



**ORDER  
OF THE  
WEST BENGAL ELECTRICITY REGULATORY COMMISSION  
IN CASE NO. OA-264/17-18**

IN REGARD TO THE APPLICATION SUBMITTED BY THE WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED (WBSEDCL) FOR 'IN-PRINCIPLE' CLEARANCE I.R.O INVESTMENT APPROVAL FOR INSTALLATION AND COMMISSIONING OF 1000 MW (4 X 250 MW) TURGA PUMPED STORAGE PROJECT AT PURULIA BY WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY LIMITED (WBSEDCL) IN TERMS OF REGULATION 2.8.1.4 OF THE WEST BENGAL ELECTRICITY REGULATORY COMMISSION (TERMS AND CONDITIONS OF TARIFF) REGULATIONS, 2011, AS AMENDED

**PRESENT:**

**SRI SUTIRTHA BHATTACHARYA, CHAIRPERSON  
SRI DURGADAS GOSWAMI, MEMBER  
SRI PULAK KUMAR TEWARI, MEMBER**

**DATE: 27.09.2021**



'In-principle' clearance i.r.o investment approval for Installation and Commissioning of 1000 MW (4 x 250 MW) Turga Pumped Storage Project at Purulia by West Bengal State Electricity Distribution Company Limited (WBSEDCL) in terms of regulation 2.8.1.4 of the West Bengal Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2011, as amended



### **FACTS IN BRIEF:**

- 1.0 The West Bengal State Electricity Distribution Company Limited (in short 'WBSEDCL') has submitted a petition vide letter dated 02.11.2017 for 'in-principle' clearance in respect of investment approval for Installation and Commissioning of 1000 MW (4 x 250 MW) Turga Pumped Storage Project at Purulia by WBSEDCL in terms of regulation 2.8.1.4 of the West Bengal Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2011, as amended (in short 'Tariff Regulations'). Subsequently, WBSEDCL has submitted additional documents in regard to their petition dated 02.11.2017 through supplementary petition dated 07.08.2020 and further vide letters dated 25.01.2021 and 10.02.2021. The Commission has admitted the petition submitted by WBSEDCL on 02.11.2017 along with supplementary petition and subsequent submissions dated 25.01.2021 and 10.02.2021 (together called as the 'application') on 12.02.2021 and registered in Case No. OA – 264/17-18.
- 2.0 The application of WBSEDCL along with the Detailed Project Report (DPR) inter-alia states the following:
  - 2.1 In order to utilize pumped storage potential of Ajodhya Hills in Purulia district of West Bengal, Government of West Bengal (GoWB) has entrusted WBSEDCL to develop 1000 MW (4 x 250 MW) pumped storage project on Turga Nala in Purulia District of West Bengal to be termed as Turga Pumped Storage Project (Turga PSP). The Turga PSP is the second pumped storage project to be taken up by WBSEDCL. Purulia Pumped Storage Project was the first project and is already in operation since 2007 – 08.
  - 2.2 WBSEDCL has stated that they have taken up detailed survey and investigation for the project through Government and Semi Government agencies like Survey of India (SOI), Geological Survey of India (GSI), Central Soil and Materials Research Station (CSMRS), Central Water and Power Research Station (CWPRS), etc. Subsequently, WBSEDCL assigned the work of preparation of Detailed Project Report (DPR) to WAPCOS Ltd., a Government of India undertaking as consultant. The DPR has also been concurred by the Central Electricity Authority (CEA) in October 2016 vide OM No. 2/WB/22/CEA/2013-PAC/713-745 dated 05.10.2016.





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2.3 WBSEDCL has submitted the following salient features of the project:

- (i) Installed Capacity: 1000 MW (4 X 250 MW)
- (ii) Type: Closed Loop, Two (2) Variable Speed Pump Turbine units, Two (2) Fixed Speed Pump Turbine units;
- (iii) Peak Operating duration: 1000 MW, 5 hours daily;
- (iv) Estimated Available Annual Energy Production: 1825 MU;
- (v) Estimated Annual Pumping Energy: 2466 MU at 74% cycle efficiency;
- (vi) Availability Factor: 95;
- (vii) Auxiliary Consumption (including transformation loss): 1.2%
- (viii) Operation and Maintenance Cost: Estimated as Rs. 3.5 Lakh/ MW in first year of operation and subsequent 5% escalation per year;
- (ix) Man/ MW Ratio: 0.225

2.4 WBSEDCL submitted that, the projected cost of Turga PSP was initially considered as Rs. 4234.90 Crore which was approved by CEA considering the December, 2014 price level. The estimated cost has been escalated to Rs. 4800.69 Crore considering the October, 2016 price level as per the provision of price escalation in terms of sub-paragraph (i) of paragraph 2 of the CEA's approval dated 05.10.2016. The project cost has been tabulated below:

In Rs Lakhs

Sl No	Particulars	CEA's Approval Dated 05.10.2016 (considering December, 2014 price level)	Project Cost submitted for approval (considering October, 2016 price level)
1	Estimated Project Cost	3795.48	4008.65
2	Interest During Construction (IDC)	439.42	642.04
3	Foreign and Local Consultancy Charges for Overall Project	-	150.00
4	<b>Total Estimated Project Cost</b>	<b>4234.90</b>	<b>4800.69</b>

WBSEDCL has also stated that Consultancy Charge of Rs. 150 Crore has been considered in the present project cost since the same was not considered earlier due to restriction in the CEA Guidelines. It is submitted that, the State Cabinet on 08.05.2017 approved the project with a cost estimate of Rs. 4800.69 Crore.





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- 2.5 WBSEDCL has further submitted that the funding of the project shall be through Externally Aided Project (EAP) Loan of 85% and Equity (State Share) of 15%. The EAP loan has already been included in rolling plan of Japan International Cooperation Agency (JICA) by the Ministry of External Affairs, Government of India and remaining fund will be available from State Government as equity as per in-principle administrative approval of Department of Finance, GoWB vide Group – N: UO No. 2711 dated 05.01.2016.
- 2.6 WBSEDCL has submitted that the estimated cost of generation of the project has been derived as Rs. 3.39 per kWh and the levelized tariff is Rs. 4.16 per kWh.
- 2.7 WBSEDCL has submitted the following documents in compliance to regulation 2.8.1.4.2 of the Tariff Regulations:
- (i) Concurrence of Detailed Project Report from CEA dated 05.10.2016 after receiving necessary clearances from CWC, GSI and CSMRS along with compliance report on the conditions given by CEA;
  - (ii) Targeted values of operating parameters;
  - (iii) Financial viability analysis of the project along with estimated cost/ tariff of generation;
  - (iv) Levelized tariff of the project;
  - (v) Clearance of Ministry of Environment and Forest dated 04.11.2013 for pre-construction activities at the proposed site;
  - (vi) 'In-principle' approval of Ministry of Environment, Forests and Climate Change dated 12.04.2018 for diversion of 234.00 ha of forest land for construction of 1000 MW Turga PSP along with compliance report on the conditions given by MoEFCC;
  - (vii) Approval of the Board of Directors, WBSEDCL of 1000 MW Turga PSP with a total project cost of Rs. 4800.69 Crore in its 70<sup>th</sup> meeting held on 28.04.2017;
  - (viii) Approval of the State Planning Board, Department of Planning, GoWB dated 22.01.2016;
  - (ix) Approval of the State Cabinet dated 08.05.2017 for a project cost of Rs. 4800.69 Crore;
  - (x) Technical specifications of the bid;





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- 2.8 WBSEDCL submitted that the power from Turga PSP will help in peak load management by reducing the wide gap between peak and off-peak load. It will also act as supporting power to renewable power and shall greatly improve the Hydro – Thermal mix in the state of West Bengal.
- 2.9 In view of the above, WBSEDCL prayed for 'in-principle' approval for Installation and Commissioning of 1000 MW Turga Pumped Storage Project at Purulia at an estimated cost of Rs. 4800.69 Crore considering October 2016 price level in terms of regulation 2.8.1.4 of the West Bengal Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2011 as amended.
- 3.0 The Commission directed WBSEDCL to publish the gist of their application as approved by the Commission in terms of regulation 2.8.1.4 of the Tariff Regulations. WBSEDCL accordingly published the gist of the application in (i) the "Bartaman", (ii) the "Times of India", (iii) the "Anandabazar Patrika" and (iv) the "Sanmarg" on 24.02.2021 inviting suggestions and objections on their petition within 14 days (including the date of publication) of publication of the notice in the Newspapers. No suggestions, objections or comments have been received by the Commission within the stipulated time-period.

#### **OBSERVATIONS OF THE COMMISSION:**

- 4.0 In terms of regulation 2.8.1.4 of the Tariff Regulations, prior approval of the Commission for investment of new generating station is mandatory. Further, such approval shall be taken before any investment is made in order to minimize the investment risk. The Commission observes that the approval shall be sought in two stages. In the first stage, the concerned generating company or licensee shall seek 'in-principle' clearance from the Commission through an application along with such related documents as specified in regulation 2.8.1.4.2 of the Tariff Regulations, before procurement or placement of order for such project. In the second stage, the final approval of investment proposal shall be sought for by the concerned owner of the generating station through an application prior to placement of order (s) after conducting due competitive bidding mentioning the project cost on the basis of the agreed price with the supplier (s) and contractor (s) and also mentioning the final details of all parameters as submitted in the first stage for 'in-principle' clearance of investment.
- 5.0 In terms of provision of Section 8 of the Electricity Act, 2003, any generating company intending to set-up a hydro-generating station shall prepare a scheme estimated to involve a capital expenditure





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exceeding such sum, as may be fixed by the Central Government, from time to time, by notification and submit to the Authority for its concurrence.

- 6.0 Accordingly, WBSEDCL has submitted the application for 'in-principle' approval for Installation and Commissioning of 1000 MW Turga Pumped Storage Project at Purulia along with all necessary documents and clearances as specified in regulation 2.8.1.4.2 of the Tariff Regulations. WBSEDCL has also submitted the DPR of Turga Pumped Storage to Central Electricity Authority in November, 2015. The Authority has accorded its concurrence in terms of Section 8 of the Electricity Act, 2003 vide OM dated 05.10.2016 to the scheme at an estimated completion cost of Rs. 4234.90 Crores based on December, 2014 price level with the stipulations that the cost can only exceed due to price escalation, change in rates of Indian taxes and duties and additional taxes and duties levied, if any, change in law and change in quantities due to Geological Surprises. WBSEDCL has sought 'in-principle' clearance at an estimated cost of Rs. 4800.69 Crore considering October 2016 price level. The said cost also includes cost of consultancy to the tune of Rs. 150 Crores.
- 7.0 The Commission directed WBSEDCL to justify the requirement of Turga PSP considering the energy requirement and peak demand as projected in the 19<sup>th</sup> Electric Power Survey of India and also considering the long-term power purchase agreements in place and proposed agreements for meeting the Renewable Power Obligation as stipulated by the Commission. WBSEDCL vide letter dated 07.07.2021 has stated the Date of Commercial Operation (COD) will be in FY 2028 – 29 and has justified their requirement of Turga Pumped Storage Project through a Load Generation Balance Report for FY 2028 – 29, which shows that the peak demand as 9910 MW and availability considering Turga PSP and other proposed agreements as 9076 MW. The Commission observes that there is a shortfall of around 834 MW and thus the project is beneficial for peak – load management of WBSEDCL.
- 8.0 The Commission has noted the operating parameters as submitted by WBSEDCL in the instant application. However, the Commission observes that WBSEDCL is required to submit performance guarantee on value of different operating parameters which shall include design performance relating to auxiliary consumption rate and cycle efficiency of pumped storage generating stations in terms of regulation 2.8.1.4.4 of the Tariff Regulations during the application for final approval i.e. second stage. The Commission shall give its 'in-principle' clearance on such operational parameters in terms of regulation 2.8.1.4.7 of the Tariff Regulations while intimating its decision about final approval to the investment proposal.





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### **ORDER OF THE COMMISSION:**

9.0 The Commission after considering the above facts and submissions made by WBSEDCL in their application dated 02.11.2017 and subsequent submissions thereof accords 'in-principle' clearance for investment for Installation and Commissioning of 1000 MW (4 x 250 MW) Turga Pumped Storage Project at Purulia by WBSEDCL at an estimated project cost of Rs. 4800.69 Crore in terms of regulation 2.8.1.4.2 of the West Bengal Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2011, as amended.

10.0 The Commission also gives the following directions:

- (i) WBSEDCL shall ensure timely completion of the project so as to avoid escalation of the project cost.
- (ii) WBSEDCL shall submit their application for final approval of the investment proposal in terms of regulation 2.8.1.4.3 of the Tariff Regulations duly complying with all such requirements as stipulated under regulation 2.8.1.4.4 of the Tariff Regulations.

11.0 The petition is thus disposed of. Let a copy of the order be served upon WBSEDCL.

sd/-  
(PULAK KUMAR TEWARI)  
MEMBER

sd/-  
(DURGADAS GOSWAMI)  
MEMBER

sd/-  
(SUTIRTHA BHATTACHARYA)  
CHAIRPERSON

Dated:27.09.2021

sd/-  
Secretary