

TAMIL NADU ELECTRICITY REGULATORY COMMISSION
(Constituted under section 82 (1) of the Electricity Act, 2003)
(Central Act 36 of 2003)

PRESENT:

Thiru. S.Akshayakumar	- Chairman
Thiru. G.Rajagopal	- Member
and	
Dr.T.Prabhakara Rao	- Member

M.A.P.No. 4 of 2014

In the matter of : Approval of Capital cost of Bhavani Barrage II Small Hydro Electric Project (2x5 MW) of Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) under Sections 62 and 86 (1) (a) of the Electricity Act, 2003 read with Regulation 18 of TNERC (Terms and Conditions of) Tariff Regulations, 2005

Tamil Nadu Generation and Distribution Corporation Limited
Represented by Chief Engineer/Civil Designs
144, Anna Salai, Chennai – 600 002. : Petitioner

Vs.

Nil : Respondent

Dates of hearing : 26.12.2014, 27.04.2015, 09.09.2016

Date of Order : 31.01.2017

Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) which is in the business of generation and distribution of electricity in the State of Tamil Nadu has filed a petition for approval of the Capital cost of Bhavani Barrage II Small Hydro Electric Project (2x2 MW) under sections 62 and 86 (1)(a) of the Electricity Act, 2003 read with regulation 18 of TNERC (Terms and Conditions of) Tariff Regulations, 2005. The above petition was heard on 26.12.2014, 27.04.2015 and 09.09.2016. The said M.A.P. No. 4 of 2014 came up

for final hearing on 09.09.2016. The Commission upon perusing the above petition and connected records and after hearing the submissions of the petitioner hereby makes the following:

ORDER

1. Prayer of the petitioner in M.A.P.No.4 of 2014:-

The prayer of the petitioner in M.A.P.No.4 of 2014 is to –

- (i) approve the Capital cost for Bhavani Barrage II Small Hydro Project (2x5 MW) upto the date of commercial operation; and
- (ii) permit to claim the cost of the above hydro station in the Aggregate Revenue Requirement (ARR) of TANGEDCO as per the petition till the time the petition is closed.

2. Facts of the case:-

Through the petition and other additional submissions of the petitioner, the following are stated:

2.1 Bhavani Barrage II (2x5 MW) Hydro Electric Project is situated in the boulder stage of the Bhavani River by construction of barrage across the river at Umaipalayam Village, Coimbatore district.

2.2. Approval of the Government of TamilNadu was accorded for executing Bhavani Barrage II Hydro Electric Project (2x3 MW) at Rs.26.69 crs as per DPR estimate 1995-96 price level) vide G.O.Ms.23 Energy (A2) Department dated 06.03.2000. Based on expert Committee's recommendation, the Bhavani Barrage II HEP has been redesigned as a peaking station with an installed capacity of 2x5 MW from Operational & Technical aspects so as to work in tandem with TNEB's upstream Pillur Power House (2x 50 MW) which is working

as a peaking station. The Expert Committee has cleared the installed capacity of 2x5 MW.

2.3 The DPR was updated on the Cost Data for the year 2004-05 and Administrative approval was accorded by the Board of the erstwhile TNEB for a total cost of Rs.49.40 crores during September 2004 vide B.P.(F.B) No.119 dated 27.05.2005.

2.4. The project component involves the following works:

- a) Land acquisition
- b) Barrage works
- c) Power House sub structure works
- d) Power House Superstructure to house two units of 5 MW each.
- e) Electro Mechanical works which included Turbine & Generator.

2.5. Subsequently, after the award of all Civil, Electrical and Mechanical packages, the cost has been escalated to Rs.187.61 crores and the same has been approved vide B.P.No. (Per) TANGEDCO Proceeding No.55 dated 09.05.2011, which is inclusive of IDC component of Rs.32.48 crores.

2.6. The Electrical & Mechanical works were executed by M/s.Meclin Fabricators Pvt. Ltd., Trichy under Engineering, Procurement and Construction (EPC) basis with completion period of 24 months from the date of award and acceptance i.e.14.12.2007. The other works viz weir and allied works, Power House sub structure, Power House super structure, and other works as per site conditions were executed by various contractors.

2.7. The factors contributing to the increase in capital cost of the power station are as follows:

- (a) Increase in the cost of Electro Mechanical equipment.
- (b) PH size increased from 25 m x 32 m to 28m x 38m based on machinery supplier's requirement.
- (c) Lowering of excavation level of Centre pier, Generator foundation and Steel liner for want of sound rock bed strata.
- (d) Slippage of earth in repair bay causing increase in excavation and filling concrete.
- (e) Unexpected floods in Bhavani river on 10.11.2009. Bund breached and head race slope portion washed away.
- (f) Frontage for DG set room & Power House not conceived in estimate.
- (g) Increase in length and size of piers.
- (h) Construction of additional works such as formation of approach road to Barrage and Power House.
- (i) Formation of concrete apron on the upstream and downstream of Barrage based on the recommendation of design consultant
- (j) Construction of wing walls on the left flank which was not conceived earlier.
- (k) Carrying out Head race and Tail race works based on the model study report of Anna University.
- (l) Protection wall construction to reduce area of land submergence.
- (m) Construction of sanitation works inside Power House, inverted filters upstream and downstream of barrage.
- (n) Adoption of 110 kV Switchyard instead of 22 kV Switchyard
- (o) Provision of IDC component.

2.8. The date of commercial operation of both the units is 15.08.2013.

2.9. It is stated by the petitioner that the project has been executed with the their own funds. However an amount of Rs.32.48 crores. has been worked out towards IDC in the petition, for the Project cost of Rs.152.61 crores.

2.10. The detailed break up of original estimated project cost and revised project cost along with reasons for variation is tabulated below:

TABLE
BREAK UP OF PROJECT COST
(Rs. in Lakhs)

Sl. No	Head of works	Original cost	Cost on COD	Variation	TANGEDCO's reasons for variation
1	Infrastructure works – Lands, Tools & Plants	57	350	292	Cost of land increased manifold
2	Major civil works – Dam, intake, PH Civil works	1220	5785	4565	i) Due to rock strata and increase in dimensions of the Power House based on the machine supplier's requirements. ii) Original provision is based on 2004-05 price level and the work awarded during 06/2006. The price variation is due to price escalation of materials and labour.
3	Plant & equipment	3300	8744	5444	
4	Taxes & Duties	Included in the respective Civil and E&M works			
5	Construction and precommissioning expenses	254	252	(-) 2	
6	Overheads	109	382	273	
7	Capital cost without IDC & FC	4940	15513	10573	
8	Financing charges and IDC	-	3248	3248	
9	Capital cost with IDC & FC	4940	18761	13821	
10	Cost per MW	494	1876		

3. The Commission in order to carry out the prudence check of the Capital cost and to address the data gaps, directed the petitioner to submit additional details with respect to actual expenditure incurred upto and after COD, split up of taxes and duties, actual taxes and duties paid, detailed statement of completion of various works of the project viz Weir, radial gates, PH sub structure, PH super

structure, Electrical & Mechanical works, specific reasons for delay in completion of the project.

4. **Contentions of the Petitioner:-**

Pursuant to the above, the petitioner submitted the details as called for by the Commission. The contents of the petition and the additional details in brief are as follows:-

4.1 The petitioner has enclosed a report of Chartered Accountant certifying that,-

- (1) TANGEDCO has computed the cost in the currency of expenditure viz. Indian Rupees under each head approved by the Board of TANGEDCO;
- (2) Cost incurred by the Company are as per Agreements entered into with Financial Institutions/Banks and as per contracts entered into with Non EPC contractors and other parties wherever applicable;
- (3) The project has commenced Commercial Operation for Unit I & Unit II on 15.08.2013 which is the commercial operation date of the project also;
- (4) The project cost excludes margin money on working capital provided by the company.

4.2 The project cost as per the administrative approval of the Board of TANGEDCO is Rs.49.40 crores. Subsequently, after the award of all Civil, Electrical and Mechanical packages, the cost was escalated upto Rs.187.61 crores which is inclusive of IDC component of Rs.32.48 crores.

4.3 The predominant factor contributing to the increase in capital cost of the power station are as follows:-

4.3.1 The rates adopted in Detailed Project Report were based on 2004-05 price level. There was a steep rise in All India Price Indices towards cost of materials, labour charges and fuel charges which in turn resulted in hike in the project cost. Major components influenced the increase in project cost is detailed below:

TABLE

(Rs. in Lakhs)

Items	Value as per DPR in 2005	Awarded value of the work
Cost of E&M works	3300	8588.07
Barrage works	550	1330.05
PH sub structure & super structure	667	2238.77
IDC	Nil	3248.01

4.3.2 Land:-

In the DPR, the land required was planned only for Weir, Switchyard and Power House area. Later stage it was found that the private patta land were to be acquired for the submerge area due to impounding of water. Market value of the land was fixed by DRO/Coimbatore after a great deal of efforts. After that, the land owner was negotiated at several sittings and agreed for transactions. The cost of land increased by manifold. The revised cost is Rs.266 lakhs against the original provision of Rs.29 lakhs in the DPR.

4.3.3 Barrage works:-

The Rock strata was found at deeper level based on test Borehole results conducted during execution since soil test bore holes could not be drilled at that time of preparing DPR due to spilling of Pillur reservoir water. Hence a Consultant was fixed to design the Barrage foundation. Due to change in design, based on consultant recommendation, the quantity of various items were got increased resulting increase in capital cost of power station.

As per model study report of Anna University, for carrying out Head race and Tail race works, such as construction of concrete apron, RCC cut off wall on the Downstream side of Weirs and Piers, RCC mat on the top surface of Downstream apron, packing the cavity formed in Left Flank bottom, RCC wing wall on the left flank Upstream side of abutment were to be constructed and due to the above, the cost of barrage works has increased from Rs.550 Lakhs to Rs.1821 Lakhs.

4.3.4 Power House Works:-

Based on the preliminary Bore hole details, the depth of foundation for Power House sub-structure was estimated and in the absence of machine suppliers requirements the dimensions of the Power House was taken based on the DPR. However, during execution of Power House, the sound rock was found at different levels in different locations which caused a change in the depth of the foundation, and the dimensions of Power House increased based on machine supplier's requirements. Due to these changes, there was an increase in excavation quantities, RCC and other items of works. Hence the cost of Projects under Power House structure (Power House sub-structure and super-structure and allied works) has been increased to Rs.3665 Lakhs against the original provision of Rs.667 lakhs made in DPR.

4.3.5 Miscellaneous Allied works:-

In the DPR an amount of Rs.3.00 lakhs was provided under the head of miscellaneous works. During execution, construction of Protection Wall/Afflux bund to avoid submergences of lands under FRL condition, formation of Launching apron in Downstream side of Barrage, extension of Tail Race Channel

upto river course, construction of Drain Water Sump and other miscellaneous works were executed for an amount of Rs.298.70 lakhs. Due to the above reason the cost of miscellaneous allied works escalated from Rs.3.00 Lakhs to Rs.298.70 Lakhs.

4.3.6 Generating Equipment (E&M works):-

The original provision made in the DPR for Generating Machineries & Equipment was Rs.33 crores based on the Budgetary offer, but during execution of work the cost increased from Rs.33 crores to Rs.87.44 crores as per award rate of E&M manufacturer.

4.3.7 IDC Component:-

Originally no Interest During Construction component was provided in the sanctioned estimate as provided in DPR and IDC has been included for an amount of Rs.32.48 crores for a period of 5 years in the revised capital cost.

4.3.8 Additional works

The following works not envisaged while preparing DPR were taken up:-

- (i) Formation of frontage for Power House & DG set room;
- (ii) Formation of approach road to Barrage & Power House;.
- (iii) Launching apron on Upstream and Downstream of Barrage;
- (iv) Construction of inverted filters on Upstream and Downstream of Barrage resulted an additional cost of Rs.11.00 crores.

4.4 Specific reasons furnished by the petitioner for Time over run are as follows:

4.4.1 Unforeseen circumstances like earth slips:-

A huge quantity of earth around 400 cu.m slipped from the repair bay side slopes into the base area. The Director GSI/Chennai inspected the site after the earth slip and recommended to remove the loose boulders and to lessen the overburden weight. Hence causing increase in excavation and quantity of concrete filling.

4.4.2 Natural calamities like floods:-

Due to unexpected floods in Bhavani River on 10.11.2009 to a tune of 1,00,000 cusecs, the bund breached and washed away the head race slope portion causing cavity. Hence to form the required slope, the so formed cavity had to be filled with concrete, thus increasing the concrete quantity.

4.4.3 Delay due to surplus of Pillur dam causing sudden floods occurred during the period from 22.06.2007 to 06.12.2007, 26.10.2008 to 14.11.2008, 15.07.2009 to 29.08.2009, 10.11.2009 to 17.12.2009 and 18.06.2011 to 03.07.2011. The flood washed away the Coffer dam arrangement works.

5. Findings of the Commission:-

5.1 Before going into the details of the issue, we would like to see the provisions in Tariff Policy 2016 and TNERC Regulations relating to the capital cost approval.

5.1.1. The relevant extracts in National Tariff Policy 2016 is reproduced below:

“5.11 (a) Return on Investment

*.....
While allowing the total capital cost of the project, the Appropriate Commission would ensure that these are reasonable and to achieve this objective, requisite benchmarks on capital costs should be evolved by the Regulatory Commission.”*

5.1.2 TNERC's Terms and conditions for determination of tariff Regulations, 2005

with respect to the Capital Cost states as follows:

“ Chapter III – General Principles of computing cost and return

18. Capital cost

- (1) Accurate computation of cost of service including return on investment is essential for determination of cost plus tariff. The Commission shall be guided by the following principles to compute the cost and return.*
- (2) Investments made prior to the notification of these regulations by the Generating Company and licensees shall be accepted on the basis of audited accounts.*
- (3) The actual capital expenditure on the date of commercial operation for the original scope of work based on audited accounts of the company/licensee limited to original cost may be considered subject to prudence check by the Commission*
- (4) Wherever Power Purchase Agreement or Agreement for transmission/wheeling provided for a ceiling of capital cost, the capital cost to be considered shall not exceed such ceiling.*
- (5) The capital cost shall include capitalized initial spares subject to the following ceiling norms:*
 - (i)*
 - (ii)*
 - (iii) In case of Hydro generating stations – 1.5% of the original project cost as on cut off date;*
- (6) Scrutiny of the project cost estimates by the Commission shall be limited to the reasonableness of the capital cost, financing plan, interest during construction stage, use of efficient technology and such other matters, for determination of tariff.*

19. Additional Capitalisation

(1) The capital expenditure within the original scope of work actually incurred in respect of the following items after the date of commencement of operation and upto the cut off date may be admitted by the Commission, subject to prudence check.

- (i) deferred liabilities*
- (ii) Works deferred for execution*
- (iii) Procurement of initial spares subject to the ceiling specified in Regulations 18.5*
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court*
- (v) On account of change of law*

- (vi) Any additional work/services which have become necessary for efficient and successful operation of the Generating Station, but not included in the original project cost

Note: The list is illustrative and not exhaustive.

(2) Any expenditure on minor items/assets like normal tools and tackles, personal computers, furniture, air conditioners etc., bought after the cut off date shall not be considered for additional capitalization for determination of tariff.

(3) The impact of additional capitalization in tariff revision may be considered by the Commission twice in a tariff period, including revision of tariff after the cut off date.

.....

20. Revenue /Charges during trial stage (prior to COD)

(1) The cost incurred during trial upto COD shall be treated as capital cost.

(2) The revenue earned from sale of power (infirm power) shall be treated as reduction in capital cost.

(3)

Chapter V – Hydro Power Generating Stations - 51. Capital cost and sale of infirm power

1) The capital cost of Hydro Power Generating Station, including the complete hydro power generating facility covering all components such as dam intake, water conducting system, power generating station and generating units of the scheme as apportioned to power generation, shall be determined in accordance with Chapter III of these Regulations.

2) Any revenue earned by the Generating company from sale of infirm power, shall be taken as reduction in capital cost of the Generating station and shall not be treated as revenue. The rate for infirm power shall be same as the energy rate of the Generating Stations.”

5.1.3 TNERC’s Power Procurement from New and renewable Sources of Energy

Regulations, 2008 with respect to determination of tariff is reproduced below:

“4. Determination of tariff

(1)

(2) While deciding the tariff for power purchase by distribution licensee from new and renewable sources based generators, the Commission shall, as far as possible, be guided by the principles and methodologies specified by:

- a) Central Electricity Regulatory Commission
- b) National Electricity Policy
- c) Tariff Policy issued by the Government of India
- d) Rural electrification Policy
- e) Forum of Regulators
- f) Central and State Governments

(3) The Commission shall by a general or specific order, determine the tariff for the purchase of power from each kind of new and renewable sources based generators by the distribution licensee. In case of small hydro projects with a capacity of more than 5 MW but not exceeding 25 MW capacities, Commission decide the tariff on case to case basis.

Provided where the tariff has been determined by following transparent process of bidding in accordance with the guidelines issued by the Central Government, as provided under section 63 of the ACT, the Commission shall adopt such tariff.

5.2 In respect of the Bhavani Barrage II project of the petitioner, the milestone activities are detailed below:

- Detailed project report prepared during April 2005
- Administrative approval of the Board accorded during May 2005.
- The gestation period of the Project is three years as per the DPR
- COD of both the units (2x5 MW) achieved on 15.08.2013

5.3 The details of completion of the civil, mechanical, E&M works are given in the Table below:

TABLE

Name of work	Award letter date	Period of completion	Date of start of work	Schedule date of completion	Actual date of completion
Construction PH sub structure works, head race and Tail race	30.08.2007	24 Months	06.02.2008	05.02.2010	31.12.2011
Construction of PH super structure	15.12.2009	6 months	14.06.2010	13.12.2010	30.09.2011
Construction of Weirs, Piers prestressed concrete Bridge with fabrication of gate, moving gantry arrangements	24.06.2006	18 months	12.02.2007	11.08.2008	31.07.2011

Launching apron	03.01.2012	120 days	07.01.2012	06.05.2012	06.05.2012
E&M works (Bulb Turbine Type)	17.11.2008	24 months	14.12.2007	13.12.2009	15.08.2013

5.4 The award cost of all the major packages viz Power house sub-structure and super structure works, weir and allied works and E&M works have increased manifold from the DPR cost increasing the capital cost of the project from Rs.494 crs to Rs.1876 crs.

5.5 Now coming to the analysis of the capital cost, there is no requisite benchmark arrived by the Commission for prudence check of the capital cost. However, Central Electricity Regulatory Commission has notified CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 with effect from 16.09.2009 for renewable sources including small hydro wherein "Small hydro" is defined as follows,

" 'Small Hydro' means Hydro Power projects with a station capacity upto and including 25 MW."

The relevant Regulation of CERC's (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 with respect to capital cost is reproduced below:

"12. Capital Cost

The norms for the Capital cost as specified in the subsequent technology specific chapters shall be inclusive of all capital work including plant and machinery, civil work, erection and commissioning, financing and interest during construction, and evacuation infrastructure upto inter-connection point.

28. Capital Cost:

(1) The normative capital cost for small hydro projects during first year of Control Period (FY 2009-10) shall be as follows:

<i>Region</i>	<i>Project size</i>	<i>Capital Cost (Rs.Lakh/MW)</i>
<i>Himachal Pradesh, Uttarakhand and North Eastern states</i>	<i>Below 5 MW</i>	<i>700</i>
	<i>5 MW to 25 MW</i>	<i>630</i>
<i>Other States</i>	<i>Below 5 MW</i>	<i>550</i>
	<i>5 MW to 25 MW</i>	<i>500</i>

(2) The capital cost for subsequent years shall be determined on the basis of indexation formula as outlined under Regulation 29.”

5.6 Based on the above RE Regulation, the CERC proceeded with the determination of generic tariff of the RE Projects for the first year of the control period (i.e. FY 2009-10) through its order dated 03.12.09 and based on the Indexation formula specified in the said regulation for the subsequent years.

5.7 In this context, it is noteworthy to recall the Hon’ble Appellate Tribunal for Electricity ‘s Judgment dated 18.09.09 in Appeal No. 50 and 65 of 2008 filed by a developer of Small Hydro Power, on the order of the Himachal Pradesh Electricity Regulatory Commission on “Small Hydro Power Projects, Tariff and other issues” dated 12.08.2007 wherein it had been observed that:

“The consensus that emerged during arguments is that capital cost of Rs.6.5 crs./MW should be accepted as the normative capital cost which can be adopted by the promoter of hydel energy and the Board, but the promoter or the Board shall be entitled to apply for a site specific fixation of capital cost in case either of them find the normative capital cost to be unsuitable for the project.”

The Hon’ble APTEL in the said order has also ordered that,

“The Capital cost of Rs.6.5 crs/MW shall be treated as normative capital cost in all such cases as are found suitable by all parties. The promoters of hydel power in the State of Himachal Pradesh as well as the Himachal Pradesh State Electricity Board shall be entitled to apply to the Commission for fixing project specific capital cost for any project in case the normative capital cost is not suitable to either of them. Similarly, if”

5.8. The petitioner was asked for project specific issues, if any, for consideration. From the details furnished by the petitioner, we have found the following:

5.8.1 Based on directions of the Board of TANGEDCO, a Technical/Expert Committee was constituted to review the capital cost of all on going Hydro Projects of the time viz. Periyar Vaigai I, II, II, & IV and Bhavani Barrage I & II and Bhavani Kattakai Barrage II & III with reference to the original cost estimates of and certify the reasonableness of the quantity and rate variations of the revised estimates and suitable proposal was placed before the Board. The Committee has observed that the project has not been executed by the petitioner meticulously.

5.8.2 Consequently, the Board of TANGEDCO in its Board Meeting held on 04.05.2011 while according the revised administrative approval for project for Rs.187.61 crores. at 2010-11 Price Level including Interest During Construction, directed that in future the DPRs shall be prepared more realistically to reflect the cost of the project. Board further directed that funds should be allotted scheme wise within the approved budget provision to avoid the excess over administratively approved cost.

5.8.3 Earth slips and floods due to surplus of Pillur dam has occurred leading to increase in additional work and time.

5.9 The Commission, however observes that though unforeseen situations have occurred, generally it is seen that the petitioner has not made a holistic approach in execution of the project. Preliminary survey to ascertain the actual depth of foundation essentially required to assess the civil works has not been done. The

original provision made in the DPR for Generating machineries and Equipment has no basis. Though the works like construction of weir have been awarded during 06/2006, it was completed during 2011 only. There has been delay in execution by the Plant and Equipment contractor. These factors have contributed to the drastic increase in the project cost from Rs.4.94 crores per MW to Rs.18.76 crores per MW.

5.10 The Commission, therefore, for admitting the capital cost, propose to consider the Normative Capital cost determined by CERC for the FY 2009-10 even though COD of the both the units have been achieved during 2013.

5.11 CERC Norms for project size of 5 MW to 25 MW for the year 2009-10 is given in the Table below:

TABLE

Description	Rs in Lakhs per MW
Normative capital cost the first year of the Control period (FY 2009-10)	500 (with IDC)
	450 (without IDC)

5.12 PROJECT COST OF THE PETITIONER:-

The capital cost and cost per MW of Bhavani Barrage II (2x5 MW) as per original cost estimate and as on COD as per TANGEDCO petition is compared with the CERC norms for 2009-10 and the same is indicated in the Table given below:

TABLE

Rs.in crores

Description	Capital cost of BB II 2x5 MW project		Per MW cost		
	As per Original estimate	As on COD	As per Original estimate	As on COD	CERC Norms 2009-10 for Project size of 5 MW to 25 MW
Total cost excluding IDC	49.40	155.13	4.94	15.51	4.50
IDC	-	32.48	-	3.25	0.50
Total	49.40	187.61	4.94	18.76	5.00

5.13. It may be seen that the TANGEDCO project cost per MW @ Rs.18.76 crores as on COD for which approval has been sought for is very much on the higher side. This Commission therefore intends to restrict the capital cost to CERC's normative capital cost of Rs.4.50 crores per MW for the control period 2009-10. Thus the capital cost of Bhavani Barrage II of 2x5 MW capacity works out to Rs.45.00 crores. against Rs.155.13 crores indicated in the petition as on COD.

5.14. Regarding IDC, though a provision of Rs.32.48 crores has been given towards IDC in the petition, the petitioner has informed that the project has been executed with their own funds. Further as per the Expenditure Statement, an amount of Rs.70.82 crores has also been incurred towards IDC as on COD.

The petitioner has not furnished any clarity on the funding of the project subsequently also. Considering the financial status of the petitioner, executing a project worth Rs.155 crores with their own funds is not possible. In view of the ambiguity in the funding of the project, it is proposed to admit the normative IDC @ Rs.0.50 per MW as per CERC norms. The IDC details are tabulated below:

TABLE

Description	Amount Rs. in crs.
IDC as per petition	32.48
IDC incurred by TANGEDCO as per their Expenditure Statement as on COD	70.82
IDC as per CERC norms @ Rs.0.50 crs/MW	5.0
IDC now allowed	5.0

5.15 The actual expenditure Statement of the petitioner as on COD and beyond COD is however, as detailed below:

TABLE

Rs. in cr.				
COD – Unit I & II – 15.08.13	Expenditure against work	Expenditure in Revenue Expenses Account	Expenditure against IDC	Total
Expenditure Upto COD	149.39	13.71	70.82	233.92
After COD (09/13 to 03/16)	0.23	--	---	0.23
Total	149.62	13.71	70.82	234.15

The Commission in the preceding paras has already restricted the expenditure incurred by the petitioner upto COD towards project work and IDC in view of the cost overrun of the project. Therefore, the Commission disallows the expenditure incurred by the petitioner beyond COD also.

5.16 Now prior to approving the project cost of the hydro project, the Commission wish to state that earlier in its MYT Petition for 2013-14 to 2015-16 along with tariff revision for 2013-14 filed before the Commission on 19.02.2013 for Determination of Tariff for Generation and Distribution, the petitioner has indicated a capital cost of Rs.187.61 crores as on COD for the said new hydro project. As the Commission then felt that the proposed capital cost was extremely

high compared to industry norms and inspite of repeated directions, as TANGEDCO has not filed any petition for approval of the capital cost of the new hydro station, the Commission in its related Tariff Order dated 20.06.13 allowed the capital cost only to the extent considering the capital cost of Rs.5.50 crores/MW for small hydro plants in accordance with CERC RE tariff Regulations.

5.17 In the light of the foregoing, the Commission admits the Capital cost of the Bhavani Barrage II Small Hydro Project of capacity 2x5 MW as on COD as per the details given below:

TABLE
CAPITAL COST APPROVAL OF BHAVANI BARRAGE II HYDRO PROJECT (2x5 MW) AS ON COD

Description	Cost on COD		Rs. in crores Cost approved as on COD	
	Total cost	Cost per MW	Total cost	Cost per MW
Capital cost of the project without IDC	155.13	15.51	45.00	4.5
IDC proposed	32.48	3.25	5.00	0.5
Total Capital cost including IDC	187.61	18.76	50.00	5.0

5.18 In the result, the Commission allows a capital cost of Rs 50.00 crores against Rs.187.61 crores including IDC sought by the petitioner for the Bhavani Barrage II Small Hydro project of capacity 2x5 MW.

6. APPEAL:-

An Appeal against this order shall lie before the Appellate Tribunal for Electricity under section 111 of the Electricity Act, 2003 within a period of 45 days from the date of receipt of a copy of this order by the aggrieved person.

(Sd)
(Dr.T.Prabhakara Rao)
Member

(Sd.....)
(G.Rajagopal)
Member

(Sd.....)
(S.Akshayakumar)
Chairman

/ True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission

