सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड
(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)
CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

**Ref:** CTU/S/00/29th CMETS-SR-Agenda

**Date:** 22.03.2024

**As per distribution list**

**Subject: 29th Consultation Meeting for Evolving Transmission Schemes in Southern Region- Meeting Agenda**

Dear Sir/Ma'am,

सीटीयू के पत्र, दिनांक 21.03.2024 के माध्यम से दक्षिण क्षेत्र में पारेषण योजनाओं से संबन्धित 29वीं परामर्श बैठक का कार्यक्रम विवरण प्रसारित किया गया था। उसी संबंध मे बैठक का एजेंडा(मसौदा) साझा किया जा रहा हैं | इस संदर्भ में संबंधित बैठक का एजेंडा (मसौदा) वेबसाइट (www.ctuil.in>> ISTS Planning and Coordination >>Consultation Meeting for ISTS>> Southern Region) पर भी उपलब्ध है ।

This is further to CTU letter dated 21.03.2024 vide which details of the 29th Consultation Meeting for Evolving Transmission Scheme in Southern Region was circulated. Please find attached agenda for the same. The agenda is also available on the website (www.ctuil.in>> ISTS Planning and Coordination >>Consultation Meeting for ISTS>> Southern Region).

Thanking you,

Yours faithfully,

V. Thiagarajan

**(V Thiagarajan)**
**Sr. General Manager**

**Distribution List:**

| | |
|---|---|
| **1. Chief Engineer (PSP&A – I)**<br>Central Electricity Authority<br>Sewa Bhawan, R.K.Puram,<br>New Delhi – 110 066 | **2. Chief Engineer (Transmission/GEC)**<br>Ministry of New and Renewable Energy,<br>Block 14, CGO Complex,<br>Lodhi Road, New Delhi – 110 003 |
| **3. Director (Transmission)**<br>Transmission Corp. of Andhra Pradesh Ltd. (APTRANSCO)<br>Vidyut Soudha, Gunadala, Eluru Rd,<br>Vijayawada, Andhra Pradesh – 520 004 | **4. Member Secretary**<br>Southern Regional Power Committee<br>29, Race Course Cross Road<br>Bangalore – 560 009 |
| **5. Director Transmission)**<br>Transmission Corp. of Telangana Ltd.<br>Vidyut Soudha<br>Hyderabad – 500 082<br>Fax: 040-23321751 | **6. Director (Transmission)**<br>Karnataka State Power Transmission Corp. Ltd., Cauvery Bhawan<br>Bangalore – 560 009<br>Fax: 080-22228367 |
| **7. Director (Trans. & System Op.),**<br>Kerala State Electricity Board Ltd.<br>Vidyuthi Bhawanam, Pattom,<br>P.B. No. 1028<br>Thiruvananthapuram – 695 004.<br>Fax: 0471-2444738 | **8. Director (Transmission Projects)**<br>Tamil Nadu Transmission Corporation Ltd (TANTRANSCO)<br>6th Floor, Eastern Wing, 800 Anna Salai,<br>Chennai – 600 002<br>Fax: 044-28516362 |
| **9. Superintending Engineer –I**<br>First Floor, Electricity Department<br>Gingy Salai, Puducherry – 605 001 | **10. Director (SO)**<br>Grid-India<br>9th Floor, IFCI Towers, 61,<br>Nehru Place, New Delhi – 110 019 |
| **11. Executive Director**<br>Southern Regional Load Dispatch Centre<br>Grid-India<br>29, Race Course Cross Road,<br>Bangalore – 560 009 | **12. Director (Power System)**<br>Solar Energy Corporation of India Ltd.<br>D-3, 1st Floor, A wing,<br>Religare Building, District Centre,<br>Saket, New Delhi – 110 017 |

**Connectivity/GNA Applicants**

| | |
|---|---|
| **1.** Shri Venkat<br>Dy CEO Director<br>Meenakshi Energy Ltd.<br>Thamminapatnam (Village), Chillakur (Mandal), District - Tirupati<br>Andhra Pradesh-524412<br>Email: venkat.reddy@vedanta.co.in<br>seshagiri.anantharapu@meenakshienergy.com | **2.** Shri Mohit Jain<br>Authorized Signatory<br>Renew Vikram Shakti Pvt. Ltd.<br>Renew.Hub, Commercial Block-1, Zone-6, Golf Course Road, DLF City Phase V, Gurugram, Haryana 122009<br>Email: mohit.jain@renew.com<br>solarbidding.gm@renew.com |
| **3.** Ms. Poorva Pitke<br>Senior Manager<br>Sprng Powerinfra Pvt. Ltd.<br>Upper Ground, Office A-001, Pentagon 5, Magarpatta City, Hadapsar Pune, Maharashtra 411013<br>Email: poorvapitke@sprngenergy.com<br>abhinavbhansali@sprngenergy.com | **4.** Shri Tarunveer Singh<br>Director<br>Sunsure Solarpark RJ One Pvt. Ltd.<br>1101A-1107, 11th Floor, BPTP Park Centra, near Jal Vayu Vihar, Sector 30, Gurugram, Haryana-122001<br>Email: tarunveer.singh@sunsure.in<br>regulatory@sunsure.in |
| **5.** Shri Harvinder<br>AVP<br>Amplus Everest Solar Pvt. Ltd.<br>6th floor, The palm Square, sec-66, Gurugram - 122102<br>Email:<br>HARVINDER.SINGH@AMPLUSSOLAR.COM<br>rahul.malik@amplussolar.com | **6.** Shri Harvinder<br>AVP<br>Amplus IIFA Solar Pvt. Ltd.<br>6th floor, The palm Square, sec-66, Gurugram - 122102<br>Email:<br>HARVINDER.SINGH@AMPLUSSOLAR.COM<br>rahul.malik@amplussolar.com |
| **7.** Shri Aman Katyal<br>Senior Manager<br>Senior Divisional Electrical Engineer, Traction Distribution, South Western Railway, Bangalore Division<br>Office of Senior Divisional Electrical Engineer, Traction Distribution Branch, Ground Floor, DRM office complex, South Western Railway, Adjacent to Majestic city railway station, Bangalore-5600231<br>Email: srdeetrdsbc@gmail.com<br>energycell.swr@gmail.com | **8.** Shri Pushpinder Hira<br>Manager<br>Am Green Ammonia (India) Pvt. Ltd.<br>15th Floor, Hindustan Times House, 18-20, Kasturba Gandhi Marg, New Delhi-110001<br>Email: pushpinder.h@greenkogroup.com<br>Arnava.s@amgreen.com |

# Agenda for 29th Consultation Meeting for Evolving Transmission Scheme in SR, scheduled to be held on 28.03.2024

## A. ISTS Network Expansion Scheme in Southern Region : No Proposal

## B. Connectivity related issued regarding deliberation of 27th CMETS-SR, held on 30.01.2024.

### 1. Proposal from AM Green for modification in transmission system identified for grant of GNA-RE for Green Hydrogen Project at Kakinada

In the 27th CMETS-SR, held on 30.01.2024, it was agreed to grant GNA-RE to M/s AM Green Ammonia Pvt. Ltd. (application no. 2200000433) for 700 MW through establishment of 2x1500 MVA, 765/400 kV Kakinada PS and Pooling Station of M/s AM Green Ammonia (India) Private Limited – Kakinada PS 400 kV D/c line (as dedicated connectivity transmission system) with tentative start date of connectivity as 31.08.2026.

Subsequently, vide letter dated 21.02.2024, M/s AM Green Ammonia Pvt. Ltd. mentioned that manufacturing of Green Ammonia is scheduled to commence by the end of May'2026. The requirement of power supply is anticipated w.e.f June 1, 2024. Therefore, M/s AM Green Ammonia (India) Pvt. Ltd. requested to revised the connectivity transmission system and provide the connectivity through 400 kV D/c (twin Moose) from 765/400 kV Vemagiri (GIS) S/s instead of connectivity through establishment of 765/400 kV S/s at Kakinada.

Regarding availability of margins at existing 765/400 kV Vemagirir (GIS) S/s, it may be noted that Vemagiri (GIS) is under operation with 2x1500 MVA, 765/400 kV ICTs. For additional drawl of power, 1x1500 MVA 765/400 kV ICT (3rd) is required. In view of above, it is proposed to grant connectivity through following connectivity transmission system. Considering approval and administrative process along with implementation schedule of 21 months, 1x1500 MVA (3rd ) ICT is expected by April/ May 2026.

### a. <u>Modified Connectivity/ GNA-RE Transmission system for M/s AM Green Ammonia Pvt. Ltd. (application no. 2200000433 for 700 MW):</u>

**Details of the GNA-RE Quantum :**

- GNA-RE within the region **: 0 MW**
- GNA-RE outside the region **: 700 MW**

i. **Dedicated Connectivity Tr. System**:

- Pooling Station of M/s AM Green Pvt. Ltd.- Vemagiri (GIS) S/s 400 D/c (twin Moose) line along with line bays at both ends under the scope of applicant.

ii. **Associated Transmission System for GNA:**

- 1x1500 MVA, 765/400 kV ICT(3rd) at Vemagiri (GIS) S/s.

iii. **Common Transmission system required for effectiveness of connectivity/GNA :**

- Existing/ under construction transmission system.

**Start date of Connectivity: 01.06.2026** with the availability of ATS required for effectiveness of GNA.

**Further, applicant is required to submit BGs as per following details within one month of the in-principle grant of intimation:**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG3 of Rs. 14.0 Cr. (@Rs.2 lakhs/MW)

Further, M/s AM Green Pvt. Ltd. is advised to submit the applications for GNA-RE for proposed drawl under Phase-II, Phase-III & Phase-IV GNA requirements so that transmission system may be planned and taken in matching time frame.

**Members may deliberate.**

**C. Connectivity/ GNA Related proposal for applications received in Southern Region**

Details of the Connectivity/ GNA applications, in line with CERC Regulations, received in the month of Feb.'2024 are given below.

**1. Proposal for grant of connectivity to Meenkashi Energy Ltd. (thermal) at Nelllore PS**

| Sl. | Application ID, date & time of submission | Name of the Applicant | Project Location | Application for: Connectivity/ GNA/ GNARE | Eligibility criterion for application | Nature of Applicant | Location details of Connectivity / GNA requested | Installed Capacity/ ~~GNA (Break up)~~ | Power injection to ISTS (MW) | Start date of Connectivity/ GNA (requested) |
|---|---|---|---|---|---|---|---|---|---|---|
| I. | 2200000509 dt 01.02.2024 | Meenakshi Energy Ltd.. | Tirupatil, Andhra Pradesh | Connectivity | - | Generating station(s) | Nellore PS | 300 | 300 | 29.02.2024 |

M/s Meenakshi Energy Ltd. (MEPL) was granted LTOA under Connectivity Regulations 2009 for 910 MW at Nellore PS. Entire LTA of the applicant was operationalized upon commissioning of the transmission system for LTA. Subsequently LTA of 910 MW was relinquished. Entire generation of the project is commissioned.

MEPL has sought connectivity under GNA Regulations 2022 for 300 MW with start date as 29.02.2024. The Connectivity may be granted with *ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region* which is under implementation.

In view of the above, it is proposed that Connectivity for 300 MW may be granted with *ISTS Network Expansion scheme in* Western *Region & Southern Region for export of surplus power during high RE scenario in Southern Region,* under GNA Regulations w.e.f. start date as 16.07.2024 with the availability of common transmission system required for effectiveeness of GNA.

**Connectivity Transmission system under GNA :**

I. **Dedicated Connectivity Transmission System : Already connected with ISTS.**

II. **Associated Transmission System for GNA : Nil**

III. **Common Transmission system required for effectiveness of GNA :**

- ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I** (under implementation)**.**

**Further, applicant is required to submit BGs as per following details within one month of the in-principle grant of intimation:**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG-3 of Rs. 6.0 crs. (@ Rs. 2 lakhs/MW)

**Members may deliberate.**

## 2. Connectivity Related proposal at Ananthapuram PS

| Sl. | Application ID, date & time of submission | Name of the Applicant | Project Location | Application for: Connectivity/ GNA/ GNARE | Eligibility criterion for application | Nature of Applicant | Location details of Connectivity / GNA requested | Installed Capacity/ GNA (Break up) | Power injection to ISTS (MW) | Start date of Connectivity/ GNA (requested) |
|---|---|---|---|---|---|---|---|---|---|---|
| I. | 2200000583 dt 22.02.2024 | Renew Vikram Shakti Pvt. Ltd. | Kurnool, Andhra Pradesh | Connectivity | Land Route | Generating station(s), including REGS(s), without ESS | Ananthapuram PS | 140 (W) | 140 | 29.02.2028 |

M/s Renew Vikram Shakti Pvt. Ltd. has sought grant of Connectivity as per above details. Applicant has submitted application under clause 5.8XI(b) (land route) of GNA Regulations 2022. Applicant, vide letter dated 14.02.2024, has requested to consider the above application as enhancement of already agreed for grant connectivity for 160 MW (application no. 2200000372) and requested to grant with bay sharing with application no. 2200000372. Applicant has also requested to implement the terminal bay at ISTS end for termination of above dedicated line under the scope of ISTS.

Ananthapuram PS is under implementation with commissioning schedule of 26.09.2025 with 7x500 MVA, 400/220 kV ICTs. Further, connectivity for 3765 MW has already been granted/ agreed for grant at Ananthapuram PS. In 26th CMETS-SR held on 29.12.2023, it was agreed to grant connectivity to M/s Renew Vikram Shakti Pvt. Ltd. for 160 MW, with start date as 29.02.2028, through sharing of dedicated connectivity transmission system of M/s Seven Renewable Power Pvt. Ltd. (granted connectivity for application no. 2200000226 for 150 MW) i.e. generating Pooling Station of M/s Seven Renewable Power Pvt. Ltd – Ananthapuram PS 220 kV S/c line. It was agreed that intimation for in-principle grant of connectivity shall be issued only after submission of dedicated connectivity infrastructure sharing agreement with M/s Seven Renewable Power Pvt. Ltd. However, agreement for same is yet to be received.

It was also agreed that ***to avoid the squatting of transmission system, grant of Connectivity to M/s Renew Vikram Shakti Pvt. Ltd. (application no. 2200000372) may be shifted from Ananhthapur PS to Ananthapur-II PS, if Anathapur-II PS shall be taken up for implementation in matching time frame. Further, grant of connectivity was subject to outcome of the WP NO:25186 of 2023 in Hon'ble High Court of Andhra Pradesh, Amaravati.***

System studies have been carried out for grant of additional connectivity of 140 MW at Ananthapuram PS, wherein it was found the Connectivity may be granted along with existing/under-construction transmission system which includes ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region (details given at **Annexure - I)** and Tr. Scheme for Ananthapuram PS (detailed scheme mentioned at **Annexure II**).

In view of above, for development of optimum techno economical transmission system, it is proposed to grant connectivity to M/s Renew Vikram Shakti Pvt. Ltd. for 140 MW (application no. 2200000583) at 220 kV through new bay and modify the connectivity transmission system of application 2200000372 (M/s Renew Vikram Shakti Pvt. Ltd.) through sharing of dedicated connectivity system for application no. 2200000583 instead of sharing of dedicated connectivity transmission system of M/s Seven Renewable Power Pvt. Ltd. (application no. 2200000226 for 150MW).

***It may be noted that, with grant connectivity to above mentioned application, margins are not available to grant additional connectivity, therefore, Ananthapuram PS is closed for all purpose regarding grant of connectivity or addition of generation capacity.***

**a. <u>Connectivity Transmission system under GNA for M/s Renew Vikram Shakti Pvt. Ltd. (app. no. 2200000583 for 140 MW) :</u>**

i. **Dedicated Connectivity Tr. System**:

- Generation Pooling Station of M/s Renew Vikram Shakti Pvt. Ltd. – Ananthapuram PS 220 kV S/c line along with line bay at generation pooling station –under the scope of applicant
- 1 no. 220 kV line bay at Ananthapuram PS for termination of above mentioned line – under the scope of ISTS

ii. **Associated Transmission System for GNA: Nil**

iii. **Common Transmission system required for effectiveness of connectivity/GNA (augmentation other than ATS):**

- ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I**.
- Transmission scheme for Solar Energy Zone in Ananthpuram (Ananthapur) (2500 MW) and Kurnool (1000 MW), Andhra Pradesh as per **Annexure-II.**

**Start date of Connectivity: 29.02.2028** with the availability of common transmission system required for effectiveness of GNA.

**Further, applicant is required to submit BGs as per following details within one month of the in-principle grant of intimation:**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG2 of Rs. 3 Crs. (Towards implementation of dedicated line bays under ISTS) + Conn-BG3 of Rs. 2.8 Cr. (@Rs.2 lakhs/MW)

**b. <u>Revised Connectivity Transmission system under GNA for M/s Renew Vikram Shakti Pvt. Ltd. (app. no. 2200000372 for 160 MW) :</u>**

Details of earlier agreed connectivity transmission system vis-a-vis revised connectivity transmission system is given below.

| Earlier agreed connectivity transmission system | Revised connectivity transmission system |
|---|---|
| i. **Dedicated Connectivity Tr. System :** Through sharing of dedicated Connectivity transmission system of M/s Seven Renewable Power Pvt. Ltd. (granted connectivity for application no. 2200000226 for 150 MW) i.e. generating Pooling Station of M/s Seven Renewable Power Pvt. Ltd – Ananthapuram PS 220 kV S/c line – all arrangement under the scope of applicant. | i. **Dedicated Connectivity Tr. System :** Through dedicated Connectivity transmission system of M/s Renew Vikram Shakti Pvt. Ltd. (proposed connectivity transmission system for application no. 2200000583 for 140 MW) i.e. Generation Pooling Station of M/s Renew Vikram Shakti Pvt. Ltd. – Ananthapuram PS 220 kV S/c line – all arrangement under the scope of applicant. |
| ii. **Associated Transmission System for GNA: Nil** | ii. **Associated Transmission System for GNA: Nil** |
| iii. **Common Transmission system required for effectiveness of connectivity/GNA (augmentation other than ATS):**<br>• ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I**.<br>• Transmission scheme for Solar Energy Zone in Ananthpuram (Ananthapur) (2500 MW) and Kurnool (1000 MW), Andhra Pradesh as per **Annexure-II.** | iii. **Common Transmission system required for effectiveness of connectivity/GNA (augmentation other than ATS):**<br>• ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I**.<br>• Transmission scheme for Solar Energy Zone in Ananthpuram (Ananthapur) (2500 MW) and Kurnool (1000 MW), Andhra Pradesh as per **Annexure-II.** |

| | |
|---|---|
| **Start date of Connectivity: 29.02.2028** with the availability of common transmission system required for effectiveness of GNA | **Start date of Connectivity: 29.02.2028** with the availability of common transmission system required for effectiveness of GNA |

Further, to avoid congestion in the system, grant of Connectivity for both applications, nos. 2200000372 & 2200000583, is subject to possibility of change in Connectivity location from Ananthapur PS to Ananthapur-II PS, if Ananthapur-II PS is considered for implementation under matching time frame of start date of Connectivity of the above mentioned applications and also subject to outcome of the WP NO:25186 of 2023 in Hon'ble High Court of Andhra Pradesh, Amaravati.

**Members may deliberate.**

## 3. Connectivity Related proposal at Bidar PS

| Sl. | Application ID, date & time of submission | Name of the Applicant | Project Location | Application for: Connectivity/ GNA/ GNARE | Eligibility criterion for application | Nature of Applicant | Location details of Connectivity / GNA requested | Installed Capacity/ GNA (Break up) | Power injection to ISTS (MW) | Start date of Connectivity / GNA (requested) |
|---|---|---|---|---|---|---|---|---|---|---|
| I. | 2200000560 dt 09.02.2024 | Sprng Powerinfra Private Limited | Bidar, Tamil Nadu | Connectivity | Land BG Route | Generating station(s), including REGS(s), without ESS | Bidar PS | 200 (Wind) | 200 | 30.06.2027 |

M/s Sprng Powerinfra Pvt. Ltd. has sought Connectivity for 200 MW, as per above details. Applicant has requested to implement 220 kV terminal line bay for termination of DTL at ISTS end under the scope of ISTS.

Bidar PS has been identified with 3x1500MVA (765/400kV), 5x500MVA (400/220kV) transformation capacity under the "Transmission Scheme for Solar Energy Zone in Bidar (2500 MW), Karnataka" with implementation schedule of 09.02.2026. Further, connectivity for 300 MW has already been granted.

Study analysis has been carried out for grant of Connectivity for 200MW under GNA Regulations 2022. From study analysis, it is found that Connectivity may be granted along with existing/under-construction/under bidding transmission system which includes ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region (details given at **Annexure-I**) and Transmission Scheme for Solar Energy Zone in Bidar (2500 MW), Karnataka (details as per **Annexure-III**).

In view of above, it is proposed to grant connectivity with following connectivity transmission system.

**a. <u>Connectivity Transmission system under GNA for M/s Sprng Powerinfra Pvt. Ltd. (application no. 2200000560 for 200 MW):</u>**

i. **Dedicated Connectivity Tr. System**

- Generation Pooling Station of M/s Sprng Powerinfra Pvt. Ltd. – Bidar PS 220 kV S/c line along with line bay at generation pooling station – under the scope of applicant
- 1 no. 220 kV line bay at Bidar PS for termination of above mentioned line – under the scope of ISTS

ii. **Associated Transmission System for GNA: Nil**

iii. **Common Transmission system required for effectiveness of connectivity/GNA (augmentation other than ATS) :**

- ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I**.
- Transmission Scheme for Solar Energy Zone in Bidar (2500 MW), Karnataka as per **Annexure-III.**

**Start date of Connectivity: 30.06.2027** with the availability of common transmission system required for effectiveness of Connectivity/ GNA.

**Further, applicant is required to submit BGs as per following details within one month of the in-principle grant of intimation:**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG2 of Rs. 3.0 Crs. (towards implementation of terminal bay under ISTS) + Conn-BG3 of Rs. 4.0 Cr. (@Rs.2 lakhs/MW).

**Members may deliberate.**

**4. Connectivity Related proposal at Bijapur PS**

| Sl. | Application ID, date & time of submission | Name of the Applicant | Project Location | Application for: Connectivity/ GNA/ GNARE | Eligibility criterion for application | Nature of Applicant | Location details of Connectivity / GNA requested | Installed Capacity/ GNA (Break up) | Power injection to ISTS (MW) | Start date of Connectivity/ GNA (requested) |
|---|---|---|---|---|---|---|---|---|---|---|
| I. | 2200000586 26.02.2024 | Sunsure Solarpark RJ One Pvt. Ltd. | Bijapur, Karnataka | Connectivity | Land BG | Generating station(s), including REGS(s), without ESS | Bijapur PS | 252 | 252 | 31.12.2026 |

M/s Sunsure Solarpark RJ One Pvt. Ltd. has sought Connectivity for 252 MW, as per above details. Applicant has requested to implement 220 kV terminal line bay for termination of DTL at ISTS end under the scope of ISTS.

RE Potential of 2 GW (out of 17 GW in Karnataka) has been identified in the Bijapur area. Due to receipt of large number of applications for integration of RE quantum at Koppal -II PS and Gadag-II PS, transmission system for Bijapur PS has been revised (details as per Annex-IV) and same has been taken up with NCT for implementation approval. Considering implementation time frame of 24 months and administrative & other approval process in 4-5 months, the scheme is expected tentatively by July/Aug'2026.

Further, Connectivity corresponding to about 1202 MW has already been granted/agreed for grant at Bijapur PS. With consideration of above application, total connectivity granted/ agreed for grant at Bijapur PS shall be about 1454 MW. System studies have been carried out for grant of additional connectivity of 252 MW under GNA Regulations. From study analysis, it is found that Connectivity may be granted with transmission schemes, "ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region" and "Transmission System for integration of Bijapur REZ" (details as per **Annexure-IV**).

In view of above, it is proposed to grant connectivity with following connectivity transmission system.

**a. <u>Connectivity Transmission system under GNA for M/s Sunsure Solarpark RJ One Pvt. Ltd. (application no. 2200000586 for 252 MW):</u>**

i. **Dedicated Connectivity Tr. System**

- Generation Pooling Station of M/s Sunsure Solarpark RJ One Pvt. Ltd. – Bijapur PS 220 kV S/c line along with line bay at generation pooling station – under the scope of applicant
- 1 no. 220 kV line bay at Bijapur PS for termination of above mentioned line – under the scope of ISTS

ii. **Associated Transmission System for GNA: Nil**

iii. **Common Transmission system required for effectiveness of connectivity/GNA (augmentation other than ATS) :**

- ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I**.
- Transmission System for integration of Bijapur REZ as per **Annexure-IV.**

**Start date of Connectivity: 31.12.2026 (tentative)** with the availability of common transmission system required for effectiveness of Connectivity/ GNA.

**Further, applicant is required to submit BGs as per following details within one month of the in-principle grant of intimation:**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG2 of Rs. 3.0 Crs. (towards implementation of terminal bay under ISTS) + Conn-BG3 of Rs. 5.04 Cr. (@Rs.2 lakhs/MW).

**Members may deliberate.**

## 5. Connectivity Related proposal at Kurnool-III PS

| Sl. | Application ID, date & time of submission | Name of the Applicant | Project Location | Application for: Connectivity/ GNA/ GNARE | Eligibility criterion for application | Nature of Applicant | Location details of Connectivity / GNA requested | Installed Capacity/ GNA (Break up) | Power injection to ISTS (MW) | Start date of Connectivity/ GNA (requested) |
|---|---|---|---|---|---|---|---|---|---|---|
| I. | 2200000543 07.02.2024 | Amplus Everest Solar Pvt. Ltd. | YSR Kadapa, Andhra Pradesh | Connectivity | Land BG | Generating station(s), including REGS(s), without ESS | Kurnool-III PS | Hybrid : 228 MW (Wind : 126 MW & Solar : 102 MW) | 130 | 31.05.2026 |
| II. | 2200000544 07.02.2024 | Amplus Iifa Solar Pvt. Ltd. | YSR Kadapa, Andhra Pradesh | Connectivity | Land BG | Generating station(s), including REGS(s), without ESS | Kurnool-III PS | 130 | 130 | 31.05.2026 |

M/s Amplus Everest Solar Pvt. Ltd. & M/s Amplus Iifa Solar Pvt. Ltd. have sought connectivity for 130 MW each, as per above details. Applicants have requested to implement the terminal bays for termination of DTL at ISTS end under the scope of ISTS. Further, M/s

Amplus Iifa Solar Pvt. Ltd. has requested to grant connectivity through sharing of dedicated bay and line with M/s Amplus Everest Solar Pvt. Ltd. Applicants have submitted the application under Regulations 5.7 of GNA Regulations and submitted the agreement for sharing the dedicated connectivity line and bay for evacuation of power.

Kurnool-III PS is under implementation with 3x1500 MVA 765/400 ICTs, as per transmission scheme mentioned at **Annexure-V**, with commissioning scheduled of Nov'2024. Further, augmentation of 3x1500 MVA, 765/400 kV ICTs (4th, 5th & 6th) along with Kurnool - III PS – C'Peta 765 kV D/c line have been considered for implementation with tentative commissioning schedule of 31.07.2026 (considering implementation period of 24 months and other time period for administrative/ bidding process). Further, Connectivity corresponding to 7740 MW has already been granted/ agreed for grant at Kurnool-III PS. For evacuation of additional power from Kurnool-III REZ and Ananthapuram REZ, 1x1500 MVA, 765/400 kV ICT (7th) is required. Considering approval and administrative process along with implementation schedule of 18 months, 1x1500 MVA ICT (7th ) is expected by 31.07.2026.

In view of above, it is proposed that cconnectivity may be granted along with existing/under-construction/under-bidding/planned transmission system including transmission system at Kurnool-III PS and ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region. Connectivity transmission system for grant of connectivity is given below.

**It may be noted that w*ith grant connectivity to above mentioned applications, margins are not available for grant of additional connectivity, therefore Kurnool-III PS is closed for all purpose regarding grant of connectivity or addition of generation capacity.***

**a. <u>Connectivity Transmission system under GNA for M/s Amplus Everest Solar Pvt. Ltd. (app. no. 2200000543 for 130 MW):</u>**

i. **Dedicated Connectivity Tr. System** :

- Generation Pooling station of M/s Amplus Everest Solar Pvt. Ltd. – Kurnool-III PS 220 kV S/c line along with line bays at generation pooling station – under the scope of applicant.
- 1 no. of 220 kV line bay at Kurnool-III PS for termination of dedicated line - under the scope of ISTS

ii. **Associated Transmission System for GNA**: Nil

iii. **Common Transmission system required for effectiveness of connectivity/GNA (System strengthening without ATS)**:

- ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I**.

- Transmission Scheme Transmission scheme for evacuation of power from RE sources in Kurnool Wind Energy Zone (3000MW)/Solar Energy Zone (AP) (1500MW) - Part-A and Part-B, as per **Annexure-V**.
- Transmission system strengthening at Kurnool-III PS for integration of additional RE generation projects, as per **Annexure-VI**.
- Augmentation of 765/400 kV, 1x1500 MVA (7th ) ICT at Kurnool-III PS

**Start date of Connectivity :** 31.07.2026 (Tentative) with the availability of common transmission system required for effectiveness of GNA. Firm *date for start date of Connectivity shall be confirmed subsequently after transfer of SPV.*

**Further, applicant is required to submit BGs as per following details within one month of intimation for in-principle grant of Connectivity.**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG2 of Rs. 3.0 Crs. (Towards implementation of 1 no of 220 kV termination bay under ISTS) + Conn-BG3 of Rs. 2.6 Cr. (@Rs.2lakhs/MW)

**b. <u>Connectivity Transmission system under GNA for M/s Amplus Iifa Solar Pvt. Ltd. (app. no. 2200000544 for 130 MW):</u>**

i. **Dedicated Connectivity Tr. System** :

- Through dedicated connectivity transmission system proposed for connectivity of M/s Amplus Everest Solar Pvt. Ltd. for application no. 2200000543 i.e. Generation Pooling station of M/s Amplus Everest Solar Pvt. Ltd. – Kurnool-III PS 220 kV S/c line – all arrangement under the scope of applicant.

ii. **Associated Transmission System for GNA**: Nil

iii. **Common Transmission system required for effectiveness of connectivity/GNA (System strengthening without ATS)**:

- ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region as per **Annexure-I**.
- Transmission Scheme Transmission scheme for evacuation of power from RE sources in Kurnool Wind Energy Zone (3000MW)/Solar Energy Zone (AP) (1500MW) - Part-A and Part-B, as per **Annexure-V**.
- Transmission system strengthening at Kurnool-III PS for integration of additional RE generation projects, as per **Annexure-VI**.

- Augmentation of 765/400 kV, 1x1500 MVA (7th ) ICT at Kurnool-III PS

**Start date of Connectivity :** 31.07.2026 (Tentative) with the availability of common transmission system required for effectiveness of GNA. Firm *date for start date of Connectivity shall be confirmed subsequently after transfer of SPV.*

**Further, applicant is required to submit BGs as per following details within one month of intimation for in-principle grant of Connectivity.**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG3 of Rs. 2.6 Cr. (@Rs.2lakhs/MW)

**Members may deliberate**

## 6. Grant of additional GNA to STTU

Karnataka Power Transmission Corporation Ltd. (KPTCL), vide application dated 26.02.2024 has requested for grant of additional GNA for 500 MW, as per below details.

| State (STU) | Total GNA already Granted(MW) | | | | Addl. GNA Requested (MW) | | | Total GNA Required (MW) | | | Requested Start date of additional GNA | Peak Demand (MW) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Within region | Outside region | Total | Within region | Outside region | Total | Within region | Outside region | Total | | |
| Karnataka | **Deemed** | 3877 | 499 | 4376 | 0 | 500 | 500 | 3877 | 1499 | 5376 | 01.03.2024 | 18214 |
| | **Additional granted** | 0 | 500 | 500 | | | | | | | | |
| | **Total GNA** | 3877 | 999 | 4876 | | | | | | | | |

Entity wise segregation of additional GNA quantum (MW) provided by KPTCL is as below.

| Entity Name | 2023-24 |
|---|---|
| BESCOM | 241.75175 |
| CESC | 94.130864 |

| | |
|---|---|
| MESCOM | 65.117135 |
| HESCOM | 39.6926 |
| GESCOM | 59.307652 |
| **Total** | **500** |

It may be noted that presently KPTCL has recorded a drawl of about 7657 MW from ISTS (as minutes of 48th SRPC). KPTCL has been granted GNA for 4876 MW only. Therefore, sufficient margins are available in ISTS for grant of additional GNA for 500 MW to KPTCL w.e.f. 01.04.2024, however, KPTCL may augment/ strengthen its downstream network and ICT requirement, if any.

In view of above, it is proposed to grant additional GNA [outside region] for 500 MW [cumulative GNA : 5376 MW] to KPTCL w.e.f 01.04.2024.

**Members may deliberate.**

## 7. Application for grant of GNA to entities other than STU

### a. Grant of additional GNA to Indian Railway

| Sl. | Application ID, date of submission | Name of the Applicant | Application for: Connectivity/ GNA/ GNARE | GNA Breakup (Within & outside region) | Eligibility under GNA Regulations 2022 | STU details | Nature of Applicant | Location details of Connectivity / GNA requested | GNA (Break up) | Start date of GNA (requested) | End date of GNA (requested |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I. | 2200000552, dt. 06.02.2024, | Indian Railways. | GNA | • Within Region : 0 MW<br>• Outside Region : 37.45 MW | Regulations 17.1 (ii) | Karnataka Power Transmission Corporation Ltd. | Drawee Entity Connected to Intra State | At various locations through electrical system of STU | 37.45 MW | 01.02.2024 | 31.01.2035 |

Indian Railways has sought grant of GNA for 37.45 MW, as per above details, for drawl of power through network of KPTCL. Applicant has also provide the details from KPTCL wherein GNA segregation of intra state entities of Karnataka is provided. As per provided information, South Western Railway has GNA share for 47.55 MW. Further, applicant has submitted NoC, dated 30.12.2023, issue by KPTCL for maximum drawl of 85 MW with start and end date of NoC as 01.02.2024 & 31.01.2035 respectively.

Sufficient margins are available in existing ISTS for drawl of addition power for quantum of 37.45 MW in Karnataka by Indian Railway. Therefore, in view of above, it is proposed to grant additional GNA to 37.45 MW [ cumulative GNA for 85 MW] to Indian Railway with start and end date of GNA as 01.04.2024 and 31.01.2025 respectively.

**Members may deliberate**

**b. Grant of GNA-RE to AM Green Ammonia (India) Pvt. Ltd. for drawl of power from Tuticorin PS**

| Sl. | Application ID, date of submission | Name of the Applicant | Application for: Connectivity/ GNA/ GNARE | GNA Breakup(Within & outside region) | Eligibility under GNA Regulations 2022 | STU details | Nature of Applicant | Location details of Connectivity / GNA requested | Start date of GNA (requested) | End date of GNA (requested) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 2200000607 29.02.2024 | AM Green Ammonia (India) Private Limited | GNA | • Within Region : 0 MW<br>• Outside Region : 1660 MW | 17.1(iii) | NA | Bulk consumer seeking to connect to ISTS | Tuticorin PS | 01.12.2026 | 30.11.2051 |

M/s AM Green Ammonia (India) Private Limited [as an eligible entity under Regulation 17.1 (iii)] has applied for GNA as Bulk Consumer for 1660 MW (Within Region: 0MW & Outside Region: 1660 MW) seeking connectivity/GNA at Tuticorin in Tamil Nadu with start and end date as 01.12.2026 & 31.01.2035 respectively.

Further, M/s AM Green Ammonia (India) Pvt. Ltd. has indicated that they are in the process of developing a Green Ammonia Plant in phased manner. The total drawl requirement for the entire Green Ammonia Tuticorin project capacity is 2260 MW. The details of the proposed phased development are given below.

| Phase | Capacity (MW) |
|---|---|
| Phase I | 1660 |
| Phase II | 600 |

A meeting was held on 19.10.2023 chaired by Hon'ble Minister with Green Hydrogen stakeholders/association, wherein it was instructed that developers shall share the details of year-wise planned Green Ammonia / Green Methanol capacities and corresponding drawl capacities desired at different locations. Hon'ble minister also instructed that this information should be shared

with CTU for planning the required substation capacities at these specified locations. MNRE vide letter dated 01.11.2023 has forwarded the consolidated information of the planned projects and drawl requirements of various developers (copy of letter attached at **Annex-VII**).

In this regard, a meeting was convened by CEA with Green Hydrogen/ Green Ammonia manufacturers to access the year wise electricity demand for proper planning of transmission system. In Tuticorin area, about 7000 MW demand has been envisaged for the Green Hydrogen/ Green Ammonia projects. The details of the phased development are as follows:

| **Year** | **Cumulative Electricity Demand (MW)** |
|---|---|
| By 2027 | 2900 |
| By 2028 | 2900 |
| By 2029 | 5645 |
| By 2030 | 7015 |

In view of the upcoming Green Hydrogen/ Green Ammonia plants/industries, planning of transmission system has been done for delivery of power to potential Green Hydrogen/Ammonia manufacturing sites. After discussion, CEA & CTU had identified following transmission system for supply of power at Tuticorin to potential Green Hydrogen/Ammonia industries.

**Proposed Transmission network:**

- Upgradation of 765 kV Tuticorin Pool (presently charged at 400 kV) to its rated voltage at 765 kV.
- Upgradation of 765 kV Dharmapuri (presently charged at 400 kV) to its rated voltage at 765 kV.
- Upgradation of Tuticorin Pool – Dharmapuri 765 kV line (presently charged at 400 kV) to its rated voltage at 765 kV.
- Upgradation of Dharmapuri – Madhugiri 765 kV line (presently charged at 400 kV) to its rated voltage at 765 kV
- Establishment of Tuticorin (GH) 765/400 kV, 3x1500 MVA S/s with 1x240 MVAR Bus Reactor.
- Tuticorin Pool – Tuticorin (GH) 765 kV D/c line.

Considering approval and other administrative process with implementation time frame of 24 months, transmission scheme is expected by 31.12.2026 (**Tentative).**

As per the meeting held on 12.07.2023 among CEA and CTUIL regarding deliberation on the identification of Associated Transmission System (ATS) and common Augmentation of Inter State Transmission System (ISTS) for grant of Connectivity and

GNA under General Network Access (GNA) Regulations, 2022 of CERC (Copy of the minutes attached at **Annexure-VIII**), following was agreed :

a. *The ISTS identified/planned for multiple injecting entities e.g. RE potential zone (identified by MNRE/SECI) can be considered as an augmentation without ATS. Accordingly, the Connectivity for such injecting entities can be granted with common augmentation. The same approach can be followed for potential based bulk consumers including consumers producing green hydrogen provided the potential site of such bulk consumers has been confirmed by the central/state government.*
b. *The ISTS identified/planned exclusively for specific injecting entity(ies), can be considered as an augmentation with ATS. Accordingly, the Connectivity for such injecting entity(ies) can be granted with ATS.*
c. *For ISTS augmentation being implemented under Tariff based Competitive Bidding (TBCB), the same can be considered to be under implementation if the Special Purpose Vehicle (SPV) transfer has been completed before the completion of the interconnection study. Similarly, for the ISTS augmentations under Regulated Tariff Mechanism (RTM), they can be considered to be under implementation from the date of its intimation by CTU to the Transmission Service Provider (TSP), considering the conditions stipulated, if any*.

In view of the above, it is proposed that GNA-RE may be granted to M/s AM Green Ammonia (India) Private Limited for 1660 MW as per the details below:

**Connectivity/GNA Transmission system for M/s AM Green Ammonia (India) Private Limited (application no. 2200000607 for 1660 MW)**

i. **Dedicated Connectivity Tr. System**

- Pooling Station of M/s AM Green Ammonia (India) Private Limited – Tuticorin (GH) 400 kV D/c (quad) line along with line bays at both ends – **under the scope of applicant**

ii. **Associated Transmission System for GNA: Nil**

iii. **Common Transmission system required for effectiveness of connectivity/GNA (augmentation other than ATS) :**

- Upgradation of 765 kV Tuticorin Pool (presently charged at 400 kV) to its rated voltage at 765 kV.
- Upgradation of 765 kV Dharmapuri (presently charged at 400 kV) to its rated voltage at 765 kV.
- Upgradation of Tuticorin Pool – Dharmapuri 765 kV line (presently charged at 400 kV) to its rated voltage at 765 kV.
- Upgradation of Dharmapuri – Madhugiri 765 kV line (presently charged at 400 kV) to its rated voltage at 765 kV
- Establishment of Tuticorin (GH) 765/400 kV, 3x1500 MVA S/s with 1x240 MVAR Bus Reactor.

- Tuticorin Pool – Tuticorin (GH) 765 kV D/c line

**Start date of Connectivity/GNA: 31.12.2026 (tentative)** with the availability of common transmission system required for effectiveness of Connectivity/ GNA. Firm date of start of connectivity shall be informed after successful transfer of SPV.

**Further, applicant is required to submit BGs as per following details within one month of the in-principle grant of intimation:**

- Conn-BG1 of Rs. 50 lakhs + Conn-BG3 of Rs. 33.2 Cr. (@Rs.2 lakhs/MW)

**Members may deliberate.**

*****

**Annexure-I**

**ISTS Network Expansion scheme in Western Region & Southern Region for export of surplus power during high RE scenario in Southern Region**

| ***Sl.*** | ***Scope of the Transmission Scheme*** | ***Capacity /km*** |
|---|---|---|
| **1.** | Narendra New (GIS) – Pune (GIS) 765kV D/c line with 1x330MVAr switchable line reactor on each ckt at both ends | 340 km<br>• 765 kV line bays -2 (GIS) (at Narendra New)<br>• 765 kV line bays -2 (GIS) (at Pune)<br>• 765 kV, 330 MVAr SLR – 2 nos (7 X 110 MVAr incl. 1 switchable spare unit) at Pune (GIS)<br>• 765 kV, 330 MVAr SLR – 2 nos (6 X 110 MVAr) at Narendra (New) (GIS) |
| **2.** | Upgradation of Narendra (New) (GIS) to its rated voltage of 765 kV level along with 4x1500 MVA transformer and 2x330 MVAr Bus Reactor. | • 765/400 kV, 1500 MVA- 4 no. (13 X 500 MVA incl. 1 spare unit)<br>• 765 kV ICT bays- 4 nos. (GIS)<br>• 400 kV ICT bays- 4 nos. (GIS)<br>• 765 kV, 330 MVAr BR – 2 nos. (7 X 110 MVAr incl. 1 switchable spare unit to be used for both bus/line reactors)<br>• 765 kV Bus Reactor bays – 2 nos. (GIS) |

**Annexure-II**

**Transmission scheme for Solar Energy Zone in Ananthpuram (Ananthapur) (2500 MW) and Kurnool (1000 MW), Andhra Pradesh**

- Establishment of 400/220 kV, 7x500 MVA Ananthapuram PS with 400kV (1x125 MVAR) bus reactor
- Ananthpuram PS – Kurnool-III PS 400 kV (Quad Moose) D/c Line
- Ananthpuram PS – Cuddapah 400 kV (Quad Moose) D/c Line with 80 MVAr SLR for each circuit at Ananthapuram PS

**Annexure-III**

**Transmission Scheme for Solar Energy Zone in Bidar (2500 MW), Karnataka**

- Establishment of 3x1500MVA (765/400kV), 5x500MVA (400/220kV)
- Bidar PS with 765kV (1x240 MVAR) and 400kV (1x125 MVAR) Bus Reactor
- Bidar PS – Maheshwaram (PG) 765kV D/C line with 240 MVAr SLR for each circuit at Bidar PS end

**Annexure-IV**

**Transmission Scheme for integration of Bijapur REZ in Karnataka**

- Establishment of 5x500 MVA, 400/220kV Pooling Station near Bijapur (Vijayapura) area, Karnataka
- Bijapur PS – Raichur New 400kV (Quad ACSR moose) D/c line with 80 MVAr SLR at Bijapur end on both circuits (~150 km)
- 2x125MVAr 420 kV bus reactors at Bijapur PS

**Annexure-V**

**Transmission Scheme Transmission scheme for evacuation of power from RE sources in Kurnool Wind Energy Zone (3000MW)/Solar Energy Zone (AP) (1500MW) - Part-A and Part-B**

- Establishment of 765/400/220kV 3x1500 MVA, 9x500 MVA Kurnool-III PS.
- Kurnool –III PS – Kurnool(new) 765 kV D/c line
- Kurnool –III PS – Maheshwaram (PG) 765 kV D/c line

**Annexure-VI**

**Transmission system strengthening at Kurnool-III PS for integration of additional RE generation projects**

- Augmentation of 765/400/220kV 3x1500 MVA, transformation capacity (4th, 5th and 6th ICTs) Kurnool-III PS.
- Kurnool –III PS – C'Peta 765 kV D/c line

Annexure-VII

1/54/2023 - NT
Ministry of New and Renewable Energy
Government of India

Atal Akshay Urja Bhawan
Lodhi Road, New Delhi – 110003
1st November 2023

**OFFICE MEMORANDUM**

**Subject: Details of year-wise planned Green Ammonia/ Green Methanol capacities and corresponding withdrawal capacities - reg.**

The undersigned is directed to refer to the discussions held during the meeting chaired by Hon'ble Minister with Green Hydrogen industry stakeholders/associations on 19th October 2023, wherein Hon'ble Minister had instructed the developers to provide details of year-wise planned Green Ammonia/ Green Methanol capacities and corresponding withdrawal capacities desired at different locations. Hon'ble Minister also instructed that this information should be shared with the Central Transmission Utility of India Limited (CTUIL) for the purpose of planning the required substation capacities at these specified locations.

2. MNRE has consolidated the information received from various developers regarding their planned projects and their withdrawal requirements at the respective locations. The compiled list is attached herewith.

3. This issues with the approval of the component authority.

Anubhav
Anubhav Uppal
Scientist - C

*Enclosed*: *as above*

To:

Shri Abhay Choudhary
Chairman
Central Transmission Utility of India Limited
First Floor, Saudamini, Plot No.– 2, Sector– 29
Near IFFCO Chowk Metro Station
Gurgaon – 122001, Haryana

Copy for information to:

i. Chairman, Central Electricity Authority
ii. PS to Hon'ble Minister
iii. PSO (Secretary), MNRE

| Connectivity to the Grid for planned Green Ammonia/ Green Methanol Plants | | | | | | |
|---|---|---|---|---|---|---|
| **S. No.** | **Developer** | **Product (Green Hydrogen/ Ammonia/ Green Methanol/ others- specify)** | **Planned Capacity (in Million Tonnes Per Annum)** | **Expected Year of Operations (provide breakup of capacity year wise)** | **Location where connectivity is required (mention the nearest port as well, if applicable)** | **Required Capacity of Power withdrawal from nearest Substation (in GW)** |
| 1. | **Renew Power** | Green Ammonia | 1.1 MMTPA | 300 TPD - 2026<br>1500 TPD - 2028<br>1500 TPD - 2030 | Paradip | 3 GW |
| | | Green Ammonia | 1.1 MMTPA | 300 TPD – 2027<br>1500 TPD - 2029<br>1500 TPD - 2031 | Gopalpur | 3 GW |
| | | Green Ammonia | 1.1 MMTPA | 300 TPD – 2027<br>1500 TPD - 2029<br>1500 TPD – 2031 | Tuticorin | 3 GW |
| | | Green Ammonia | 1.1 MMTPA | 300 TPD – 2027<br>1500 TPD - 2029<br>1500 TPD - 2031 | Kakinada | 3 GW |
| | | Green Ammonia | 1.1 MMTPA | 300 TPD – 2027<br>1500 TPD - 2029<br>1500 TPD - 2031 | Kandla | 3 GW |
| | | Green Methanol | 0.3 MMTPA | 450 TPD - 2027<br>450 TPD - 2029 | Rayagada | 1.1 GW |
| | | Green Methanol | 0.5 MMTPA | 750 TPD - 2027<br>750 TPD - 2029 | Malkangiri | 1.8 GW |
| 2. | **Axis Energy Ventures India Pvt Ltd** | Green Hydrogen, Ammonia, Methanol and its derivatives | 2 MMTPA | 1 MMTPA – 2027<br>1 MMTPA - 2030 | Ramayapatnam Port, Andhra Pradesh | 3.5 - 4 GW |
| 3. | **Welspun New Energy** | Green Hydrogen & Green Ammonia | 0.7 MMTPA (GA equivalent) | 0.1 MMTPA - 2027<br>0.6 MMTPA - 2030 | Kendarpada dist. | 3.5 GW |
| | | Green Hydrogen & Green Ammonia | 1 MMTPA (GA equivalent) | 0.1 MMTPA - 2027<br>0.9 MMTPA - 2030 | Kandla area, Kutch district | 5 GW |
| 4. | **Gentari Hydrogen - India** | Green Ammonia | 0.5 MMTPA (500 KTPA) Phase 1 | 2027 | V. O. Chidambaranar Port - Tuticorin (Tamil Nadu) | 750 MW (0.75 GW) |
| | | Green Ammonia | 0.5 MMTPA | 2028 | New Mangalore Port | 750 MW (0.75 GW) |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | (500 KT PA) Phase 1 | | - Mangalore (Karnataka) | |
| 5. | **Aditya Birla Renewables** | Green Ammonia | 0.1 MMTPA | 2027-28 | Paradip Port | 0.15 GW |
| 6. | **Greenko** | Green Ammonia | 1 MMTPA | 2026 | Kakinada | 1.5 GW |
| | | Green Ammonia | 1 MMTPA | 2027 | Kakinada | 1.5 GW |
| | | Green Ammonia | 1 MMTPA | 2027 | Tuticorin | 1.5 GW |
| | | Green Ammonia | 1 MMTPA | 2028 | Mangalore | 1.5 GW |
| | | Green Ammonia | 1 MMTPA | 2028 | Kandla | 1.5 GW |
| 7. | **Adani New Industries Limited (ANIL)** | Green Ammonia | 1.2 MMTPA | 2027 | Injection point:<br>(a) Lakadia ISTS S/s (up to 4 GW from Zone 3)<br><br>(b) At a nearby location of Zone II / Zone I which may be taken into CEA planning considering huge quantum of power.<br><br>Else, Radhanesda ISTS S/s (up to 18 GW) from Zone II / Zone I | 4 GW |
| | | Green Ammonia | 1.2 MMTPA | 2028 | | 7 GW |
| | | Green Ammonia | 1.6 MMTPA | 2029 | | 6 GW |
| | | Green Ammonia | 1.6 MMTPA | 2030 | | 5 GW<br>(22* GW combined)<br><br>Withdrawal point - Proposed ISTS S/s at Navinal, Mundra (22 GW)<br><br>***Overall plan is for transmission of ~ 40 GW of RE through ISTS by the end of 2032 for ~9 MTPA of Green Ammonia production** |
| 8. | **Infinity Global** | Green Ammonia (Odisha) | 0.5 MMTPA | Phase 1- 2027<br>Phase 2- 2029 | Gopalpur Port, Odisha | 0.75 GW RTC |
| | | Green Ammonia (Tamil Nadu) | 0.5 MMTPA | Phase 1- 2027<br>Phase 2- 2029 | Tuticorin Port, Tamil Nadu | 0.75 GW RTC |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9. | **Ocior Energy** | Green Ammonia | 1 MMTPA | 0.1 MMTPA – Jan 2027<br>0.9 MMTPA – Jan 2030 | Gopalpur Industrial Park (TATA SEZ) in Odisha near Gopalpur port | 0.15 GW [connected on state (Odisha) transmission system by Jan 2027]<br>1.5 GW [connected on Inter State transmission system by 2030] |
| | | Green Ammonia | 1 MMTPA | 0.1 MMTPA - Jan 2027<br>0.9 MMTPA - Jan 2030 | Kandla, Gujarat near Deendayal/Kandla port | 0.19 GW (connected on Inter State Transmission System by Jan 2027)<br>1.5 GW (connected on Inter State transmission System by 2030) |
| 10. | **Hindustan Petroleum Corporation Limited (HPCL)** | Green Hydrogen – Visakhapatnam Refinery | 0.37 KTPA (0.00037 MMTPA) | November 2023 | Visakhapatnam, Andhra Pradesh | 2.6 MW (0.0026 GW) |
| | | Green Hydrogen – Barmer Refinery | 4.30 KTPA (0.0043 MMTPA) | December 2025 | Newai, Dist. Balotra, Rajasthan | 30 MW (0.03 GW) |
| | | Green Hydrogen – Visakhapatnam Refinery | 2.60 KTPA (0.0026 MMTPA) | December 2025 | Visakhapatnam, Andhra Pradesh | 20 MW (0.02 GW) |
| | | Green Hydrogen – Visakhapatnam Refinery | 21.80 KTPA (0.0218 MMTPA) | 2030 | Visakhapatnam, Andhra Pradesh | 150 MW (0.15 GW) |
| 11. | **Bharat Petroleum Corporation Limited** | Green Hydrogen through electrolysis (cumulative production) | 0.70 KTPA (0.0007 MMTPA) | 2025 | Bina, MP | 5 MW (0.005 GW) |
| | | | 7.60 KTPA (0.0076 MMTPA) | 2027 | Yet to be finalized | 55 MW (0.055 GW) |
| | | | 20.70 KTPA (0.0207 MMTPA) | 2030 | Yet to be finalized | 150 MW (0.15 GW) |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Green Hydrogen through biomass (cumulative production) | 37 KTPA (0.037 MMTPA) | 2030 | Yet to be finalized | |
| 12. | **NTPC** | Green Ammonia | 0.5 MMTPA | 2027 | VOC Port, Tuticorin, Tamil Nadu | 1 GW |
| | | Green Ammonia | 1 MMTPA | 2027 | Deendayal Port, Kandla, Gujarat | 2 GW |
| | | Green Ammonia | 2 MMTPA | 2027 | Pudimadaka, Andhra Pradesh (Near Visakhapatnam Port) | 4 GW |
| | | Green Ammonia | 0.5 MMTPA | 2028 | Syama Prasad Mookerjee Port, (Near Haldia port) | 1 GW |
| | | Green Methanol | 0.5 MMTPA | 2028 | Simhadri / Pudimadaka, Andhra Pradesh, (Near Visakhapatnam Port) | 1 GW |
| Total | | | 29.295 MMTPA | | | 75.3 GW |

Annexure-VIII

भारत सरकार
**Government of India**
विद्युत मंत्रालय
**Ministry of Power**
केंद्रीय विद्युत प्राधिकरण
**Central Electricity Authority**
विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग-II
**Power System Planning & Appraisal Division-II**

सेवामें/To,

Chief Executive Officer (COO)
Central Transmission Utility of India Limited
Gurugram (Haryana)

**विषय/Subject: Minutes of the meeting held on 12-07-2023 regarding grant of Connectivity under CERC GNA Regulations, 2022**

महोदय/Sir,

A meeting was held on 12.07.2023 regarding grant of Connectivity under CERC GNA Regulations, 2022. The minutes of the meeting are enclosed herewith.

This issues with the approval of Chairperson, CEA.

भवदीय/Yours faithfully,

Signed by B.s.bairwa
Date: 29-07-2023 23:00:27
Reason: Approved

(बी.एस.बैरवा/B.S.Bairwa)
निदेशक / Director

Copy to:

1) Member (E&C), CEA
2) Member (PS), CEA
3) Chief Engineer (RA), CEA
4) Director(Trans.), MoP
5)

**Minutes of the meeting held on 12-07-2023 regarding grant of Connectivity under CERC GNA Regulations, 2022**

1. The meeting was held on the request of CTU to carry out deliberation on the identification of Associated Transmission System (ATS) and common Augmentation of Inter State Transmission System (ISTS) for grant of Connectivity and GNA under General Network Access (GNA) Regulations, 2022 of CERC.

   List of participants is attached at **Annex-I**.

2. CTU mentioned that –

   i) As per GNA Regulations, Connectivity to ISTS can be granted to injecting entities either through "existing ISTS" or "augmentation (with or without ATS)". In cases where ATS (augmentation required for immediate evacuation excluding terminal bays as per GNA Regulations) is identified, injecting entities including Energy storage Systems (ESS) are required to furnish applicable Bank Guarantee (BG) corresponding to the cost of ATS and in case of no ATS requirements, BG @ Rs. 2 Lakh/MW is required to be submitted.

   ii) Further, as per Regulation 8.3, if such ATS and terminal bay(s) are planned for more than one entity, BG (corresponding to the cost of ATS) shall be furnished in proportion to the quantum of Connectivity applied for by such entities. As per GNA Regulations, the awarded ISTS is to be considered as existing system.

   iii) With the above provisions, CTU is facing difficulties in processing the applications wrt the phrase "augmentation required for immediate evacuation" read with the stipulation that ISTS projects awarded shall be considered as existing system. The plain reading of the above provisions may led to following anomalous situations :

      (a) As the awarded projects are to be considered as the existing system, the ATS requirement for different generation projects getting connected at the same voltage level at the same pooling station would be different depending on the status of the award of the transmission system at the time of application by the generation developers. In the above case, different applicants at the same pooling station shall be required to submit different amounts of BGs depending on the time at which the application is received. Considering 1x500 MVA, 400/220 kV ICT as ATS for initial applicant(s), approx. Rs. 40 Cr. (corresponding to the estimated cost of ICT with associated bays) BGs shall be applicable, whereas the subsequent applicant granted Connectivity with the same ICT would be required to submit BG of Rs. 2 lakhs/MW if it applies after the ICT is awarded. The difference in ATS/status of award of identified augmentation would lead to discrimination in the requirement of BGs for various applicants at the same pooling station but applied at different stages/times.

(b) Based on the prioritization of RE potential zones by MNRE/SECI, implementation of transmission system catering to multiple generation projects in RE zones is taken-up prior to receipt of any Connectivity applications. In such cases, applicants applying after the award of identified augmentation would need to be granted Connectivity on the existing system i.e. ATS would be NIL. To avail the benefit of lesser BG requirement, the generation developers may also abstain from applying for Connectivity prior to the award of the transmission system for such RE zones.

(c) Further, there is difficulty in the identification of an immediate evacuation system, which can be 400/220 kV ICT(s) for generations pooled at 220 kV level at a 400/220 kV pooling station or may be 400 kV line(s) for generation pooled at 400 kV level at same pooling station.

3. Considering these difficulties, it was opined that a congruous interpretation which leads to a rational and non-discriminatory approach for requirement of BG amongst various applicants can be as under:

i) Augmentation identified for multiple users on a potential zone basis when the entire list of users can not be identified when initial applications are being received, does not fall into the "augmentation required for immediate evacuation". Thus, augmentation in potential areas such as RE potential/ Green Energy Corridor (GEC) (identified by MNRE/SECI), hydro potential (identified by MoP/CEA), and drawl potential (MNRE/any Central or State Government agencies including STUs) etc may be considered as common augmentation for multiple users.

ii) Augmentation identified exclusively for a specific user(s), which are known in advance may be considered falling into "augmentation required for immediate evacuation".

This will also lead to timely development of commensurate transmission system by avoiding potential disputes. This is essential because the gestation period of wind/solar generation projects is less as compared to the gestation period of commensurate transmission system and the transmission system development needs to be taken up well in advance. This issue has been deliberated several times in Ministry of Power.

4. It was also mentioned that the Electricity Act 2003 mandates for the non-discriminatory open access.

5. Based on the above, it was agreed that CTU may adopt the following and expeditiously dispose off the pending applications:

(a) The ISTS identified/planned for multiple injecting entities e.g. RE potential zone (identified by MNRE/SECI) can be considered as an augmentation without ATS. Accordingly, the Connectivity for such injecting entities can be granted with common augmentation. The same approach can be followed for potential based bulk consumers including consumers producing green hydrogen provided

the potential site of such bulk consumers has been confirmed by the central/state government.

(b) The ISTS identified/planned exclusively for specific injecting entity(ies), can be considered as an augmentation with ATS. Accordingly, the Connectivity for such injecting entity(ies) can be granted with ATS.

(c) For ISTS augmentation being implemented under Tariff based Competitive Bidding (TBCB), the same can be considered to be under implementation if the Special Purpose Vehicle (SPV) transfer has been completed before the completion of the interconnection study. Similarly, for the ISTS augmentations under Regulated Tariff Mechanism (RTM), they can be considered to be under implementation from the date of its intimation by CTU to the Transmission Service Provider (TSP), considering the conditions stipulated, if any.

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**Annex-I**

## List of Participants

**CEA**

| | | |
|---|---|---|
| 1. | Shri Ghanshyam Prasad | Chairperson |
| 2. | Shri Ashok Kumar Rajput | Member (PS) |
| 3. | Shri Ajay Talegaonkar | Member (E&C) |
| 4. | Shri Pardeep Jindal | Chief Engineer (RA) |
| 5. | Shri Ishan Sharan | Chief Engineer (PSPA-I) |
| 6. | Shri B.S. Bairwa | Director (PSPA-II) |

**CTU**

| | | |
|---|---|---|
| 1. | Shri P C Garg | COO |
| 2. | Shri Ashok Pal | Dy. COO |
| 3. | Shri Jasbir Singh | CGM |
| 4. | Shri P. S. Das | Senior GM |
| 5. | Shri Kashish Bhambhani | GM |
| 6. | Shri Bhaskar L Wagh | Ch. Manager |
| 7. | Shri Manish Ranjan Keshari | Ch. Manager |
| 8. | Shri Ankush Patel | Ch. Manager |
| 9. | Shri Narendra Sathvik R. | Manager |