एनएचपीसी लिमिटेड
(भारत सरकार का एक नवरत्न उद्यम)
NHPC Limited
(A Government of India Navratna Enterprise)

ITUWTSA NEW DELHI 2024

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NH/Comml./Tariff/29/2024/1047

06.09.2024

The Secretary
Central Electricity Regulatory Commission,
7th Floor, Tower-B, World Trade Centre
Block-F, Nauroji Nagar, Safdurjund Enclave,
New Delhi- 110 029
Fax: 011-23753923

Sub:-Comments on draft Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2024 - Reg.

Ref:- Public Notice No L-1/268/2022/CERC dated 02.08.2024

Sir,

In reference to above public notice dated 02.08.2024, the comments / suggestions / objections of NHPC on the draft CERC (Terms and Conditions of Tariff) (First Amendment) Regulations, 2024 are enclosed for further necessary action. The comments / suggestions / objections have been uploaded through SAUDAMINI portal under 'e-Regulation'.

Thanking You,
Encl: As above

Yours Sincerely,

Ranjeet Thakur

(Ranjeet Thakur)
General Manager (Comml.)

Comments of NHPC on Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2024

Hon'ble Commission has issued draft amendment in Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2024 (in short CERC Tariff Regulations, 2024) vide public notice dated 02.08.2024 and invited comments / suggestions / objections from the stakeholders by 06.09.2024. Accordingly, comments / suggestions / objections of NHPC on the relevant regulations are as under:

I. Amendment of Regulation 3 of the Principal Regulations

Sub-regulation (9A) shall be added after sub-regulation (9) of Regulation 3 as under:

"Bank Rate" means the one year Marginal cost of lending rate as specified by the State Bank of India from time to time or any replacement thereof for the time being in force plus 100 basis points."

Comments of NHPC

Hon'ble Commission in the draft amendment has defined 'Bank Rate' which is 1 year SBI MCLR rate plus 100 basis points. In the Principal Regulation, 'reference rate of interest' has already been defined incorporating SBI MCLR as base in sub-regulation (66) of Regulation 3 as under:

(66) 'Reference Rate of Interest' means the one year marginal cost of funds based lending rate (MCLR) of the State Bank of India (SBI) issued from time to time plus 325 basis points;

Thus, if the change related to Bank rate proposed in the draft amendment is adopted in the final amendment, then there will be two rates defined in the Regulation having the same base rate as one year marginal cost of funds based lending rate (MCLR) of the State Bank of India (SBI).

Therefore, it is proposed to have only one rate defined in the Regulation i.e. Bank Rate and link all the rates to Bank Rate. In view of above, following amendments in Principal Regulation are proposed in addition to the amendment already proposed in draft first amendment for kind consideration of Hon'ble CERC

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1. Sub-regulation (66) of Regulation 3 of Principal Regulation may be deleted.
2. Amendment of Regulation 10 of the Principal Regulation

   In first proviso of **sub-regulation (3) of Regulation 10,** the words and expressions "rate worked out on the basis of 1 year SBI MCLR plus 100 basis points" may be substituted by the words "bank rate".

3. Amendment of Regulation 30 of the Principal Regulation

   In first proviso of **sub-regulation (3) of Regulation 30,** the words and expressions "one-year marginal cost of lending rate (MCLR) of the State Bank of India plus 350 basis points as on 1st April of the year" may be substituted by the words "bank rate plus 250 basis points".

4. Amendment of Regulation 34 of the Principal Regulation

   In **sub-regulation (3) of Regulation 34** and the first proviso thereunder, the words and expressions "Reference Rate of Interest" may be substituted by the words "bank rate plus 225 basis points".

II. <u>Additional Point</u>

Revision of Normative Annual Plant Availability Factor (NAPAF) in respect of Dulhasti, Chamera-II & Rangit Power Stations

CERC Tariff Regulations, 2024 has been notified by the Hon'ble Commission vide order dated 15th March 2024, which are applicable for the period from 2024 to 2029. Under Regulation-71(A)(4) of Tariff Regulations 2024, NAPAF of Hydro Generating Stations of all utilities along with NHPC Power Stations have been indicated, which is applicable for the period from 2024 to 2029. As per above clause, the NAPAF of Dulhasti, Rangit and Chamera-II Power Stations have been fixed as 90%, 90% & 87% respectively for the period 2024-29.

Further, **Hon'ble Commission vide order dated 02nd August 2024 issued a draft CERC (Terms and Conditions of tariff) (First Amendment), Regulations, 2024**. While going through the draft amendment, it has been learnt that Hon'ble Commission has considered the revision of NAPAF of Karcham Wangtoo HE Project (1091 MW) from 90% (in Principal Regulation) to 87%.

Norms of Operation for Hydro Generating Stations has been given under the clause 71 of Tariff Regulation, wherein the norms of fixing of Normative Annual Plant Availability Factor has been elaborated, which is reproduced hereunder:

Quote:

> ***"71. Norms of Operation for Hydro Generating Stations: The norms of operation as given hereunder shall apply to hydro generating stations: (A) Normative Annual Plant Availability Factor (NAPAF):***
>
> ***(1) The following normative annual plant availability factor (NAPAF) shall apply to hydro generating station:***
>
> ***(c) Pondage type plants where plant availability is significantly affected by silt: 85%."***

Unquote:

From reading of above Regulation, it is clear that a relaxation of 5% in fixation of NAPAF shall be given to the hydro projects which are affected by silt. In this backdrop, a brief about Rangit, Dulhasti and Chamera-II Power Station is submitted along with explanation as how the operation of these power plants is affected by silt.

1. RANGIT POWER STATION:

1.1 Brief of Rangit Power Station

Rangit Power Station is located in State of Sikkim having Installed Capacity of 60 MW (3x20 MW). It uses water of river Rangit for generation of Power. It is a ROR with Pondage Scheme. The power house is a surface power house housing 3 units of 20 MW capacity each, designed to operate under the net rated head of 129 m and designed to generate 338.61 million units in a 90% dependable year, with 95% machine availability. Power Station was commissioned in the month of February' 2000. The beneficiary states of this power station are Sikkim, West Bengal, Bihar, Jharkhand and Damodar Valley Corporation.

The Rangit Power Station is located on river Rangit near Legship town in South Sikkim district of Sikkim. The project comprises of 43 m high dam with 1 penstock of 287.76 m length and 3.5 m diameter trifurcating into 3 nos. near power house with 2 m dia. each after trifurcation. There is surface power house and a short tailrace tunnel joining the

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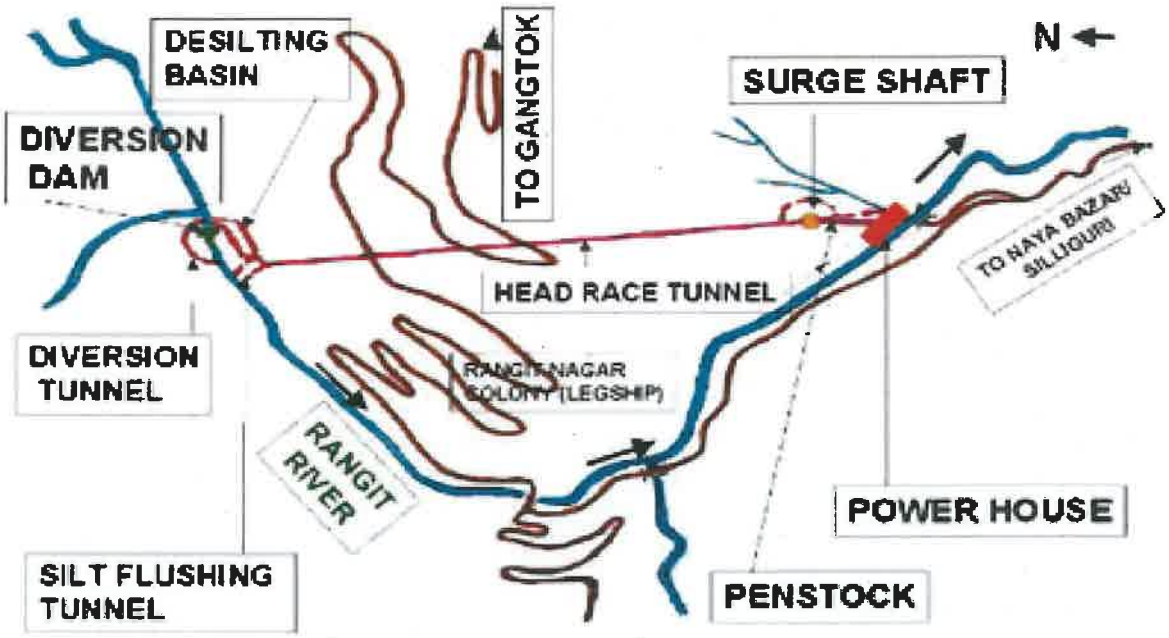
river. The top level of dam is at El 640 m with provision of 3 bays (9.0 m wide and 12 m high each) of gated spillway. The crest of spillway is at El 620.0 m, which is about 1.5 m below the invert of power intake. The FRL and MDDL of the reservoir are at El 639.0 m and El 627.0 m respectively. The gross storage capacity of Rangit reservoir is 1.06 Mcum at FRL i.e El 639.0 m whereas the live storage is also 0.983 Mcum. The layout of Rangit Power Station is given as under:



Layout of Rangit Power Station

1.2 EXPLANATION

As per operation manual of Rangit Power Station, the Non-Monsoon period means period from 1st November to 30th April and Monsoon period means 1st May to 30th October. Therefore, the monsoon period of Rangit Power Station continues for approx. 06 months.

Rangit Dam which forms the headworks of the Rangit Hydroelectric Power Project Stage III, is a run-of-the-river hydroelectric power project on the Ranjit River, a major tributary of the Teesta River in the South Sikkim district of the North-eastern Indian state of Sikkim

The Ranjit River on which the Rangit Dam is located, is a major right bank tributary of the Teesta River in Sikkim. The river arises from the Talung glacier and it meets the Teesta river at Melli after a travel of 61 kilometres (38 mi) from its source. At the dam site, the

catchment area drained is 979.02 square kilometres (378.00 sq mi) (rain-fed catchment is 712 square kilometres (275 sq mi) and the balance area is snow fed above snow line contour of (4,570 metres (14,990 ft)); elevation of the catchment area varies from about 600 metres (2,000 ft) to about 7,338 metres (24,075 ft) (North Kabru Peak) and is delimited between (27.275°N 88.0141°E) and (27.6195°N 88.42°E). A number of perennial streams originate in glacial fields of the river basin; important snow-fed rivers which constitute the Rangit basin above the dam site are the Rathong Chu, Rimbi Chu, Prek Chu, Ralli Chu, Rongdon Chu and Kayam Chu.

The Rangit Power dam is located on Rangit River, which carries a lot of sediment load during monsoon season (May to October) due to its geomorphology. The high sediment of Rangit river is manifestation of huge catchment, steep slope, high erosion during cloudburst, avalanche & landslides due to fragile basin geology. These, along with heavy silt movement from tributaries resulting into inflow of heavy debris and silt every year into Rangit reservoir.

During monsoon season, landslides at various locations in upstream occurs due to heavy rainfall, resulting heavy debris flow in the river increasing the silt concentration. Being the first plant in the basin, the heavy silt concentration is directly affecting the plant operation.

The maximum silt observed in respective years during monsoon season in last 5 years is tabulated as under:

Table-A

Financial Year	2019-20	2020-21	2021-22	2022-23	2023-24
Maximum Silt (PPM)	38178	145801	178544	59899	14884

It is also pertinent to mention here that, due to high silt above 5000 PPM in river plant has to take a forced/Miscellaneous shutdown in each monsoon months, as per the Electro-Mechanical safeguards for machine parts (Annexure-A), which results in reduced generation. The continuous operation of machines during monsoon though silt concentration below limit also impacts the underwater parts and cooling system resulting frequent outages of machines during monsoon season and further impacts the availability of machines.

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The below table (Table-B) sums up the lost machine hours during monsoon season and the equivalent loss in energy generation during last 5 years:

Table-B

Sl. No.	Financial Year	Total Machine Hours lost (Hr:mm)	Expected Energy Loss (MU)
1	2019-20	209:02	4.18
2	2020-21	1242:39	24.85
3	2021-22	441:45	8.84
4	2022-23	269:34	5.39
5	2023-24	320:24	6.41
Total Outage		**2483:27**	**49.67**
Average (Yearly)		496:41	9.93

From the above table, it is evident that the Rangit Power Station has average shutdown of about 21 days annually (5.66% of a year) due to high silt above the threshold operating range, which cost an equivalent generation loss of about approx. 10 MU each year.

It is also to be highlighted that during October 2023, the outburst of South Lhonak Lake resulted into flash flood in the region. This outburst of lake impacted the generation of Rangit Power Station and has also damaged the Teesta-III Power Station, Spillway & Radial Gates of Teesta-V and heavy silt deposition at TLDP-III and TLDP-IV Power Stations. The intensity of devastation was so high, that the hydro power stations in the region are continuously facing the issues of breakdown of cooling water system, choking of gates etc. till date and shall continue in future. This will also impact the ability of the plant to achieve the NAPAF in the coming years. The actual Annual PAF achieved by Rangit Power Station during last 5 years are as under:

Table-C

Financial Year	2019-20	2020-21	2021-22	2022-23	2023-24	Average
Annual PAF (%)	95.35	86.73	95.82	90.31	82.30	90.10

From above table it can be seen that Power Station has achieved 90.10% Average PAF against its NAPAF of 90% and there is a downward trend in actual PAF of the plant due to increased floods and landslides in Teesta region. Therefore, fixing of NAPAF of 90% for the Tariff Period 2024-29 seems to be on the higher side.

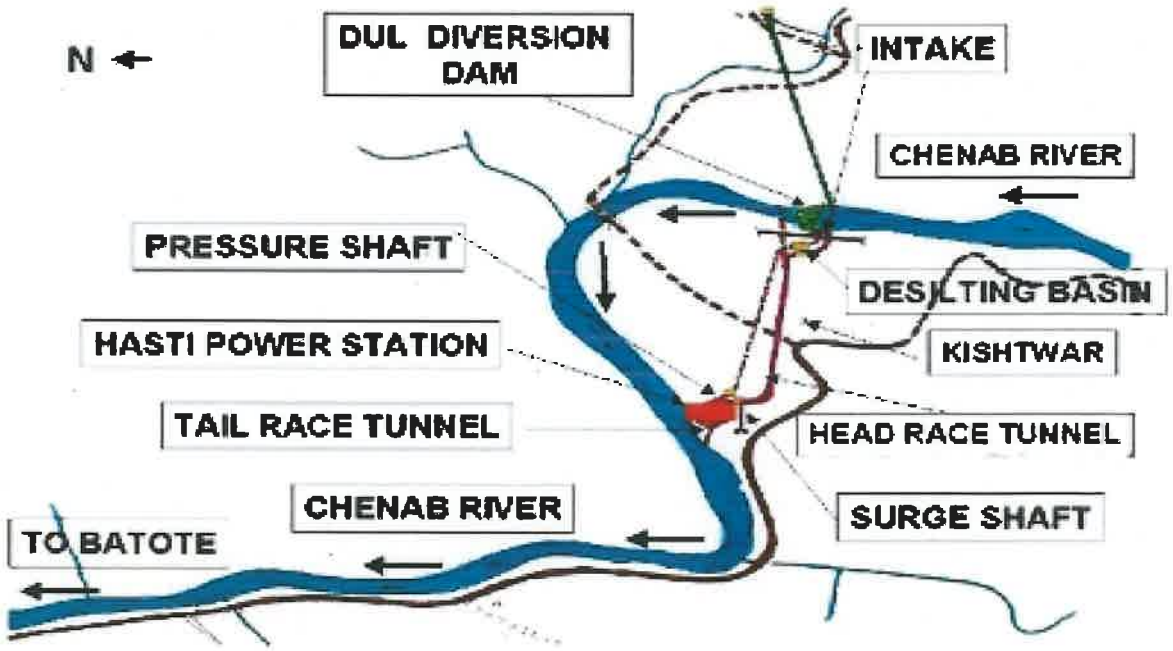
2. DULHASTI POWER STATION:

2.1 Brief of Dulhasti Power Station

Dulhasti Power Station having installed Capacity of 390 MW (3x 130 MW) is located in the Kishtwar District of UT of Jammu & Kashmir. This is a Run of the River (RoR) with Pondage scheme and uses water of Chenab River for Power Generation. The Power Station has an annual Design Energy of 1907 MU in a 90% dependable year, with 95% machine availability.

Dulhasti Power Station is a run-of-the-river with pondage type on the Chenab River, in a rugged, mountainous section of the Himalayas. It consists of a 70m (230 ft) tall gravity dam which diverts water through a 9.5 km long Headrace tunnel to the power station which discharges back into the Chenab river.

Dulhasti Power was commissioned in 2007 and since then the power station is in operation. The layout of Dulhasti Power Station is given as under:



Layout Dulhasti Power Station

2.2 EXPLANATION

As per operation manual of Dulhasti Power Station, the Non-Monsoon period means 16th October to 14th June and Monsoon period means 15th June to 15th October. Thus, the monsoon period of Dulhasti Power Station is of approx. 04 Month, in such period.

The river Chenab (or Chandra Bhaga) is formed after the two streams the Chandra and the Bhaga merge with each other. The Chandra and the Bhaga originate from the south-west and north-west faces of Barelacha pass respectively in the Himalayan canton of Lahul and Spiti valley in Himachal Pradesh. The Chandra initially flowing southeast for about 88 kms. sweeps round the base of the mid-Himalayas and joins the Bhaga at Tandi, after traversing a total length of about 125 kms. The course of Bhaga upto the confluence is 80 kms only having a steep slope with an average fall of about 24 metres per kilometer. Thereafter the united stream, known as the Chenab or Chandra Bhaga, flows in a north-west course for about 46 kms where it receives its first major tributary the Miyar Nalla on the right bank. Then it flows for another 90 km generally in north direction in Himachal Pradesh when it crosses the Pangi valley before entering to Padder area of Doda district of Jammu province in UT of Jammu & Kashmir. In this reach a number of small streams join in, namely Chaini, Talsuen, and Ans on the right bank, Yabu Nallah, Mandial and Painthal Khad on the left bank. Downstream of Ans river confluence the river changes its direction and flows in southerly course for about 45 kms. upto Akhnoor where-after it enters into Sialkot district of Pakistan. Total length of the river from confluence of Chandra & Bhaga to Akhnoor is about 504 km.

Due to steep slope and lots of tributaries, Chenab River carries lots of silt and debris to the Dam of Dulhasti. During monsoon season, landslides at various locations in upstream occurs due to heavy rainfall, resulting in the heavy debris flow in the river increasing the silt concentration.

The maximum silt concentration (PPM) observed in respective years during monsoon of last 5 years is given as under:

Table-D

Financial Year	2019-20	2020-21	2021-22	2022-23	2023-24
Maximum Silt (PPM)	9010	3900	4270	37640	11130

It is also pertinent to mention here that, in case of high silt above the levels of 5000 PPM in river plant has to take a forced/Miscellaneous shutdown in every month of monsoon season as per the Electro-Mechanical safeguards for machine parts (Annexure-B), which also affect the energy generation and machine availability. Further, continuous operation

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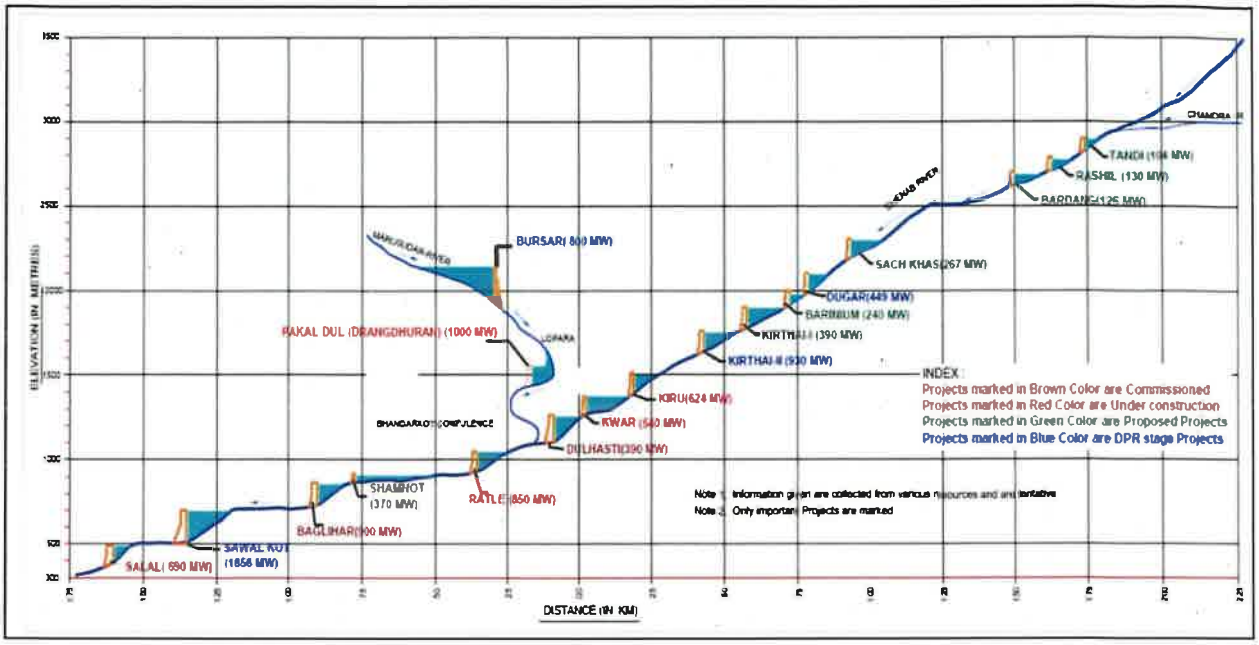
of machines during monsoon at high silt concentration (i.e. below threshold limit) also impacts the underwater parts and cooling system resulting in frequent outages of machines during monsoon season. The details of outages of machines due to high silt/silt flushing is given as under:

Table-E

Sl. No.	Financial Year	Total Machine Hours (Hr:mm)	Expected Energy Loss (MU)
1	2019-20	358:05	46.55
2	2020-21	158:39	20.62
3	2021-22	141:49	18.44
4	2022-23	354:12	46.05
5	2023-24	322:17	41.90
Total		**1335:04**	**173.56**
Average (Yearly)		**267:00**	**34.71**

From the above Table, it is evident that the Dulhasti Power Station has an average shutdown of about 11 days (3.04% of a year) annually due to high silt above the threshold operating range, which results in an equivalent energy loss of about approx. 35 MU each year.

Considering the hydro potential in UT of J&K, various hydro projects are under active construction stage on Chenab River by M/s CVPPL (a JV of NHPC and JKSPDC). These projects are situated in the up- stream of Dulhasti Power Stations. The Schematic diagram as given below shows the location of on-going hydro projects. The debris and silt generated due to construction work in these projects are also get carried to Dulhasti Dam/Power House. Moreover, there is road widening/alignment works going along the Chenab river, which have also worsen the present situation of silt in the river.



The high concentration of sediment in Chenab River is manifestation of huge catchment area, steep slope, high erosion during cloudburst, avalanche & landslides due to fragile basin geology and various construction activities in the upstream of Dulhasti Dam. Due to heavy silt and reservoir flushing being done on high silt the machines encountered forced/miscellaneous outages, which also impacts the Plant Availability factor of Power Station. The effect of the increase in sediment load can be seen from Table (E) and (F), and it can be observed that outages have increased in last two years (2022-23, 2023-24) when active construction activities – project/highways, etc have increased in the upstream of Dam and is significantly impacting the actual PAF achieved.

The actual Annual PAF achieved by Dulhasti Power Station during last 5 years are as under:

Table-F

Financial Year	2019-20	2020-21	2021-22	2022-23	2023-24	Average
PAF (%)	79.75	101.44	100.55	92.01	92.9	93.33

From above table, it can be seen that Dulhasti Power Station has achieved 93.33% Average PAF during last 5 years against its NAPAF of 90%. Therefore, the fixing of NAPAF of 90% for the Tariff Period 2024-29 seems to be on the higher side considering the active construction activities in the region and further increase in these activities in future years.

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3. CHAMERA-II POWER STATION:

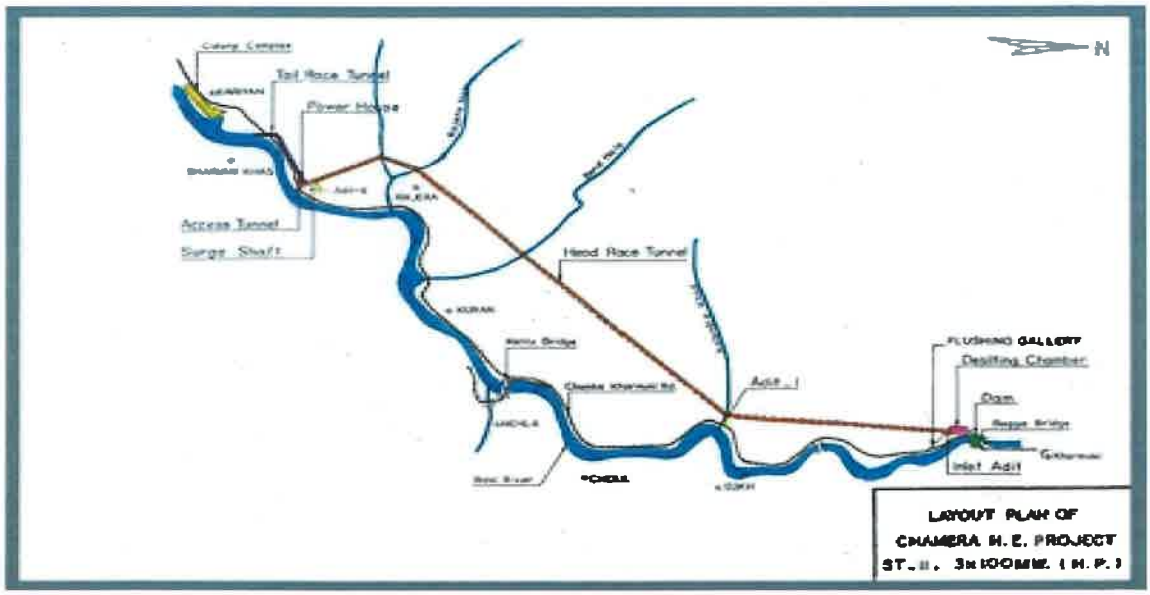
3.1 Brief of Chamera-II Power Station

Chamera-II Power Station is a run of the river scheme with small pondage with an installed capacity of 300 MW (3x100 MW) to harness the hydro power potential of river Ravi) at a gross head of 267 m. It is located on the right bank of River Ravi between 6 to 20 km on Chamba-Kharamukh road, Chamba District of Himachal Pradesh. The power station is about 120 Km from the nearest railhead at Pathankot and about 220 Km from nearest airport at Jammu. This project is located 30 km upstream of Chamera-I Power Station and downstream of Chamera-III Power Station.

The project comprises of a 43m high, 118.5m long concrete gravity dam with 7.0 m dia, 7.86 Km long horse shoe shaped head race tunnel. The catchment area of the dam site 60 m downstream of Bagga bridge is 2593 Km^2.

The underground power house with installed capacity of 300 MW houses 3 units of 100 MW capacity each designed to operate under the net rated head of 243 m and designed to generate 1499.89 MU in a 90% dependable year with 95% machine availability.

Chamera-II Power Station was commissioned in 2003/2004. Uttaranchal, UP, Delhi, HP, Haryana, J&K, Punjab, Rajasthan and Chandigarh are the beneficiary states/ UTs of this power station. The layout plan of Chamera-II Power Station is given as under:



Layout Chamera-II

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3.2 EXPLANATION

As per operation manual of Dulhasti Power Station, the Non-Monsoon period means 1st October to 31st May and Monsoon period means 1st June to 30th September. Thus, the monsoon period of Chamera-II Power Station is of approx. 05 Month.

The Ravi River, a transboundary river of India and Pakistan, is an integral part of the Indus River Basin and forms the headwaters of the Indus basin. The Ravi River originates in the Himalayas in the Multhan tehsil of Kangra district of Himachal Pradesh, India. It follows a north-westerly course and is a perennial river. It is the smallest of the five Punjab rivers that rise from glacier fields at an elevation of 14,000 feet, on the southern side of the Mid Himalayas. It flows through Barabhangal, Bara Bansu, and Chamba districts. It flows in rapids in its initial reaches with boulders seen scattered in the bed of the river. The Ravi River in this reach flows in a gorge with a river bed slope of 183 feet per mile (34.7 m/km) and is mostly fed by snowmelt, as this region lies in a rain shadow. Two of its major tributaries, the Budhil and Nai or Dhona join 64 kilometres (40 mi) downstream from its source.

Since Chamera-II Power Station is situated in the downstream of Chamera-III Power Station, therefore, the power station is facing the siltation problems. Further, due to steep slope and lots of tributaries, Ravi River carries lots of silt and debris to the dam of Chamera-II. During monsoon season, landslides at various locations in upstream occurs due to heavy rainfall, resulting in the heavy debris flow in the river increasing the silt concentration.

The maximum silt concentration (PPM) observed in respective years during monsoon of last 5 years is given as under:

Table-G

Financial Year	2019-20	2020-21	2021-22	2022-23	2023-24
Maximum Silt (PPM)	29580	8010	36260	87988	65720

It is also pertinent to mention here that, due to high silt above 5000 PPM in river as per the Electro-Mechanical safeguards for machine parts, plant has to take a forced/miscellaneous shutdown in each monsoon month, which also reduces the energy

generation. Further, continuous operation of machines during monsoon at high silt concentration (i.e. below threshold limit) also impacts the underwater parts and cooling system resulting in frequent outages of machines during monsoon season. The details of outages of machines due to high silt/silt flushing is given as under:

Table-H

Sl. No.	Financial Year	Total Machine Hours (Hr:mm)	Expected Energy Loss (MU)
1	2019-20	179:50	17.98
2	2020-21	38:14	3.82
3	2021-22	73:56	7.39
4	2022-23	334:44	33.47
5	2023-24	736:44	73.67
Total		**1363:29**	**136.35**
Average (Yearly)		**272:41**	**27.27**

From the above Table, it is evident that the Chamera-II Power Station has an average shutdown of about 11 days annually due to high silt above the threshold operating range, which cost an equivalent financial loss of about approx. 27.27 MU each year.

The Chamera-II Power station is located on Ravi River and lots of sediment load receives from upstream projects and also due to its geomorphology. The high sediment of Ravi River is manifestation of huge catchment, steep slope, high erosion during cloudburst, avalanche & landslides due to fragile basin geology. Due to heavy silt and reservoir flushing being done on high silt the machines encountered forced/miscellaneous outages, which also impacts the Plant Availability factor of Power Station.

The actual Annual PAF achieved by Chamera-II Power Station during last 5 years are as under:

Table-I

Financial Year	2019-20	2020-21	2021-22	2022-23	2023-24	Average
PAF (%)	54.89	59.11	96.22	97.10	89.80	79.42

From above table it can be seen that Chamera-II Power Station has achieved average PAF of 79.42% during last 5 years against its NAPAF of 90%. The outage of units due to generator problem also contributes to the less PAF during the FY 2020-21 and 2021-22. Therefore, fixing of NAPAF of 87% for the Tariff Period 2024-29 against actual average of 79.42% seems to be on the higher side.

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4. SUBMISSION:

1. The payment of capacity charges for Hydro generating stations is dependent on Normative Annual Plant Availability Factor (NAPAF). However, there are situations where the availability of a Hydro generating station is affected by uncontrollable factors like non-availability of water storage due to less rainfall/ drought situation or restrictions on water release imposed by Govt. authorities etc. like e-flow implemented by Hon'ble NGT, leading to a decrease in the recovery of fixed costs. Also, the major factor for not achieving of PAF is high silt, in this way it would be very difficult to achieve the NAPAF considering above factors.

   We would like to draw Hon'ble Commission's attention that in determining the NAPAF of Rangit, Dulhasti, Chamera-II the Hon'ble Commission ignored the issues of Siltation.

2. Further, it is also to be highlighted that as per new IEGC code implemented w.e.f. Oct. 2023, that the generating station has been restricted to declared capacity to only Installed capacity minus auxiliary consumption (Approved LTAS) without any overload during peaking hours in non-monsoon periods. This will also result in reduction in actual annual PAF of the Power Stations during tariff period 2024-29.
3. Furthermore, it is also pertinent to mention that the NAPAF of Nathpa Jhakri and Rampur HE projects of SJVNL are allowed as 87% and 83% for the tariff Period 2024-29 against their actual average PAF of 104.6% and 104.28% respectively. Also Hon'ble CERC vide their order dated 2nd August 2024 (Draft CERC, Terms & Conditions of Tariff) (First Amendment), Regulation 2024 revised the NAPAF of Karcham Wangtoo from 90% to 87%.

   While going through the fixation of NAPAF of other utilities (Hydro Generators) during different tariff periods, the difference between actual PAF against NAPAF is in the range of 7% to 21% (Like NAPAF of Rampur has been fixed as 83% against their actual average achievement of 104.28%).

   Whereas, the NAPAF of Rangit and Dulhasti Power Station have been fixed as 90% (each) for the Tariff period 2024-29 against their actual average PAF of 92.78% and 92.67% respectively, which is not justified for NHPC Power Stations in comparison to methodologies adopted for fixing of NAPAF of other hydro generators. As these NHPC power stations are also heavily affected by silt.

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Similarly, the NAPAF of Chamera-II Power Station for the period 2024-29 has been fixed as 87% against their actual average achievement of 79.42%. Taking a cue from NAPAF fixed for Rampur HEP, which is downstream of Nathpa Jhakri and operates in tandem, NAPAF fixed is 83% (4% lower than upstream Nathpa Jhakri), it can be drawn that NAPAF of Chamera-II should be fixed lower than the upstream project Chamera - III whose NAPAF is fixed as 87%.

4. Tariff Regulation 71(C) signifies that Pondage plants where operation is affected by silt shall be given relaxation of 5% in NAPAF. Since as explained above, above power stations are facing acute siltation problem in recent years, therefore, the relaxation of 5% on this ground may be allowed.

   In consideration of above, an additional margin of 5% towards NAPAF is requested in respect of following NHPC Power Stations considering high siltation issues in these power stations:

Power Station	**NAPAF (2019-24)**	**Actual Average PAF (2019-24)**	**NAPAF (Final tariff Regulations 24)**	**Proposed NAPAF**
Rangit	90	92.78	**90**	**85**
Chamera-II	90	80.30	**87**	**83**
Dulhasti	90	92.67	**90**	**85**