

Annexure-1

Annual Report on Technical Performance of Ramganga HEP

1.1 Overview

1.1.1 The petitioner in compliance of the relevant Regulations of UERC (Terms and Conditions for determination of Tariff) Regulations, 2015 & UERC (Terms and Conditions for determination of Multi Year Tariff) Regulations, 2018 is providing information with regard to the operational performance related to technical parameters of Ramganga Hydro Power Station.

1.1.2 The information provided in this chapter relates to actual and expected performance in 2016-17, 2017-18 and 2018-19. The operational parameters considered are:

- (a) Gross generation
- (b) AUX (Auxiliary consumption and Transformation losses)
- (c) Plant Availability factor (PAF)

1.2 Power Station Description

1.2.1 Ramganga Power Station has an Installed capacity of 198 MW (3X66 MW). Ramganga Power Station is a Reservoir based scheme on river Ramganga located near the famous Jim Corbett Park in district Pauri Garwhal. Ramganga Power station is a multipurpose project and it serves the purpose of power generation and irrigation in the command area of the canal. It utilizes water stored for irrigation purpose. The water release from Ramganga Dam is regulated by the UP Irrigation Department. The generation is dependent on the rain in the catchment area and on the drawl of water for irrigation purpose in the command area of the canal in the state of Uttar Pradesh.

1.2.2 The surface Power Station is located at the toe of the dam and houses 3 units of 66 MW each with vertical Francis turbines. The Ramganga Power Station is a medium head scheme with a design head of 84.4 m and a design discharge of 285 cum.


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1.2.3 The project has unique challenges in operation due to restriction imposed on the release of water in the water conductor system by the UP irrigation Department which is dependent on the demand of water in the command area of the canal in Uttar Pradesh based on the irrigation requirement.

1.2.4 Salient features of the Power Station are provided in form F 2.3 of this petition.

1.3 Energy Generation

1.3.1 Actual/Expected/Projected energy generation in FY 2016-17, FY 2017-18, FY 2018-19 & for the control period from FY 2019-20 to FY 2021-22 is given in the table below:

Table 1: Actual, Expected & Projected Energy

Particulars	Norms	2016-17 (A)	2017-18 (A)	2018-19 (E)	2019-20 (P)	2020-21 (P)	2021-22 (P)
Design Energy/ Actual Generation (MU)	311.00	180.98	249.82	192.00	205.00	210.00	215.00
Auxiliary Cons. (%)	0.20%						
Transformation/ other losses and consumption (%)	0.50%	1.05%	0.47%	1.08%	0.43%	0.43%	0.42%
Net Saleable Energy (MU)	308.82	179.08	248.63	191.49	204.15	209.13	214.13

1.3.2 From the above table it is evident that gross generation has been less than the design energy in FY 2017-18 and the energy generation in FY 2018-19 and for the control period is expected to be less than the design energy. Ramganga Power Station was closed on 21.05.17 and remained closed in June, July, Aug & Sept as Ramganga Dam is regulated by UPID as per irrigation requirement. There is no generation loss at Ramganga Power Station.

1.3.3 During the control period of FY 2019-20 to FY 2021-22, the Auxiliary consumption is expected to be within normative level.

1.4 Plant Availability Factor

1.4.1 The recovery of the Annual Fixed Charges is dependent on the Plant Availability achieved by the Power Station. The principle for recovery of fixed charges on the basis of the availability achieved by the plant has been introduced by the Hon'ble

Commission by its regulations UERC (Terms and Conditions for determination of tariff) Regulations, 2015 & 2018. The petitioner has provided this factor as per the provisions of the above regulations.

Table 2: Plant Availability Factor

Particulars	Norms	2016-17 (A)	2017-18 (A)	2018-19 (E)	2019-20 (P)	2020-21 (P)	2021-22 (P)
NAPAF/PAFM (%)	19.00%	10.81%	15.29%	15.29%	15.00%	15.00%	15.00%
	19.00%						
Planned Outages (Hrs.)	NA	2,808	10,374	3,360	10,872	6,552	1,632
Forced Outages (Hrs.)	NA	885	1,134	1,010	1,072	1,041	1,056

1.4.2 Water release from Ramganga Dam is purely irrigation based and control of which rests with Uttar Pradesh Irrigation Department. Based on water released from the dam during 2017-18 PAFM of 15.29% could only be achieved against the approved NAPAF of 19%. Similarly, during FY 2018-19 PAFM of 15.29% (approximately 15%) is expected to be achieved with best efforts of UJVN Ltd. In view of the above, the Petitioner requests the Hon'ble Commission to kindly consider and approve the NAPAF of 15% for Ramganga HEP for the period from FY 2017-18 to FY 2021-22.

Table 3: Average PAFM (%)

Sl. No.	Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Average
1	2013-14	13.24	17.75	7.48	-	50.73	7.21	-	4.27	42.20	12.34	11.73	9.58	14.71
2	2014-15	-	47.42	19.48	28.61	-	-	3.26	4.83	11.94	34.54	42.78	7.60	16.70
3	2015-16	-	6.22	16.55	43.13	65.05	35.31	39.70	1.39	16.41	51.27	49.55	36.24	30.07
4	2016-17	4.41	12.24	-	-	-	-	1.97	-	23.90	43.61	25.07	18.57	10.81
5	2017-18	23.58	11.58	-	-	-	-	2.05	1.25	32.95	52.49	41.40	18.16	15.29
6	2018-19	2.32	26.15	6.60	-	-	-	2.05	1.25	32.95	52.49	41.40	18.16	15.29

1.5 **Planned Outages:** Planned outages on account of annual/capital maintenance in the control period FY 2019-20 to FY 2021-22 are given below. The Petitioner shall continue to lay emphasis on preventive and planned maintenance of machines for the year 2018-19 onwards for better power station availability.


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Table 4: Planned Maintenance Plan

FY	Unit No.	Date of Start	Date of Completion	No of Days	Remarks
2019-20	Unit 1	15-06-2019	09-02-2020	239	CM
	Unit 2	20-07-2019	23-08-2019	34	AM
	Unit 3	01-04-2019	28-09-2019	180	CM & Other Works
2020-21	Unit 1	-	-	-	-
	Unit 2	15-06-2020	09-02-2021	239	CM
	Unit 3	15-06-2020	19-07-2020	34	AM
2021-22	Unit 1	20-07-2021	23-08-2021	34	AM
	Unit 2	-	-	-	-
	Unit 3	15-06-2021	19-07-2021	34	AM

AM- Annual Maintenance, CM-Capital Maintenance


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