



**SHIGA ENERGY PRIVATE LIMITED**

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DLF Cyber City, Phase-II,  
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6<sup>th</sup> November, 2017

To

**Shri G S Patra,**  
**Executive Director-Projects ( ER & NER)**  
**Power Finance Corporation Limited (PFC)**  
**Urja Nidhi, 1, Barakhamba Road,**  
**Connaught Place, New Delhi-110001**

**Shri Suneet Shukla,**  
**General Manager**  
**IFCI Limited (IFCI)**  
**IFCI Tower**  
**61, Nehru Place, New Delhi-110019**

**Subject : Achievement of Commercial Operation Date (COD) of our Tashiding Hydroelectric Power Project in Sikkim (Project)**

**Refer : GE Power India Limited's (GEPIL) letter HIN / TSG / SEPL/ C 300 / 17 dated 5<sup>th</sup> November, 2017**

Dear Sir,

We are pleased to inform you that GEPIL vide its letter no. HIN / TSG / SEPL/ C 300 / 17 dated 5<sup>th</sup> November, 2017 informed us that all the works related to wet commissioning of the Project has been completed, the performance and guarantee test for the Project has been completed on 4<sup>th</sup> November, 2017 and the plant is fully ready for commercial operation (copy of letter is enclosed herewith). Accordingly, the Company has declared the Commercial Operation Date of the Project from 00:00 hrs of 6<sup>th</sup> November, 2017.

We request you to take note of the same.

Thanking You.

**Yours faithfully,**  
**For Shiga Energy Pvt. Ltd.**

  
**Tadikamalla Nagendra Rao**  
**Managing Director**  
DIN: 00729696  
E-702, The Villas, Akashneem Marg  
DLF-PH-2, Gurgaon-122002, Haryana

Copy to: Mr Manish Kumar Sinha, General Manager (Hydro Power and WR)  
Lahmeyer International (India) Pvt. Ltd., Intec House, 37  
Institutional Area, Sector-44, Gurgaon-122002

**Registered Office**

207, Chiranjeev Tower, 43 Nehru Place, New Delhi-110019

**Corporate Identity No.**

U51909DL2005PTC143237





**GE Power India Limited**  
(formerly ALSTOM India Limited)  
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Date : 5<sup>th</sup> November 2017  
Ref: HIN /TSG /SEPL/ C 300 / 17

**To,**  
**The Managing Director,**  
Shiga Energy Private Limited  
5<sup>th</sup> Floor, Building No 8, Tower C,  
DLF Cyber City,Phase-II, Gurgaon

**Subject :** Tashiding Hydro Electric Power Project ( 2 x 48.5 MW)

Dear Sir,

We are pleased to inform that all works related to wet commissioning of Tashiding HEP have been completed and the performance and guarantee test for Tashiding HEP has been completed on 4th November 2017. Hence the plant is fully ready for commercial operation.

We thank Shiga Energy Private Limited for all the support and cooperation rendered to us for completing the wet commissioning and testing activities.

Thanking you and assuring our best service always.

Yours faithfully,  
**For GE Power India Limited**  
(Formerly known as ALSTOM India Limited)

**Keyur Shah**  
Contractor's Representative

Cc : Mr. Prasad Varma TSV ( GM E&M ), Tashiding Site.



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To,  
Senior Manager (ER & NER)  
Power Finance Corporation Limited  
5th floor, Urja Nidhi,  
1, Barakhamba Lane  
Connaught Place, New Delhi



YOUR REF.: Work Order No. HO.PAD/SKPPL/186, dated- 31.03.2011 and email dated 6 Nov. 2017

OUR REF.: M.501087/001

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Date: 2017 12 21

**Subject: 2x48.5 MW Tashiding HEP, Sikkim: Review of COD in accordance to CERC Guideline and Field Efficiency Test of Turbine & Generator.**

Dear Sir,

This is reference to the above subject matter. The key observations of LE is provided as below:

**1) COD declaration in accordance to CERC norms:**

SEPL has taken prior acceptance from PSOCL (Power System Operation Corporation Limited) for evacuating the generated power from Tashiding HEP. Refer PSOCL Certificate No. ERLDC/Trial Run/8/3291 dated 17<sup>th</sup> October, 2017 which is enclosed as **Annexure I**. The generating unit # 1 and # 2 have completed the trial runs on 15<sup>th</sup> October, 2017 and 16<sup>th</sup> October, 2017 respectively. The units have demonstrated peaking capability equivalent to the installed capacity.

CERC Regulations 2016 dated 06<sup>th</sup> April, 2016 is enclosed in **Annexure II**, which describes regarding declaration of COD in Clause 6.3.A. 2(iii). The project company has informed that the obtaining of PPA is in progress. The declaration of COD made by the Project Generating Company is 00:00 hrs of 6<sup>th</sup> November, 2017, provided as **Annexure III**

**LE Comments**

The COD as declared by the Project Generating Company is 00:00 hrs of 6<sup>th</sup> November, 2017. The declaration of COD by the Project Generating Company is in line with the CERC Regulations 2016 dated 06<sup>th</sup> April, 2016 and is based on the necessary clearances obtained from the concerned RLDC namely Power System Operation Corporation Limited vide Certificate No. ERLDC/Trial Run/8/3291 dated 17<sup>th</sup> October, 2017.

**2) Field efficiency testing of Turbine and Generator.**

LE did not participated in Field efficiency testing of Turbine and Generator, as no information was provided to Lenders Engineer at the time of field efficiency testing. LE's representative Mr. Krishna Bhargava had visited the project site on 3<sup>rd</sup> and 4<sup>th</sup> November 2017.

During the visit on 3<sup>rd</sup> November, 2017, the Project Company informed the following:

- a. All the contractual tests (including commissioning, Power evacuation test, Turbine field efficiency test & Generator field efficiency tests), except unit # 1 heat-run-test at 0.9 power factor and rated / over load, were completed.

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Power Finance Corporation Limited

- b. Generator field efficiency testing instruments, which were mounted on 29<sup>th</sup> October, 2017 for efficiency test, were required to replace with original instrument. These instruments replacing activity planned to be taken on 3<sup>rd</sup> November, 2017.
- c. Unit # 1 heat-run-testing at 0.9 power factor and rated / over load planned to be performed on 4<sup>th</sup> November, 2017.

On 4<sup>th</sup> November, 2017, LE representative witnessed the unit # 1 heat-run-testing at 0.9 power factor and rated / over load. The test started at 15:20 Hours and successfully completed at 18:15 hours.

The Project Company has submitted the field efficiency test reports. We submit the following:

- a. Field efficiency test of Turbine for Unit # 1 and Unit # 2 were performed on 27<sup>th</sup> October, 2017 under the responsibility of GE. Tests were witnessed by Project Company's officials.  
As per contract agreement OEM has guaranteed weighted average efficiency of 94.53% as per formula described below:  

$$\eta_w = 0.1 \times \eta_{115} + 0.6 \times \eta_{100} + 0.2 \times \eta_{70} + 0.1 \times \eta_{50}$$
 The Turbine field efficiency test report is attached as **Annexure IV**. As per Turbine field efficiency test report's Clause No. 5.3 (on page 18/50) and Clause No.5.5 (on page 25/50), the weighted average efficiency of Turbine (Unit # 1) and Turbine (Unit # 2) have been achieved as 94.83 (94.34 + 0.5)% and 94.93 (94.46+0.5)%. LE opined it to be reasonable.
- b. Field efficiency test of Generator for Unit # 1 was performed from 29<sup>th</sup> October to 3<sup>rd</sup> November-2017 under the responsibility of GE. Test was witnessed by the officials of Project Company.  
As per contract agreement OEM has guaranteed weighted average efficiency of 98.693% as per formula described below  

$$\eta_w = 0.1 \times \eta_{115} + 0.6 \times \eta_{100} + 0.2 \times \eta_{70} + 0.1 \times \eta_{50}$$
 The Generator field efficiency test report is attached as **Annexure V**. As per Generator field efficiency test report's Clause No. 8 (on page 20), the weighted average efficiency of Generator (Unit # 1) has been achieved as 98.719. LE opined it to be reasonable.

### 3) Monitor and oversee start up, commissioning

LE had not witness the start-up and wet commissioning activities, as no information was provided to Lenders Engineer regarding time of start-up and wet commissioning. LE's representative Mr. Krishna Bhargava had visited the project site on 3<sup>rd</sup> and 4<sup>th</sup> November 2017. During LE project site visit (3<sup>rd</sup> and 4<sup>th</sup> November 2017) it was observed that both the generating units & their related auxiliaries to be running fit.

This review is based on the documents provided by SEPL and LE project site visit on 3<sup>rd</sup> and 4<sup>th</sup> November 2017.

Yours Faithfully,

for Tractebel Engineering Private Limited



M K SINHA  
Project Manager

### Enclosures-

- Annexure I: Certificate of Completion of Trial Run Operation of Generation Stations from PSOCL vide Certificate No. ERLDC/Trial Run/8/3291 dated 17th October, 2017
- Annexure II: CERC Notification dated 6th April 2016
- Annexure III: Declaration of COD by Project Generating Company
- Annexure IV: Turbine Relative Efficiency Test Report on Unit 1 & 2
- Annexure V: Generator Field Efficiency Test Report