
General Network Access: Concept and Evolution

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The power sector plays a substantial role towards a country's development. Since gaining independence in 1947, India has embarked on an ambitious journey towards ensuring a reliable and continuous power supply and 100% electrification in the country to now a vision of developing a system to export power after bridging the demand supply gap for its population by developing a robust evacuation, storage and transmission infrastructure.

However, the transmission of electricity has been a matter of concern for this sector. After the notification of the Electricity Act 2003, the Central Electricity Regulatory Commission framed regulations for Open Access for Interstate Power Transmission in 2004, which were repealed in 2009 with the enactment of Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access to the Inter-State Transmission and Related Matters) Regulations, 2009 or the Connectivity Regulations 2009. Later in 2010, the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations were notified. After the implementation of these Regulations, several authorities including the Central Electricity Authority (CEA), The Central Transmission Utility (CTU) and Power System Operation Corporation (POSOCO) and various Independent Power Producers (IPPs) raised their concerns regarding the Connectivity Regulations¹. The need for more market-friendly regulations was identified. In September 2014, "Staff Paper on Transmission Planning, Connectivity, Long Term Access, Medium Term Open Access and other related issues" was published. Subsequently, in 2015, the Mata Prasad Committee was formed to review transmission planning and access, culminating in a comprehensive report submitted in 2016. Building on the committee's recommendations, the 2017 Draft GNA Regulations were issued, with stakeholder workshops and public hearings² conducted in early 2018 to refine these regulations. Consequently, following developments in connectivity and open access had been made

- Mechanisms for RE connectivity were established following specific petitions.
- Amendments to the 2009 Connectivity Regulations were made, incorporating detailed procedures for renewable projects.
- ISTS charges and losses waivers were extended for RE projects.

Accordingly, after considering the developments as stated above and the comments received on the 2017 Draft GNA Regulations, the draft Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission

¹ Draft Central Electricity Regulatory Commission (Connectivity, General Network Access to the inter-State transmission system and other related matters) Regulations, 2017; Accessed from https://cercind.gov.in/2017/draft_reg/D_GNA.pdf

² List of Stakeholders commented on draft CERC (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2021; Accessed from https://cercind.gov.in/Comments_GNA.html

System) Regulations, 2021 (hereinafter referred to as 'the 2021 Draft GNA Regulations') have been proposed.

General Network Access:

GNA regulations have been issued in line with the guiding principle of 'One Nation, One Grid'³. These regulations aim to provide non-discriminatory open access to the ISTS to generating companies through GNA. The driving factors of these regulations are, a robust transmission system for integrating new RE projects, supporting a competitive electricity market, ensuring a resilient power grid, and balancing generation facilities and increasing demand.

With an ambitious goal 'to facilitate non-discriminatory open access to licensees or generating companies or consumers for use of inter-State transmission System through General Network Access and to consolidate the Regulations on the subject' Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022 has been notified in June 2022.

Grant of Connectivity:

Applicants seeking connectivity to the grid, particularly those comprising generating stations including Renewable Energy Generating Stations (REGS), must submit applications to the Nodal Agency for a quantum equivalent to their installed capacity. However, Renewable Hybrid Generating Stations (REGS) with storage have the option to request connectivity for a quantum less than or equal to their installed capacity. Additionally, generating stations or Energy Storage Systems (ESS) may, with prior approval from the Central Transmission Utility (CTU), augment their connectivity to include additional generation capacity within the originally granted quantum. Captive generating plants must apply for connectivity based on their proposed maximum injection into the Inter-State Transmission System (ISTS). Standalone Energy Storage Systems (ESS) should seek connectivity based on their proposed maximum injection to or drawal from ISTS, whichever is higher. Renewable Power Park Developers are required to apply for connectivity corresponding to the quantum authorised by either the Central or State Government. The application for connectivity must include details such as the applicant's proposed geographical location, installed capacity, quantum of power to be interchanged with ISTS, preferred point of connection, and any other relevant details as specified by the Central Transmission Utility (CTU). The transmission rate of GNA has been fixed at 1lakh/MW by CTU⁴.

³ General Network Access – One-Nation One-Grid One-Frequency; Accessed from <https://www.azbpartners.com/bank/general-network-access-one-nation-one-grid-one-frequency/>

Eligible Entities:

The following entities shall be eligible as Applicants to apply for the grant of GNA or for enhancement of the quantum of GNA⁴: (Process for the Grant of GNA is annexed in annexure below)

- (i) State Transmission Utility on behalf of intra-state entities including distribution licensees;
- (ii) A drawee entity connected to intra-state transmission system;
- (iii) A distribution licensee or a Bulk consumer, seeking to connect to ISTS, directly, with a load of 50 MW and above;
- (iv) Trading licensees engaged in cross border trade of electricity in terms of the Cross Border Regulations;
- (v) Transmission licensee connected to ISTS for drawal of auxiliary power.
- (vi) Other entities that are connected to the ISTS or for whom Connectivity granted under Connectivity Regulations, 2009 has become effective, shall be eligible for applying for the grant of GNA to the ISTS for the quantum equal to the quantum of Connectivity⁴

Temporary GNA:

Temporary GNA (T-GNA) has been introduced with the provision of managing variation of drawal and optimising the transmission costs for a temporary period, i.e.; T-GNA will be granted to buyer for one time block to 11 months. It is granted on the surplus capacity in the existing ISTS. The transaction schedules under this cannot be modified except in case of congestion management, grid security or unit tripping. While GNA being essential for transmission planning, the charges for T-GNA have been specified to be 10% higher than the GNA charges to ensure adequate use of GNA.

Eligible entities for T-GNA:

The following entities shall be eligible as Applicants to apply for T-GNA to ISTS⁴:

- (a) As buyers,
 - i. Distribution licensee directly connected to ISTS;
 - ii. Bulk consumer directly connected to ISTS;
 - iii. A buying entity connected to an intra-State transmission system or to a distribution system connected to such intra-state transmission system;
 - iv. Generating station including REGS for meeting its auxiliary consumption or start-up power or for meeting its supply obligations;
 - v. Captive generating plant;

⁴ Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2021; Accessed from: https://cercind.gov.in/2021/draft_reg/Draft-CGNA-Regulations.pdf

- vi. Standalone ESS;
- vii. REGS for drawal during non-generation hours.

(b) Trading licensee

(c) Power exchange for collective transactions or bilateral transactions

The T-GNA applications shall be applied and processed through single-window electronic platform, namely, the National Open Access Registry (NOAR).

Transmission charge rate for T-GNA, in Rs./MW/time block, for a State shall be published for each month by the Implementing Agency. Further, in case of bilateral and collective transactions, charges shall be payable only at the point of drawal, as per the last published Transmission charge rate for T-GNA for the State where such point of drawal is located⁴.

However, considering the suggestions submitted by TANGEDCO, APPC and CTUIL and other entities⁵, the Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) (First Amendment) Regulations, 2022 has been notified. Following clauses have been amended in the regulation:

- In case of Renewable Power Park Developer, the following documents shall be submitted
 - Registered Title Deed as a proof of Ownership or lease rights or land use rights for 50% of the land required for the capacity for which Connectivity is sought;
 - Auditor's certificate, certifying the release of at least 10% of the project cost including the land acquisition cost through equity.
- In the transfer of connectivity, provided further that where a bulk consumer has been granted GNA under Regulations seeking to connect to ISTS directly, GNA granted to such Bulk consumer may be utilized in part or full by its subsidiaries.
- A generating station or ESS, with prior approval of CTU, shall be eligible to add, within the quantum of Connectivity granted to it, additional generation capacity or ESS, including the capacity owned by any other entity. However, net injection at any point of time shall not exceed the quantum of total Connectivity granted to the existing Connectivity grantee
- An injecting entity which is granted Connectivity to intra-State transmission system and seeking GNA for purpose of injection into ISTS, should be eligible for GNA grant.
- Distribution licensees have been made eligible for GNA Grant on behalf of their consumers.
- In case of determination of transmission charges, SLDC shall furnish to NLDC whether drawal schedule was more than GNA quantum or T-GNA quantum or

⁵ List of Stakeholders commented on draft CERC (Connectivity and General Network Access to the inter-State Transmission System) (First Amendment) Regulations, 2023, Accessed from <https://cercind.gov.in/GNA-Comments-2023.html>

both in case of collective transaction, each intra-state entity-wise detail of schedule under GNA or T-GNA, as the case may be. NLDC shall issue power exchange-wise and entity-wise segregation of payable T-GNA charges.

- In payment of charges, provided that One-time GNA charges shall not be payable for the capacity which has been declared commercial operation as on date of coming into effect of these Regulations⁶.

Again in 2024, suggestions have been received from the Ministry of Power (MoP), CTUIL, RE Developers and various RE Associations⁷ to address concerns regarding issues pertaining to the application and grant of connectivity, timeline for submission of land documents and achieving of financial closure and releasing of 10% of the project cost through equity, Transfer of Connectivity from LoA route to Land route⁸. Against this backdrop, Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) (Second Amendment) Regulations, 2024 has been implemented, with following changes:

- Renewable Energy Implementing Agency" or "Bid Process Coordinators" means and includes an entity designated by the Central Government or the State Government to act as Intermediary Procurer to select and buy power from Renewable energy generating station(s) and sell the same to one or more distribution licensees or any other entity in accordance with the Guidelines issued from time to time by the Ministry of Power, Government of India or the Ministry of New and Renewable Energy, Government of India or the State Government.
- The minimum installed capacity individually or with an aggregate installed capacity to apply for a grant of Connectivity shall be 25 MW in North Eastern Region (NER) and Eastern Region
- For a capacity up to 1000MW - Bank Guarantee of Rs. 5 lakh/ MW and for a capacity more than 1000MW - Bank Guarantee of Rs.10 lakh/ MW, in lieu of ownership or lease rights or land use rights of land for 50% of the land required for the capacity for which Connectivity is sought subject to condition that capacity limit of 1000MW shall be applicable to Applicant only⁹

To Conclude, the power sector in India has seen significant regulatory developments aimed at ensuring reliable transmission and open access to the inter-state transmission system (ISTS). These regulations, such as the Connectivity and General Network Access Regulations, aim to facilitate non-discriminatory access to the grid,

⁶ Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) (First Amendment) Regulations, 2022; Accessed from https://cercind.gov.in/2023/draft_reg/EM.pdf

⁷ Comments or Presentation of Stakeholders during Public Hearing dated 21st March, 2024, accessed from <https://cercind.gov.in/suggestion-GNA-2024.html>

⁹ Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) (Second Amendment) Regulations, 2024; Accessed from https://cercind.gov.in/2024/draft_reg/GNA-EM24.pdf

particularly for renewable energy projects. Amendments and amendments have been made over the years, including the introduction of Temporary General Network Access (T-GNA) to manage transmission costs and address variations in drawal. Recently, further amendments have been made in 2022 and 2024, considering suggestions from various stakeholders to streamline processes and address concerns related to connectivity and financial closure for renewable energy projects.

ANNEXURE:ⁱ

17. Eligibility for GNA

17.1. The following entities shall be eligible as Applicants to apply for grant of GNA or for enhancement of the quantum of GNA:

- (i) State Transmission Utility on behalf of distribution licensees connected to intra-State transmission system and other intra-State entities;
- (ii) A buying entity connected to intra-State transmission system;
- (iii) A distribution licensee or a Bulk consumer, seeking to connect to ISTS, directly, with a load of 50 MW and above;
- (iv) Trading licensees engaged in cross border trade of electricity in terms of the Cross Border Regulations;
- (v) Transmission licensee connected to ISTS for drawal of auxiliary power.

17.2. Entities not covered under Regulation 17.1, which as on the date of coming into force of these regulations, are connected to the ISTS or for whom Connectivity granted under Connectivity regulations has become effective, shall be eligible for applying for grant of GNA to the ISTS for the quantum equal to the quantum of Connectivity, which shall be processed as per Regulation 37.6 of these regulations.

18. Deemed Grant of GNA

18.1. On the date, these regulations come into force,

(a) GNA for a (i) State including intra-State entity(ies) and (ii) other drawee entities, shall be the average of „A“ for the financial years 2018- 19, 2019-20 and 2020-21:

where, ‘A’ = {0.5 X maximum ISTS drawal in a time block during the year} + {0.5 X [average of (maximum ISTS drawal in a time block in a day) during the year]}

(b) GNA computed as per clause (a) of this Regulation is given at Annexure-I to these regulations.

(c) GNA for a State including intra-State entity(ies) as per clause (b) of this Regulation shall be deemed to have been granted to STU of that State on behalf of such intra-State entities and shall remain valid until relinquished in accordance with these regulations.

(d) GNA deemed to have been granted to STU as per clause (c) of this Regulation, shall be published by the Nodal Agency within 30 days of notification of these regulations, as (i) GNA within the region and (ii) GNA from outside the region, in proportion to contracts, within the region or outside the region, under Long Term Access and Medium Term Open Access obtained in terms of the Connectivity Regulations.

(e) GNA deemed to have been granted to STU under clause(d) of this Regulation, shall be segregated for each intra-State entity, including distribution licensee, by the respective SLDC, and intimated to STU, Nodal Agency and NLDC within 1 month of publication of details by the Nodal Agency under clause (d) of this Regulation.

Provided that in case an SLDC fails to provide such segregation, the pro rata GNA shall be allocated to each intra-State entity in the ratio of their Long Term Access and Medium Term Open Access, as included in the first bill raised in the previous month under the Sharing Regulations.

f) Entity(ies) covered under Regulation 4.1 of these regulations where Long Term Access granted to such entity or to its identified buyer, under the Connectivity Regulations has become effective, shall be deemed to have been granted GNA equal to the quantum of such Long term Access, under these regulations.

(g) The Central generating stations which are connected to the grid and have not been granted Long term Access under the Connectivity Regulations but whose power is allocated by the Ministry of Power, shall be deemed to have been granted GNA equal to the installed capacity of such generating station(s).

(h) Long Term Access granted to a Trading licensee, other than for cross border trade of electricity in terms of the Cross Border Regulations, shall be part of the GNA deemed to have been granted to the concerned grid connected entity(ies) under clauses (a) to (f) of this Regulation: Provided that settlement of transmission charges inter-se between such trading licensee and the concerned grid connected entity(ies) shall be made in terms of the existing agreement between them or as may be mutually agreed.

(i) Long term Access granted to a Trading licensee engaged in cross border trade of electricity in terms of the Cross Border Regulations shall be the GNA deemed to have been granted to such trading license under these regulations for the period of such Long term Access.

18.2. Details of entities deemed to have been granted GNA under these regulations shall be published by the Nodal Agency on its website within 1 (one) month of coming into force of these regulations.

19. Application for Grant of additional GNA by STU

19.1. Within 3 months of coming into force of these regulations, STU may, on behalf of intra-State entities including distribution licensees, apply for additional GNA over and above the GNA deemed to have been granted under clauses (a) to (e) of Regulation 18.1 of these regulations, with entity-wise segregation indicating GNA within the region and from outside the region.

19.2. STU, on behalf of intra-State entities including distribution licensees, may apply, once in a financial year (starting from the financial year following the financial year in which these

regulations have become effective) by the month of September each year, for additional GNA for the next 3 (three) financial years, with entity-wise segregation indicating GNA within the region and from outside the region, as stipulated in the Detailed Procedure for Connectivity and GNA issued in accordance with Regulation 39.1:

Provided that such additional GNA quantum to be added in each of the next three financial years shall be applicable from a specified date of the respective financial year.

20. Application for Grant of GNA by entities other than STU

20.1. Entities covered under clauses (ii) and (iii) of Regulation 17.1 of these regulations, indicating bifurcation of GNA within the region and outside the region, may apply for GNA from a specified date, for a specified quantum, and for a specified period of not less than eleven months.

20.2. Entities covered under Regulation 17.1(iv) of these regulations, may apply separately for GNA for injection into Indian grid or drawal from Indian grid, for a specified quantum, and for a specified period of not less than eleven months.

21. System Study by the Nodal Agency

The Nodal Agency, based on the applications received for grant of additional GNA, shall carry out system study in accordance with the Rules and Regulations made under the Act and the CEA Transmission Planning Criteria specified under the Act

22. Grant of GNA

22.1. Grant of additional GNA to STU

(a) The Nodal Agency shall process all applications received under Regulation 19.1 of these regulations together, within two months from last day of receipt of applications and grant additional GNA to STU based on available transmission capacity, or on pro-rata basis, if necessary. GNA once granted shall remain valid until relinquished.

(b) The Nodal Agency shall grant additional GNA to STU based on applications received under Regulation 19.2 of these regulations by 31st March of the same financial year, keeping in view the available transmission capacity or timeline of augmentation, indicating the date from which such additional GNA shall be effective. GNA once granted shall remain valid until relinquished.

(c) The total GNA of STU shall be the sum of GNA deemed to have been granted under Regulation 18.1 and additional GNA granted under this Regulation.

(d) Intra-State entity-wise GNA deemed to have been granted to STU under Regulation 19.1 and additional GNA granted under this Regulation shall form the basis for raising the bills under the Sharing Regulations to such intra-State entities.

22.2. Grant of GNA to entities other than STU

(a) Connectivity grantees covered under Regulation 4.1 of these regulations shall be deemed to have been granted GNA, equal to the quantum of Connectivity from the start date of Connectivity. In the event of split or transfer of Connectivity in terms of Regulation 15 of these regulations, the corresponding GNA shall be deemed to have been split or transferred, as the case may be.

(b) The Nodal Agency shall grant GNA to entities covered under clauses (ii) to (iv) of Regulation 17.1 specifying start date of GNA, as per the following timeline:

(i) where GNA is granted on the existing system: by the end of the month subsequent to the month in which application complete in all respects has been received;

(ii) where augmentation of transmission system is required: within 180 days from the end of the month in which application complete in all respects has been received: Provided that the Nodal Agency shall grant GNA with start date of GNA keeping in view the timeline of augmentation of the transmission system.

(c) Entities covered under clause (iv) of Regulation 17.1 and

(i) applying GNA for injection into the Indian Grid shall comply with all requirements as applicable to entities under Regulation 4.1: Provided that Conn-BG1, Conn-BG2 and Conn-BG3 shall be returned in accordance with Regulation 16 of these regulations or on expiry of period of GNA, whichever is earlier;

(ii) applying GNA for drawal from the Indian Grid shall comply with all requirements as applicable to entities under Regulation 17.1(iii).

(d) Entities covered under Regulation 4.1 and clause (iii) of Regulation 17.1 of these regulations shall furnish one-time GNA charge for Rs. one lakh per MW for the quantum of GNA one month prior to the start date of GNA. In case, such charges are not furnished by the entity within the specified timeline, the same shall be recovered by encashment of ConnBG1, Conn-BG2 and Conn-BG3 as required. The proceeds of such one- time GNA charge shall be used for reducing Monthly Transmission Charges under the Sharing Regulations.

22.3. Details of entities which have been granted GNA along with quantum, period and start date of GNA shall be published by the Nodal Agency, on its website, within one (01) month of grant of GNA.

23. Use of GNA by other GNA grantee(s)

23.1. An entity covered under Regulation 17.1 which is a GNA grantee, may authorise other entities covered under Regulation 17.1 which are GNA grantee(s), to use its GNA, in full or in part, with prior approval of the Nodal Agency, for a period not exceeding 1 (one) year at a time on mutually agreed terms and conditions:

Provided that payment liability for transmission charges shall continue to be with the original GNA grantee that authorised its GNA to be used by other GNA grantee(s):

Provided further that for the purpose of calculating the transmission deviation charges under the Sharing Regulations, GNA authorised to be used by other GNA grantee(s) shall be reduced from original GNA grantee that authorised its GNA to be used by other GNA grantee(s) and shall be added to GNA of other GNA grantee(s) which is using it.

23.2. The GNA grantee that intends to authorise the use of its GNA by other GNA grantee(s), shall apply to the Nodal Agency in terms of the Detailed Procedure for Connectivity and GNA issued in accordance with Regulation 39.1.

ⁱ Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) (Second Amendment) Regulations, 2024; Accessed from https://cercind.gov.in/2024/draft_reg/GNA-EM24.pdf