

**ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
PLOT No.4, CHUNOKOLI, SAILASHREE VIHAR,
BHUBANESWAR – 751 021**

**Present: Shri G. Mohapatra, Officiating Chairperson
Shri Susanta Kumar Ray Mohapatra, Member**

Case No. 48/2022

M/s. GRIDCO Ltd.	Petitioner
Vrs.		
M/s. NHPC Ltd. & Others	Respondent

In the matter of: **Application under Section 86(1)(b) of the Electricity Act, 2003 read with Section 21 of the Orissa Electricity Reform Act, 1995 and other enabling provisions for approval of the Power Purchase Agreement (PPA) executed between GRIDCO Ltd. and M/s. NHPC Ltd. dated 21.02.2017 for purchase of 103.8 MW (19.96% of installed capacity) of power from its upcoming 520MW (\$X130MW) Teesta-IV Hydro Electric Project, Sikkim.**

For Petitioner: Sri P K Das, CGM (PP) & Ms. Murchana Dhar, DGM, GRIDCO Ltd.

Respondent: Shri Puneet Munjal, (Head Regulatory Affairs), TPCODL, Shri K. C. Nanda, GM (RA & Strategy), TPWODL, Ms. Malancha Ghose, DGM(RA), TPNODL, Shri V. Wagle, (Head Regulatory Affairs), TPSODL, Shri Rajiv Dwivedi, Advocate on behalf of M/s. NHPC and Shri R. P. Mahapatra.
Nobody represented on behalf of DoE, GoO & Water Resources Dept., GoO.

ORDER

Date of hearing: 27.12.2022

Date of Order: 10.01.2023

The Petitioner M/s. GRIDCO Ltd. being a Bulk Supplier and Deemed Licensee of Trading of Electricity has filed the present petition under Section 86 (1)(b) of the Electricity Act, 2003 read with Section 21 of the Orissa Electricity Reform Act, 1995 (OER Act, 1995) including other enabling provisions of the Act and Regulations for necessary approval of the Power Purchase Agreement (PPA) executed between M/s. GRIDCO Ltd. and M/s. NHPC Ltd. dated 21.02.2017 for purchase of 103.8 MW (19.96% of the Installed Capacity) of power from its upcoming 520MW (4X130MW) Teesta-IV Hydro Electric Project, Sikkim as allocated by Ministry of Power, Govt. of India (GoI).

2. The gist of the submissions made by the Petitioner is as under: -

(a) The Teesta Hydro Electric Project, Stage-IV, Sikkim having an installed capacity of 520MW (4x130MW). NHPC has signed MoU with Govt. of Sikkim for execution of

project in Central Sector and Central Electricity Authority (CEA) has also given their concurrence for this project. The tariff of this project will be determined by Central Electricity Regulatory Commission (CERC) through multiyear tariff after CoD.

- (b) During the FY 2011-12, the petitioner was informed by NHPC that the expected date of commissioning of this project would be February 2018 subject to CEA approval by December 2011 and the levelized tariff for 35 years would be Rs3.43/-.
- (c) The petitioner, vide its letter dated 27.07.2011, had conveyed its in-principle consent to NHPC to purchase power from Teesta-IV as per the allocation made by Ministry of Power, Government of India.
- (d) To resolve the pending commercial issue of the Draft PPA, the Petitioner communicated the NHPC and also a meeting was convened by NHPC with the beneficiaries of Eastern Region to resolve the issues. Accordingly, the revised draft PPA was forwarded by NHPC to GRIDCO for its acceptance.
- (e) The power purchase agreement signed between GRIDCO and NHPC dated 21.02.2017 was for a period of 35 years from the date of Commercial Operation of the last unit or balance normative life of NHPC station whichever is later.
- (f) The same was placed before the Board of Directors in its 171st meeting held on 08.11.2017 for approval. The Board noted that the approximate first year tariff as Rs.4.84 /kWh and the approximate levelized tariff as Rs.4.49/kWh as per updated cost as on May, 2016. Thereafter, the above executed PPA have been submitted before the Commission and Department of Energy, Government of Odisha.
- (g) PGCIL, vide its letter dated 01.01.2021, had intimated the matter of grant of connectivity and it is learnt that the tentative commissioning schedule of units of Teesta-IV are as under:

Unit-I	-	28.02.2027
Unit-II	-	31.03.2027
Unit-III	-	30.04.2027
Unit-IV	-	31.05.2027

- (h) NHPC, vide its letter dated 26.07.2022, has intimated that the indicative 1st year tariff and levelized tariff would be Rs.5.51/kWh and Rs.5.43/kWh respectively as per updated cost approved by CEA as on April, 2021.
- (i) The Ministry of Power, GoI office Memorandum dated 08.03.2019 stipulates that *“Hydropower Purchase Obligation (HPO) is notified as a separate entity within non-solar Renewable Power Obligation (RPO). The HPO shall cover all LHPs*

commissioned after issue of this office memorandum as well as the untied capacity.....”.

- (j) Section 4.5 of the OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2021 stipulates that *“HPO benefit can be met from the power procured from the illegible large hydro projects commissioned on and after 08.03.2019 and in case the generation from those large hydro projects is in sufficient to meet the specified HPO, the generation from small hydro commissioned on and after 08.03.2019 will qualify for fulfillment of the HPO.”*
- (k) Ministry of Power, GoI order dated 22.07.2022 stipulates that :
- “(a) HPO shall be met only by energy produced from LHPS (including PSPS) commissioned after 08.03.2019,*
- (b) the renewable energy certificate mechanism corresponding to hydro power to be developed by CERC to facilitate compliance of HPO obligation would have capping price of Rs.5.50/unit of electrical energy w.e.f. 08.03.2019 to 31.03.2021 and with an annual escalation @ 5% thereafter for the purpose of ensuring HPO compliance.”*
- (l) As per Load Generation Balanced Report(LGBR), the State of Odisha is going to face peak shortage of power from FY 2022-23 onwards. Since, hydro power is environmental friendly it is always preferable to maintain a good hydro thermal mix. Further, the indicative levelized tariff of Rs.5.43/kWh (excluding CTU charges) seems to be commercially viable as the OERC approved rate of various small hydro electrical projects like Meenakshi & Samal Hydro Electric Project comes around Rs.6/- to Rs.7/kWh.
- (m) The petitioner has projected the HPO for the period from FY 2021-22 to FY 2029-30 of the State of Odisha as under:

FY	Projected Demand(MU) excluding 6500 MU Hydro Consumption	HPO (%)	Projected HPO (MU)	Hydro Capacity required @ 40% PLF(MW)	Yearly Hydro Capacity addition required (MW)
2021-22	20,788	0.18	37	11	11
2022-23	22,580	0.35	79	23	12
2023-24	24,635	0.66	163	46	35
2024-25	26,221	1.08	283	81	46
2025-26	27,573	1.48	408	116	70
2026-27	35,791	1.80	644	184	113
2027-28	37,050	2.15	797	227	114
2028-29	38,316	2.51	962	274	161
2029-30	46,502	2.82	1,311	374	214

- (n) In view of above, the power from Teesta-IV can be consider for meeting the HPO as specified by the Ministry of Power, Government of India and by the State Commission.
 - (o) Therefore, it is prayed before the Commission to approve the PPA of Teesta Hydro Electrical Project-IV executed with NHPC dated 21.02.2017 for procurement of State share from aforesaid HEP of NHPC.
3. The gist of the submissions made by the Respondents TPCODL& TPNODL are as under:-
- a) Due to delayed in Commissioning of this project, the revised levelized tariff expected to increase by 58% (from Rs.4.43/kwh to Rs.5.43/kwh) from original expected date of Commissioning (i.e., February 2018) to revise expected date of Commissioning (i.e., year 2027). The respondents further submit that, the Commission has not considered this project in the CESU vesting order date 26.05.2020 in anticipation of delay in Commissioning.
 - b) Further MoP, GoI, vide their order dated 22-07-2022, has fixed the minimum targets for HPOs for the period FY 2022-23 to FY 2029-30 and it is expected that the Commission shall fix in line with the MoP stipulated targets.
 - c) Further as per targets fixed by MoP, minimum 0.35% in the FY 2022-23 and 1.80% in the FY 2026-27 are required for HPOs and large hydro projects which are commissioned after 08.03.2019 would be considered for HPOs. Since the project is expected to be commissioned in the year 2027, this unit would not be available to meet the HPO requirements of initial 3-4 years.
 - d) The petitioner had earlier taken consent from respondents to procure 345MW from M/s. NEEPCO's Kameng HEPs in Arunachal Pradesh. The project has already been commissioned and the tariff is about Rs.4.40/kwh which is quite competitive compared to Teesta-IV HEPs.
 - e) In view of the above facts, with high estimated levelized tariff, the Commission may advise the petitioner to consider such Hydro projects which are already commissioned or to be commissioned in near future so that price fluctuation would be minimum. Power from other Hydro Power Projects with more competitive tariff can be explored to meet the power requirement of the State as well as to meet HPO target. This will also avoid the additional tariff burden to the consumers of the State.
4. The other Respondent, TPWODL submitted as follows:
- a) Although the date of signing of PPA is 21.02-2017, yet there is delay of 5 years to place it before the Commission for approval. Further the 1st year tariff and levelized tariff as noted by Board of Directors (BoD) in their meeting, has gone up by 94 paise/unit and 70paise/unit respectively as per updated cost as on April 2021. Therefore, it is not

possible to ascertain what would be the tariff after 5 years (in 2027) when the plant is expected to be commissioned. Further the respondent submitted that the petitioner has not mentioned about current status of the project and therefore the Commission may direct to the petitioner to provide the current status of the project.

- b) The Commission in BST Order for FY 2022-23 has approved Central hydro power purchase price @Rs.2.75/kwh including Teesta -V @ Rs.1.99/kwh. This is considerably lower than the indicative tariff of the instant project for which PPA has been signed.
- c) The normative composite tariff of NHPC TLDP-IV project issued by CERC is Rs.4.35/kwh for FY 2018-19 and the same is applicable for the tariff period FY 2019-24. The tariff petition for Teesta Stage-IV for FY 2019-21 on 27.09.2021 is under sub-judice. Therefore, as per clause No-6 of the instant PPA, Commission may consider the tariff as Rs.4.35/kwh till updated tariff for FY 2019-21 is being issued by CERC.
- d) In view of the above, Commission may provide appropriate direction to the petitioner to procure alternative cheaper hydro power or draw power from this plant on merit order dispatch basis.

5. The Respondent, Shri R. P. Mahapatra submitted that:

- a) From the HPO requirements projected by the petitioner for the period from FY 2021-22 to 2029-30, it is revealed that 227MW cannot be met from Teesta-IV during FY 2027-28. Further HPO requirement of remaining period from FY2021-22 to 2026-27 and FY 2028-29 to 2029-30 cannot be met as no new HPS having more than 25MW capacity are scheduled to be commissioned during the said period.
- b) Further the petitioner has failed to meet its RPO so far. Therefore, the petitioner has to take proactive action to meet the HPO targets.
- c) In view of the above, Department of Water Resources, Govt. of Odisha may be impleaded in the present case to furnish information on LHPS and SHEPs, proposal if any.
- d) The Commission may also take proactive action to meet HPO targets otherwise there would be additional burden on the consumers of the State on account of procurement of Renewable Energy certificates at high cost.

6. The Petitioner-GRIDCO in its Rejoinder to the reply by the Respondents has submitted as under:

- a) The Teesta-IV HEP was unintentionally and inadvertently missed out from Vesting Orders and also prayed to condone the delay in filling the PPA before the Commission.
- b) The project is scheduled to be commissioned within 74 months from the date of Govt. of India sanction. However, the sanction of same is yet to be accorded by GoI.

- c) The indicative 1st year tariff to be Rs.5.51/kWh and levelized tariff to be Rs.5.43/kWh as per update cost (Rs.6113.21cr) have been approved by CEA as on April, 2021. The final tariff of Teesta -IV can only be ascertained after sanction of Govt. of India.
- d) The year wise revised additional capacity requirement to fulfill HPO at CUF 35% is estimated as under:

HPO Requirements of GRIDCO at CUF 35%				
FY	Required Capacity (inMW)	Available Capacity (inMW)	Capacity addition (in MW)	Additional Capacity required (in MW)
2022-23	35	42	9	-
2023-24	71	51	-	20
2024-25	124	51	17	56
2025-26	185	68	-	117
2026-27	264	68	4	192
2027-28	335	71	104	160
2028-29	401	175	-	226
2029-30	454	175	-	279

- e) From the above estimation, it can be ascertained that after availing power from Teesta-IV in FY 2027-28, still there would be shortfall in HPO. If power from Teesta -IV will not be availed, the requirement of HPO will further rise.
- f) Comparison of tariff of Teesta-IV with tariff of Teesta-V is not appropriate because Teesta -V had commissioned in 14 years back (w.e.f. 28-03-2008) and the project was developed through low rate of interest on loan from JBIC, Japan. Further the composite tariff of latest commissioned projects i.e., Teesta Low Dam Projects (TLDP)-III and TLDP-IV of NHPC was Rs.5.30/kwh and Rs.4.35/kwh respectively for FY 2018-19. Therefore, the first-year tariff of Rs.5.51/kwh is reasonable.
- g) As per Ministry of Power, GoI, Order dated 22-07-2022, the HPO shall be met only from LHPs and SHEPs which are commissioned after 08.03.2019. Therefore, the energy which has been procured from existing State & Central hydro stations will be considered as Other RPO and not for HPO as per said order of MoP.
- h) It is further mentioned that the commissioned hydro projects have already tied up by beneficiaries. So, it is difficult to avail power from such projects. Further the petitioner stated that it is taking all possible measures to avail power from existing hydro projects to meet HPO at commercially viable rate to minimize the burden on the consumers.
- i) Regarding power availability from Kameng HEP, the petitioner stated that the NEEPCO, vide its letter dated 06-09-2022, intimated that 345MW from KHEP

@4.40/kwh is no longer available till 31.03.2023 and same will be available through NVVN. After discussion with NVVN, vide letter dated 04.11.2022, it has offered that upto 200MW may be available @5.45/Kwh (inclusive of NVVN Trading Margin) depending upon actual generation from April 2023 onwards. After getting consent from the DISCOMs and necessary direction from the Commission, the Petitioner will take further necessary action for procurement of power from KHEP.

- j) Considering the above facts and circumstances and taking note of the benefits of HPO, reasonable tariff and longer useful life of the Project, Commission may approve the PPA of Teesta-IV HEP and also pass necessary directives for procurement of power from Kameng HEP through NVVN.
7. The Commission heard the petitioner and respondents in virtual mode and also considered their written submissions and argument during the hearing. The documents filed by the parties have been referred by the Commission. We observe as under:
- a) The Teesta Hydro Electric Project, Stage-IV, Sikkim is having an installed capacity of 520MW (4x130MW) with annual energy of 2251.89 MU. NHPC has signed MoU with Govt. of Sikkim for execution of project in Central Sector and Central Electricity Authority (CEA) has also given their concurrence for this project. As per allocation of Ministry of Power, Govt. of India for purchase of 103.8 MW (19.96% of the Installed Capacity) power from upcoming Hydro Electric Project (HEP), the Petitioner had executed a Power Purchase Agreement (PPA) with M/s. NHPC Ltd. on 21.02.2017 and had filed the application seeking for necessary approval.
- b) The tariff of this project will be determined by Central Electricity Regulatory Commission (CERC) through multiyear tariff after CoD.
- c) The petitioner, vide its letter dated 27.07.2011, had conveyed its in-principle consent to NHPC to purchase power from Teesta-IV as per the allocation made by Ministry of Power, Government of India.
- d) The power purchase agreement was signed between GRIDCO and NHPC on 21.02.2017 for a period of 35 years from the date of commercial operation of the last unit or balance normative life of NHPC station whichever is later. Thereafter the same was placed before the Board of Directors, in its 171st meeting held on 08.11.2017, for approval. The Board noted the approximate first year tariff as Rs.4.84 /kWh and the approximate levelized tariff as Rs.4.49/kWh as per updated cost as on May, 2016. The petitioner has submitted that the levelised & first year tariff would be Rs.5.43/kWh and Rs.5.51/kWh based on estimated cost of Rs.6113.21 crore (April 2021 price level).

- e) PGCIL, vide its letter dated 01.01.2021, had intimated about grant of connectivity and it was learnt that the tentative unit wise commissioning schedule of this Teesta-IV are as under:

Unit-I	-	28.02.2027
Unit-II	-	31.03.2027
Unit-III	-	30.04.2027
Unit-IV	-	31.05.2027

- f) The Ministry of Power (MoP), GoI, in their order dated 22.07.2022, has stipulated the Renewable Purchase Obligation (RPO) and Energy Storage Obligation trajectory from FY 2022-23 to FY 2029-30 as under:

RPO Trajectory by MoP				
FY	Wind RPO (%)	HPO (%)	Other RPO (%)	Total RPO (%)
2022-23	0.81	0.35	23.44	24.61
2023-24	1.60	0.66	24.81	27.08
2024-25	2.46	1.08	26.37	29.91
2025-26	3.36	1.48	28.17	33.01
2026-27	4.29	1.80	29.86	35.95
2027-28	5.23	2.15	31.43	38.81
2028-29	6.16	2.51	32.69	41.36
2029-30	6.94	2.82	33.57	43.33

- g) Further, as per above notification of MoP, GoI, HPO shall be met only by energy produced from LHPs (including PSPs) commissioned after 08.03.2019 and the renewable energy certificate mechanism corresponding to hydro power to be developed by CERC to facilitate compliance of HPO obligation would have capping price of Rs.5.50/unit of electrical energy w.e.f. 08.03.2019 to 31.03.2021 and with an annual escalation @ 5% thereafter for the purpose of ensuring HPO compliances. The petitioner has submitted that even after availing the power from Teesta-IV HEP, still there would be shortfall in HPO.
- h) Considering the above facts & circumstances and considering the requirements of HPO, longer useful life of the Project, green source of energy and the current market scenario, the tariff determined by CERC during the year 2027 (i.e., the expected date of commissioning of the Teesta-IV, HEP) will be competitive and reasonable.
- i) The petitioner-GRIDCO has submitted that the state is likely to face peak shortage of power from 2022-23 onwards. Since Hydro power is environment friendly green power, purchase of hydro power is always preferable in order to maintain a good Hydro-Thermal mix.

- j) The salient features of PPA are as follows:
- i. The installed capacity of Teesta-IV HEP of NHPC is 520MW (4X130MW) and allocation of power shall be in accordance with instruction issued by MoP, GoI from time to time.
 - ii. The energy to be supplied shall be in the form of 3 phase, 50 hertz alternating current at a voltage of 400 KV or as applicable. The evacuation of power from the delivery point of NHPC station shall be through the transmission system of POWERGRID or any authorized agency as the case may be.
 - iii. The supply of energy to bulk power customer is subject to outages determined by NHPC in consultation with ERPC/ERLDC.
 - iv. The bulk power customer shall apply to CTU for grant of connectivity in terms of CERC (Grant of Connectivity, Long-term and Medium-term Open Access in Inter-State Transmission and related matters.) Regulations, 2009.
 - v. The metering arrangement including its installation, testing operation, maintenance, collection, transportation and processing of data required from energy exchange shall be governed in accordance with CEA (Installation and Operation of Meters) Regulations, 2006 amended from time to time.
 - vi. The quantum of energy sold and energy bill raised by NHPC to the bulk power customer shall on the basis of REAs issued by ERPC.
 - vii. Tariff to be charged shall be as per tariff Notifications /Orders/ Directions issued/ by CERC from time to time.
 - viii. The payment of bills for supply of power from NHPC station may be made by the bulk power customers through RTGS/NEFT or through a confirmed revolving irrecoverable Letter of Credit to be established in favour of NHPC which shall be kept valid at all the times during the validity of the agreements or extended period.
 - ix. If the bills are not paid within 60 days or payment security mechanism is not maintained, NHPC shall have the option to regulate/ or reallocated the power in accordance with the guidelines/directives issued by CERC/ GoI from time to time. Further, if outstanding dues remain unpaid for more than 90 days, NHPC may recover these dues through central plan assistance of respective State in terms of tripartite Agreement if in force.
 - x. All disputes shall be dealt in accordance with the provisions of the Electricity Act, 2003. All other disputes which are not covered under this Act, shall be referred for arbitration. The venue of the arbitration proceedings shall be at New Delhi/Faridabad/Bhubaneswar.

- xi. This agreement shall remain operative for 35 years from the date of commercial operation of the last unit or balance normative life of NHPC station whichever is later.
- k) In view of the above observations, the Commission decides to approve the PPA dated 21.02.2017, executed between GRIDCO Ltd. and NHPC Ltd., to purchase 103.8 MW (19.96% of the Installed Capacity) power from upcoming 520MW (4X130MW) Teesta-IV HEP, Sikkim as allocated by Ministry of Power, Govt. of India in order to meet the HPO as well as peak demand shortage. The availability of adequate Hydro Power in generation mix is the need of hour due to large scale integration of generation from variable Energy Resources.
8. Further, regarding procurement of power from Kameng hydro power project through NVVN, the Commission directs GRIDCO to take suitable action in consultation with all the DISCOMs, DoE of GoO and NVVN to meet the RPO shortfall of the State.
9. The petitioner has prayed for *post-facto* approval of PPA executed between GRIDCO and NHPC Ltd. on 21.02.2017 after a gap of more than 5 years. The Commission is of view that after such a gap of time approval of PPA is not proper & desirable. In this regard, the letter No.114 dated 19.01.2021 of the Commission should be strictly followed.
10. The Case is accordingly disposed of in terms of the above.

Sd/-
(S. K. Ray Mohapatra)
Member

Sd/-
(G. Mohapatra)
Officiating Chairperson