERC issues draft guidelines for procurement and dispatch of BESS

August 13, 2024: Pursuant to a [notification dated August 13, 2024](#), the AERC issued the draft AERC (Procurement and Dispatch of Battery Energy Storage System) Guidelines, 2024 for the procurement of energy/ancillary services/capacity from battery energy storage systems ("BESS") through competitive bidding from grid-connected projects with a minimum individual project size of 1 MW.

AERC issues draft group and virtual net metering guidelines for RE

September 11, 2024: Pursuant to a [draft notification dated September 11, 2024](#), the AERC issued a draft of the proposed AERC (Group Net Metering and Virtual Net Metering for Renewable Energy) Guidelines, 2024 for the implementation of group and virtual net metering frameworks in the state of Assam under the AERC (Grid Interactive Rooftop Solar PV System) Regulations, 2019, as earlier issued pursuant to a [state gazette notification dated August 6, 2019](#).

Delhi

DERC issues draft regulations for the threshold limit with respect to the development of intra-state transmission projects under tariff-based competitive bidding regulations

August 29, 2024: Pursuant to a [notification dated August 29, 2024](#), the Delhi Electricity Regulatory Commission ("DERC") issued the Draft DERC (Threshold Limit for the Development of Intra-State Transmission Projects under the Tariff Based Competitive Bidding) Regulations, 2024 seeking comments and suggestions from stakeholders.

Among other things, these draft regulations sought to fix INR1.50 billion (excluding land cost) as the minimum threshold limit for intra-state transmission

projects to be awarded under the tariff-based competitive bidding process.

Gujarat

GERC allows the transfer of connectivity rights for RE projects and park developers

September 21, 2024: Pursuant to an [order dated September 21, 2024](#), the GERC approved the petition of Gujarat Energy Transmission Corporation, which sought an amendment to the GERC's Order No. 1 of 2024 for 'Tariff Framework for Procurement of Power by Distribution Licensees and others from Wind-Solar Hybrid Power Projects including Storage, if any, for the State of Gujarat and Procedure for Grant of Connectivity to Projects based on Renewable Sources to Intra-State Transmission System' dated January 7, 2023 – including for the purpose of enabling the transfer of connectivity rights for RE project and park developers.

GERC issues draft regulations for the procurement of energy from renewable sources

September 30, 2024: Pursuant to a [notification dated September 30, 2024](#), the GERC issued the draft GERC (Procurement of Energy from Renewable Sources) Regulations, 2024 to incorporate provisions provided in:

1. the CERC (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation), Regulations, 2022 ("REC Regulations"), as issued by the CERC pursuant to its [notification dated May 9, 2022](#); and
2. the revised trajectory related to renewable power purchase obligations issued by the MoP pursuant to a [gazette notification dated October 20, 2023](#).

For a discussion and analysis of the REC Regulations, see our note [here](#).

Karnataka

KERC notifies regulations on resource adequacy framework

September 23, 2024: Pursuant to a [notification dated September 23, 2024](#), the KERC issued the KERC (Framework for Resource Adequacy) Regulations, 2024 with the aim of enabling the implementation of a resource adequacy framework in the state of Karnataka by outlining a mechanism for the planning of generation resources for reliably meeting the projected demand in compliance with specified reliability standards.

Maharashtra

MSEDCL issues circular for granting GEOA to consumers availing power from RE sources

September 9, 2024: Pursuant to a [commercial circular dated September 9, 2024](#), the Maharashtra State Electricity Distribution Company Limited (“MSEDCL”) issued guidelines for the grant of GEOA to consumers availing power from RE sources with green attributes (such guidelines, “MSEDCL Guidelines”).

The MSEDCL Guidelines were issued with reference to, among things:

1. the Electricity Act;
2. the [MERC \(Distribution Open Access\) Regulations, 2016, along with its amendments](#) (including the MERC (Distribution Open Access) (Second Amendment) Regulations, 2023); and
3. the GEOA Rules, along with its amendments.

Among other things, the MSEDCL Guidelines provide that consumers with a contracted demand or sanctioned load of 100 KW or more will be eligible for open access. The MSEDCL Guidelines apply to the registration and applications made for short-, medium- and long-term GEOA to the transmission lines or associated facilities of the intra-State transmission system (“InSTS”), distribution lines or associated facilities of the distribution system.

The MSEDCL Guidelines will be applicable for all types of RE sources, as may be notified by the Government of India from time to time, and will also include any mechanism that utilizes green energy to replace fossil fuels, including the production of GH or GA.

Odisha

OERC issues draft regulations for RPO

August 13, 2024: Pursuant to a [public notice dated August 13, 2024](#), the OERC issued the draft OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2024 (“OERC RE Regs”), inviting views and suggestions from the public.

The proposed OERC RE Regs seek to repeal the OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2021 (“OERC PERSC Regulation”).

[Background](#)

Pursuant to a [public notice dated July 1, 2023](#), the OERC had issued a draft first amendment to the OERC PERSC Regulation. Such draft first amendment sought to amend Regulation 4.2 to 4.9 and 5.1 of the OERC PERSC Regulation to align the renewable purchase obligation (“RPO”) trajectory for the state of Odisha in line with the MoP [order dated July 22, 2022](#) related to the trajectory in respect of RPO and energy storage obligation until FY 2029-30.

RPOs refer to the requirement to purchase a minimum percentage of electricity from RE sources. Section 86(1)(e) of the Electricity Act requires certain categories of ‘obligated entities’ (such as discoms, open access consumers, captive power producers) to purchase a minimum percentage of electricity from RE sources as a mandatory share of their total power consumption. Such obligations are known as RPOs.

[Applicability of the Proposed OERC RE Regs](#)

The proposed OERC RE Regs are intended to apply to all ‘obligated entities’ in the state of Odisha, including:

- Discoms or any other entity procuring power on their behalf.
- Any person consuming electricity that is (i) generated from a conventional captive generating plant having capacity of 1 MW and above for its own use, and/or (ii) procured from conventional generation through open access and third-party sale.
- Coal or lignite-based thermal generating stations which have a COD on or after April 1, 2023.

RPOs and Obligated Entities

The proposed OERC RE Regs require every 'obligated entity' to meet its RPO target by one or more of certain specified methods. The proposed OERC RE Regs define an 'obligated entity' as such entities which are mandated under Section 86(1)(e) of the Electricity Act to fulfil RPOs, which include (i) discoms (or a "GRIDCO," i.e., a state-designated entity that is responsible for power purchase and bulk supply of electricity to discoms and that acts as demand aggregator and State Nodal Agency for the implementation of the Odisha Renewable Energy Policy – 2022), (ii) captive users, (iii) open access consumers, and (iv) gencos.

Meeting RPO targets

The methods specified in the proposed OERC RE Regs pursuant to which every obligated entity is required to meet its RPO target include the following:

- Own generation set up at any location in India from RE sources for own consumption (the generating plant may be set up by the entity itself or by a developer with which the entity enters into a PPA).
- By procuring RE through open access from any developer (which generates electrical energy from renewable sources of energy) directly or through a trading licensee or through the power markets.
- By requisition from a discom or GRIDCO.
- By consuming green energy from a captive power plant.
- Purchase of GH or GA or their derivatives.
- Procurement of Renewable Energy Certificates ("RECs") in accordance with the CERC (Terms and Conditions for REC) Regulations, 2022.
- Any other sources as may be determined by the Central Government.

GEOA Rules

The GEOA Rules had included GH and GA for the purpose of RPO compliance. RE consumed for the production of GH/GA will count towards the RPO of the consuming entity.

Rajasthan

RERC issues draft regulations on GEOA

September 30, 2024: Pursuant to a [public notice](#), the RERC issued the RERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 for allowing and governing open access to electricity generated from RE sources, both captive and third-party, as well as for the use of InSTS and/or distribution system of licensees in the state of Rajasthan.

Uttar Pradesh

UPERC issues draft amendment to open access regulations

July 29, 2024: Pursuant to a [public notice dated July 29, 2024](#), the Uttar Pradesh Electricity Regulatory Commission ("UPERC") issued a draft of the UPERC (Terms and Conditions for Open Access) (First Amendment) Regulations, 2024 for the purpose of:

1. amending the UPERC (Terms and Conditions for Open Access) Regulations, 2019 ("Principal UP Regulations"); and
2. seeking comments and suggestions from stakeholders and the public.

Subsequent to the notification of the Principal UP Regulations, various regulatory and sectoral developments had taken place both at the national and state level, respectively, which had necessitated appropriate amendments to the Principal UP Regulations. Accordingly, the draft amendment was issued for the purpose of incorporating changes in industry, as well as pursuant to amendments made to the GEOA Rules, as notified by the MoP.

[Context](#)

The Electricity Act specifies the roles and responsibilities of SERCs with respect to introducing open access in their respective states in a phased manner, including in connection with determining the applicable charges to be levied on consumers that opt for open access for utilizing the applicable power distribution network.

Open access charges vary from state to state. As per the Electricity Act, the tariff is determined by the appropriate SERC. Rule 4(2) of the GEOA Rules specifically provides that the tariff for the supply of green energy by discoms will be determined separately by the appropriate SERC, and such tariff will comprise the average pooled power purchase cost of RE, cross-subsidy charges (if any), and service charges covering the prudent cost of the discom for providing green energy to consumers. Accordingly, the GEOA Rules request all SERCs and joint commissions to take appropriate action for the determination of green tariff under such provision at the earliest.

[Amendments to the Electricity Rules](#)

Since open access charges (such as wheeling or distribution charges) are calculated by state discoms pursuant to the methodology prescribed by SERCs, such charges vary across states. Accordingly, in order to make such charges uniform across states, and with the aim of further incentivizing power procurement via open access, the First Rules Amendment specified a formula for the calculation of wheeling charges.

In this regard, pursuant to a [gazette notification dated January 17, 2024](#), the MoP further amended the Electricity Rules through the Electricity (Second Amendment) Rules, 2024 (the “**Second Rules Amendment**”). The Second Rules Amendment

specified that sub-rule (1) of rule 22 would be substituted with a revised formulation, such that a proviso was included.

Earlier, pursuant to the First Rules Amendment, a formula was specified for the purpose of computing wheeling charges, so that such charge would be equal to the Annual Revenue Requirement towards wheeling divided by the energy wheeled during the year. While the Second Rules Amendment retained such formula, it added a proviso to specify that the appropriate commission may determine the wheeling charges at different voltage levels separately in accordance with such formula.

[State Adoption of the GEOA Rules](#)

Pursuant to a [letter dated February 12, 2024](#) (the “**February 12 Letter**”), the MoP had requested all states and union territories to take appropriate action towards the implementation of the (central) GEOA Rules, as amended from time to time. In this regard, the MoP specifically asked all states and union territories to align their respective open access regulations on an ‘aggregation basis’ for the purpose of complying with amended provisions of the (central) GEOA Rules, including with respect to statutory modifications made by the MoP, such as those introduced through the [Electricity \(Promoting Renewable Energy Through Green Energy Open Access\) \(Second Amendment\) Rules, 2023](#) (“**GEOA Second Amendment**”). Previously, pursuant to a [gazette notification dated January 27, 2023](#), the MoP had notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Amendment Rules, 2023 (the “**GEOA First Amendment**”). The GEOA First Amendment had amended the GEOA Rules by introducing certain changes related to consumers, banked energy, and leviable charges – including in respect of surcharge and standby charges.

Pursuant to the February 12 Letter, the MoP asked all states and union territories to send the status of their compliance with the GEOA Rules within 15 days from the issue of such letter. Previously, pursuant to a [letter dated May 13, 2023](#), the MoP had instructed all SERCs to: (i) determine green tariffs, and (ii) notify GEOA regulations within their respective states, in alignment with the (central) GEOA Rules. Accordingly, certain states and union territories have taken initiatives to align their

respective GEOA regulations with the (central) GEOA Rules.

For example, with respect to the state of Gujarat, pursuant to a notification dated February 21, 2024, the GERC issued the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 (the “**Gujarat GEOA Regs**”) to provide non-discriminatory open access for RE, including with respect to the grant of open access for using intra-state transmission and/or distribution system(s) (“**InSTDS**”) of relevant licensee(s) in the state of Gujarat – including those InSTDS that are incidental to the inter-state transmission of electricity.

Miscellaneous – Pumped Storage

STATE

Tamil Nadu

Tamil Nadu government issues pumped storage policy 2024

August 22, 2024: Pursuant to an [order dated August 22, 2024](#), the Energy Department of the State Government of Tamil Nadu approved the draft Tamil Nadu Pumped Storage Projects Policy - 2024 (“**TN PSP Policy**”), as sent by TNGECL for approval.

The TN PSP Policy aims to harness the potential of pumped storage projects (“**PSPs**”) in the state of Tamil Nadu by encouraging the development of off-river and on-river sites, and by facilitating the development of PSPs.

Background

Pursuant to a [notification dated January 15, 2023](#) issued by the MoP in consultation with the MNRE, draft guidelines to promote the development of PSPs had been released seeking comments from both public and private stakeholders.

A few months later, pursuant to a [notification dated April 10, 2023](#), the MoP issued final guidelines to promote the development of PSPs (“**PSP Guidelines**”). The PSP Guidelines were aimed to promote PSPs in India on account of, among other things, the ecological advantages offered by PSPs, as well as the longer and more reliable duration of discharge related to PSPs – especially when compared to the BESS which were then being used.

Context

India’s proposed energy transition involves an increasing presence of RE sources in the country’s energy mix (such as solar and wind energy), which, in turn, tend to be variable and intermittent. On account of such inherent variability, various challenges arise at the grid level. Addressing such challenges requires the incentivization of

technologies with attributes that offer storage and ancillary services.

In this regard, the PSP model offers a large-scale, domestically available, time-tested, and globally acceptable technology which can suitably address the country’s requirements with respect to storage and ancillary services. Further, PSP is a clean and safe technology which neither produces toxic or harmful by-products, nor poses problems of disposal. Accordingly, in light of the significant advantages offered by PSP – including with respect to grid stabilization and meeting peak power demands – there appear to exist sufficient reasons to formulate a separate set of guidelines to promote PSP, especially to direct developmental initiatives in this regard. It is in this context that the PSP Guidelines were issued.

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Glossary

Term	Meaning
2016 Guidelines	The “Guidelines on Cross Border Trade of Electricity – 2016” issued by the MoP through an office memorandum dated December 5, 2016
ABR	Average Billing Rate
ACV	Accredited Carbon Verification
AERC	The Assam Electricity Regulatory Commission
APDCL	Assam Power Distribution Company Limited
APJL	Adani Power (Jharkhand) Limited
APL	Adani Power Limited
APL Media Release	Media release dated July 27, 2023 issued by APL announcing that APJL has achieved its COD with respect to the second unit of its 2 X 800 MW Godda USCTPP on June 26, 2023.
APSERC	The Arunachal Pradesh State Electricity Regulatory Commission
April 10 Memo	Office memorandum dated April 10, 2024 issued by the MNRE revising the ALMM List-I
April 29 Memo	Office memorandum dated April 29, 2024 issued by the MNRE revising the ALMM List-I
ALMM	Approved List of Manufacturers and Models
ALMM Amendment	Office memorandum dated September 7, 2024 issued by the MNRE circulating draft amendment to the ALMM Order.
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	The Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirements for Compulsory Registration) Order, 2019
August 7 Amendment	Office memorandum dated August 7, 2024 issued by the MNRE to amend the ALMM Order
August 12 Amendment	Amendment dated August 12, 2024 to the Exim Guidelines issued by the MoP
August 23 Clarification	Office memorandum dated August 23, 2024 issued by the MNRE to issue a clarification to the July 4 Amendment
BEE	The Bureau of Energy Efficiency
BERC	The Bihar Electricity Regulatory Commission
BESS	Battery energy storage systems
BiPV	Building-integrated PV
BIS	The Bureau of Indian Standards

Term	Meaning
BPDB	The Bangladesh Power Development Board
C&I	Commercial and Industrial
CEA	The Central Electricity Authority
CERC	The Central Electricity Regulatory Commission
CfP	Call for Proposals
CFA	Central Financial Assistance
CFA Clarification	Clarification dated September 20, 2024 issued by the MNRE in respect of the operational guidelines for the PSGMBY scheme with regard to the component related to Central Financial Assistance to residential consumers.
CFA Guidelines	The operational guidelines for the PSGMBY scheme with regard to the component related to CFA to residential consumers issued by the MNRE.
CHT	Center for High Technology
Consumer Rights Rules	The Electricity (Rights of Consumers) Rules, 2020
Consumer Rules Amendment	The Electricity (Rights of Consumers) Amendment Rules, 2024
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent
COD	Commercial Operations Date
CPI	Consumer Price Inflation
CPP	Captive Power Plant
CSGS	Central Sector Generating Stations
CSS	Cross-Subsidy Surcharge
CTU	Central Transmission Utility
CUF	Capacity Utilization Factor
discoms	Distribution Companies
DCR	Domestic Content Requirement
DERC	The Delhi Electricity Regulatory Commission
Draft BERC Net Metering Regulation	The BERC (Rooftop Solar Grid Interactive Systems Based on Net and Gross Metering) (First Amendment) Regulation, 2024
Draft Blockchain Regulations	The draft KERC (Implementation of Peer-to-Peer Solar Energy Transaction through blockchain based platform) Regulations, 2024
Draft CFA Guidelines	Draft guidelines for the CFA component issued by the MNRE on April 16, 2024 under its Grid-Connected Rooftop Solar Program
Draft GERC RTS Amendment	The Draft GERC (Net Metering Rooftop Solar PV Grid Interactive Systems) (Fourth Amendment) Regulations, 2024

Term	Meaning
DSM Regs	The CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2024
DVC	Damodar Valley Corporation
EEZ	Exclusive Economic Zones
Electricity Act	The Electricity Act, 2003
Electricity Rules	The Electricity Rules, 2005
EOU	Export Oriented Unit
ESS	Energy Storage System
EV	Electric Vehicle
EVCI	EV Charging Infrastructure
Exim Guidelines	Guidelines for Import/Export (Cross-Border) of Electricity – 2018
February 9 Memo	Office memorandum dated April 10, 2024 issued by the MNRE reimposing the ALMM Order with effect from April 1, 2024
February 12 Letter	Letter dated February 12, 2024 issued by the MoP requesting all states and union territories to take appropriate action towards the implementation of the (central) GEOA Rules, as amended from time to time.
First GNA Regulation Amendment	The CERC Connectivity and General Network Access to the inter-State Transmission System) (First Amendment) Regulations, 2023
First Rules Amendment	The Electricity (Amendment) Rules, 2024
FPPPA	Fuel and Power Purchase Price Adjustment
FPPPA Formula	The FPPPA surcharge formula, as provided in Regulation 3 of the FPPPA Regulations, where the FPPPA surcharge refers to the variation in cost of power supplied to consumers due to changes in (i) fuel cost, (ii) power purchase cost, and (iii) transmission charges with reference to the cost of supply approved by the AERC.
FPPPA Regulations	The AERC (Fuel and Power Purchase Price Adjustment) Regulations, 2024
GA	Green Ammonia
gencos	Generating Companies
GEOA	Green energy open access
GEOA Second Amendment	The Electricity (Promoting Renewable Energy Through Green Energy Open Access) (Second Amendment) Rules, 2023
GEOA Rules	The Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022
GERC	The Gujarat Electricity Regulatory Commission
GERC Rooftop Solar Amendment	The Draft GERC (Net Metering Rooftop Solar PV Grid Interactive Systems) (Fourth Amendment) Regulations, 2024

Term	Meaning
GERC RTS Amendment	The GERC (Net Metering Rooftop Solar PV Grid Interactive Systems) (Fourth Amendment) Regulations, 2024
GH	Green Hydrogen
GHCI	Green Hydrogen Certification Scheme of India
GHG	Greenhouse Gas
GNA	General Network Access
GRIDCO	A state-designated entity that is responsible for power purchase and bulk supply of electricity to discoms and that acts as demand aggregator and State Nodal Agency for the implementation of the Odisha Renewable Energy Policy – 2022
Gujarat GEOA Regs	The GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024
HPERC	The Himachal Pradesh Electricity Regulatory
HVDC	High Voltage Direct Current
InSTDS	Intra-state Transmission and/or Distribution System(s)
InSTS	Intra-State Transmission System
IPP	Independent Power Producers
ISTS	Inter-State Transmission System
IT	Information Technology
July 4 Amendment	Office memorandum dated July 4, 2024 issued by the MNRE to amend the guidelines for the development of onshore wind power projects, as issued on October 22, 2016
July 15 T.O.	Tariff order dated July 15, 2024 issued the TNERC.
KERC	The Karnataka Electricity Regulatory Commission
KERC EV Order	Order dated July 30, 2024 issued by KERC clarifying the procedure for installing EV charging units in buildings
KERC July 2022 Order	Order dated July 18, 2022 issued by the KERC restricting the use of net metering facility by the consumers using power from other sources or captive sources through an open access mechanism.
Lease Rules	The Offshore Wind Energy Lease Rules, 2023
March 29 Memo	Office memorandum dated March 29, 2024 issued by the MNRE clarifying that the ALMM Order for solar PV modules would come into effect from April 1, 2024 with certain modifications
MEA	The Ministry External Affairs
MERC	The Maharashtra Electricity Regulatory Commission
MHI	The Ministry of Heavy Industries
MNRE	The Ministry of New and Renewable Energy

Term	Meaning
MNRE PSGMBY Order	Order dated March 16, 2024 issued by the MNRE announcing the launch of the PSGMBY scheme
MoP	Ministry of Power
MoPNG	The Ministry of Petroleum and Natural Gas
MSEDCL	The Maharashtra State Electricity Distribution Company Limited
MSEDCL Guidelines	Guidelines for the grant of GEOA to consumers availing power from RE sources with green attributes – issued by MSEDCL on September 9, 2024
MT	Metric Tonnes
MYT	Multi-year tariff
NGHM	The National Green Hydrogen Mission
NISE	The National Institute of Solar Energy
NIWE	National Institute of Wind Energy
OEMs	Original Equipment Manufacturers
OERC	The Odisha Electricity Regulatory Commission
OERC PERSC Regulation	The OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2021
OERC RE Regs	The draft OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2024
open access charges	The charge specified in Electricity Act for providing non-discriminatory open access to their network by transmission utilities at both the central and state levels, as well as discoms at the state level
P2P	Peer to peer
p.a.	Per annum
PAC	Project Appraisal Committee
PGCIL	Power Grid Corporation of India Limited
PLI	Production Linked Incentive
PM E-Drive	PM Electric Drive Revolution in Innovative Vehicle Enhancement
PPA	Power Purchase Agreement
Principal GNA Regulations	The CERC (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022
Principal UP Regulations	The UPERC (Terms and Conditions for Open Access) Regulations, 2019
PSERC	Punjab State Electricity Regulatory Commission
PSGMBY	PM-Surya Ghar: Muft Bijli Yojana
PSM	Payment Security Mechanism
PSP	Pumped Storage Projects

Term	Meaning
PSP Guidelines	Guidelines to promote the development of PSPs notified by the MoP on April 10, 2023
PV	Photovoltaic
RE	Renewable Energy
RECs	Renewable Energy Certificates
REC Regulations	The CERC (Terms and Conditions for Renewable Energy Certificates for Renewable Energy Generation), Regulations, 2022
RERC	The Rajasthan Electricity Regulatory Commission
Revised Draft EVCI Guidelines	Draft revised guidelines and standards on EV charging infrastructure
RfS	Request for Selection
RPO	Renewable purchase obligation
RTS	Rooftop Solar
SECI	The Solar Energy Corporation of India
Second GNA Regulation Amendment	The CERC Connectivity and General Network Access to the inter-State Transmission System) (Second Amendment) Regulations, 2024
Second Rules Amendment	The Electricity Rules through the Electricity (Second Amendment) Rules, 2024
SERC	State Electricity Regulatory Commission
SEZ	Special Economic Zone
SIA	Scheme Implementation Agency
SIGHT	The 'Strategic Interventions for Green Hydrogen Transition'
SRTPV	Solar Rooftop Photovoltaic
STU	State Transmission Utility
TANGEDCO	The Tamil Nadu Generation & Distribution Corporation Limited
T.O.	Tariff Order
T.O. 7 of 2022	T.O. (No. 7 of 2022) dated September 9, 2022 issued by TANGEDCO
TNERC	Tamil Nadu Electricity Regulatory Commission
TNERC Forecasting Regulations	The TNERC (Forecasting, Scheduling and Deviation Settlement and Related Matters for Wind and Solar Generation) Regulations, 2024
TNERC Methodology	The methodology laid down by the TNERC for CPI-linked tariff revision in T.O. 7 of 2022 for FY 2023-24 to FY 2026-27.
TNGCEL	The Tamil Nadu Green Energy Corporation Limited
TN PSP Policy	Tamil Nadu Pumped Storage Projects Policy - 2024
UERC	The Uttarakhand Electricity Regulatory Commission

Term	Meaning
UERC RE Regulations	The UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2023
UERC Solar Projects	The solar PV and thermal plants, along with grid-interactive rooftop and small solar PV projects for which the UERC has specified benchmark capital cost in the UERC RE Regulations
UPERC	The Uttar Pradesh Electricity Regulatory Commission
USCTPP	Ultra-supercritical thermal power plant
VGf	Viability Gap Funding
VGf Scheme	Scheme for offshore wind energy projects with a total outlay of INR74.53 billion, including VGf of INR68.53 billion for the installation of 1,000 MW of offshore wind energy introduced by the government of India.
Windmill Policy	The Tamil Nadu Repowering, Refurbishment and Life Extension Policy for Wind Power Projects – 2024
Wind VGf Guidelines	Scheme guidelines issued by the MNRE on September 11, 2024 for implementing the 'Viability Gap Funding Scheme for offshore wind energy projects'

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