

Ref. No: SEPL/F-5/15-16/508.

To,  
The Joint Director,  
North-Eastern Regional office,  
Ministry of Environment & Forest,  
Government of India

Dated: 28/5/2015

**Subject: Six Monthly compliance Report on status of Environmental Safeguards of 97MWTashiding Hydro Electric Project.**

Dear Sir,

This has reference to Environmental Clearance of 97MW Tashiding hydro Hydro Electric Project vide MoEF letter No.J-12011/66/2006-IA-I dated 29.07.2010 following are clarified for your kind perusal.

1. As per the Stage I Clearance the following amount is deposited to the Forest Env. & Wildlife management Deptt. Government of Sikkim, Gangtok.
  - i) **Compensatory afforestation:** Rs, 28,43,900=00
  - ii) **Net Present Value:** Rs, 32,18,774=00
  - iii) **CAT Plan:** Rs 63,48,000=00
  - iv) **Biodiversity Conservation & Management Plan:** Rs,88,40,000=00
2. Public Notification Published as per the Para 12 of the Environmental Clearance. We have advertised in two Local Newspaper widely circulated in the region around the Project "Himali Bela" in Nepali and "Sikkim Express" in English and Sikkim Herald classified the Government of Sikkim paper dated;11<sup>th</sup> August 2010 and 12<sup>th</sup> August 2010, informing that Project has been accorded environmental clearance.
3. Six Monthly compliance on the status of the 97 MW Tashiding Hydro Electric Project to the stipulated environmental conditions is enclosed as Annexure-A, Environmental activities and Corporate Social Responsibilities as Annexure B and Monthly Progress report of the project as Annexure C.

This is for your kind information.

Thanking You.

Yours faithfully,



(C.L Thakur)  
Sr.Vice president  
Shiga Energy Pvt. Ltd.  
Email.id:cl.thakur@dansenergy.com

- Copy to: 1) Additional Director, MoEF New Delhi, for kind information.  
2) Central Pollution Control Board, Govt. of India, for kind information.  
3) CCF-cum -Nodal Officer (FCA) Gangtok, for kind information.  
4) Member Secretary, State pollution Control Board Gangtok, for kind information.

**97MW TASHIDING HYDRO ELECTRIC PROJECT  
DATA SHEET**

Sl.No.	Particulars	Details
1.	<b>Project Type</b>	Run- of- River Scheme
2.	<b>Name of the Project</b>	97MW Tashiding Hydro Electric Project
3.	<b>Clearance Letter</b> i) Environmental Clearance ii) Forest Clearance.	No.J-12011/66/2006-IA-I dated 29.7.2010 MoEF GOI vide letter No.3-SKB 007/2010-SHI/1693-94 dated 16 <sup>th</sup> Sept.2011. Forest Env.& wildlife Management Deptt GOS vide Letter No.1368/FCA/FEWMD 955-57 Dated 24/9/2011
4.	<b>LOCATION:</b>	
	District	West District
	State	Sikkim
	Latitude	27°20'28"N
	Longitude	88°13'59"E
5.	<b>Address for Correspondence</b>	
	a) Address of concerned Project Head(with pin code, Telephone/Fax)	Shri. P.B.Praveen Kumar, Director Shiga Energy Pvt.Ltd. Rabdenling, Annex-II, Adjoining Hotel Royal Plaza Upper Shyari, Gangtok, East Sikkim. e-mail:praveenpb@yahoo.com Telephone:03592-280709 Fax:03592-280703
	b) Address of Project Incharge site office (With Pin code, Telephone/Fax)	Mr. C.L.Thakur Sr.Vice-President, Shiga Energy Pvt.Ltd. Yangtey, Gyalshing, West Sikkim, Contact no;8348691932 e-mail:cl.thakur@dansenergy.com
6.	<b>Break up of the Project Area</b>	
	a) Forest Land Total	4.3492Ha(Surface 2.7840Ha+Underground :1.5652Ha) in West Sikkim,
7.	<b>Break-up of the Project affected Population.</b>	Project affected families:30 Landless affected families: Nil
8.	<b>Financial Details</b>	
	a) Project cost as originally planned.	494.44Crores.
9.	<b>Forest Land requirement</b>	
	a.The Status of approval for diversion of forest land for non forestry use,	The Ministry of Environment & Forest Government of India vides its letter No.3-SKB 007/2010-SHI/1693-94 dated 2 <sup>nd</sup> May 2008 Forest Env.& wildlife Management Deptt GOS vide Letter No.1368/FCA/FEWMD 955-57 Dated 24/9/2011

**Annexure-A**  
**Compliance Status on Environmental Clearance.**

Sl.No.	Stipulated Conditions	Compliance Status
<b>Part –A: Specific Conditions</b>		
(i)	Catchment area treatment plans as has been proposed should be completed in 3 years.	We have already deposited the CAT amount of Rs. 63, 48, 000=00 in the CAMPA fund and work will be carried out by the State Forest Department.
(ii)	Five dumping site have been identified for dumping 380858m <sup>3</sup> of excavated material. For retaining the dumped /unused material for subsequent stabilization along the hill slopes and along the stretch of the road sausage-cum-retaining walls shall be developed. These need to be built prior to the dumping of muck at these sites. These walls would range from 70 to 290m length at the proposed dumping site.	Muck dumping is being carried out in approved muck dumping sites. Sausage cum retaining walls has been developed as proposed to ensure that the unused material does not spillover. Further, the excavated muck is being used for preparation of aggregate and boulder is being used for constructing of sausage wall.
(iii)	It should be ensured that the dumping yards blend with the natural landscape by developing the sites with gentle slopes, bunds, terraced and water ponds, patches of greenery in and around them.	After the completion of the construction work we will convert the dumping sites into natural vegetation parks and recreational centre by consulting experts in this field.
(iv)	For maintaining environmental flow in the river two cumec water should be released during lean season.	We will comply as per the MoEF norms.
(v)	The scheme of disposal of solid waste should cover the integrated project area including from labour colony during construction Phase. Solid waste from the labour camps shall be collected in beans/Masonry Vats and the same shall be dumped or disposed to nearby municipal landfills/authorized dump sites. No dumping of solid waste is allowed near any water body or a stream to exclude any health hazard problems to the society.	The solid waste is collected in bins and then dumped into Municipal approved dumping area. This condition is being complied strictly so as to prevent any health hazards to staffs and labourers.

(vi)	Jobs should be provided to atleast 1 member of all the 30 affected families as per their skills.	We have already provided jobs to atleast one member of all the affected families as per their skills and also contract works are being allocated to the affected families and we are further encouraging them to produce organic vegetables and developed poultry/ dairy farming to be supplied to the Company.
(vii)	Fishery Management Plan as proposed in the EMP should be implemented in totality.	We will implement the Fishery Management plan as proposed in the EMP together with the Fisheries Department, Govt. of Sikkim and we are in touch with the Fishery Department Government of Sikkim for implementation.
(viii)	The Proposed site is about 5Km away from the buffer Zone of Khangchendzonga Biosphere Reserve as per Supreme Court order clearance from NBWL may be obtained ( If required)	Not applicable as per Gazette Notification issued by MoEF vide: 1688 dated 27 <sup>th</sup> August 2014.
(ix)	The Proponent should carry out a study on post construction period during O&M stage in between 3 to 5 years after commissioning of the project to examine the actual environmental impact of the project on its surrounding compare to what was planned initially. The study should be conducted by a reputed institute/consultant.	Construction of the project is in progress. After the commissioning of the project we will comply with the said condition.

#### **Part-B: General Conditions**

Sl.No.	Stipulated Conditions	Compliance status
(i)	Adequate free fuel arrangement should be made for the labour force engaged in the construction work at project cost so that indiscriminate felling of trees is prevented.	Sufficient free fuel (only LPG) has been provided by the company for labourers engaged in the project. As such food is provided to the most employees at the Company's mess where LPG is used as fuel.
(ii)	Fuel depot may be opened at the site to provide the fuel (kerosene/wood/LPG). Medical facilities as well as recreational facilities should also be provided to the labourers.	The fuel Depot (LPG) has been established at site. We have employed three nurses (one female & two male) and two ambulances have been provided to meet the emergency needs for project employees and also the public residing within the project site. Routine health checkup is conducted at project sites. We are also taking help from State Health Department. We have provided Table Tennis , Carom Board, chess, Volley ball

		Television, Screening Films etc. for recreation of labourers and employees.
(iii)	All the labourers to be engaged for construction works should be thoroughly examined by health personal and adequately treated before issuing them work permit.	Labourers engaged at construction work are examined by MBBS Doctor. Regular health checkup is carried out at Project sites.
(iv)	Restoration of Construction area including dumping site of excavated materials should be ensured by leveling, filling up of burrow pits, landscaping etc. The area should be properly treated with suitable plantation.	As and when the construction is complete the guidelines laid down will be followed. We have already started the plantation around the dumping areas.
(v)	Financial provision should be made in the total budget of the project for implementation of the above suggested safeguard measures.	Yes, the financial provision for implementation of environmental safeguards has been kept.
(vi)	Six monthly monitoring reports should be submitted to the Ministry and its Regional Office, Shillong for review.	Proposal for constituting monitoring committee is already submitted to Additional Director, MoEF, and New Delhi for confirmation.
5.	Officials from Regional Office MoEF, Shillong who would be monitoring the implementation of environmental safeguards should be given full co-operation, facilities and documents/data by project proponents during their inspection.	We have been providing full co-operation, facilities and documents/ data by project proponents during the inspection of the officials from MoEF, Shillong.
6.	The responsibility of implementation of environmental safeguards rests fully with the M/s Shiga Energy Pvt.Ltd. & Govt. of Sikkim.	We are strictly complying with all the conditions set for the safeguards of environment with the cooperation of Forest Env. & Wildlife management Department, Government of Sikkim.
7.	The total amount of Rs.466.76 lakh kept in the budgetary provision for implementation of environmental management plan should be strictly adhered and not to be diverted for any other purpose.	We are committed to implement of the said budget for Environmental Management programme.
8.	In case of change in the scope of the project, project would require a fresh appraisal.	There is no change in scope of the project. However, in case of any changes we will inform the concern department and take the fresh appraisal.
9.	The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary and take action including revoking of the clearance under the provision of the Environment (protection) Act,1986 to ensure effective implementation of the safeguard measures in a time bound and satisfactory manner.	Agreed.
10.	This clearance letter is valid for a period of 10 years from the date of issue of this for	The construction work began since December, 2011.

	commencement of construction work	
11.	A copy of the clearance letter will be marked to concerned Panchayat / local NGO, if any .from whom any suggestion / representation has been received while processing the proposal. The Clearance letter shall also be put on the website of the Company by the proponent.	Till date we had not received the suggestion /representation while processing the proposal. The Clearance letter is available on the company's website.
12.	The proponent should advertise in atleast two local newspaper widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen in the Website of the ministry of environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> .	We have advertised in Two local Newspaper widely circulated in the region around the project "Himali Bela" in Nepali and "Sikkim Express" in English and Sikkim Herald Classified the Government of Sikkim Paper dated :11 <sup>th</sup> August 2010 and 12 <sup>th</sup> August 2010, informing that project has been accorded environmental clearance . The clearance letter is available with SPCB and at MoEF website.
13.	The project proponent shall also submit Six monthly reports on the status of compliance of the stipulated EC conditions including result of monitored data ( both in Hard copies as well as by e-mail) to the representative Regional office of MoEF, the respective Office of CPCB and the SPCB.	We are submitting six monthly compliance reports as stipulated in Hard and soft copy to the concerned officials.
14.	Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Authority Act.1997.	Agreed

## **ANNEXURE- B** **ENVIRONMENTAL ACTIVITIES AND CORPORATE SOCIAL** **RESPONSIBILITY**

### **PROGRAMME ON STRESS MANAGEMENT AND PSYCHOLOGICAL PROBLEMS**

Shiga Energy Pvt. Ltd. organised a mental health and stress management programme at Sakyong Secondary School on 10<sup>th</sup> October, 2013 and Tashiding Sr. Sec. School, West Sikkim on 25<sup>th</sup> October, 2013. There were a total of 300 students including teachers of the same School. The resource person of the programme was Dr. C.L.Pradhan (Neuro Psychiatrist) of STNM Hospital, Gangtok. He laid emphasise on the point that parents on their part will have to take care of the psychological aspect of their children right from their tender age.. Also, parents will have to consult a doctor if they find any psychological change or abnormality. Proper care and upbringing will enable the parents to understand his/her child's psychological problems and hence act on time. He also informed that stress is harmful for an individual's mental health, so one needs to ensure, understand and control his/her psychological problems. A child needs a peaceful home environment to have a stable mental health. An interactive session between the students and the teachers also took place. Mr. Gopal Adhikari, representative of Shiga Energy Pvt. Ltd. and Mr. J.C.Kafley, teacher of the school addressed the programme.



***Programme at Sakyong Secondary School***



***Tashiding Sr. Sec. School***

## **FREE EYE CAMP**

Shiga Energy Pvt.Ltd had organized a one day Free Eye Camp at Sakyong Secondary school, Geyzing West Sikkim on 30.10.2014.The Doctor present was Dr. Karma Bhutia (Eye specialist), the students and the staff of the School took active part and got their eyes checked. Around 100 students were found to have some eye problems and accordingly corrective measures were advised by the Doctor.

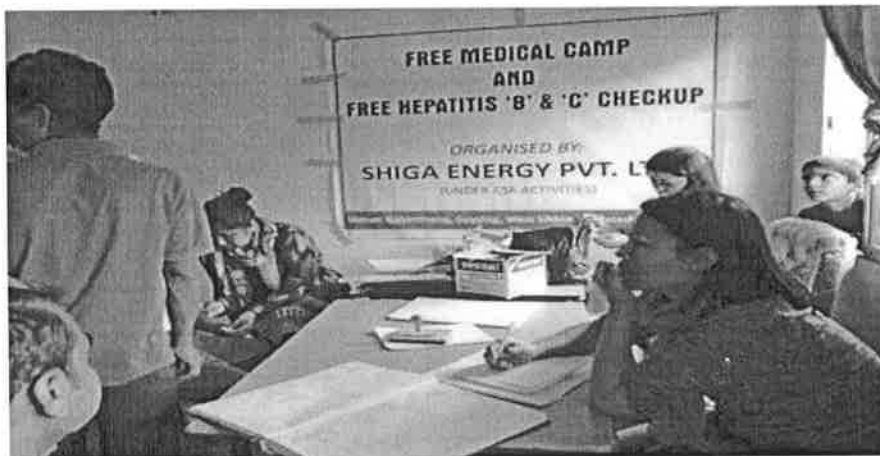
The Company proposes to organized more eye Camp in different school around the project area in future.



## **FREE MEDICAL CAMP AND FREE HEPATITIS 'B' & 'C' CHECKUP**

Shiga Energy Private limited had organized a one day Free Medical camp and hepatitis 'B' and 'C' checkup at Kaberthang project complex Geyzing west Sikkim on 9th November 2014.Local gentries including students, company employees and senior citizens from kaberthang, Sakyong, Raigaon, Omlok, Bhaluthang and Project affected areas families took active part in this free medical camp. More than 80 people were checked and they were advised as to what precaution and medicine is to be taken and for those people who were found to have Hepatitis 'B' and 'C' (+ve) were advised medicines. People were also advised that cleanliness is godliness. So they should keep their surrounding environment clean.

The company proposes to carry out more such Free Medical camp in project affected areas under corporate social Responsibilities.





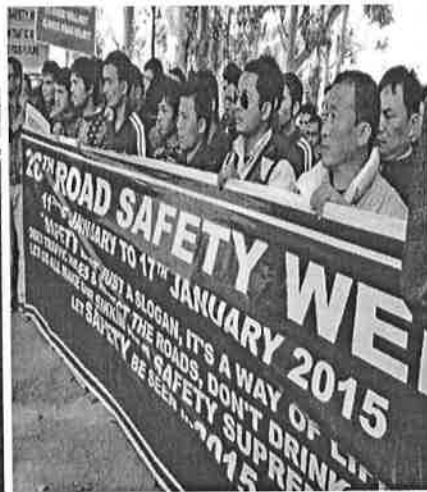
## WINTER MULTI-CAMP

M/s Shiga Energy Pvt. Ltd have been supporting the winter Multi disciplinary Camp by providing LPG Gas cylinder , Water Pump and supplying water through company Tanker for the student participating in this Camp . The winter Multi disciplinary Camp was organized by the Local NGO Heavenly Path Organization Sakyong. The winter Multi disciplinary camp provides participants to improve their skill in fields of sports, Culture and studies for over all development of the individuals.



## Road Safety Week from 11th January to 17th January 2015

The District Transport department along with the District Administration organized Road safety week from 11th January to 17<sup>th</sup> January 2015 at Geyzing West Sikkim. It was active participants were Police department, NGO, Municipality, and Business Association of the area. M/s Shiga Energy Pvt.Ltd also took active part in making the programme a success.



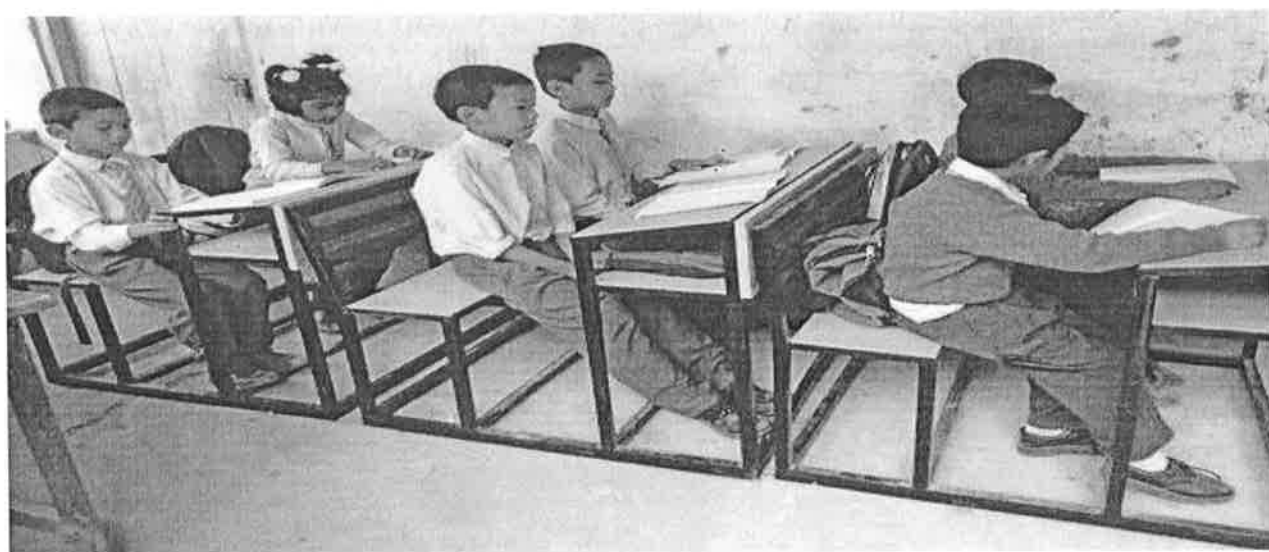
### **Sponsoring of Computer to Primary Health Sub- Centre Sakyong**

Under the corporate Social Responsibilities M/s Shiga Energy Pvt.Ltd. had sponsored the one set of Computer to Primary Health Sub- Centre Sakyong, West Sikkim, Geyzing on dated 17<sup>th</sup> January 2015. The set of computer is being handed over by the company officials to Shri L. B. Rai In-charge of the Primary Health Sub- Centre. The computer is provided to records datas pertaining to different types of diseases/illness occurring in the areas and the same is being forwarded to District Hospitals.



### **Desks and Benches to Kaberthang Primary School Geyzing, West Sikkim**

Under the Corporate Social Responsibility Scheme Shiga Energy Pvt.Ltd has provided the 30 Nos of 2 seater Desks & Benches to Kaberthang Primary school Geyzing West Sikkim. The Desk Bench were handed over by company officials to School Managing Committee on 17<sup>th</sup> February 2015. The company aims to meet the needs of both educational institute and the children studying there.





### **Sponsored of Multi-purpose Printer to Sakyong Secondary School**

M/s Shiga Energy Pvt. Ltd has sponsored the Multi-purpose Printer to Sakyong Secondary School, Geyzing West Sikkim. Officials from Shiga Energy Pvt.Ltd handed over the Printer to Principal Shri.B.B.Rai on 26/2/2015



## **Chairs, gas Cylinder and Utensils for Phur Sha- Chu Sewa samiti of Labing - Gerathang.**

Under CSR Shiga Energy Pvt. Ltd have provided cooking Utensils 10.Nos. 2 sets of Gas Cylinder and 30 Nos. of Chairs to NGO of Gerethang Tamatam Village ' PhurPhur-Sha-Chu' Sewa Samitti in presence of Hon'ble Area MLA Shri. Sonam Dadul Bhutia, Shri. L.P. Kafley, Zilla Upa-Adhakshya, Gram Panchayat Labing Gerethang GPU and the members of 'Phur-Sha-Chu' Sewa Samitti and officials of Shiga Energy Pvt.Ltd on 7<sup>th</sup>Day of February 2015 at Labing – Gerethang Gram Panchayat Unit No 06.



## **EYE CAMP AT FOR SCHOOL STUDENT AT PRIMARY LOBING SCHOOL**

Shiga Energy Pvt. Ltd has organized a Free Eye Checkup camp for the students at Lobing Primary School along with Jr. High School Tamtam under Lobing Gerathang GPU (Gram Panchayat Unit) of Yuksum Tashiding Constituency on 21<sup>st</sup> April 2015.

An Eye Specialist of the Manipal Hospital Gangtok has visited at Lobing School and test the eye of the school students. From the both schools total 62 students eyes were examined and most students' eyes were normal. As per eye specialist 17 students eye required attention while 03 students referred for the further treatment. During the treatment Dr. has also provided some awareness tips for healthy eyes to the students regarding food habit and small exercises for the eye muscles.

Both School administration had welcome the step of Shiga Energy for conducting health checkup camps and requested that Shiga Energy will organize further health camps for students of the area.



### **PARTICIPATION IN BOOK FARE AND DONATION OF BOOK FOR SCHOOL LIBRARY**

A Book fare for the students was held at Girls Senior Secondary School Auditorium, at Geyzing, West Sikkim on 25<sup>th</sup> April 2015. In this book fare Shiga Energy has facilitated the students of Two Project Area Schools for the participation in the Book fare, which were Tamatam Jr. High School under Lobing Gerathang GPU (Gram Panchayat Unit) and Government Secondary School Sakyong under Yangtey GPU of Yangthang constituency.

Students of the both schools have participated in this book fare and visit all the book stall. Shiga Energy has provided books for the establishment of library at Tamatam Jr. High School and provided books to the library of Sakyong Sr. Secondary School's library to strengthen the book capacity of the library.

Both School Headmasters had thanked Shiga Energy for this step regarding raising awareness among the students for this type of event. Someone has rightly said that good books are the Best friend for the human and enlighten their mind & moral.



### **PARTICIPATION OF STUDENTS AT BOOK FARE**

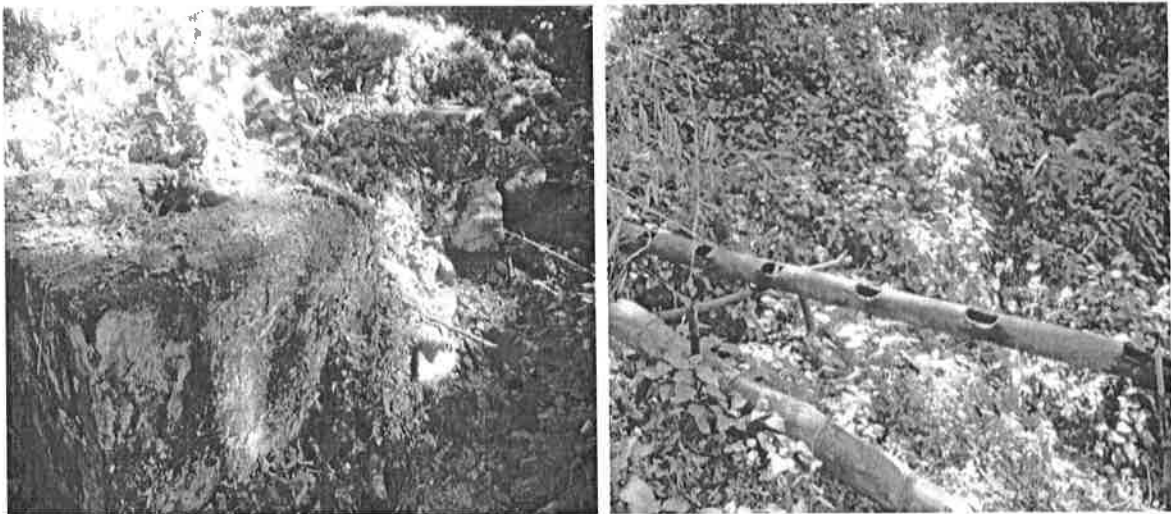
### **Poly Pipe Provided to Lower Bhaluthang Lower Belt for Drinking Water supply.**

Under Corporate Social responsibility Shiga Energy Pvt. Ltd provided 40mm poly pipe to the villagers of Lower Bhaluthang lower belt near (Adit-I) for the supply of drinking Water on dated 22.02.15. More than fifteen household get benefited proper drinking Water supply. The villagers along with the Ward Panchayat had precise the appreciation to the company.



Under Corporate Social Responsibility M/s Shiga Energy Pvt.Limited had constructed the water source tank and main Distribution Tank of Lower Chumbung and laying of poly pipe of 2Kilometer, to facilitate the proper drinking supply to the affected Villagers. After constructing the water Source tank and Main distribution Tank more than 22 households being benefited.

### **Lower Chumbung Shata Source (BEFORE)**



### **AFTER (Construction)**



M/s Shiga Energy Pvt.Limited had constructed the water source tank at Lower Bhaluthang, Geyzing West Sikkim .After constructing the water Source Tank more than 26 households are being getting proper Water Supply.

**Bhaluthang Water Source Tank (Before )      After construction**



M/s Shiga Energy Pvt.Limited had constructed three Nos. of Water Tank and provided the poly pipe of 40mm approximately 1.5 KM at Omnglok (Rai Gaon Ramitay) Geyzing West Sikkim. More than 20 families are being getting proper Water Supply.

### **Raigaon(Omnglok)Water Source Tank**

#### **Before**



#### **After Costructions**





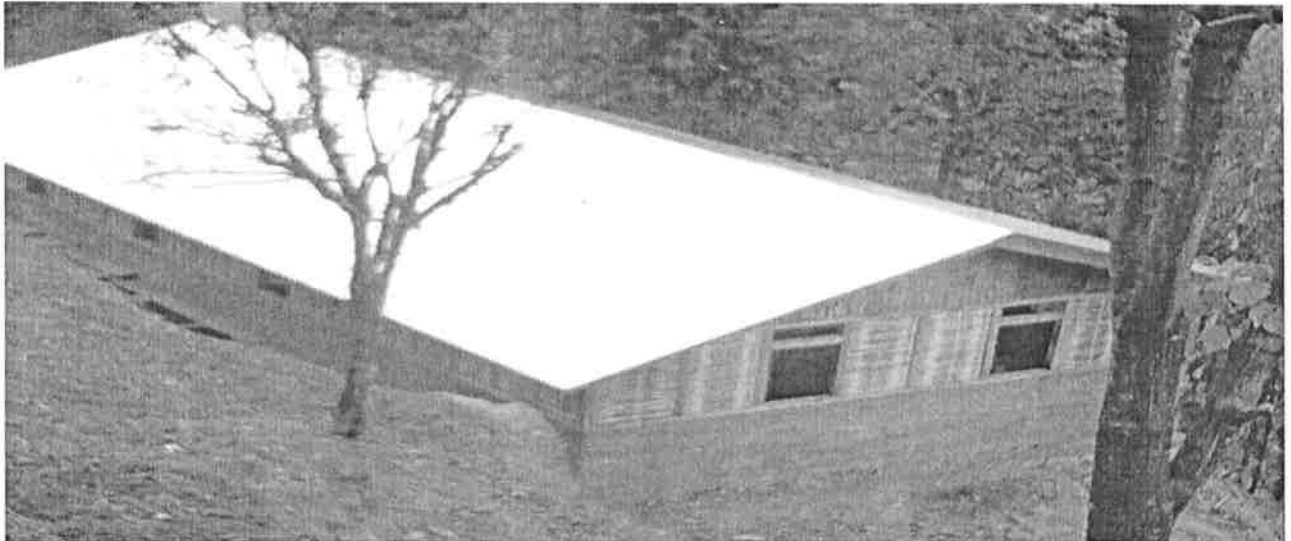
## **CLUB HOUSE CONSTRUCTION**

M/s Shiga Energy Pvt.Limited had supported the Kanchan Yuwa Club of Lower Bhaluthang by providing all the materials like Cement, Road, aggregate, Sand and GCI Sheets for proper Club House.

**Before**



**After Constructions**



APRIL 2015

# 97 MW TASHIDING HEP SIKKIM

## MONTHLY PROGRESS REPORT



SHIGA ENERGY PVT LTD

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**EXECUTIVE SUMMARY**

Owner	: Shiga Energy Pvt Ltd
Civil and HM Works Contractor	: Bumi Geo Engineering Ltd
Electro-Mechanical Contractor	: Alstom India Ltd
Owner's Engineer	: Energy Infratech Pvt. Ltd

All the construction contracts for Tashiding HEP project main works have been awarded and construction works at various fronts is going on in full swing with HRT and penstock tunnel excavation completed; construction works in Power House sub-structure and superstructure as well as in head works area are in progress; preliminary survey as well as detailed topographic survey along the selected route for the transmission line having been completed.

Diversion Tunnel works is completed and **river successfully diverted on 06<sup>th</sup> Jan 2015 followed by Barrage excavation start.** Excavation of upstream launching apron and barrage body has been completed including left and right bank excavation and concreting of Barrage Body and the upstream apron is nearing completion.

Under Ground excavation of the HRT has been completed with about 88.60m left at the inlet end which is to be taken up later along with power intake works.

Under Ground excavation of Penstock Tunnel was completed **on 27<sup>th</sup> March 2015** and mud mat concreting is in progress.

**Surge Shaft Adit Portal construction is complete** and underground excavation of Adit to Surge Shaft cavern is under progress. 50.50m length is already excavated out of 82.60m.

Power House open excavation along with extensive slope protection works was completed in the month of Feb. 2014. Draft tube positioning along with 2<sup>nd</sup> stage concreting of both the Units is completed. Service Bay Raft, D line RCC columns, River side wall and draft tube side wall concreting completed and structural steel erection in superstructure in the service bay area to facilitate EoT crane erection is under progress.

Preliminary survey as well as detailed topographic survey along the selected transmission line route has been completed.

## **1. PROJECT STATUS**

### **1.1 Clearances**

SEPL has obtained all clearances which are required for construction of the Tashiding HEP.

### **1.2 Financial Closure**

The financial closure for the Project was achieved in the month of July 2011.

## **2. Infrastructure Works at Project Site**

### **2.1 Infrastructure Works**

Infrastructure works are almost completed, the detail of which is given below:

- The total land required for the project has been acquired.
- The work for construction of access roads were completed and regular maintenance is under progress.
- Bridges erection works completed and are in operation.
- Construction of Magazine House is completed.
- Power supply line network for Construction power has been charged and is under operation.
- New Batching plant 45TPH and cement godown erection at Adit-1 completed and operational
- New Crusher Plant 100TPH erection near Adit-1 is completed and operational.
- Tower crane erection at the power house end completed and is operational.
- Setting up of SEPL's administrative and technical office at Project Site has been done.
- Construction Work of labour quarters for the Civil Contractor completed at all sites.

## **3. Progress of Works**

### **3.1 Head Race Tunnel**

Excavation of all the three Adits is completed. Excavation of the HRT was taking place from six faces: Faces 1 and 2 from Adit 1 with Face 1 advancing towards intake and Face 2 advancing towards Adit 2; Faces 3 and 4 from Adit 2 with Face 3 advancing towards Adit 1

and Face 4 advancing towards Adit 3; Faces 5 and 6 from Adit 3 with Face 5 advancing towards Adit 2 and Face 6 advancing towards Surge Shaft. The faces as well as various lengths have been shown pictorially enclosed as Appendix II.

### **3.1.1 HRT-Face-1:**

Under Ground excavation of HRT from Face-1 was completed in the month of Oct.2014 making total progress of excavation to 1376.20m.

### **3.1.2 HRT-Face-2:**

Under Ground excavation of HRT from Face-2 was completed in the month of Nov.2013 making total progress of excavation to 765.00m. Cleaning is under progress.

### **3.1.3 HRT-Face-3:**

Under Ground excavation of HRT from Face-3 was completed in the month of Nov.2013 making total progress of excavation to 1181.48m.

Mud mat concreting of HRT-Face-3 completed for a length of 110m and cleaning in Face-3 completed.

### **3.1.4 HRT-Face-4:**

Under Ground excavation of HRT from Face-4 was completed in the month of March 2015 and making total progress 1119.10m.

### **3.1.5 HRT-Face-5:**

Under Ground excavation of HRT from Face-5 was completed in the month of March 2015 and making total progress 967.80 m

### **3.1.6 HRT-Face-6:**

Under Ground excavation of HRT from Face-6 was completed in the month of Oct 2014 and making total progress 243.34 m.

## **3.2 Penstock Tunnel:**

Under Ground excavation of Penstock Tunnel was completed in the month of March 2015 making total progress 234 m. Out of 234m length mud mat completed for 124m length during the month.

## **3.3 Intake Site:**

### **Diversion Tunnel:**

Diversion Tunnel excavation is completed. (DT Length=262m includes 90.60m length of HRT).

Invert concreting & slope protection work near DT inlet portal, DT Outlet Channel, Invert concrete and side slope protection work (Concreting) is completed followed by successful river diversion achieved on 6<sup>th</sup> Jan 2015.

### 3.4 Barrage

Excavation of U/S Apron and Barrage body completed including left and right bank excavation. Concreting in U/S Apron was completed for 12 panels out of 16 panels. Barrage Body (Barrage Bay 3 & 4) and (Barrage Bay 1 & 2) concreting also completed. 1<sup>st</sup> Lift of concreting in Pier no 3(2) and Pier no 4 completed and for 2<sup>nd</sup> lift reinforcement and shuttering is under progress.

Retaining wall in Right Bank of Barrage u/s of Intake 1<sup>st</sup> Lift completed (2m Height) and for second lift shuttering is under progress.

### 3.5 Surge Shaft

Surge Shaft Adit Portal is ready and underground excavation of Adit to Surge Shaft is under Progress making total progress 50.50m.

### 3.6 Power House area:

- **Excavation and Slope protection works**

Power House open excavation along with slope protection was completed in the month of Feb. 2014.

- **Concreting**

**Dewatering Sump:** 1<sup>st</sup> stage concreting from El. 676.00m to El. 682.50m completed.

**Unit-1:** Draft tube lowering, positioning, alignment and second stage concreting completed up to El. 682.50m.

**Unit-2:** Draft tube lowering, positioning, alignment and second stage concreting completed up to El. 682.50m.

**Control Block:** Concreting in raft from El. 684.10m to El. 689.45m completed from D-Line up to E-Line of Power House. Concreting of slab at El. 690.60m completed and scaffolding for slab at El. 696.50m is under progress. Wall concrete completed from 695.70 to El. 698.60m during the month.

**Hill Side Wall:** Concreting of the wall completed.

**River Side Wall:** Concreting of the river side wall completed.

**Draft Tube Gate Wall:** Concreting pouring from El. 700.10 to El. 705.30m completed during the month.

- **Protection works along river side**

Wire crate fixing as well as Back filling with due compaction has already been completed up to El. 707.00m.

Construction of temporary approach to the service bay area is under progress.

#### 4. Electro-mechanical Work :

The contract for entire Electro Mechanical works was awarded to M/s ALSTOM Projects India Ltd on turnkey basis.

##### Status of E&M drawings/documents:

#### 1. Turbine , MIV& Governing System

##### - Approved Drawings/ Documents

Lower & Upper pit liner, embedded pipes, pressure taps and field efficiency pipes, inlet spiral case and stay ring foundation, anchorage and extension piece, Draft Tube, Elbow & Liner Hydraulic Design, Turbine generator coupling and runner assembly and Draft Tube Bulk Head General Arrangements & ITP of Turbine & MIV, Francis Turbine Guide bearing, shaft seal, Discharge Draft tube cone, Pressure tap disposal board GA drawings, Head cover, Bottom ring, Wicket gate & regulating ring BOM, Francis Turbine Stages of concrete Civil work General layout, Francis Turbine Non Embedded Pipes for SA 10 Spiral Case. Drain GA, MIV Air admission & Air release valve GA, MIV by pass Line GA & BOM, UltraSonicFlowmeter Technical Specification, Francis Turbine governing system and MIV function diagram, Governor Panel –GA& Wiring Diagram, Governing System & MIV Design Memorandum and Calculation note, ITP of Governing System, Turbine runner removal gallery layout, Turbine Cross Section & Distributor, turbine Instrumentation & monitoring diagram, Francis Turbine Shaft Line Calculation, Head Cover Dismantling General Arrangement & BOM, MIV Design Memorandum, Downstream Sleeve GA & BOM, Spherical valve loads on concrete, MIV Signalization & Water piping General Assembly

##### - Under Review Drawings/ Documents

Design Memorandum of Turbine, Turbine Hard Coating Details, , , MIV General Arrangement, MIV Loads on concrete, , , Spherical Valve Penstock and MIV Body Drainage GA& BOM, Governor Operating Instructions, MIV Pressure Testing General Assembly & BOM, Upstream Sleeve General Assembly

#### 2. Generator

##### - Approved Drawings/ Documents

Characteristic Curve, Instrumentation & Monitoring Diagram, ITP, Design Memorandum, Pole Complete, Generator, Rotor & Stator cross-section layout, lower guide bearing arrangement, stator sole plate, upper & lower bracket sole plate anchoring arrangement & BOM, Upper Combined Bearing & Lower Guide Bearing Basic Layout, Rotor Embedded Plate Arrangement, Stator Complete Handling & Rotor Lifting Arrangement, Upper Combined Bearing complete & BOM .

##### - Under Review Drawings/ Documents

Generator Instruments and Safety List, Upper Bracket Assembly, Generator Foundation Embedded Component, ITP Excitation System, Generator loads on concrete



### 3. BOP Items

#### - **Approved Drawings/ Documents**

Design Memorandum - Grounding System, 11 kv isolated phase busduct, GSU Transformer, Elevator & EOT crane, Buried main earth mat and electrodes drawings, Cable trays & support system erection standard, General Site list of Embedments, PH EOT Crane - Assembly Drawings, rail fixing arrangements, Electrical Schematic Circuit Diagram, BOM & GA Drawing of Panels & electrical and Control Write Up, Structural Design, Shrouded Type DSL Fixing Arrangement Details Technical Specification of condition monitoring system, Embedded and overgrind piping hydro test procedure, Piping System & support Erection Standard, Oil piping calculation note, Design Memorandum & Flow Diagram - Power House Drainage & Dewatering System, Cooling Water System, Design Memorandum & Single Line Diagram - Illumination, NGR & NGT Calculation, Generating Unit - Protection Single Line Diagram, 220kV Switchyard single line diagram, Protection System Design Memorandum, Protection relay list

ITP of Grounding System, Cooling Water System and fire protection & detection system.

#### - **Under Review Drawings/ Documents**

Design Memorandum & Flow Diagram -, Oil Handling System and Ventilation and Air Conditioning System, Design Memorandum & Single Line Diagram -, 220 V & 48 V DC, 240 V UPS and MV, LV & DG Systems, , Lightning Protection System calculation, Grounding System connection details, General Power Plant - Control System Design Memo & Configuration, Communication System, LV & MV system cable sizing, 11kV & 220 kV CT & VT Calculations

#### **Following Material Dispatch Clearance Certificate (MDCC) has been released:**

1. Grounding System (Lot-1)
2. Draft Tube Elbow & Liner for Unit -1 and unit -2
3. Draft tube embedded parts
4. Embedded parts for Spiral casing - lot 1
5. Draft Tube Bulk Head
6. Embedded parts for Spiral casing - lot 2
7. Stay ring Unit 1

#### **Status of E&M equipment at Alstom works/ Inspection/ Dispatch:**

1. Draft Tube elbow /liner for unit 1 and Unit 2 and grounding system material (Lot-1) have been manufactured, Inspected and reached project site.
2. Draft Tube embedded parts reached at site.

#### **Status of Erection, Testing and Commissioning at Site**

1. Initial stage embedment in first stage concreting has been started.
2. Draft tube liner of both Unit 1 and Unit 2 has been placed in position and its alignment and concreting completed.

**5. Transmission System :**

SEPL has signed the Long Term Access Agreement (LTAA) with Power Grid Corporation of India Limited (PGCIL) on 19<sup>th</sup> October, 2011 for evacuation of power. Transmission service agreement (TSA) has been signed with Power Grid Corporation of India Limited (PGCIL) on 30<sup>th</sup> January, 2014.

Preliminary survey for selection of the final transmission line route as well as detailed survey along the selected transmission line route has been completed. Action for land acquisition and obtaining various clearances are in progress.

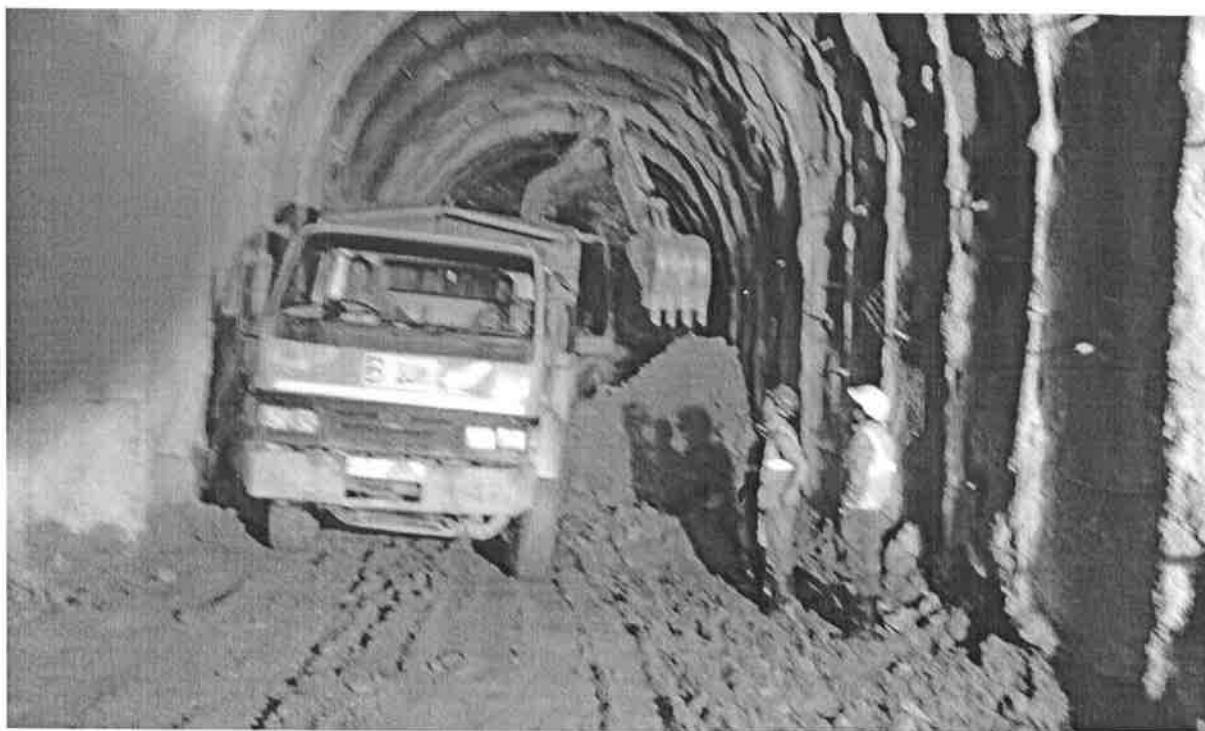
6. **PROGRESS PHOTOGRAPHS:**



**View of Barrage Works-Concreting of 2<sup>nd</sup> lift under progress**



**View of Barrage Works**



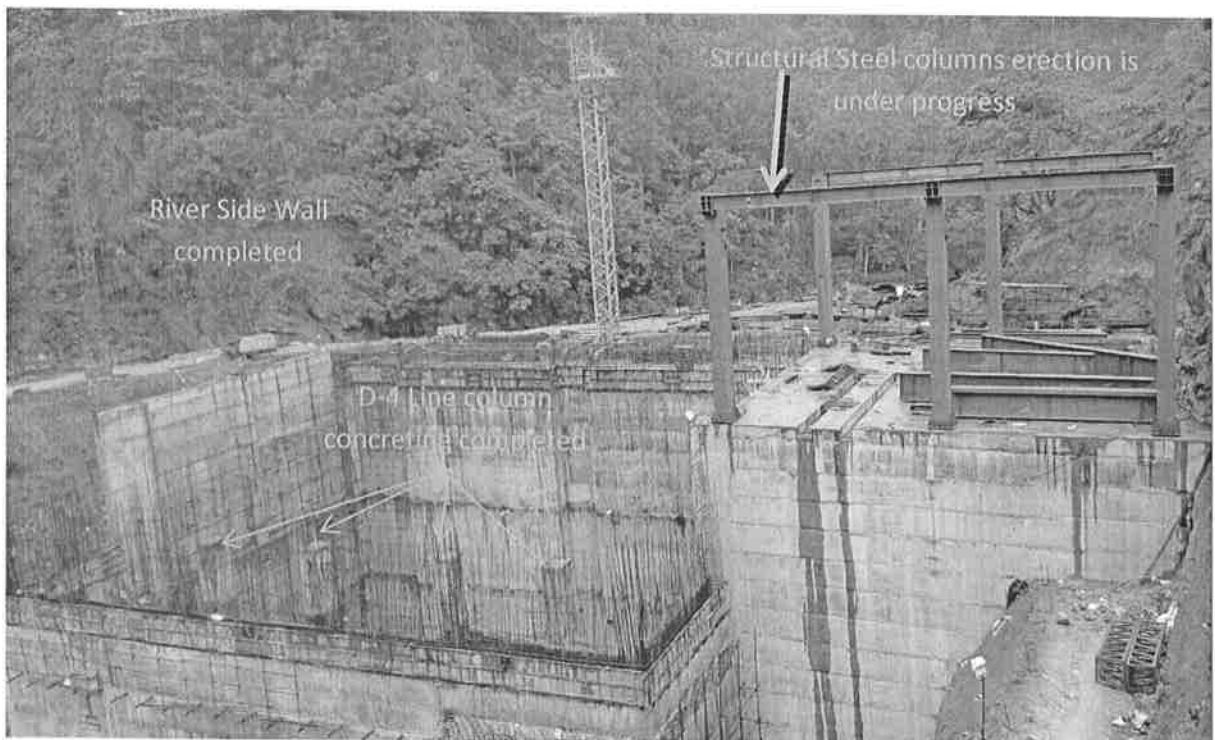
**Adit to Surge Shaft –Mucking Under Progress**



**Pressure Tunnel Day-light**



**View of Power House-Concreting, reinforcement binding, shuttering and structural steel erection work under progress**



**View of Power House**