



Aqua & South Asian Hydro Power Stations - a Symbiotic Relationship

*The Best Global technologies go
into Aqua's Dry Motor
Submerged Pumpsets
especially designed
for demanding conditions
of South East Asian
Hydro
Power Stations*



Thanks to our capable R&D, Robust Quality & Sincerity towards developing pumps exclusively for Hydro Electricity applications; Aqua has been awarded the Prestigious **Best Quality Pump Vendor**

by



*(one of the World's Largest
Heavy ElectroMechanical manufacturers)*



“Aqua” has specially Designed & Developed this series of pumps keeping in mind the real life situations - i.e. high Silt levels, high Leaching of Calcites, high Delivery & Submergence (Immersion) heads (when flooded), etc.

Flood Protection

These heavy duty, high flow x high head pumps are used for controlling water level within the Machine Rooms in case of accidental flooding to avoid catastrophic capital loss.

Dewatering

Dewatering pumps are used for Planned Periodic Maintenance works / Inspection – they have to drain enormous quantities of water from not only the Turbines, but also from its Suction & Discharge Draft Tubes.

Dewatering & Flood Protection pumps have to perform with utmost reliability under arduous conditions as they:

- 1) they experience long periods of inactivity wherein they are very susceptible to jamming due to silt & calcites.
- 2) operate against wide water level variations corresponding to wide pump discharge head variation :
 - a. this leads to increased vibrations & thrusts
 - b. may hamper the ability of motor to start up the pump (as it is buried under silt & has to start up at reduced head condition without valve throttling)

Drainage

Leakage & Seepage from Turbine Shafts, Concrete, etc comes into the machine room galleries which must be drained out continuously & reliably by Drainage pumps- they are designed for 24x7 duties

All the above duties require the pumps typically located at the bottom of sumps to work under Silty & Calcite laden water which :

- 1) may cause galling/seizure or in worst case burial under silt.
- 2) severely erodes pumps reducing their discharge pressure to a point where they may shut off against static gravitational head
- 3) may lead to breakdown of pump bearings (if they are water lubricated)

Cooling Water

Turbine & generator bearings are generally cooled & lubricated by oil which in turn is cooled by water through heat exchanger. Shaft seals, generator windings, brakes, HVAC condensers, etc are also cooled by water. This can be either through open or closed loop cooling system wherein either raw or cleaned water is utilized. Cooling water pumps work round the clock & hence should be of high efficiency & require minimum maintenance.

Fire Fighting

Water is pumped upto an overhead tank from where it gravity feeds the firefighting system. These pumps are left idle for extended periods yet should start up at a moment's notice & hence should be of non-galling/ non seizing type. Aqua's submerged pumps require no special civil superstructure & start up immediately even after extended idle periods.

Feed & Lubricating Water

Clean water can be used to lubricate & cool the turbine shaft seals or pressure feed the labyrinth type shaft seals. ARS HE pumps do the job efficiently & require no routine maintenance.

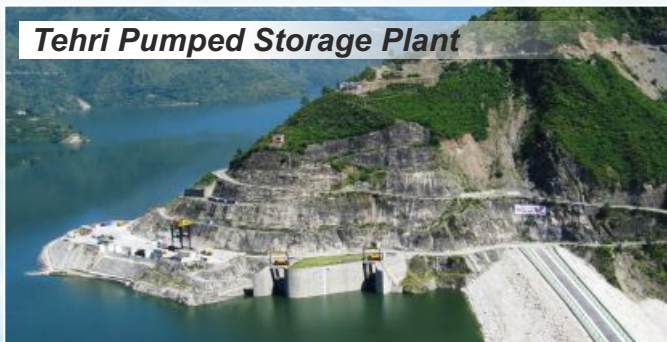


ALSTOM

GE (USA) acquired Alstom's (France) power generation & by 2018 their power plants produced **1/3rd** of the **World's** electricity...!

After trying virtually every make, GE (Alstom) have now almost standardized on Aqua's pumpsets for their South Asian HEP's...!

Project Site	Country	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No)	Year of Supply
Jorethang	India	60	36	204	3	2008
		50	40	110	3	
Thac Mo (1 x 75 MW)	Vietnam	25	34	100	3	2017
Dikchu	India	40	25	175	2	2012
		50	23	265	4	
Lower Solu Hydro Electric Project	Nepal	6	14	35	2	2018
		6	14	35	2	
Chuzachen	India	20	23	80	4	2013
Tehri Pumped Storage Plant (4 x 250 MW)	India	200	73	450	3	2016
		215	77	450	3	
		335	75	760	3	
		5	12	40	2	
		20	41	35	2	
Tashiding Hydro Electric Project	India	45	36	150	2	2016
		100	38	450	2	
Hirakud Hydro Electric Project	India	140	30	820	2	2016
Baleh	Malaysia	200	55	560	6	-



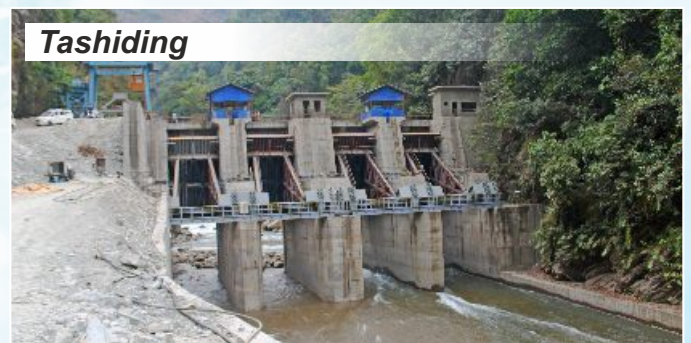
Tehri Pumped Storage Plant



Hirakud Hydro Electric Project (OHPC)



CHUZACHAN



Tashiding



Jorethang



Dikchu HEP

ANDRITZ Hydro

ANDRITZ Hydro is one of the leading global suppliers of electro-mechanical equipment and services for hydropower plants with a total capacity of more than 21,000 MW in India.

Project Site	Country	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
OPGCL_Middle Bhotekoshi (102 MW)	Nepal	75	25	468	2	2017
		40	25	234	2	
DAK MI-2	Vietnam	25	28	100	2	2017
		22.5	20	150	2	
Nam Theun 1	Laos	50	57	90	5	2019
		450	58	1260	4	2018
		200	50	630	4	
Thuong Kon Tum (2x110 mw)	Vietnam	35	30	150	1	2018
Baglihar-II	India	150	62	360	3	2018
Regional Rusumo Falls	Tanzania	35	32	100	2	2019
		3	10	18	1	
Nam Kong - 3	Laos	100	37	390	2	2020
		12.5	37	30	3	
Shongtong Karchham (3x150 MW)	India	100	50	270	10	2020



Nam Theun 1 (Laos)



Thuong Kon Tum (Vietnam)



DAK MI-2



Gol's Maharatna BHEL has the capability to deliver complete hydro power plants in the range of **5 MW to 300 MW** unit sizes with various **Turbine** types along with matching **Generators** both of which are designed, engineered, manufactured and tested **at BHEL's own manufacturing plants... !**

BHEL has installed more than 1000 utility sets in thermal, hydro, nuclear & gas based power plants, contributing **53%** to the total installed conventional power generation capacity of India..!

Aqua's & BHEL's collaboration began in 2009 with the challenging pumps for NTPC Koldam HEP (80m head in Single Stage installed on Auto Coupling System).



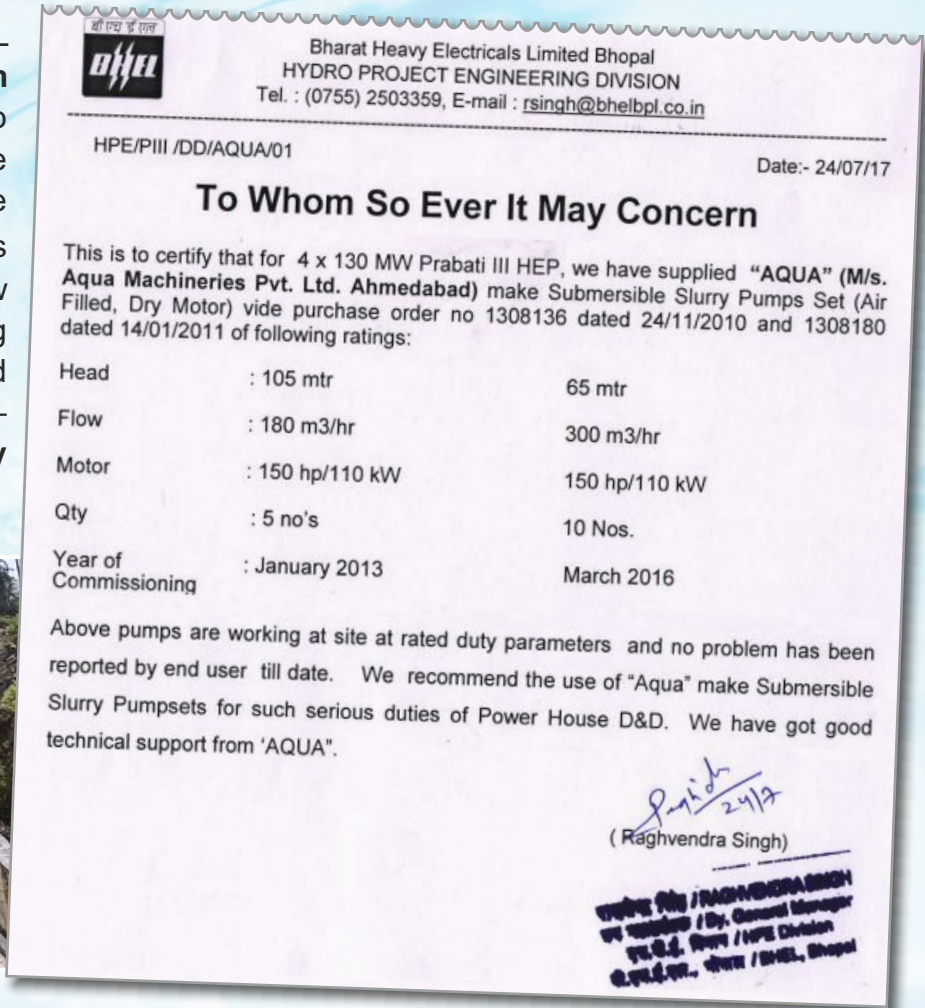
After 100% successful installations, Aqua has; till date supplied cumulatively **10,650 kW** Submerged Slurry pumpsets to BHEL for it's various Indian as well as Export projects.

Project Site	Country	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Grand Katende	South Africa	90	33	420	3	2016
		50	30	240	3	
Punatsangchhu - I (6 x 200MW)	Bhutan	225	70	360	8	2017
Punatsangchhu - II (6 x 170MW)	Bhutan	315	90	360	3	2017
		250	75	372	8	
Alaknanda	India	225	41	900	3	2011
		85	41	300	1	
		65	41	225	1	
		30	41	75	2	
Tuirial (2 x 30 MW)	India	50	42	150	5	2015
		50	42	150	2	2016
Baira Suil (3 x 60 MW)	India	100	45	300	8	2018
		85	40	300	6	
Pranhita Chevella LIS Package – VI (7 x 127.6 MW)	India	160	80	270	8	2017
		140	80	210	3	
Pranhita Chevella LIS Package – VIII (7 x 121.5 MW)	India	160	80	270	9	2017
		140	80	210	4	
Kameng (4 x 150 MW)	India	75	60	150	3	2017
Pranhita Chevella LIS Package – X (4 x 106 MW)	India	160	80	270	4	2018
		140	80	210	3	
Pranhita Chevella LIS Package – XI (4 x 96 MW)	India	180	90	270	4	2018
		160	90	210	2	

For its NHPC Parbati III, BHEL had to offer **Single Stage x High Head** pumps installed on Auto Coupling system – they chose Aqua to design & develop these **105m** Submerged pumpsets since Aqua was one of very few companies to have strong InHouse R&D capability & a good understanding of Indian HEPs – these are running **satisfactorily since 2013**.



Parbati III



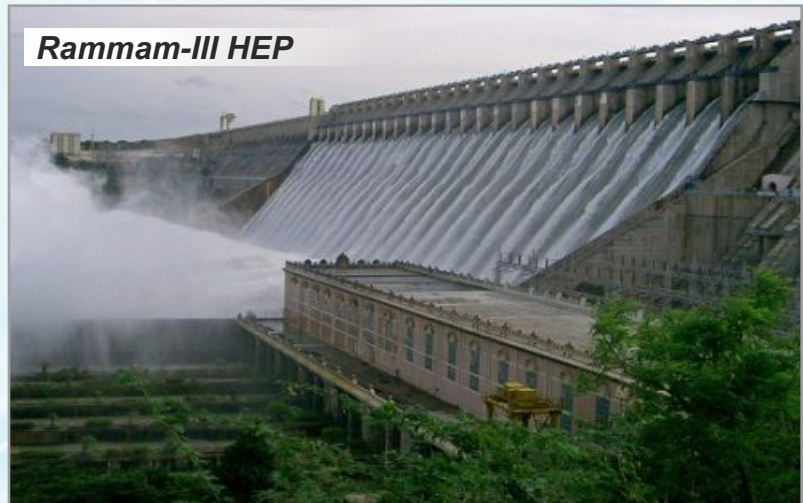
NTPC Limited, formerly known as National Thermal Power Corporation Limited, is an Indian government electricity board engaged in the business of generation of electricity and the company contributes to over 25% of total power generation.

AQUA's has supplied pumpsets to it's both HEP's - Koldam & Rammam.

Project Site	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Koldam HEP	50	80	60	3	2008
	50	80	60	4	2016
Rammam-III HEP (3 x 40 MW)	90	30	426	6	2019



Koldam HEP



Rammam-III HEP



Reference Installations

(as on March 2021)



Aqua's submerged pumps have **Low Life Cycle Costs** & require No Routine Maintenance or Consumables.

At Bhira 150MW Reversible Pump Turbine station, Aqua's Submerged pumps are used to lift **6000 m³/hr** of water from adjoining Kundalika river into the main Mulshi Reservoir (which is ultimately used for hydro electric power generation) since 2004...!

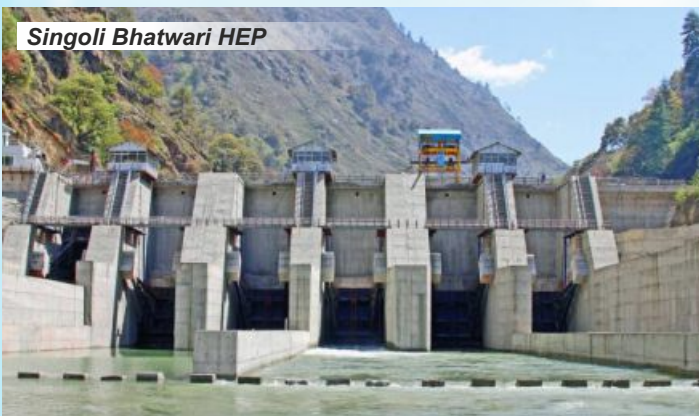


VOITH

Engineered Reliability

Voith Hydro (formerly Voith Siemens Hydro Power Generation) is a joint venture between Voith and Siemens, which is a system supplier for **1/3rd** of the world's hydroelectric power being produced with its turbines & generators. Voith has chosen our Pumpsets for its various Projects.

Project Site	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Sainj	50	35	120	2	2013
Singoli Bhatwari	20	30	45	2	2017
	35	30	175	2	
Bhasmey (2 x 27 MW)	10	26	10	1	2013
	15	25	45	3	
Rongnichu (2 x 48MW)	12.5	15	120	2	-
	6	15	60	2	
	3	15	15	2	



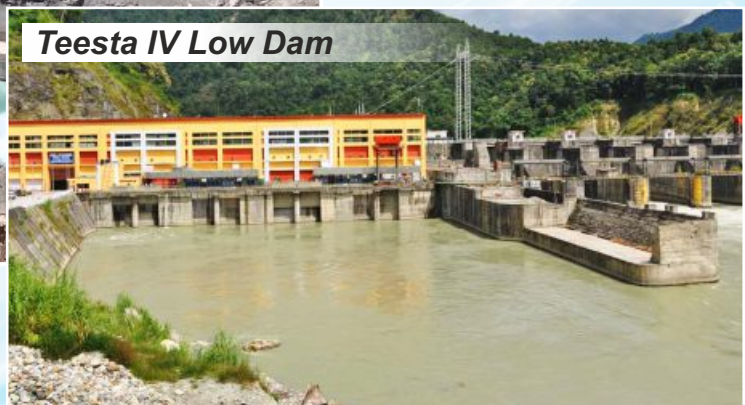


As on date, **Gol's NHPC Limited** has become the largest organisation for hydropower development in India - presently it has an installed base of **7000+ MW**.

Aqua's pumpsets are running satisfactorily in various NHPC projects.



Project Site	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Teesta V	150	50	420	2	2009
Omkareshwar	80	42	310	1	2009
Parbati III	150	105	180	5	2011
Parbati III	150	65	300	10	2011
Chutak	65	30	300	9	2011
	15	8	300	2	
	10	20	60	5	
	2	6	18	5	
Teesta IV Low Dam	150	54	388	9	2012
	60	35	240	3	
Chamera-1	30	35	102	2	2015
Chutak (4 X 11 MW)	50	30	240	1	2016
Bairasuil	50	360	21	2	2018
Bairasuil (3 X 60 MW)	100	45	300	8	2019
	85	40	300	6	
Rangit	65	27	400	3	2020



NHPC is using Aqua's pumpsets at Dulhasti HEP which are running satisfactorily in **wide temperature variation** ~3°C to +40°C..!



एनएचपीसी लिमिटेड

(भारत सरकार का उद्घम)



NHPC Limited

(A Govt. of India Enterprise)

(ISO 9001: 2015, ISO 14001: 2015 & OHSAS 45001:2018 Certified)



दुलहस्ती पावर स्टेशन
किश्तवाड जे एण्ड के - 182206
Dulhasti Power Station
Kishtwar (J&K)-182206
Phone-01995-259354,259832
Telefax-01995-260361
E-mail:-dulhasti@rediffmail.com

Ref: NH/DPS/PHEC/DGM/2020/1084

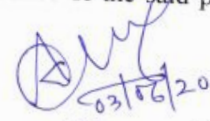
Date:03/06/2020

Installation & Performance Certificate

This is to certify that following Supply Orders were placed to M/s Aqua Machineries Pvt. Ltd., Ahmedabad, India for Supply, Installation, Testing and Commissioning of Submersible Slurry Pumps at Power House of Dulhasti Power Station, Kishtwar (J&K).

1. PO No: NH/DPS/PROC/PR-1438/SO-574/2015/2870 Dated: 16.01.2015-
Supply of pumps having discharge capacity of 300 m³/Hr. at 65 mtr. Head, 150 H.P, Qty: 01 No.
Month & Year of Commissioning: June-2015.
2. PO No: NH/DPS/PROC/PR-1431/SO-620/2015/274 Dated: 17.06.2015-
Supply of pumps having discharge capacity of 400 m³/Hr. at 65 mtr. Head, 180 H.P, Qty: 01 No.
Month & Year of Commissioning: March-2016.

All Pumps were installed successfully and performance of the said pumps is found satisfactory.



Dy. General Manager (M)
Dulhasti power Station
Kishtwar (J&K)

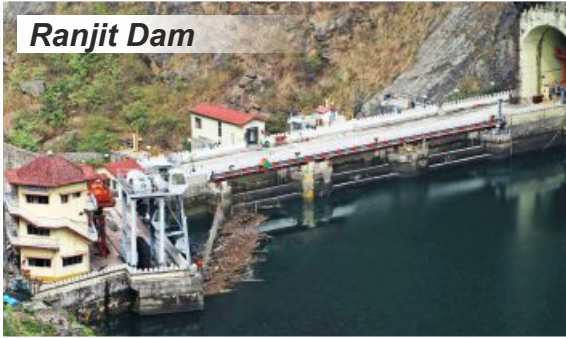
Dy. General Manager (PHEC)
NHPC Limited
Dulhasti Power Station
Kishtwar (J&K) 182206

स्वहित एवं राष्ट्रहित में बिजली बचाएं

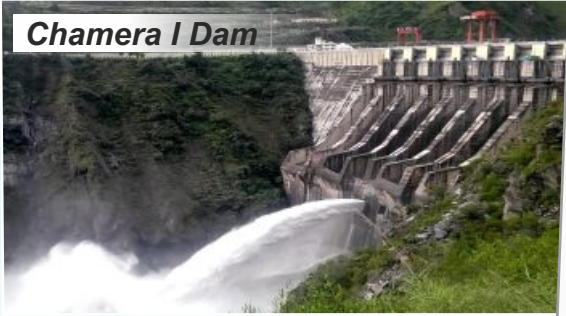
Project Site : Dulhasti Power Station				
Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
150	65	300	3	2014
150	65	300	1	2015
180	65	400	1	2016
180	65	400	3	2019



Dulhasti



Ranjit Dam



Chamera I Dam



Teesta V

एन एच पी सी
NHPC

एन एच पी सी लिमिटेड
NHPC LIMITED
(भारत सरकार का अंग) (A Govt. of India Enterprise)
टीस्ता V पावर स्टेशन
Teesta V Power Station
सिंगताम पूर्वी सिक्किम - 737134
Singtam, East Sikkim - 737134

ISO 9001 ISO 14001 IS 18001
आई एस १८००१:२०१५
IMS certified Power Station
सिंगताम/Ph. 03592-247262
फैक्स/Fax: 03592-247271/377

Date: 25.03.2013

NH/TSV/SM(E)/1687

To
M/S Aqua Machineries Pvt. Ltd
Plot No. 3821, GIDC, Phase-IV,
Valva, Ahmedabad-382445

Sub: Performance of M/S Aqua Machineries Pvt. Ltd. make Submersible Pump
Ref: Your letter No. AQUA/HO/NHPC/SKM/2013/1091 Date: 06.03.13

Sir,

With reference to above, it is to intimate that two numbers of **M/S Aqua Machineries Pvt. Ltd.** make submersible pumps are installed at power house of Teesta-V Power Station as a part of Disaster Management plan during the year 2009-2010. The pumps are not in continuous use. But the testing of the pumps is carried out at regular interval and the performance during testing is found satisfactory. The detail of the pumps are attached in Annexure-I.

This is for your kind information please.

Thanking you,

Yours sincerely,

Dy. Manager (E)
Power House Electrical

बंधु एवं स्वयं विद्युत ने दुर्घटना को रोकता है
 फरीदाबाद कार्यालय: एन एच पी सी कार्यालय परिसर/सेक्टर - 33, फरीदाबाद - 121003 (हरियाणा)
 Regd. Office: NHPC Office Complex, Sector 33, Faridabad-121003 (Haryana)

Odisha Hydro Power Corporation Ltd.

Based on the very satisfactory performance of GE-Alstom's supplied Aqua pumpsets, Odisha Hydro Power Corporation Ltd. have given **Repeat Specification** yet **Direct** order to Aqua.

Project Site	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Hirakud	140	30	820	1	2017
	140	30	820	1	2020



Hirakud Hydro Electric Project

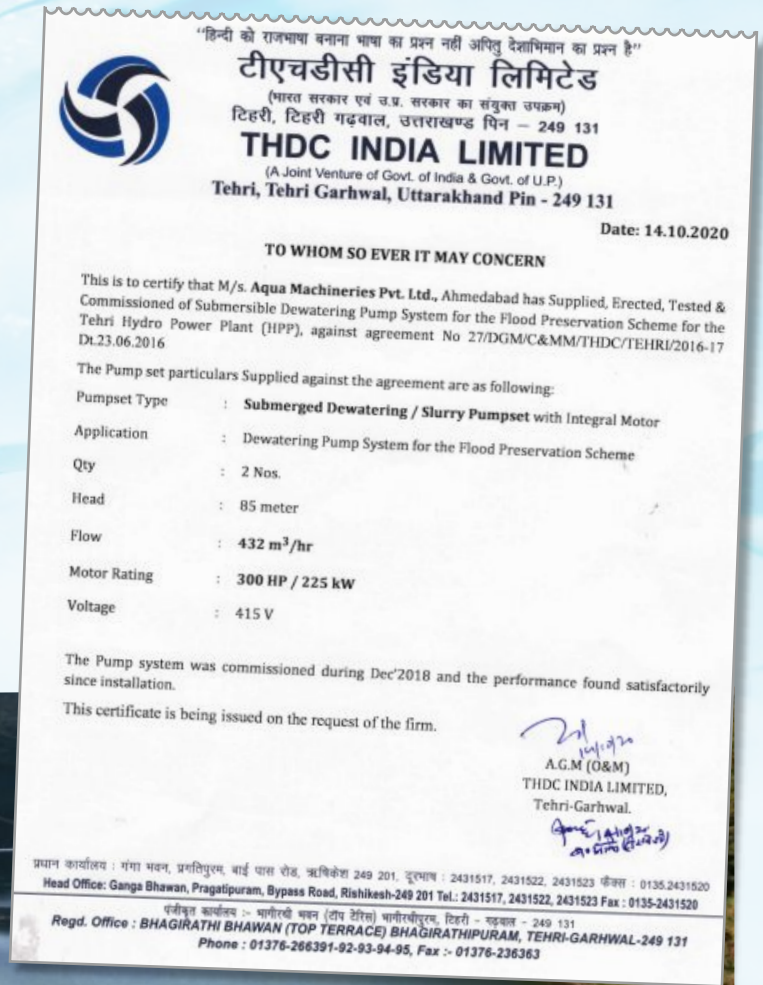
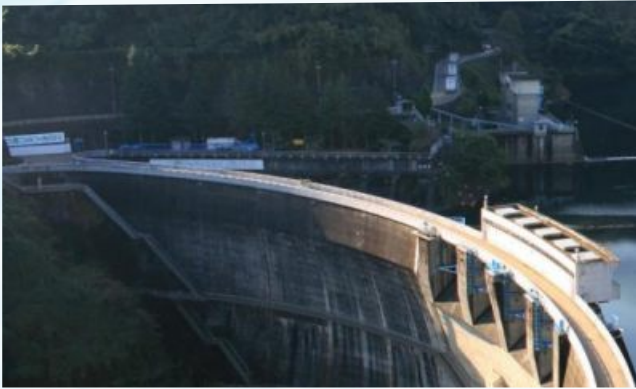


**THDC
India Limited**

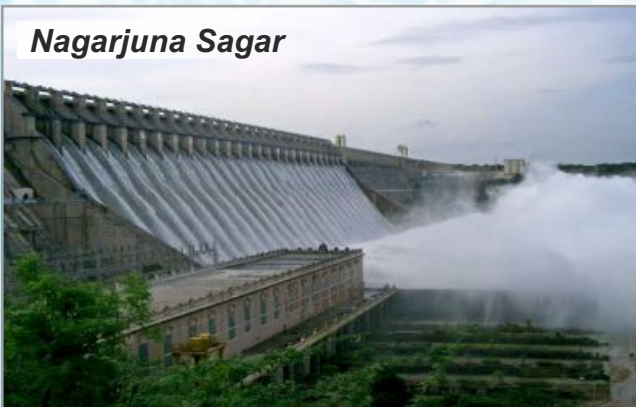
THDC India Limited, is a Public Sector Enterprise under the administrative control of the Ministry of Power (MOP), Government of India (GoI) to develop, operate & maintain

the 2400MW Tehri Hydro Power Complex.

Project Site	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Tehri HEP	50	68	50	3	2010
Koteshwar HEP	130	70	300	2	2012
Tehri HEP	120	48	432	1	2013
Tehri HEP	300	85	432	2	2018

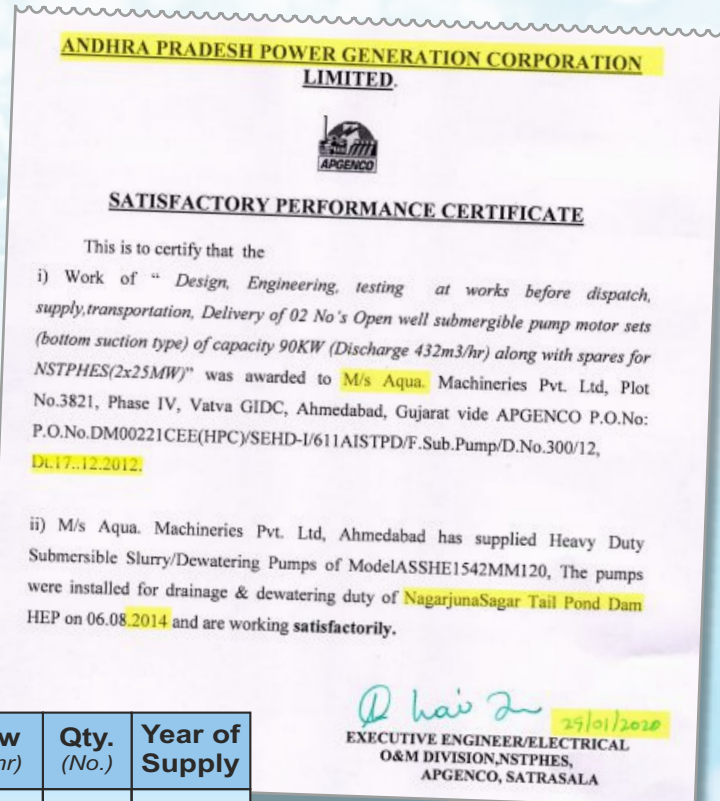


APGenCo are using Aqua pumpsets for their Nagarjuna Sagar Tail Pond Dam since 2014 without a single maintenance issue till date..!



Nagarjuna Sagar

Project Site	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Nagarjuna Sagar Tali Pond Dam, (2X25MW)	120	50	432	2	2013
Srisailam	45	30	180	1	2014



JAIPRAKASH POWER VENTURES LIMITED

Jaypee Ltd. has used our pumpsets for Dewatering during the Dam Construction of its KarchamWangtoo, Baglihar, & Omkareshwar HEPs.

Project Site	Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
Karcham Wangtoo	300	80	432	2	2008
	140	17.5	1520	8	
Baglihar	60	15	600	2	2010
	120	15	1200	2	
	140	17.5	1520	4	
	130	50	360	3	
	20	70	10	3	



Baglihar HEP

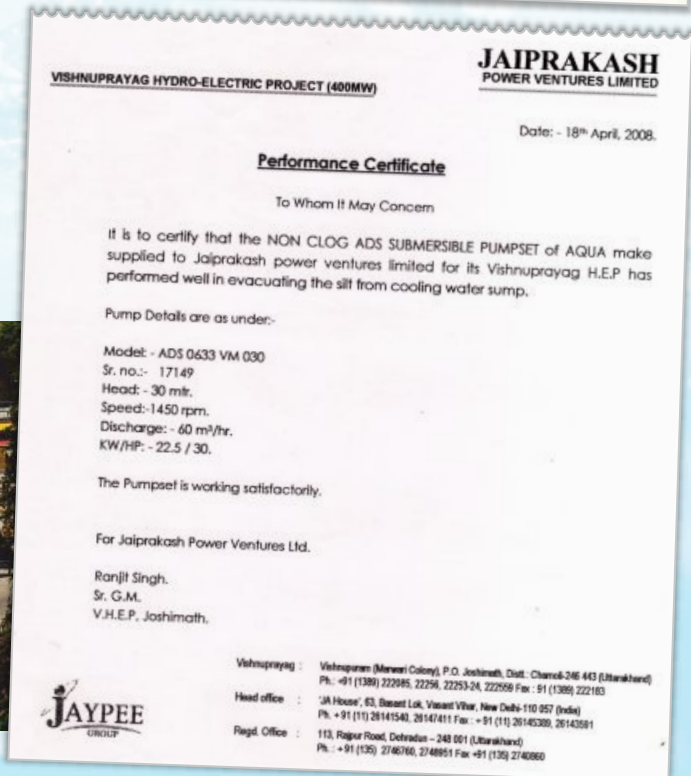
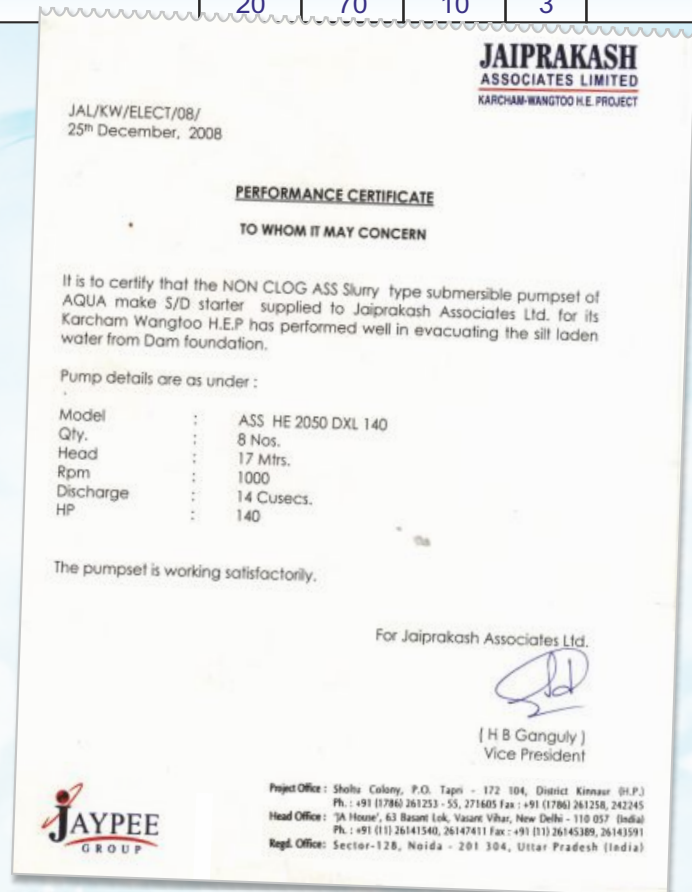


Karcham Wangtoo

Vishnuprayag Hydro Electricity Project is owned by Jaypee Industries & produces 400MW. Aqua's ADS Dredging pumpsets are used for **periodic removal of Silt** from the Cooling Water Sump.



Vishnuprayag HEP





The HEP's developer, (ANDRITZ) had supplied Ritz make **German (Non Clog Sewage Submersible)** pumps (as a part of its BoP commitment) to this HEP but these fragile pumps ran into frequent problems (due to heavy Silt & Calcites).

Realizing the need for Robust Engineered pumps, both the Developer & the Client; since then have **replaced the German pumps with Aqua** (& permanently shifted over to Aqua for newer demand) & are very satisfied with the same....

Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
150	45	800	2	2013
150	45	800	1	2018

**OFFICE OF THE EXECUTIVE ENGINEER GENERATION
DIVISION BAGLIHAR H.E.P-I CHANDERKOTE**

Xenegenbhep@gmail.com

Tel: 01998288119

Performance Certificate

To Whomsoever It May Concern

This is to certify that, the LOA was placed vide no. : GD/PH/BHEP-I/1516-20 dated 31/01/2013 with M/s. **Aqua Machineries Pvt. Ltd. Ahmedabad, India**, for Supply, Installation, Testing & Commissioning of two Nos. **110kW/150 HP** Submersible Dewatering Pump sets capacity 700-800 m³/hr x 40-45 mtr head for replacing of original Ritz make Pumps. Supplied pumps were installed in July 2013 for ultra critical Drainage and Dewatering duties of **Baglihar -I Power House.**

The Pumps are in continues operation from 5 years without any breakdown.

We are very satisfied with Pump's performance. We recommend using Indian make 'AQUA' Pumps.

No: GD/BHEP-I/2371
Dated:- 30-01-2019

Executive Engineer
Generation Division BHEP-I
Chanderkote



Alaknanda HEP



ALAKNANDA HYDRO POWER COMPANY LIMITED
(Formerly DUNCANS NORTH HYDRO POWER COMPANY LTD)

Date: - 26.06.19

Performance Certificate

To Whomsoever It May Concern

This is to certify that, M/s. Bharat Heavy Electricals Ltd. has supplied following capacity **'AQUA'** make (M/s. Aqua Machineries Pvt. Ltd. Ahmadabad) Heavy Duty Submersible Pump sets for **Alaknanda Hydro Electric Project** for Drainage, Dewatering & Flood Dewatering Applications:

Head: 42 mtr
Flow: 900 m³/hr
HP/kW: **285 HP/212 kW**
Qty. 3 No.

We are using above supplied pump sets since April 2013. We are very satisfied with Performance of above supplied pump sets for ultra critical Slurry Water Dewatering. We recommended using Indian "AQUA" Make Pump sets for D&D application of Hydro Power Stations.

For Alaknanda Hydro Power Company Ltd.

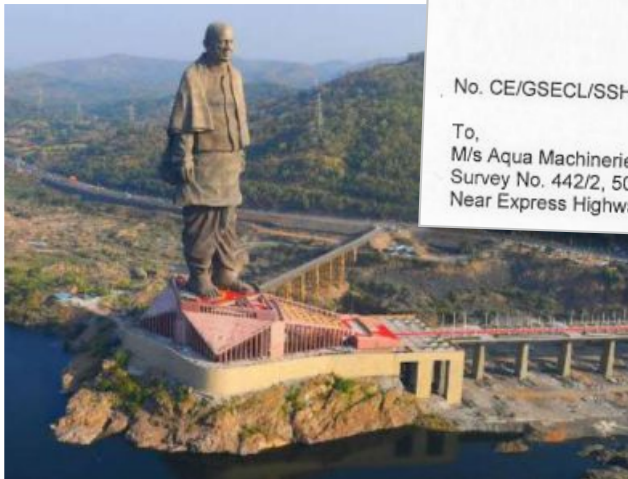
Authorized Signatory

Koteshwar Colony, Srinagar, Dist. Pauri Garhwal - 246174
Tel.(91-1346) 244339, Tele/Fax (91-1346) 244336, Email : Ahpc.purchase.gvk.com



The Sardar Sarovar Project is one of the largest water resources project of India - the dam's spillway (discharging capacity 30.7 lakhs cusecs) would be **3rd highest in the World** & it has an installed capacity of 1200MW (6 x Francis RPT x 200 MW).

They are using Aqua make **400hp** x 70m Head x **1020m³/hr** - effectively the **Largest capacity** Submerged pumpsets used in any Indian HEP.



Form 3(A)

WORK WISE DETAILS OF WORK COMPLETED BY THE CONTRACTOR

1. Name of contractor:- M/s Aqua Machineries Pvt. Ltd, Ahmedabad.
2. Name of work :- Design, supply, Installation & commissioning of High capacity submersible pump and its auxiliaries for Disaster management point of view at SSHEP RBPH K' colony.
3. L.O.I No. :- GSECL/ SSHEP/ CE(O&M)/F/RBMM/WL-11/18-19/LOI/1073 Dtd. 14/05/2018
3. Work order no :- GSECL/SSHEP/CE(O&M)/F/RBMM/WL-11/ WO / 1607 Dtd 21.07.2018
4. Estimated cost of work put to tender :- 2,50,00,000.00
5. Tender amount:- 2,45,00000.00
6. Date of starting of work :- 01.06.2018
7. Time Limit :- 06 Months
8. Time Limit Extension:- NA
9. Date of completion of the work :- 30.11.2018
10. Actual date of the completion of work:- 31.01.2019
11. Amount of work as per final bill :- 2,45,00,000.00


 Signature & Seal of contractor

- 13 State whether the details as above given by the contractor are correct. If not state as to what is the correct information:-
 :- The above details are correct as per record
- 14 State whether the contractor has executed the work satisfactorily as per specification has completed the work satisfactorily as per specification if not give comment position of the work
 :- Work completed satisfactory.
- 15 Any other remarks (Product details)
 :- Application : Dewatering of Hydro Power House
 Head: 70 mtr
 Flow : 1020 m3/hr
 HP : 400 HP
 Qty. : 2 Nos.

Performance of above supplied Pumpsets are satisfactory till date.


 Addl. Chief Engineer (O&M),
 GSECL, SSHEP, Kevadia Colony.

No. CE/GSECL/SSHEP(O&M)/RBPH E&M/3-A/ Date : 29 JAN 2021
000224

To,
 M/s Aqua Machineries Pvt. Ltd,
 Survey No. 442/2, 504/1 & 504/2, Near Haridarshan Estate,
 Near Express Highway, Ramol, Ahmedabad-382445



In October **2005**, at India's Largest (1500MW) Hydro Power Station, M/s. Satluj Jal Vidhyut Nigam Ltd. procured an **Imported** "Submersible Sewage" pump (as a part of contingency measures against accidental flooding) at it's **Nathpa Jhakri HEP**.

Just 7 days (after this pump was commissioned), the power house was accidentally flooded – hence to dewater it's UnderGround Power House; this **Imported "Submersible Sewage"** pump was put on continuous duty **but it failed in just 5 hours..!**



Rating (HP)	Head (m)	Flow (m ³ /hr)	Qty. (No.)	Year of Supply
300	80	432	10	2007
270	60	432	1	



SJVN Limited/एसजेवीएन लिमिटेड
6X250 मेगावाट नाथपा झाकड़ी जल विद्युत परियोजना
Office/कार्यालय
Power House Mechanical Maintenance Dept./विद्युत गृह यांत्रिक अनुस्क्षण
NJHPS, Jhakri, Teh Rampur Br./एन जे एच पी एस झाकड़ी तह रामपुर बुर्जहर
Dist. Shimla H.P.-172201/जिला शिमला हिमाचल प्रदेश-172201
Ph. no. 1782-275237, Fax no. 1782-275834 / फोन 1782-275237, फैक्स 1782-275834
www.sjvn.nic.in CIN L40101HP1988GO1008409

No. : SJVN/NJHPS/PHMM./2016-1224-B

Dated: 23 September 16

Performance Certificate

Name of Manufacturer: M/s Aqua Machineries Pvt. Ltd. 3821, G.I.D.C. Phase-4, Vatva, Ahmedabad, Gujarat.

Subject: Submerged Centrifugal Pumps, Capacity – 120 LPS at 80 MT head Motor 300 HP/1500 RPM along with Control Panel and 35mt. Cable.

Qty: 10 Nos.

LOA No. SJVN/NJHPS/DGM/P&C/Pkg-014 (O&M)/2007/244-50
Dated: - 18/04/2007.

The above installed materials by the manufacturer in year 2008 are working satisfactory till date.


(O. P. Singh)
Sr. Manager, (PH - 400)

Thereafter, m/s SJVNL frantically diverted Aqua pumps from Tata Power Ltd's BHIRA HEP (on loan basis) & the Aqua pumps could successfully dewater the power house (where the Imported pump had failed).

Now SJVNL is using "Aqua" make Submersible Slurry Pumps of capacity **10nos x 300hp @ 80m** – they are running **since 2008** till date **without any single breakdown** in heavy silt (often above 5000 ppm) laden water..!

Why Aqua...?

Aqua is India's pioneering manufacturer of Hermetically Sealed (Dry Air filled, IP 68.40/ 68.75) Submerged motor pumps & has **successfully substituted** (& in some case, **bettered** the performances of) **many imported pumps**.

The "HE" (*Hydro Electric*) series of submersible & amphibious pumps are specially designed to perform reliably under the arduous conditions prevalent at South Asian Hydro Electric Power Stations (*HEP's*); they :

- Can **tolerate higher Silt levels**
- Can **Remove settled silt**
- Can **tolerate higher Calcite deposits** (*often encountered in new constructions*).



Calcite Icicles



- Can Tolerate Deep (*upto 40m/75m*) **water submergence** (*encountered during flooded power house*).
- Require No Routine Maintenance
- Can Tolerate Wide Head Range Variation.

Aqua's pumps have :

- Steep Natured Head Flow performance curves,
- it's motors have high inbuilt Reserve Margins;
- Reinforced Shaft, Heavy Duty Greased for Life Bearings &
- Anti Vibration Fastening methods;

enabling them to be started & used with wide head variations.

As the bearings are located deep inside the hermetically sealed motor the pump is essentially non galling / non seizing.

Aqua pumps are ideal for drainage & dewatering applications. They are compact & of great use in narrow spaces - e.g. galleries.



Robust & Reliable

No breakdown even in High **Silt**, Rust & **Calcite** levels.



Zero Aging

Mechanical Shaft Seals are Calcite, Silt & Rust resistant. Bearings are Greased for Life.



User Friendly

The use of Auto Coupling system enables Installation / Removal in matter of minutes (*for cleaning grass, plastics, etc stuck up in suction strainer*)



Ultra Low Maintenance

- **Requires No Consumables or Routine Maintenance** (*like Oil, Grease, Bush, Sleeves, Auto Coupling Rubber Gaskets, etc*)

Aqua Machineries Private Limited

www.aquapumps.com

Registered Office & Manufacturing Plant

Survey No. 504/1-2, 442/2, Near Haridarshan Estate, Near Express Highway, Ramol, Ahmedabad-382 445. Gujarat, India.

marketing@aquapumps.com