



# यूजेवीएन लिमिटेड

(उत्तराखण्ड सरकार का उपक्रम)

## UJVN LIMITED

(A Govt. of Uttarakhand Enterprise)

कार्यालय निदेशक (परिचालन), "उज्ज्वल", महारानी बाग, जी०एम०एस० रोड, देहरादून - 248 006 (उत्तराखण्ड), दूरभाष: 0135-2761484, फ़ैक्स: 0135-2763506  
Office of the Director (Operations), "UJJWAL", Maharani Bagh, G.M.S. Road, Dehradun - 248 006 (Uttarakhand), Phone: 0135-2761484, Fax: 0135-2763506  
CIN No. 40101UR2001SGC025866 ISO 9001:2008 Certified

No. M-1423/UJVNL/02/D(O)/B-8

Dated: 31 January, 2019

The Secretary,  
Uttarakhand Electricity Regulatory Commission  
"Vidyut Niyamak Bhawan"  
Near ISBT, Dehradun

**Subject: Petitions for True up of Tariff for FY 2017-18, Annual Performance Review for FY 2018-19 & Multi Year Tariff for FY 2019-20 to FY 2021-22 for 10 LHPs of UJVN Ltd.**

Sir,

Please find enclosed herewith under affidavit the information against the Hon'ble UERC's letter no. UERC/6/TF/509/2018-19/1535 dated 28/01/2019 on the captioned subject matter attached in soft copy & the additional submission regarding Design Energy and NAPAF of MB-II HEP of UJVN Ltd is enclosed at **Annexure-A** for kind consideration of the Hon'ble Commission please.

We hope your kind self would find the above in order. We shall be please to furnish further information/clarification on the matter as and when required.

Thanking you,

Yours Sincerely,

**(Purushottam Singh)**  
**Director (Operations)**  
**Encl. As above**

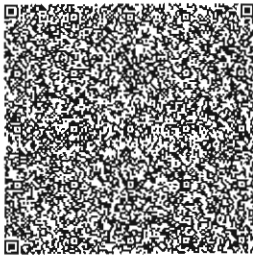


सत्यमेव जयते

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## e-Stamp

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रवि लखसानी-ई-स्टाम्प विक्रेता  
कांठ परिवार, देहरादुन  
2019

Please write or type below this line  
BEFORE THE HON'BLE UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

**In the matter of:**

Filing of reply in respect of the information desired by the Hon'ble UERC vide its letter dated 28.01.2019 pertaining to the Petitions filed by UJVN Ltd for true up for the FY 2017-18, APR for FY 2018-19 and Annual Fixed Charges for FY 2019-20 to FY 2021-22 for 10 LHPs & and additional submission regarding NAPAF & Design Energy of MB-II HEP of UJVN Ltd.

AND

**In the matter of:**

UJVN Ltd. is a Company incorporated under the provisions of the Companies Act, 1956 and having its registered office at "UJWAL", Maharani Bagh, GMS Road, Dehradun.

.....Petitioner.



(Purushottam Singh)  
Director (Operation)  
UJVN Ltd  
Dehradun

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**Affidavit**

I, Purushottam Singh S/o Late Sh. Perdiya, aged 55 years, working as Director (Operations), UJVN Ltd., residing at P-V/1, Yamuna Colony, Dehradun-248001 the deponent named above, do hereby solemnly affirm and state on oath as under: -

1. That the deponent, the petitioner in the matter, is the Director (Operations) of UJVN Ltd., Maharani Bagh, G.M.S. Road, Dehradun and is acquainted with the facts deposed below.
2. I, the deponent named above do hereby verify that the contents of the Paragraph No. 1 of the affidavit and those of the Reply with Annexures in respect of the information desired by the Hon'ble UERC vide its letter dated 28.01.2019 pertaining to the Petitions filed by UJVN Ltd for true up for the FY 2017-18, APR for FY 2018-19 and Annual Fixed Charges for FY 2019-20 to FY 2021-22 for 10 LHPs & and additional submission regarding NAPAF & Design Energy of MB-II HEP of UJVN Ltd are true and correct to my personal knowledge and based on the perusal of official records, information received and the legal advice which I believe to be true and verify that no part of this affidavit is false and nothing material has been concealed.

  
(Purushottam Singh)  
(Deponent)  
Director (Operation)  
UJVN Ltd.  
Dehradun

I, V.S. Chauhan Advocate, D. Deu, do hereby declare that the person making this affidavit is known to me and I am satisfied that he is the same person alleging to be deponent.

  
(Advocate)

Solemnly affirmed before me on this 31<sup>st</sup> day of Jan, 2019 at 12-00 Noon a.m./ p.m. by the deponent who has been identified by the aforesaid advocate.

I have satisfied myself by examining the deponent that he understood the contents of the affidavit, which has been read over and explained to him. He has also been explained about Section 193 of Indian Penal Code that whosoever intentionally gives false evidence in any of the proceedings of the Commission or fabricates evidence for purpose of being used in any of the proceedings shall be liable for punishment as per law.



(Notary Public)

VERIFICATION

I, Purushottam Singh S/o Late Sh. Perdiya, aged 55 years, working as Director (Operations), UJVN Ltd., residing at P-V/1, Yamuna Colony, Dehradun-248001 do hereby verify that the contents of the Reply with Annexures in respect of TVS held on dated 08.01.2019 and Minutes of Meeting provided by the Hon'ble UERC vide its letter dated 09.01.2019 pertaining to the Petitions filed by UJVN Ltd for true up for the FY 2017-18, APR for FY 2018-19 and Annual Fixed Charges for FY 2019-20 to FY 2021-22 for 10 LHPs & Business Plan of UJVN Ltd are true and correct to my personal knowledge and based on the perusal of official records, information received and the legal advice which I believe to be true.

  
(Signature of Petitioner)

(Purushottam Singh)  
Director (Operation)  
UJVN Ltd.  
Dehradun



This affidavit is sworn before me by  
Shri Purushottam Singh  
who is identified by Sri V.S. Chauhan  
at Dehradun on 31/01/2019 Adv. P.D.N.

  
V.S. NEGI  
Advocate & Notary, Dehradun  
31/01/2019

**Additional Submission on Design Energy and NAPAF of MB-II HEP**

**MB-II Design Energy**

1. It is to submit that design energy provided in the DPR is 1566.10 MU . UJVNL has not been able to achieve generation up to Design Energy of 1566.10 MU envisaged in DPR of MB-II HEP since commissioning of the project, which was also approved by the Hon'ble Commission. The actual generation achieved by MB-II since commission is given below-

S.N.	FY	Generation (MU)	Loss (MU)	Maximum Possible Generation
1	2008-09	1044.95	111.41	1156.36
2	2009-10	1198.04	59.03	1257.07
3	2010-11	1335.96	58.49	1394.45
4	2011-12	1351.15	93.99	1445.14
5	2012-13	1153.65	97.70	1251.35
6	2013-14*	833.09	222.27	1055.35
7	2014-15*	888.10	463.81	1351.91
8	2015-16	1221.18	179.98	1401.16
9	2016-17	1251.95	95.53	1347.48
10	2017-18	1276.58	120.15	1396.73
Average		1229.18	102.03	1331.22

\*Excluded from average calculation considering exceptional Years(Natural Calamity/Hydrology)

From above table it is evident that for the last 10 years since commissioning MB-II HEP could not achieve generation up to design energy even for once due to hydrology factor. Moreover the maximum average generation which could have been achieved from MB-II HEP is 1331.22 MU.

2. Due to non-achievement of generation of design energy UJVNL could not recover Energy Charges (EC) during same tariff year from first control period onwards. Due to this reason UJVNL is recovering shortfall of EC as

  
(Purushottam Singh)  
Director (Operation)  
UJVNL Ltd.  
Dehradun

per regulation 54(6)(a) & 50(6) (a) of the UERC Regulation 2011 & 2015 respectively in next year.

3. It is to submit that Regulation 50(6) (a) of UERC Regulation 2015 & 2018 has provisioned for revision of design energy from CEA if actual generation is less than the design energy for continuous period of 4 years on account of hydrology factor, if energy shortfall occurs within ten years of the date of Commercial Operation. However in case of Energy Shortfall occurs after ten years for the date of commercial operation of a generating station the above provision for revision of design energy from CEA is not specified in regulation 50(6)(b) of Regulation 2015 & 2018.
4. MB-II HEP is in operation for more than 10 years and regulation 50(6)(b) is applicable. In this proviso there revision from CEA is not specified for revision of Design Energy. Therefore it is requested that the Hon'ble Commission may kindly consider the aforesaid facts and may kindly revise the design energy of MB-II HEP.
5. After 10 years of operation the Shortfall is recovered in third year. This is substantial delay in recovery of Energy Charges in view of the fact that for last ten years MB-II HEP was not able to achieve design generation.
6. On the basis of table given on sl. No. 1 UJVNL prays to the Hon'ble Commission to revise the Design Energy of MB-II to 1331.22 MU for third control period excluding the impact of NGT Order.
7. The Impact of NGT Order to maintain minimum lean period discharge in the river assessed by UJVNL on MB-II on design Energy is 62.39 MU.
8. **Therefore it is requested that the Design Energy of MB-II may kindly be revised to (1331.22-62.39) 1268.83 MU for MB-II.**

  
(Purushottam Singh)  
Director (Operation)  
UJVN Ltd.  
Dehradun

## MB-II NAPAF

1. It is to submit that PAF achieved by UJVNL with respect to NAPAF approved by the Hon'ble Commission is as follows for first and second control period-

SI No	FY	NAPAF Approved in MYT Order	NAPAF Approved/Restated by UERC after True Up (Except 2017-18)	PAF Achieved
1	2013-14	71	58.23	39.37
2	2014-15	73	53.72	40.03
3	2015-16	74	56.33	56.33
4	2016-17	61.51	65.15*	65.15
5	2017-18	82	82	65.17

2. From above it is evident that UJVNL was not able to achieve NAPAF as fixed by the Hon'ble Commission and therefore has incurred losses on account of non-recovery of Capacity Charges.

The financial impact on the company is as below-

SI No	FY	Approved AFC After True Up(Except 17-18)	Approved Capacity Charges	NAPAF Approved by UERC	Actual PAF Achieved	Loss/ Non recovered Capacity Charges	Loss in % of AFC
1	2013-14	234.07	117.035	58.23	39.37	37.91	16.2%
2	2014-15	225.86	112.93	53.72	40.03	28.78	12.7%
3	2015-16	231.65	115.825	56.33	56.33	0.00	0.0%
4	2016-17	237.35	118.675	65.15	65.15	0.00	0.0%
5	2017-18	255.95	127.975	82	65.17	26.27	10.3%
Total		1184.88	592.44		266.05	92.95	7.8%

3. From above table it is evident that UJVNL is regularly incurring losses due to non-recovery of Capacity Charges due to non-achievement of NAPAF which amounts to an average of 7.8 % of AFC approved by the Hon'ble Commission.
4. UJVNL Ltd has following submission for Non achievement of NAPAF –

- A. The silt content of 10000 ppm or more is experienced during monsoon whereas the maximum limit is 3000 PPM upto which the plant can be operated. Floods/high river discharges are also passed into the Bhagirathi River during which plant is kept under shutdown. Further, the

failure of shaft seal is quite frequent in MB-II during monsoon due to heavy silt. Shutdown of complete machine is required for attending the fault. Also, there are other frequent Breakdowns in Turbine sections during the monsoon period. This results in frequent breakdowns of machines. This leads to shutdown of all machines for an average of 13 days approx. in a year during monsoon period. Thus reducing availability to (96.4 % availability).

- B. Further it is to submit that due to operation of the plant during monsoon period under high silt conditions there is excessive damage caused to almost all the underwater parts. Thus leading to extensive repair and maintenance activities during annual maintenance/capital maintenance period.
- C. The design head of MB-II is 247 Mts which is highest among all LHPs of UJVNL. The machines of MB-II run at 333 RPM which is highest among the 10 LHPs of UJVN Ltd. Due to high head and high RPM the damage caused by the slit is severe.
- D. Due to excessive damage caused by the quartzite particles during monsoon period the time required for AM/CM is almost doubled as compared to other power stations not affected by excessive silt.
- E. The average time required for AM/CM for last six years are as below

	Unit 1	Unit 2	Unit 3	Unit 4	Average Time
2012-13	90	107	86	101	96
2013-14	-	76	66	209	117
2014-15	74	73	69	87	76
2015-16	67	65	61	78	68
2016-17	71	97	73	91	83
2017-18	77	72	70	85	76
				Average	86

- F. It is to submit that the Hon'ble Commission has considered 60 days for normal maintenance however despite best of the efforts UJVN Ltd has not been able to complete the maintenance work in 60 days' time period and the average time required for maintenance works is approx. 80 days (as per point E).

  
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- G.** Due to the passage of high silt during monsoon period, the excessive damage to the Top Cover liner of the Turbine occurs which requires very high quantum of welding & grinding work for repairing of Top Cover. During annual maintenance of the machine the in-situ repair of top cover liner is carried out. The repair of top cover liner is done by overhead welding & grinding with limited space for welder/grinder man. The increased quantum of welding, overhead welding & grinding work and space constraint results in substantial increase in maintenance period. The time period for repairing of top cover takes 35-40 days and it is not possible to reduce the time required for in-situ repair of top cover inspite of best efforts. Further, the maintenance of pivot ring takes around 40-45 days which cannot be reduced. The assembly of top cover, guide vanes & pivot ring takes about 5-6 days, as the surface of top cover & pivot ring liner are made smooth by grinding. The overall alignment, centring and levelling of machine also take around 5-10 days. The time required for above maintenance activities(which normally not required in other LHP of UJVNL during annual maintenance work) takes 20-25 days more to the time allowed (60 days) by the Hon'ble Commission. Besides above the weather during winter nights in MB-II are not conducive for workers while repairing under water parts. And therefore it becomes difficult to speed up the maintenance works.
- H.** Due to silt the efficiency of the machines deteriorate even during monsoon season. The PAF of the machines reduces by 5% at the end of September. This translates in to 1.71% reduction in PAFA or **98.29%** availability.
- I.** In view of above it is requested the Hon'ble commission may allow minimum 80 days for annual/ capital maintenance of MB-II. Thus allowing additional allowance of **12 %** is required for MB-II
- J.** UJVNL has invested around Rs. 200 Crores in Balance Capital Works of MB-II which includes construction of wall up to FRL of 1108 mt for increasing the pondage level of Joshiyara Barrage. Moreover the work of TRC of MB-II has been completed which has resulted in achieving Rated capacity of 304 MW. However this rated capacity is not achieve in case

of low pond level at Joshiyara Barrage due to protests from local natives. And therefore the average level of reservoir is generally maintained at 1107 mt level. Further due to increase in river discharge during monsoon period tail race level becomes higher by 2 to 3 mtrs which results in head loss. Therefore resulting in lowering of head by approx 3 mtrs and thus lower peaking loads. UJVNL prays the Hon'ble Commission to allow availability of 3 mtr/247mtr=**98.8 %** on the account of lower head.

**K.** In view of Point A, H, I & J above NAPF for MB-II may be fixed as  $85\% \times 0.96 \times 0.98 \times 0.88 \times 0.98 = \mathbf{68.96\%}$  for FY 2017-18, 2018-19 & for next Control Period.

**L.** Moreover, here it is pertinent to mention that due to investment (200 Crore) made in balance capital works in MB-II HEP in UJVNL was able to increase PAF by approx. 20%. This translates in to following benefit to the UJVNL and State-

i) 20% PAF translates to capacity charge of Rs.  $(255.55/2) \times (20\%/82\%) = \mathbf{31 \text{ Crore per Year}}$  (taking AFC as 255.55 Crore)

ii) Benefit to state to extra energy generation due to increase capacity from 280 MW to 304 MW during Monsoon Season that UPCL has to procure from open market.

Extra energy generated during 4 moths of monsoon season-  
 $20 \times 1000 \times 24 \times 120 = 57.6 \text{ MU}$  (considering 20 MW increase in load)

Average Tariff of MB-II = Rs 1.62

Average Purchase Cost of UPCL as approved by UERC for FY 2018-19= Rs 3.39

Benefit to State=  $(3.39-1.51) \times 57.6 \text{ MU} = \mathbf{10.83 \text{ Crore per year}}$

Total Minimum Benefit after investments in balance Capital Cost=  
 $31+10.83 = \mathbf{41.83 \text{ Crore per year}}$

Total Investment in Balance Capital Works (200 crores) can be recovered within 5 years of Investment.

**5. In view of all above it is requested that the Hon'ble Commission may kindly revise the NAPAF of MB-II HEP to 68.96% from FY 2017-18 onwards.**