Annexure-D

No. J-12011/11/2018-IA.I(R)
Ministry of Environment, Forest & Climate Change
Government of India
(IA-I Division)

Indira Paryavaran Bhawan
3rd Floor, Vayu Wing
Jor Bagh Road
New Delhi-110 003
Date: 25th September, 2018

To,

Shri. Gopi Krushna
Assistant General Manager
M/s Greenko Energies Private Limited
Plot no.1071, Road No.44,
Jubilee Hills,
Hyderabad-500033 (Telangana)

Subject: Saundatti IREP (1260 MW) - Pumped Storage Project in Belgavi District of Karnataka by M/s Greenko Solar Energy Pvt. Ltd – Amendment in TOR- regarding.

Sir,

This is with reference to your online application no. IREP-Saundatti/MoEF & CC/TOR Amendment/20180810 dated 13.8.2018, 14.8.2018 and 15.9.2018 on the above mentioned subject. The Terms of Reference (TOR) for Saundatti IREP (1200 MW) in Belgavi District of Karnataka was accorded on 18.5.2018 for 4 years. Your request for approval for change of scope in the project and enhancement of capacity of the project from 1200 MW to 1260 MW has been examined by the Expert Appraisal Committee (EAC) for River Valley & Hydroelectric Projects in its meeting held on 27.8.2018.

2. The EAC duly considered the relevant documents submitted by you and have recommended the enhancement of capacity of the project from 1200 MW to 1260 MW and agreed for minor changes in the project. Accordingly, the Ministry hereby accords amendment ToR for enhancement of capacity from 1200 MW to 1260 MW in respect of Saundatti IREP (1260 MW) in Belgavi District of Karnataka with the same TOR as communicated vide letter dated 18.5.2018 with the following corrections:

i. The committee noted the minor changes in project, capacity increased from 1200 MW to 1260 MW. The comparative statement with reference to earlier proposal and revised proposal are presented below:

S.No.	Details	Original	Revised
1	Capacity	1200 MW	1260 MW
2	Rated Pumping Head	156.92 m	157.38 m
3	Pump Capacity	230 MW	240 MW
4	Turbine Design Discharge	77.14 cumec for each unit	81.13 cumec for each unit

5	Structure	400 KV Multi circuit Towers	400 KV Double circuit Towers with Moose Conducter
6	Number of units	7 Units (5 x 200 MW + 2 x 100 MW)	7 Units (5 x 210 MW + 2 x 105 MW)
7	Terminating at	One double circuit connected to PGCIL Narendra 400 KV substation at Dharwad and other double circuit connected to IRESP CPSS	One line will be connected to PGCIL Narendra 400 KV substation at Dharwad and other line will connected to IREP CPSS

3. You have requested EAC that this being a pump storage scheme & not typically river valley project as this is not located on any river course, some of the standard TOR conditions are not applicable and delete from the earlier TOR dated 18.5.2018. The EAC agreed on the suggestion and the following items are deleted from the TOR in the present case:

S. No.	TOR conditions
1	• Para Nos. 2 – (ii), (vii), (viii) & (xiii) (related to river, drainage and catchment delineation)
2	• Para No.6 (b) related to hydrology studies approved by CWC, Flow series of 90%, 75% and 50% dependable years discharge, Minimum of 1 km distance from tip of the reservoir, norms for release of e-flows, etc.
3	• Para No.6 (d) related to (ii) & (iii) related to fish, their migration and conservation
4	• Para No. 8 related to CAT Plan
5	• Para No.9 related to CAD
6	• Para No. 10 related to Fisheries Conservation and Management
7	• Para No. 11 related to CAD Plans for distributary outlet

4. All other terms and conditions of the Scoping/TOR clearance stipulated in letter No. J-12011/11/2018-IA-I (R) dated 18.5.2018 and 6.7.2018 shall remain unchanged.

5. This issues with the approval of the Competent Authority.

Yours faithfully,

(Dr. S. Kerketta)
Director

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Secretary, Ministry of Water Resources, Shram Shakti Bhawan, Rafi Marg, New Delhi – 1.

3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
4. The Chief Engineer, Project Appraisal Directorate, Central Water Commission, Sewa Bhawan, R. K. Puram, New Delhi – 110 066.
5. The Additional Principal Chief Conservator of Forests (C), Regional Office (SZ), Ministry of Environment, Forest and Climate Change, Kendriya Sadan, 4th Floor, R & F Wings, 17th Main Road, Block-II, Koramangala, Bangalore – 560 034
6. The Secretary, Department of Forest, Ecology & Environment, Government of Karnataka, M.S. Building, Ambedkar Veedhi, Banglore -
7. The Member - Secretary, Karnataka State Pollution Control Board, 5th Floor, Parisara Bhavan, # 49, Church Street, Off MG Road, Bangalore – 560 001
8. Guard file.

(Dr. S. Kerketta)
Director

No- J-12011/11/2018-IA-I (R)
Ministry of Environment, Forests and Climate Change
Government of India
[IA-I Division]

Indira Paryavaran Bhawan
3rd Floor, Vayu Wing
Jor Bagh Road
New Delhi-110003

Dated: 6th July, 2018

CORRIGENDUM

Subject: Saundatti HEP (1200 MW) Integrated Renewable Energy with Pumped Storage Project in Belagavi District of Karnataka by M/s. Greenko Solar Energy Pvt. Ltd. - regd.

Reference: (1) TOR letter dated 17.5.2018 (2) Your letter of Nil number dated 30.5.2018.

With reference to the subject cited above, it is to inform that the Ministry has reviewed the content of your letter and the following correction at Sl.No.4 of the ToR letter has been made and it may be read as:

a. Shri Gopi Krishna, AGM, M/s. Greenko Solar Energy Pvt. Ltd, Plot No. 8-2-293/82/A/1131A, Road No. 36, Jubilee Hills, Hyderabad – 500 033

Instead of

Shri Gopi Krishna, AGM, M/s. Greenko Energies Pvt. Ltd, Plot No. 1071,Road No. 44, Jubilee Hills, Hyderabad – 500 033

b. M/s. Greenko Solar Energy Pvt. Ltd

Instead of

M/s. Greenko Energies Pvt. Ltd,

2. All other terms and conditions of the Scoping /ToR Clearance stipulated in Letter No. J-12011/11/2018-IA.I (R) dated 18.5.2018 shall remain unchanged.

3. This issues with the approval of Competent Authority.

Yours faithfully,

(Dr. S. Kerketta)
Director

Copy to:

1. Secretary, Ministry of Water Resources, Shram Shakti Bhawan, Rafi Marg, New Delhi – 1.
2. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi -1.
3. Shri Gopi Krishna, AGM, M/s. Greenko Solar Energy Pvt. Ltd, Plot No. 8-2-293/82/A/1131A, Road No. 36, Jubilee Hills, Hyderabad – 500 033
4. The Secretary, Department of Forest,Ecology & Environment Government of Karnataka, MS Building, Ambedkar Veedhi, Bangalore.

No. J-12011/11/2018-IA.I(R)
Ministry of Environment, Forest & Climate Change
Government of India

Indira Paryavaran Bhawan
3rd Floor, Vayu Wing
Jor Bagh Road
New Delhi-110 003.

Date: 18th May, 2018

To,

The Authorised Signatory
M/s Greenko Energies Private Limited
Plot no.1071, Road No.44,
Jubilee Hills, Hyderabad-500033, Telangana.

Sub: 1200 MW Saundatti HEP (Integrated Renewable Energy with Pumped Storage Project) near Village and Tehsil Suandatti in Belagavi District of Karnataka by M/s Greenko Energies Private Limited.– reg. Terms of Reference (ToR).

Sir,

This has reference to online application no. IA/KA/RIV/74600/2018 dated 16.4.2018 on the above mentioned subject.

2. It has been noted that Proposed Saundatti Integrated Renewable Energy with Storage Project (IRESP) located in Belagavi District of Karnataka which will have a 4.8 GW project i.e. 2.4 GW of Solar Project and 2.4 GW of wind project with storage capacity of 1200/ 9600 MWH. Saundatti IRESP- Storage Project will comprise of two reservoirs i.e. Renuka Sagar Reservoir (already existing) and Saundatti IRESP Reservoir (to be constructed in natural depression). This project is a one of its kind because the proposed reservoir is not located on any river course and the existing Renuka Sagar reservoir is located across river Malaprabha which is a tributary of River Krishna. The proposed Saundatti IRESP reservoir is in a natural depression and it is far away from any river course.

3. It has been informed that the Pumped Storage Scheme stores energy in the form of gravitational potential energy of water, pumped from a lower elevation reservoir to a higher elevation. Low-cost surplus off-peak electric power generated from wind energy and solar energy is typically used to run the pumps. During periods of high electrical demand, the stored water is released through turbines to produce electric power. Although the losses of the pumping process make the plant a net consumer of energy overall, the system increases revenue by selling more electricity during periods of peak demand, when electricity prices are highest which will supply firm dispatchable renewable power to the grid for 24 hrs.

4. The scheme envisages non-consumptive re-utilization of 1 TMC of water of the Renuka Sagar reservoir by recirculation. The water in the Renuka Sagar reservoir (lower reservoir) will be pumped up and stored in the proposed Saundatti IRESP reservoir (upper Reservoir) and will be utilized for power generation. The Proposed Rating of the Saundatti Pump storage project is 1200 MWH by utilizing a design discharge of 925.68 Cumec and rated head of 149.82 m. The Saundatti IRESP will utilize 1360 MW to pump 1.0 TMC of water to the upper reservoir in 9.2 hours.

5. The Salient Features of the Project are as below:

1	**Saundatti IRESP Upper Reservoir (Now Proposed)**	
	Catchment Area	0.386 sq. km
	Live Storage	1.01 TMC
	Dead Storage	0.74 TMC
	Gross Storage	1.75 TMC
	Full Reservoir level (FRL)	EL +793.00 m
	Dimensions of earthen dam (Length x Height x Width)	435.0 m x 96.0 m x 6.0 m
2	**Renuka Sagar Lower Reservoir (Existing)**	
	Catchment Area	2176 sq. km
	Live Storage	34.346 TMC (972.56 Mcum)
	Dead Storage	3.385 TMC (95.85 Mcum)
	Gross Storage	37.731 TMC (1108.41 Mcum)
	Full Reservoir level (FRL)	EL +633.832 m
3	**Power Intake**	
	Type	Open Semi Circular
	Elevation of Intake center line	EL +745.26 m
4	**Head Race Tunnel**	**Concrete lined**
	No. and Dimensions	2 nos. and 817m x 12.0m dia
5	**Tail Race Tunnel**	**Concrete Lined**
	Type of tunnel	Trapezoidal
	Width & Length of each Tunnel	55.0 m & 2390 m
6	**Powerhouse**	
	Type	Surface Power House
	Dimensions	L 200.0 m x B 24.0 m x H 56.50 m
7	**Parameters of Storage Plant**	
	Storage Capacity	9600 MWH
	Rating	1200 MWH
	No. of Units	7 (5 x 200 MW + 2 x 100 MW)
	Turbine Capacity	200 MW / 100 MW
	Total Design Discharge	925.68 Cumec
	Rated Head in Turbine mode	149.82 m
	Pump Capacity	230 MW / 105 MW

6. Total land required for the construction of various components is about 259.03 Ha. About 172.48 Ha out of 259.03 is part of Kagehala forest under Savadati Range. Application for diversion of forest land is yet to be submitted. There are no wildlife sanctuaries, national parks and other protected areas within 10 km radius of proposed project.

7. By constructing a 817 m long twin tunnel and Power house complex, Surge chamber, Tailrace Channel, etc., the quantity of muck to be generated is estimated to be about 72.15 lakh Cum. It is expected that about 57.90 lakh Cum of this will be used for making aggregates which will be used in construction of various roads and buildings. The remaining quantity will be disposed-off in a planned manner. It is proposed to dump about 10.00 Lakh Cum of muck in the reservoir bed as there is no water course is existing and the remaining quantity of muck is proposed to dump in 3 different locations of dumping sites and they are to be identified at suitable places.

8. The Suandatti IRESP is envisaged to be completed in a period of 3.0 years. The project cost works out to Rs. 4,985.80 Crores. About 400 workers and 100 technical staff are likely to work during the peak construction phase in the project area.

9. The above proposal was appraised by the Expert Appraisal Committee (EAC) for River Valley & Hydroelectric Power Projects (RV & HEP) in its 13th meeting held on 27.4.2018. The comments and observations of EAC may be seen in the Minutes of the meeting that are available on the Ministry's website.

10. In view of the recommendations made by the EAC (RV&HEP) in its 13th meeting held on 27.4.2018 and the information/clarifications submitted by you with regard to the above-mentioned project proposal, **the Ministry hereby accords a fresh clearance for pre-construction activities at the proposed site along with the following Terms of Reference (ToR) for the proposed project under Schedule 1(c) of the EIA Notification, 2006 and its amendments issued time to time, for the preparation of EIA/ EMP report**:

a) The EIA/EMP report should contain the information in accordance with provisions & stipulations as given in the ***Annexure-I***.
b) The consultant engaged for preparation of EIA/EMP report has to be registered with Quality Council of India (QCI/ NABET under the scheme of Accreditation & Registration of MoEF. This is a pre-requisite.
c) Consultant shall include a "Certificate" in EIA/EMP report regarding portion of EIA/EMP prepared by them and data provided by other organisation(s)/ laboratories including status of approval of such laboratories.
d) The draft EIAA/EMP report prepared as per ***Annexure-I*** should be submitted to the State Pollution Control Board Committee concerned for conducting Public Consultation as per the provisions stipulated in EIA Notification of 2006. Public Hearing, which is a component of Public Consultation, shall be held district wise at the site or in its close proximity as prescribed in Appendix (IV) of EIA Notification, 2006. The draft EIA/EMP report is to be submitted to SPCB etc. sufficiently before the expiry of the ToR validity so that necessary amendments in EIA/EMP can be undertaken based on public hearing and the same is submitted to MoEF&CC before expiry of validity.
e) All issues discussed in the Public Hearing / Consultations should be addressed and incorporated in the EIA/EMP report. Final EIA/EMP report should be submitted to the Ministry for Environmental Clearance only after incorporating these issues before the expiry of validity of ToR.
f) The ToR will remain valid for a period of 4 years from the date of issue of this letter for submission of EIA/EMP report along with public consultation. The ToR will stand lapsed on completion of 4 years in case final EIA/EMP is not submitted and the validity is not extended.
g) In case of any change in the scope of the project such as capacity enhancement, change in submergence, etc., fresh scoping clearance has to be obtained by the project proponent.
h) The PP should submit a copy of TEC of the DPR along with EIA/EMP report.
i) Information pertaining to Corporate Environmental Responsibility and Environmental Policy shall be provided in the EIA/EMP Report as per this Ministry's OM No. 22-65/2017-IA.III dated 1.8.2018 (Reference as ***Annexure-II***)
j) The EIA/ EMP report must contain an Index showing details of compliance of all TOR conditions. the Index will comprise of page no. etc., vide which compliance of a specific ToR is available. It may be noted that without this index, EIA/ EMP report will not be accepted.

k) In case the validity is to be extended, necessary application is to be submitted to Regulatory Authority before expiry of validity period together with an updated Form-I based on proper justification.

This has approval of the Competent Authority.

Yours faithfully,

(Dr. S. Kerketta)
Director, IA.I

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Secretary, Ministry of Water Resources, Shram Shakti Bhawan, Rafi Marg, New Delhi – 1.
3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
4. The Chief Engineer, Project Appraisal Directorate, Central Water Commission, Sewa Bhawan, R. K. Puram, New Delhi – 110 066.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
6. The Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, Koramangala II Block, Bangalore – 560034
7. The Principal Secretary Environment, Department of Ecology & Environment, 708, M S Building, 7th Floor, Near-Vidhana Soudha, Ambedkar Veedhi, Bengaluru, Karnataka 560001.
8. The Chairman, Karnataka State Pollution Control Board, Parisara Bhavan, #49, 4th & 5th Floor, Church Street, Bangalore-560001.
9. The District Collector, Belgaum District, Commissioner, DC Compound, Main Road, Belgaum Ho, Belgaum-590001.
10. Guard file/Monitoring file.
11. Website of MoEF&CC.

(Dr. S. Kerketta)
Director, IA.I