

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 183/TT/2011**

**Coram:**

**Shri V.S. Verma, Member  
Shri M. Deena Dayalan, Member**

**Date of Hearing: 20.6.2013**

**Date of Order : 13.2.2014**

**In the matter of**

Approval under Regulation-86 of CERC (Conduct of Business) Regulations 1999 and CERC (Terms and Conditions of Tariff) Regulations 2009 for determination of transmission tariff for

(a) Combined assets of Tirunelveli- Edmon 400 kV D/C line (1.7.2010), 2 nos. switchable line reactors at Udumalpet S/S (DOCO: 1.12.2010 & 1.3.2011) & Cochin (Muvattappuzha)-Trichur 400 kV D/C Quad Line (anticipated DOCO-1.1.2012) and,

(b) Combined Assets of 315 MVA, 400/220kV, ICT-I along with downstream system & ICT-II at Cochin (anticipated DOCO-1.1.2012) for the period from 1.1.2012 to 31.3.2014 under Kudankulam ATS in SR for tariff block 2009-14.

**And in the matter of:**

Power Grid Corporation of India Ltd  
Saudamini, Plot No 2,  
Sector 29 Gurgaon – 122001

**.....Petitioner**

Vs

1. Karnataka Power Transmission Corporation Ltd.,  
Kaveri Bhawan,  
Banglore-560 009
2. Transmission Corporation of Andhra Pradesh Ltd.,  
Vidyut Soudha, Hyderabad-500 082
3. Kerala State Electricity Board,  
Vaidyuthi Bhavanam, Pattom,  
Thriuvananthapuram – 695 004
4. Tamil Nadu Electricity Board  
NPKRR Maaligai, 800, Anna Salai,  
Chennai-600 002

5. Electricity Department  
Government of Pondicherry,  
Pondicherry – 605 001
6. Eastern Power Distribution Company of Andhra Pradesh  
Limited (APEPDCL),  
P&T Colony, Seethmmadahara,  
Vishakhapatnam
7. Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL),  
Srinivasasa Kalyana Mandapam Backside, Tiruchanoor Road,  
Kesavayana Gunta,  
Tirupati-517 501
8. Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL),  
Corporate Office, Mint Compound,  
Hyderabad-500063
9. North Power Distribution Company of Andhra Pradesh Limited (APNPDCL),  
Opp. NIT Petrol Pump, Chaitanayapuri,  
Kazipet  
Warangal-506 004
10. Bangalore Electricity Supply Company Limited (BESCOM)  
Corporate Office, K.R. Circle,  
Banglore-560 001
11. Gulbarga Electricity Supply Company Limited (GESCOM)  
Station Main Road,  
Gulbarga
12. Hubli Electricity supply Company Limited (HESCOM)  
Navanagar, PB Road,  
Hubli
13. Mescom Corporate Office  
Paradigm plaza, Ab Shetty Circle,  
Manglore-575 001
14. Chamundeswari Electricity Supply Corporation Ltd. (CESC)  
# 927, LJ Avenue Ground Floor,  
New Kantharaj Urs Road,  
Saraswatipuram, Mysore-570 009
15. Electricity Department  
Government of Goa,  
Vidyuti Bhawan, Panaji, Goa-403 001

.....Respondents

**For petitioner:** Shri S S Raju  
Shri M M Mondal

**For respondents:** None

### **ORDER**

The petition has been filed for approval of transmission charges for the period from the date of commercial operation of the respective asset to 31.3.2014 in respect of (a) Tirunelveli-Edmon 400 kV D/C Line, 2 nos. switchable line Reactors at Udumalpet sub-station and Cochin (Muvattapuzha)-Trichur 400 kV D/C Quad Line (**collectively called Asset- I**) and, (b) 315 MVA, 400/220 kV, ICT-I along with downstream system & ICT-II at Cochin (**collectively called Asset - II**), collectively referred to as “**the transmission assets**” included in the transmission system associated with Kudankulam Atomic Power Project (**the transmission system**) in Southern Region in terms of the Central electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (**the 2009 Tariff Regulations**).

2. The investment approval for the transmission system was accorded by Ministry of Power vide letter dated 25.5.2005 at an estimated cost of ₹177929 lakh, including Interest During Construction (IDC) of ₹7141 lakh (based on 4th Quarter, 2004 price level). Subsequently, approval for the Revised Cost Estimate for the transmission system was accorded by the Board of Directors of the petitioner company vide Memorandum dated 3.9.2010 at ₹215907 lakh, including IDC of ₹22342 lakh based on 1<sup>st</sup> Quarter 2010 price level. The scope of works covered under the transmission system include:-

#### **Transmission Lines**

- (i) Kudankulam (NPC) – Tirunelveli (POWERGRID) 400 kV (QUAD) D/C Transmission Line-I

- (ii) Kudankulam (NPC) – Tirunelveli (POWERGRID) 400 kV (QUAD) D/C Transmission Line-II
- (iii) Tirunelveli (POWERGRID) - Udumalpet (POWERGRID) 400 kV D/C Transmission Line
- (iv) Tirunelveli (POWERGRID) – Edmon (Kerala state Electricity Board) 400 kV Multicircuit Transmission Line
- (v) Edmon (Kerala State Electricity Board) – Muvattapuzha (POWERGRID) 400 kV (QUAD) D/C Transmission Line
- (vi) Muvattapuzha (POWERGRID) – North Trichur (POWERGRID) 400kV (QUAD) D/C Transmission Line
- (vii) LILO of both circuits of Madurai (POWERGRID) – Trivendrum (POWERGRID) 400 kV D/C Transmission Line at Tirunelveli

### Sub-stations

- (i) 400/220 kV Tirunelveli (POWERGRID) Substation (New)
- (ii) 400/220 kV Muvattapuzha (POWERGRID) Substation (New)
- (iii) 400/220 kV North Trichur (POWERGRID) Substation (Extension)
- (iv) 400/220 kV Udumalpet (POWERGRID) Substation (Extension)
- (v) 400/220 kV Trivendrum (POWERGRID) Substation (Extension)

3. The petitioner has claimed transmission tariff for the assets covered in the petition as follows:-

S. No.	Asset	Anticipated/ Actual DOCO	Reference
1	<b>A-</b> Tirunelveli (PGCIL) – Edamon (KSEB) 400 kV Multi-Circuit Line	1.7.2010	Order dated 19.8.2011 in petition no. 306/2010
2	<b>B-</b> 1 no. switchable line reactors at Udumalpet S/S	1.12.2010	Order dated 29.11.2011 in Petition no. 346/2010
	<b>C-</b> 1 no. switchable line reactors at Udumalpet S/S	1.3.2011	
	<b>D-</b> Combined Assets “Tirunelveli (PGCIL) – Edamon (KSEB) 400 kV Multi-Circuit Line and 2 no switchable line reactors at Udumalpet S/S” (A+B+C)	1.3.2011 (Notional)	
3	<b>E-</b> Combined Assets “Muvattapuzha (Cochin) – North Trichur 400 kV (Quad) D/C” and “Tirunelveli (PGCIL) – Edamon (KSEB) 400 kV Multi-Circuit Line and 2 no switchable line reactors at Udumalpet S/S” ( <b>Combined Asset-I</b> )	1.1.2012 (Notional Anticipated DOCO)	Covered in the instant petition
4	<b>F-</b> Combined Assets “315 MVA ICT-I and ICT-II at Muvattapuzha (Cochin)” ( <b>Combined Asset-II</b> )	1.1.2012 (Notional Anticipated DOCO)	

4. Transmission tariff for the above combined assets have been claimed, based on the projected capital expenditure to be incurred up to anticipated notional DOCO and estimated additional capital expenditure projected to be incurred from anticipated notional DOCOs to 31.3.2014.

5. In accordance with the Ministry of Power investment approval dated 25.5.2005, the transmission system was to be completed within 42 months from that date. Therefore, the scheduled date of commercial was 1.12.2008. However, the transmission assets were put under commercial operation on 1.12.2011, after a delay of 36 months.

6. The transmission charges claimed by the petitioner based on the actual date of commercial operation are as under:-

(₹ In lakh)

Particulars	Asset - I			Asset - II		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Depreciation	471.93	1508.28	1564.41	108.40	343.45	360.55
Interest on Loan	274.48	851.31	841.53	44.86	135.80	133.05
Return on Equity	522.75	1676.58	1747.24	107.61	340.95	357.93
Interest on Working Capital	31.34	99.63	103.05	11.01	34.79	36.46
O & M Expenses	125.01	396.48	419.10	121.05	383.88	405.84
<b>Total</b>	<b>1425.51</b>	<b>4532.28</b>	<b>4675.33</b>	<b>392.93</b>	<b>1238.87</b>	<b>1293.83</b>

7. The details submitted by the petitioner in support of its claim for interest on working capital are given overleaf:-

(₹ In lakh)

Particulars	Asset - I			Asset - II		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Maintenance Spares	56.25	59.47	62.86	54.47	57.58	60.88
O & M Expenses	31.25	33.04	34.93	30.26	31.99	33.82
Receivables	712.76	755.38	779.22	196.47	206.48	215.64
<b>Total</b>	<b>800.26</b>	<b>847.89</b>	<b>877.01</b>	<b>281.20</b>	<b>296.05</b>	<b>310.34</b>
Rate of Interest	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
<b>Interest</b>	<b>31.34</b>	<b>99.63</b>	<b>103.05</b>	<b>11.01</b>	<b>34.79</b>	<b>36.46</b>

8. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act. The replies to the petition have been filed by Tamil Nadu Generation and Distribution Company Limited (TANGEDCO) and Kerala State Electricity Board (KSEB), vide affidavits dated 9.8.2011 and 4.12.2012 respectively. The petitioner has filed its rejoinder to TANGEDCO and KSEB's reply, vide affidavits dated 22.8.2012 and 4.12.2012 respectively.

9. We have heard the representatives of the petitioner present at the hearing and have perused the material available on record.

### **Date of commercial operation**

10. TANGEDCO, vide its affidavit dated 9.8.2011, in its reply to the petition has raised the issue of date of commercial operation of the transmission assets. According to TANGEDCO, as per the schedule, the transmission line is to be commissioned along with commissioning of the second unit Kudankulam Atomic Power Project which is not likely to be synchronized before August 2012. Kudankulam Atomic Power Project involves, among other assets, Tirunelveli-Edamon transmission line, Edamon-Cochin

(Muvattapuzha) and Cochin to North Trichur transmission lines. There is no mention about commissioning of the intervening Edmon-Cochin transmission line. With the intermediary link missing and without the commissioning of the generators at Kudankulam, the transmission assets will not be a regular use. Therefore, it is not fair on the part of the petitioner to seek transmission charges. The petitioner should either commission the assets as per the original schedule or wait till the commissioning of the associated generators. The petitioner should file on record the proposed date of commissioning of the generating station at Kudankulam.

11. In response to above, the petitioner has submitted in its rejoinder dated 28.8.2012 as under:-

(a) As per the investment approval, the transmission system is scheduled for completion in a phased manner. 400 kV D/C (quad) Kudankulam to Tirunelveli transmission line - I and establishment of sub-station at Tirunelveli by LILO of both circuits of Madurai-Trivandrum transmission line would be completed in 26 months to match with the commissioning of 1<sup>st</sup> unit of Kudankulam Atomic Power Project in May, 2007. 400 kV D/C (Quad) Kudankulam to Tirunelveli transmission line-II and 400 kV D/C Tirunelveli-Udumalpet transmission line would be commissioned in December, 2007 to match with the commissioning of second unit of Kudankulam Atomic Power Project. Balance system from Tirunelveli to North Trichur i.e. 400 kV Tirunelveli-Muvattapuzha-North Trichur transmission line would be completed in 42 months.

(b). Cochin (Muvattapuzha)- Trichur 400 kV D/C Quad transmission line (anticipated DOCO - 1.1.2012) has implementation schedule to match with the

commissioning of 2<sup>nd</sup> unit of Kudankulam Atomic Power Project in December, 2007.

- (c) In the 140<sup>th</sup> SREB meeting held at Bangalore on 18.3.2006, NPCIL indicated that the 1<sup>st</sup> unit of Kudankulam Atomic Power Project is expected to be commissioned by November, 2007.
- (d) The petitioner accordingly placed awards on agencies to meet the above completion schedule. In the 2<sup>nd</sup> SRPC meeting, held on 31.10.2006, it was intimated by the petitioner that programme of commissioning of transmission assets was generally matching with the scheduled commissioning of generating units of Kudankulam Atomic Power Project.
- (e) There have been further issues with regard to execution of Kudankulam Atomic Power Project with M/s. NPCIL. There was a delay in supply of equipments from Russia and accordingly, 1<sup>st</sup> unit had to be further rescheduled to June, 2010. In the SRPC meetings held on 17.9.2009 and 18.12.2009, it has been intimated by NPCIL that the 1<sup>st</sup> unit will be commissioned by June, 2010 and the 2<sup>nd</sup> unit by December, 2010.
- (f) The petitioner had commenced the work of transmission lines keeping in view the parallel time lines of generation. With the subsequent shift / delay in generation project, the petitioner had to slow down the work. However, it was not feasible to delay the transmission system as time extensions would have obvious implications for the petitioner which would have a bearing on the project cost. The petitioner was accordingly constrained to complete the construction activity and lines have been completed.



- (g) The lines are ready for its intended use, but the petitioner is unable to charge the same because of non-readiness of generation (not attributable to the petitioner). Hence, it requires consideration by Commission in accordance with Regulation clause (12) of Regulation 3 of Tariff Regulations 2009, extracted below:-

"(12) **'date of commercial operation' or 'COD'** means

(c) in relation to the transmission system, the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful charging and trial operation :

Provided that the date shall be first day of a calendar month and transmission charge for the element shall be payable and its availability shall be accounted for, from that date:

Provided further that in case an element of the transmission system is ready for regular service but is prevented from providing such service for reasons not attributable to the transmission licensee, its suppliers or contractors, the Commission may approve the date of commercial operation prior to the element coming into regular service. "

- (h) Cochin (Muvattapuzha)- Trichur 400 kV D/C Quad transmission line was ready for intended use and declared under commercial operation w.e.f. 1.12.2011 which cannot be kept on hold because of delay in commissioning of the Kudankulam generation unit. The petitioner, therefore, is not able to provide service for the reasons not attributable to itself, its suppliers or contractors. The case accordingly qualifies for consideration of the Commission for approval of the date of commercial operation prior to the element coming into regular service.

12. The petitioner has further submitted that NPCIL is a separate entity, who have committed the commissioning schedule many a times before SRPC (where TANGEDCO is also a member) but still the units are yet to be commissioned. The commitment of commissioning of both NPCIL units is already placed on record in SRPC meetings. The commissioning of generating units is not within the purview of the petitioner.

13. It is observed that there has been an inordinate delay in execution of Kudankulam Atomic Power Project. The petitioner commenced the construction activities to keep pace with the schedule of generation, though the activities got delayed for a substantial period. Any further delay, keeping in view the advanced stage of execution activities, was to prejudice the commercial interests of the petitioner. Therefore, the petitioner has commissioned the transmission assets. The action of the petitioner in completion of the transmission assets is considered reasonable. The Commission in its order dated 24.9.2010 in Petition No. 81/2010 [POWERGRID vs KPTCL and others] in the matter of approval of date of commercial operation for Kudankulam (NPC) - Tirunelveli (POWERGRID) 400 kV D/C Quad transmission line I & II with associated bays and equipments observed as under

"that in case of delay in commissioning of generation, petitioner cannot be held responsible and date of commercial operation could be approved if transmission system is ready as provided in the second proviso to regulation 3(12) (c) of the 2009 Tariff Regulations. In line with the above referred order, we approve the date of commercial operation in the present case as prayed by the petitioner. However the petitioner is directed to seek the prior approval of the Commission whenever the transmission system is ready for regular services but is prevented from doing so for reasons not attributable to it as provided under the second proviso to Regulation 3(12) (c) of the 2009 Tariff regulations."

14. In accordance with the above order, the date of commercial operation of 1.12.2011 as declared by the petitioner is in order in accordance with sub-clause (c) of clause (12) of Regulation 3 of the Tariff Regulations 2009.

### **Capital cost**

15. Regulation 7 of the Tariff Regulations 2009 so far as relevant provides as under:-

**“(1) Capital cost for a project shall include:-**

- (a) The expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan – (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii)

being equal to the actual amount of loan in the event of the actual equity less than 30% of the fund deployed, - up to the date of commercial operation of the project, as admitted by the Commission, after prudence check.

(b) capitalised initial spares subject to the ceiling rates specified in regulation 8; and

(c) additional capital expenditure determined under regulation 9:

Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost.

(2) The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff:

Provided that in case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Commission from time to time:

Provided further that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the reasonableness of the capital expenditure, financing plan, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff.”

16. The details of the revised apportioned approved capital cost, capital cost as on the dates of commercial operation and estimated additional capital expenditure projected to be incurred for the assets are given hereunder:-

(₹ in lakh)

Particulars	Apportioned approved cost	Actual cost on date of commercial operation*	Projected additional capital expenditure			Estimated completion cost
			2011-12	2012-13	2013-14	
Asset-I	30806.00	28930.83	1946.68	2184.78	510.00	<b>33572.29</b>
Asset-II	6466.00	6113.76	83.78	607.58	40.00	<b>6845.12</b>

\* Inclusive of initial spares amounting to ₹203.60 Lakh and ₹69.83 Lakh for Asset-1 and Asset-2 pertaining to Sub-Station. The same falls within the ceiling limit specified in Regulation 8 of Tariff Regulations 2009.

### Initial spares

17. The actual cost on the date of commercial operation claimed by the petitioner is inclusive of the cost of initial spares of ₹203.60 lakh and ₹69.83 lakh for sub-station in case of Asset-I and Asset-II respectively.

18. Regulation 8 of the Tariff Regulations 2009 provide for ceiling norms for capitalization of initial spares in respect of transmission system as under:

**“8. Initial Spares.** Initial spares shall be capitalised as a percentage of the original project cost, subject to following ceiling norms:

(iv) Transmission system

(a) Transmission line - 0.75%

(b) Transmission Sub-station - 2.5%

(c) Series Compensation devices and HVDC Station - 3.5%

Provided that where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost under first proviso to clause (2) of regulation 7, such norms shall apply to the exclusion of the norms specified herein.

19. It is seen that initial spares claimed by the petitioner are within the normative initial spares and is hence in order. Ceiling limit of the initial spare will be reviewed at the time of truing up, on the basis of actual capital expenditure incurred.

### **Time over-run**

20. As already noted, there is a delay of 36 months in commissioning of the transmission assets. KSEB, vide its submission dated 4.12.2012, has requested that IDC and IEDC forming the part of the capital cost should be disallowed and not be passed on to the beneficiaries. A similar submission has been made by TANGENCO who has stated that IDC/IEDC should be restricted to the original scheduled COD date and the losses, if any, suffered by the petitioner should be recovered from the generator directly, in accordance with the indemnification agreement signed in this regard.

21. During technical validation, vide letter dated 19.9.2011, the following information was sought from the petitioner:-

- (a) Reasons for placing the award for various packages on different dates when the transmission system was to be completed by December, 2008.
- (b) Reasons for starting the work on 10.4.2008, though the scheme was approved on 25.5.2005 and the transmission assets were to be commissioned by January, 2009 as per the investment approval.
- (c) Date of the Right of Way (RoW) problem in the construction of 400 kV D/C Muvattapuzha (Cochin)-Trichur transmission line, detailed justification along with documentary evidence of RoW problem and date of approaching KSEB for handing over 220 kV D/C Muvattapuzha (Cochin)-Trichur transmission line.

22. In response to above queries, the petitioner, vide affidavit dated 3.11.2011, has submitted as under:-

- (a) The procurement of goods and services of a project are done by slicing the project into different packages. Further based on the final completion schedule of the project and the specified work completion dates/Award/Completion dates etc, are planned for different packages of the project so as to match the inter-linking activities. Following the same, the NITs for different packages were released on different dates and awards were finalized accordingly.
- (b) Initially the petitioner had proposed to finance the transmission system inter alia including Transmission Line Tower Packages - A1, & A2 for 400 kV D/C (Quad) Edmon- Muvattapuzha Transmission Line Part-I & Part-II and Tower Package -A3 for 400kV D/C (Quad) Muvattapuzha"- North Trichur Transmission Line under the Asian Development Bank (ADB)

funding. NITs for these packages were released on 26.9.2005 and bids were opened on 28.11.2005. To finalize the award recommendations, it was required to carry out the assessment of capacity and capability and verification of Qualifying Requirements data of a foreign party including obtaining opinions on certain legal issues on said foreign party's company status. The assessment, which required visits to Spain and Mexico, was carried out in May 2006. The award recommendations, finalized after assessment and detailed evaluation, were forwarded to ADB for approval in August 2006. The same were, however, not accepted by the ADB. The petitioner, after detailed deliberation and considering its commercial prudence decided to withdraw the above said tower packages from the funding of ADB and subsequently invited the bids vide invitation dated 30.4.2007. Muvattapuzha - North Thrissur transmission line (78 km) is being constructed by utilizing 58 km corridor of existing KSEB's 220 kV Idukki- Madakkatara transmission line and in a new corridor of approx 20 km. Right of way issues (except a few) were noticed in the new corridor of 20 km and it came to forefront only after commencement of construction of the transmission line in 2008, There were constant objections by the public and there were a number of references and litigations in the Hon'ble High Court of Kerala as well as District Magistrate, Eranakulam and Thrissur wherever the line traverses.

- (c) During the tendering process for award of main contracts for construction of Edmon - Muvattapuzha (Cochin) - Trichur transmission lines, a writ petition was filed on 13.6.2007 against opening of tenders and stay order was issued by Hon'ble High Court of Kerala on 26.7.2007. Subsequent to

hearings, the Hon'ble High Court had disposed of the petition on 24.10.2007. Subsequently, the order for main package for Tower Supply & Erection of 400 kV D/C Quad Muvattapuzha- North Thrissur transmission line was placed on 20.3.2008 with a completion schedule of 20 months from the date of LOA. Accordingly, the agency has commenced the work on 14.04.2008.

(d) After completion of foundations in the 220 kV line corridor to be handed over by KSEB, the petitioner approached KSEB through SRPC vide letter dated 10.6.2009 for handing over their line and KSEB agreed to hand over the line in July 2009. However, due to grid constraints, the line was actually handed over by KSEB only on 10.2.2010 and dismantling of existing line commenced immediately and construction of new towers in the corridor commenced in April 2010.

23. On the basis of information submitted by the petitioner, the chronological summary of events connected with the construction of the transmission assets is as under:-

Srl No.	Date	Event	Remarks
1.	25.5.2005	Approval of the transmission system by Ministry of Power, Govt. of India.	Scheduled completion within 45 months, i.e. by 1.12.2008
2.	26.9.2005	NIT released	Under ADB funding, as per MoP approval
3.	28.11.2005	Bids Opened	
4.	May, 2006	Visit to Spain and Mexico for assessment of capacity and verifying qualifying requirement of foreign firm.	
5.	August, 2006	Award recommendation forwarded to ADB, which was not accepted by ADB. POWERGRID decided to withdraw funding of ADB.	Delay of 15 months (May, 2005 to August, 2006)

6.	30.4.2007	Bids invited	8 months delay (August, 2006 to April, 2007: bidding process)
7.	19.2.2007, 25.5.2007	SRPC Meeting ----do---	Issue discussed in SRPC meeting.
8.	13.6.2007	Writ Petition in HC of Kerala against opening of bids	
9	26.7.2007	Stay by High Court of Kerala	Stay granted
10.	24.10. 2007	Supreme Court disposed of the Writ Petition	4 1/2 months delay in court case (13.6.2007 to 24.10.2007)
11.	20.3.2008	Main Package Award for Muvattapuzha-North Thrissur Line	Scheduled completion within 20 months i.e. by 19.11.2009
12.	14.4.2008	Agency started work	
13.	April, 2008	Commencement of work; ROW problem objections by the public and litigation in the High Court of Kerala regarding passing of line through their lands as well as DM Ernakulam and Thrissur where ever the line traverses in 20 km new corridor.	
14.	July, 2009	KSEB agreed to hand over line	After completion of foundations in 220 kV line corridor to be handed over by KSEB, the petitioner approached KSEB through SRPC vide letter dated 10.6.2009.
15.	8.12.2009	SRPC meeting: NPCIL intimated scheduled date of commissioning of Unit # 1 as June, 2010 and that of Unit # 2 as Dec, 2010.	The petitioner accordingly slowed/ delayed the work to match with commissioning of Kudankulam unit.
16.	10.2.2010	Line was actually handed over by KSEB. Dismantling work started.	KSEB took 7 months to hand over the line (July, 2009 to Feb., 2010).
17.	April, 2010	New tower construction commenced	
18.	1.1.2012	Kochin- Trichur transmission line COD declared under CERC Regulations.	Not able to use this line in regular service. Hence, petitioner is praying under regulation (12)(c) to allow COD w.e.f 1/1/2012.



24. Time over-run can be further segregated under three heads as under:-
- (i) Time over-run on account of delay in funding decision,
  - (ii) Time over-run due to delay in commissioning of Kudankulam, and
  - (ii) Time over-run due to litigation and RoW problem for transmission line.

#### **Time over-run on account of delay in funding decision**

25. Initially the transmission system was to be executed through funding of ADB, which could not materialize. The petitioner therefore decided to withdraw funding from ADB and re-invited the bids in April 2007. This was beyond the control of the petitioner.

#### **Time over-run due to delay in commissioning of Kudankulam Atomic Power Project**

26. The transmission system was to match with the generation of Kudankulam Atomic Power Project. The scheduled completion as per investment approval was in the month of December 2008. However, the commissioning of Kudankulam Atomic Power Project got delayed and matter was discussed in the SRPC meeting in December, 2009, wherein NPCIL representative intimated that Unit-I was to be commissioned in June, 2010 and Unit-II in December, 2010. The petitioner slowed/delayed the work to match with the commissioning of Kudankulam Atomic Power Project. The commissioning of units of Kudankulam Atomic Power Project got further delayed with 1<sup>st</sup> unit in June, 2011 and 2<sup>nd</sup> unit in March, 2012. However the units got further delayed but the petitioner could no longer delay commissioning of the transmission assets as this would have prejudicially affected the commercial interests of the petitioner. The petitioner has thus successfully explained the delay which cannot be attributed to it.

### **Time over-run due to litigation and RoW problem**

27. During the tendering process for award of main contracts for construction of Edmon - Muvattapuzha (Cochin) - Trichur transmission lines, a writ petition was filed on 13.6.2007 against opening of tenders and stay order was granted by the High Court of Kerala on 26.7.2007. The Supreme Court disposed of the writ petition in October, 2007 and the petitioner awarded the work of main package for Muvattapuzha-North Trichur transmission line with scheduled completion within 20 months i.e. by November, 2009. The transmission line was to be constructed by utilizing 58 km existing corridor of KSEB's 220 kV Idukki-Madakkatara transmission line. There was a RoW problem in the 20 km stretch of this line. The problem came to forefront only after commencement of construction of the transmission line in 2008. There were objections by the public regarding compensation and a number of references and litigations in the High Court of Kerala as well as District Magistrates of Ernakulam and Thrissur. The transmission line was to be handed over by KSEB in July, 2009 but was actually handed over in February, 2010. The petitioner commenced the work in April, 2010 and completed the work in December, 2011 and the line was ready for commercial operations w.e.f. 1.1.2012.

28. The delay due to ADB funding not maturing (15 months), bid processing work for re-bidding (8 months), court case (approx 5 months) and non-handing over of line by KSEB (7 months) were all the reasons beyond the control of the petitioner. Further, we allow a margin of one month for commencement of work after handing over of the KSEB's 220 kV line to the petitioner. Further, due to delay in commissioning of generating units of Kudankulam Atomic Power Project, the assets could not be put to

regular service and petitioner had no control over it. Accordingly, we condone delay of 36 months and regularize the time over-run till 30.12.2011.

### **Cost over-run**

29. The total estimated completion cost of both the transmission assets exceeds the apportioned approved cost. Hence, for the purpose of determination of tariff the capital cost has been restricted to apportioned approved cost. The aspect of restricting the capital cost is being further discussed herein below. Further, capital expenditure so restricted will be reviewed at the time of truing-up, on submission on actual expenditure.

30. The petitioner has claimed capital cost of ₹28930.83 lakh as on DOCO for the Asset-I and ₹6113.76 Lakh as on DOCO for Asset-II vide Management Certificate dated 15.10.2012. The same has been considered for as on date of commercial operation for the purpose of determination of tariff calculation.

### **Projected additional capital expenditure**

31. Clause (1) of Regulation 9 of the Tariff Regulations 2009 provides as under:-

“Additional Capitalisation: (1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (i) Undischarged liabilities;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital Spares within the original scope of work, subject to the provisions of Regulation 8;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law.”

32. Clause (11) of Regulation 3 of Tariff Regulations 2009 defines “cut-off” date as under:-

“cut-off date” means 31<sup>st</sup> March of the year closing after 2 years of the year of commercial operation of the project, and in case the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31<sup>st</sup> March of the year closing after 3 years of the year of commercial operation”.

33. After taking into account the dates of commercial operation of the assets, cut-off date arrived at is 31.3.2014.

34. The petitioner has claimed projected additional capital expenditure for the assets are as under:-

(₹ in lakh)			
Year	Work proposed to be added after COD upto cut off date	Amount to be capitalized /proposed to be capitalized	Justification
DOCO to 31.3.2012	Building & civil works	161.32	Balance /Retention Payments
	Transmission Line	1627.40	
	Sub station	157.96	
	<b>Sub Total</b>	<b>1946.68</b>	
2012-13	Freehold Land	456.16	
	Building & civil works	306.22	
	Transmission Line	901.97	
	Sub station	520.43	
	<b>Sub Total</b>	<b>2184.78</b>	
2013-14	Transmission Line	450.00	
	Sub station	60.00	
	<b>Sub Total</b>	<b>510.00</b>	
	<b>Total</b>	<b>4659.46</b>	

35. KSEB has pleaded that the petitioner’s claim for additional capital expenditure may be rejected as there is 124.29% increase in the cost of construction of Muvattupuzha – North Thrissur transmission line. KSEB has further submitted that increase in cost by 181.76% under the head “Total Civil Works” has been caused due to lack of proper planning and forecasting by the petitioner. We may point out the KSEB has computed increase in cost with reference to the cost given in the original investment approval dated 25.5.2005. However, in the mean time, the Board of Directors of the

petitioner company has accorded approval for the revised cost estimate. The cost over-run is to be considered with reference to the approved revised cost estimate.

36. In case of Asset-I, there is a cost over-run of ₹2766.29 lakh. Hence, capital cost has been restricted to revised apportioned approved cost of ₹30806.00 lakh. Accordingly, additional capital expenditure of ₹1875.17 lakh for the year 2011-12 has been allowed for the purpose of tariff determination and projected capital expenditure, incurred or to be incurred, for the years 2012-13 and 2013-14 has not been considered. Year wise detail of projected additional capital expenditure considered for the purpose of tariff calculation is as follows:-

<b>Particulars</b>	<b>(₹ in lakh)</b>		
Capital Cost as on the date of Commercial Operation (A)	28930.83		
Year-wise Excess Add-Cap not considered for tariff calculation	<b>Add-Cap claimed</b>	<b>Add-Cap Disallowed</b>	<b>Add-Cap Allowed</b>
2011-12 (B)	1946.68	71.51	1875.17
2012-13 (C)	2184.78	2184.78	0.00
2013-14 (D)	510.00	510.00	0.00
<b>Total (A)+(B)+(C)+(D)</b>	<b>33572.29</b>	<b>-</b>	<b>30806.00</b>

37. Element wise detail of additional capital considered for 2011-12 is as follows:-

<b>Particulars</b>	<b>2011-12</b>	
	<b>Add-Cap claimed</b>	<b>Add-Cap considered</b>
Freehold Land	0.00	0.00
Leasehold Land	0.00	0.00
Building & Other Civil Works	161.32	155.39
Transmission Line	1627.40	1567.62
Sub-Station Equipments	157.96	152.16
PLCC	0.00	0.00
<b>Total</b>	<b>1946.68</b>	<b>1875.17</b>

38. Allowable element-wise additional capital expenditure for 2011-12 has been considered on *pro-rata* basis.

39. As regards Asset-II, the petitioner has claimed projected additional capital

expenditure of ₹83.78 lakh, ₹607.58 lakh and ₹40.00 lakh for the year 2011-12, 2012-13 and 2013-14 respectively for sub-stations. As there is a cost overrun of ₹379.12 lakh, projected additional capital expenditure has been restricted to revised apportioned approved cost i.e. ₹6466.00 lakh. Accordingly, additional capital expenditure of ₹83.78 lakh for the year 2011-12 and ₹268.46 lakh for the year 2012-13 has been allowed for the purpose of tariff by disallowing projected additional capital expenditure of ₹339.12 lakh for 2012-13 and ₹40 lakh for the year 2013-14. Year-wise details of the projected additional capital expenditure considered are as follows:-

<b>Particulars</b>	<b>₹ in lakh</b>		
Capital Cost as on the date of Commercial Operation (A)			6113.76
Year wise Excess Add-Cap considered for tariff	<b>Add-Cap claimed</b>	<b>Add-Cap disallowed</b>	<b>Add-Cap allowed</b>
2011-12 (B)	83.78	0.00	83.78
2012-13 (C)	607.58	339.12	268.46
2013-14 (D)	40.00	40.00	0.00
<b>Total (A)+(B)+(C)+(D)</b>	<b>6845.12</b>	<b>-</b>	<b>6466.00</b>

### **Debt- equity ratio**

40. Regulation 12 of the Tariff Regulations 2009 provides as under:-

“12. Debt-Equity Ratio (1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff:

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

**Explanation-** The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

41. The debt:-equity ratio for projected additional capitalization considered in the normative ratio of 70:30 is as follows:-

(₹ in lakh)

Particulars	Asset-I		Asset-II	
	2011-12	2011-12	2011-12	2012-13
Debt	1312.62	58.65	187.92	
Equity	562.55	25.13	80.54	
<b>Total</b>	<b>1875.17</b>	<b>83.78</b>	<b>268.46</b>	

42. Details of debt-equity considered in respect of the transmission assets as on dates of commercial operation and 31.3.2014 by applying the normative ratio of 70:30 are as follows:-

(₹ in lakh)

Particulars	Cost on date of commercial operation		Cost on 31.3.2014	
	Asset-I	Asset-II	Asset-I	Asset-II
Debt	20251.67	4279.63	21564.29	4526.20
Equity	8679.16	1834.13	9241.71	1939.80
<b>Total</b>	<b>28930.83</b>	<b>6113.76</b>	<b>30806.00</b>	<b>6466.00</b>

### Return on equity

43. Regulation 15 of the Tariff Regulations 2009 provides as under:-

“15. (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% for thermal generating stations, transmission system and run of the river generating station, and 16.5% for the storage type generating stations including pumped storage hydro generating stations and run of river generating station with pondage and shall be grossed up as per clause (3) of this regulation:

Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**:

Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.

(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be:

(4) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where t is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee as the case may be, shall recover the shortfall or refund the excess Annual Fixed charge on account of Return on Equity due to change in applicable Minimum Alternate/ Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission;

Provided further that Annual Fixed charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective financial year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations".

44. The petitioner has claimed RoE at the rate of 15.5% in accordance with clause (2) of Regulation 15 *ibid* and has grossed up by applying the applicable Minimum Alternate Tax rate. KSEB has pointed out that the petitioner be directed to avail benefit of tax holiday and therefore it should not be allowed grossing up. The contention of KSEB is *de-hors* Regulation 15. Accordingly, the petitioner has been allowed RoE for the years 2011-12, 2012-2013 and 2013-2014 as given overleaf:-



(₹ in lakh)

Return on Equity	Asset-I			Asset-II		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Opening Equity	8679.16	9241.71	9241.71	1834.13	1859.26	1939.80
Addition due to Additional Capitalisation	562.55	0.00	0.00	25.13	80.54	0.00
Closing Equity	9241.71	9241.71	9241.71	1859.26	1939.80	1939.80
Average Equity	8960.44	9241.71	9241.71	1846.70	1899.53	1939.80
Return on Equity (Base Rate )	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2008-09 (MAT)	11.33%	11.33%	11.33%	11.33%	11.33%	11.33%
Rate of Return on Equity (Pre Tax )	17.481%	17.481%	17.481%	17.481%	17.481%	17.481%
<b>Return on Equity (Pre Tax)</b>	<b>522.12</b>	<b>1615.54</b>	<b>1615.54</b>	<b>107.61</b>	<b>332.06</b>	<b>339.10</b>

### Interest on loan

45. Regulation 16 of the Tariff Regulations 2009 provides as under:-

“16. **Interest on loan capital** (1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.”

46. In keeping with the provisions of Regulation 16, the petitioner’s entitlement to interest on loan has been calculated on the following basis:-

(a) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition.

(b) The repayment for the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that period.

(c) Notwithstanding moratorium period availed by the transmission licensee, the repayment of the loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

(d) Weighted average rate of interest on actual average loan worked out as above is applied on the notional average loan during the year to arrive at the interest on loan.

47. Detailed calculations in support of the weighted average rate of interest have been given in Annexure I (for Asset-I) and Annexure II (for Asset-II) to this order.

48. Based on the above, interest on loan has been calculated as given hereunder:-

(₹ in lakh)

Particulars	Asset - I			Asset - II		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Gross Normative Loan	20251.67	21564.29	21564.29	4279.63	4338.28	4526.20
Cumulative Repayment upto previous year	0.00	471.32	1933.27	0.00	108.40	442.90
Net Loan-Opening	20251.67	21092.97	19631.01	4279.63	4229.88	4083.30
Addition due to additional capital expenditure	1312.62	0.00	0.00	58.65	187.92	0.00
Repayment during the year	471.32	1461.96	1461.96	108.40	334.50	341.59
Net Loan-Closing	21092.97	19631.01	18169.06	4229.88	4083.30	3741.71
Average Loan	20672.32	20361.99	18900.04	4254.75	4156.59	3912.51
Weighted Average Rate of Interest on Loan	3.9788%	4.0251%	4.0937%	3.1253%	3.1411%	3.1690%
Interest	<b>274.17</b>	<b>819.60</b>	<b>773.70</b>	<b>44.33</b>	<b>130.56</b>	<b>123.99</b>

### Depreciation

49. Regulation 17 of the Tariff Regulations 2009 provides as follows:-

“17. **Depreciation** (1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site;

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff.

(3) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III to these regulations for the assets of the generating station and transmission system:

Provided that, the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.”

50. The petitioner has claimed actual depreciation. In our calculations, depreciation has been calculated in accordance with clause (4) of Regulation 17 extracted above.

51. The transmission assets were put under commercial operation on 1.1.2012. Accordingly, these assets will complete 12 years beyond 2013-14 and hence depreciation has been calculated annually based on Straight Line Method at the rates specified in Appendix-III to the Tariff Regulations 2009, as per details given as follows:-

(₹ in lakh)

Particulars	Asset - I			Asset - II		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Opening Gross Block	28930.83	30806.00	30806.00	6113.76	6197.54	6466.00
Addition due to Projected Additional Capitalisation	1875.17	0.00	0.00	83.78	268.46	0.00
Closing Gross Block	30806.00	30806.00	30806.00	6197.54	6466.00	6466.00
Average Gross Block	29868.42	30806.00	30806.00	6155.65	6331.77	6466.00
Rate of Depreciation	4.7340%	4.7457%	4.7457%	5.2830%	5.2829%	5.2828%
Depreciable Value	24578.95	25422.78	25422.78	5540.09	5698.59	5819.40
Remaining Depreciable Value	24578.95	24951.46	23489.50	5540.09	5590.19	5376.50
Depreciation	<b>471.32</b>	<b>1461.96</b>	<b>1461.96</b>	<b>108.40</b>	<b>334.50</b>	<b>341.59</b>
Cumulative Depreciation	471.32	1933.27	3395.23	108.40	442.90	784.49

### Operation & maintenance expenses

52. Clause (g) of Regulation 19 of the Tariff Regulations 2009 prescribes the norms for operation and maintenance expenses for the transmission system based on the type of sub-station and the transmission line. Norms prescribed in respect of the elements covered in the instant petition are as under:-

Element	2009-10	2010-11	2011-12	2012-13	2013-14
D/C quad conductor transmission line (₹ lakh/ km)	0.940	0.994	1.051	1.111	1.174
400 kV bay (₹ lakh/ bay)	52.40	55.40	58.57	61.92	65.46
220 kV bay (₹ lakh / bay)	36.68	38.78	41.00	43.34	45.82

53. The details of line length and bays forming part of the transmission assets are given follows:-

Name of the Element	Length (in km)
<b>Asset – I</b>	
<b>Transmission line</b>	
Muvattapuzha (Cochin)- North Trichur, 400 kV quad conductor D/C transmission line	78.197
<b>Sub-stations</b>	
<b>Muvattapazha (Cochin)Sub-station</b>	
400 kV North Trichur bay-I	1
400 kV North Trichur bay-II	1
400 kV Bus Reactor bay	1
<b>North Trichur Sub-station:</b>	
400 kV Muvattapuzha (Cochin)-bay-I	1
400 kV Muvattapuzha (Cochin)-bay-II	1
<b>Asset – II</b>	
<b>315 MVA ICT-I &amp; II at Muvattapuzha (Cochin) Sub-station</b>	
400 kV ICT-I bay	1
400 kV ICT-II bay	1
220 kV ICT-I bay	1
220 kV ICT-II bay	1
220 kV Kalamassery-I bay	1
220 kV Kalamassery -II bay	1
220 kV Brhamapuram-I bay	1
220 kV Brhamapuram -II bay	1

54. The allowable O&M expenses for the transmission assets are as under:-

(₹ in lakh)

Name of the assets	2011-12	2012-13	2013-14
<b>Asset – I</b>			
78.197 km, 400 kV D/C quad conductor transmission line	27.40	86.88	91.80
5 nos., 400 kV bays	97.62	309.60	327.30
<b>Sub-total</b>	<b>125.02</b>	<b>396.48</b>	<b>419.10</b>
<b>Asset – II</b>			
2 no. 400 kV bays	39.05	123.84	130.92
6 nos., 220 kV bays	82.00	260.04	274.92
<b>Sub-total</b>	<b>121.05</b>	<b>383.88</b>	<b>405.84</b>
<b>Total O&amp;M Expenses</b>	<b>246.07</b>	<b>780.36</b>	<b>824.94</b>

55. The petitioner has stated that O&M expenditure for 2009-14 tariff block had been arrived on the basis of normalized actual O&M expenses of the petitioner during the year

2003-04 to 2007-08. The wage hike of 50% on account of pay revision of the employees of public sector undertaking was also considered while calculating the O&M charges for tariff period 2009-14. The petitioner has submitted that it would approach the Commission for suitable revision in the norms for O&M expenditure in case the impact of wage hike w.e.f 1.1.2007 is more than 50%.

56. While specifying the norms for Operation and Maintenance Expenses, the Commission has in the Tariff Regulations 2009 already factored 50% on account of pay revision of the employees of PSUs after extensive consultation with the stakeholders. At this stage there does not seem to be any justification for deviating from the norms. However, in case the petitioner separately approaches the Commission by making an appropriate application, the same shall be dealt with in accordance with law.

### **Interest on working capital**

57. The petitioner is entitled to claim interest on working capital as per the Tariff Regulations 2009. The components of the working capital and the petitioner's entitlement to interest thereon are discussed hereunder:-

#### **(i) Receivables**

As per Regulation 18(1) (c) (i) of the Tariff Regulations 2009, receivables as a component of working capital will be equivalent to two months' of fixed cost. The petitioner has claimed the receivables on the basis of 2 months' of annual transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months' transmission charges.

#### **(ii) Maintenance spares**

Regulation 18 (1) (c) (ii) of the Tariff Regulations 2009 provides for maintenance spares @ 15% per annum of the O & M expenses as part of the working capital from 1.4.2009. The value of maintenance spares has accordingly been worked out.

**(iii) O & M expenses**

Regulation 18(1) (c) (iii) of the Tariff Regulations 2009 provides for operation and maintenance expenses for one month to be included in the working capital. The petitioner has claimed O&M expenses for 1 month of the respective year. This has been considered in the working capital.

**(iv) Rate of interest on working capital**

In accordance with clause (3) of Regulation 18 of the Tariff Regulations 2009, as amended, rate of interest on working capital shall be on normative basis and shall be equal to State Bank of India Base Rate of 8.25% plus 350 bps as on 1.4.2011 (11.75%). The interest on working capital for the assets covered in the petition has been worked out accordingly.

58. Necessary computations in support of interest on working capital are appended hereunder:-

(₹ in lakh)

Particulars	Asset - I			Asset - II		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Maintenance Spares	56.25	59.47	62.87	54.47	57.58	60.88
O & M Expenses	31.25	33.04	34.93	30.26	31.99	33.82
Receivables	711.97	731.74	727.89	196.47	202.83	207.94
<b>Total</b>	<b>799.48</b>	<b>824.25</b>	<b>825.68</b>	<b>281.20</b>	<b>292.40</b>	<b>302.64</b>
Rate of Interest	11.75%	11.75%	11.75%	11.75%	11.75%	11.75%
Interest	<b>31.31</b>	<b>96.85</b>	<b>97.02</b>	<b>11.01</b>	<b>34.36</b>	<b>35.56</b>



## Transmission charges

59. The transmission charges being allowed for the transmission assets are summarized hereunder:-

(₹ in lakh)

Particulars	Asset - I			Asset - II		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
Depreciation	471.32	1461.96	1461.96	108.40	334.50	341.59
Interest on Loan	274.17	819.60	773.70	44.86	132.19	125.59
Return on Equity	522.12	1615.54	1615.54	107.61	332.06	339.10
Interest on Working Capital	31.31	96.85	97.02	11.01	34.36	35.56
O & M Expenses	125.01	396.48	419.10	121.05	383.88	405.84
<b>Total</b>	<b>1423.94</b>	<b>4390.43</b>	<b>4367.32</b>	<b>392.94</b>	<b>1216.98</b>	<b>1247.67</b>

60. The transmission charges approved for the year 2011-12 are for four months from 1.12.2011 to 31.3.2012. The transmission charges allowed are slightly on the lower as compared to those claimed by the petitioner. This is for the reason of reduction in capital cost on account of restricting the capital cost to the apportioned approved cost.

61. The transmission charges allowed are subject to truing up in accordance with the Tariff Regulations 2009.

## Filing Fee, Licence Fee and Publication Expenses

62. The petitioner has sought reimbursement of fee paid by it for filing the petition, licence fee and also the publication expenses. The petitioner shall be entitled for reimbursement of fee and licence fee directly from the beneficiaries in accordance with Regulation 42A of the Tariff Regulations 2009. Similarly, the petitioner shall also be

entitled to recover the publication expenses incurred in connection with the present petition. The reimbursement of filing fee, licence fee and the publication expenses shall be on *pro rata* basis in the same ratio as the transmission charges.

### **Service tax**

63. The petitioner has made a prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if it is subjected to such service tax in future. We consider petitioner's prayer pre-mature and accordingly this prayer is rejected.

### **Sharing of transmission charges**

64. The petitioner has submitted that the transmission charges for the Combined Assets of Tirunelveli-Edmon 400 kV D/C Line, 2 nos. switchable line reactors at Udumalpet Sub-station and Cochin-Trichur 400 kV D/C Quad Line for the 2009-14 period shall be shared by the constituents of Southern Region. And that the transmission charges for the Combined Assets of 315 MVA, 400/220 kV, ICT-I with downstream system and ICT-II at Cochin for the 2009-14 period shall be shared by KSEB.

65. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time.

65. This order disposes of Petition No. 183/TT/2011.

sd/-  
**(M. DEENA DAYALAN)**  
**MEMBER**

sd/-  
**(V.S. VERMA)**  
**MEMBER**

**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR  
ASSET-I**

(₹ in lakh)

	<b>Details of Loan</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>1</b>	<b>ADB-III (Exchange Rate @ 52.28)</b>			
	Gross loan opening	<b>14747.67</b>	<b>14747.67</b>	<b>14747.67</b>
	Cumulative Repayment upto DOCO/previous year	<b>957.12</b>	<b>1227.01</b>	<b>1808.06</b>
	Net Loan-Opening	13790.55	13520.66	12939.61
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	269.88	581.06	640.05
	Net Loan-Closing	13520.66	12939.61	12299.56
	Average Loan	13655.61	13230.13	12619.58
	Rate of Interest	1.80325%	1.80325%	1.80325%
	Interest	<b>246.24</b>	<b>238.57</b>	<b>227.56</b>
	Rep Schedule	30 Half yearly installments w.e.f. 15.01.2010		
<b>2</b>	<b>Bond XXV</b>			
	Gross loan opening	<b>233.00</b>	<b>233.00</b>	<b>233.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>19.42</b>	<b>19.42</b>	<b>38.83</b>
	Net Loan-Opening	213.58	213.58	194.17
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	19.42	19.42
	Net Loan-Closing	213.58	194.17	174.75
	Average Loan	213.58	203.88	184.46
	Rate of Interest	10.10%	10.10%	10.10%
	Interest	<b>21.57</b>	<b>20.59</b>	<b>18.63</b>
	Rep Schedule	12 Equal Annual Installments from 12.6.2011		
<b>3</b>	<b>BOND-XXXIV</b>			
	Gross loan opening	<b>600.00</b>	<b>600.00</b>	<b>600.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	600.00	600.00	600.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	600.00	600.00	600.00
	Average Loan	600.00	600.00	600.00

	Rate of Interest	8.84%	8.84%	8.84%
	Interest	<b>53.04</b>	<b>53.04</b>	<b>53.04</b>
	Rep Schedule	12 Equal Annual Installments from 21.10.2014		
<b>4</b>	<b>Bond XXXVI</b>			
	Gross loan opening	<b>2000.00</b>	<b>2000.00</b>	<b>2000.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	2000.00	2000.00	2000.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2000.00	2000.00	2000.00
	Average Loan	2000.00	2000.00	2000.00
	Rate of Interest	9.350%	9.350%	9.350%
	Interest	<b>187.00</b>	<b>187.00</b>	<b>187.00</b>
	Rep Schedule	15 Equal Annual Installments from 29.8.2016		
<b>5</b>	<b>Bond XXXVIII</b>			
	Gross loan opening	<b>971.00</b>	<b>971.00</b>	<b>971.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	971.00	971.00	971.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	971.00	971.00	971.00
	Average Loan	971.00	971.00	971.00
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	<b>89.82</b>	<b>89.82</b>	<b>89.82</b>
	Rep Schedule	Bullet payment on 9.3.2027		
<b>6</b>	<b>Bond XXXV</b>			
	Gross loan opening	<b>1700.00</b>	<b>1700.00</b>	<b>1700.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	1700.00	1700.00	1700.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1700.00	1700.00	1700.00
	Average Loan	1700.00	1700.00	1700.00
	Rate of Interest	9.640%	9.64%	9.64%
	Interest	<b>163.88</b>	<b>163.88</b>	<b>163.88</b>
	Rep Schedule	12 Equal Annual Installments from 31.5.2015		

	<b>Total Loan</b>			
	Gross loan opening	<b>20251.67</b>	<b>20251.67</b>	<b>20251.67</b>
	Cumulative Repayment upto DOCO/previous year	976.54	1246.42	1846.90
	Net Loan-Opening	19275.13	19005.25	18404.77
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	269.88	600.47	659.47
	Net Loan-Closing	19005.25	18404.77	17745.31
	Average Loan	19140.19	18705.01	18075.04
	Rate of Interest	<b>3.9788%</b>	<b>4.0251%</b>	<b>4.0937%</b>
	<b>Interest</b>	761.55	752.90	739.93

## Annexure-II

**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR  
ASSET- II**

(₹ in lakh)

	Details of Loan	2011-12	2012-13	2013-14
<b>1</b>	<b>ADB-III (Exchange Rate @ 52.28</b>			
	Gross loan opening	<b>3571.61</b>	<b>3571.61</b>	<b>3571.61</b>
	Cumulative Repayment upto DOCO/previous year	<b>231.80</b>	<b>297.16</b>	<b>437.88</b>
	Net Loan-Opening	3339.81	3274.45	3133.73
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	65.36	140.72	155.01
	Net Loan-Closing	3274.45	3133.73	2978.72
	Average Loan	3307.13	3204.09	3056.23
	Rate of Interest	1.80325%	1.80325%	1.80325%
	Interest	<b>59.64</b>	57.78	55.11
	Rep Schedule	30 Half yearly installments w.e.f. 15.01.2010		
<b>2</b>	<b>Bond XXVI</b>			
	Gross loan opening	<b>109.00</b>	<b>109.00</b>	<b>109.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>9.08</b>	<b>18.17</b>
	Net Loan-Opening	109.00	99.92	90.83
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	9.08	9.08	9.08
	Net Loan-Closing	99.92	90.83	81.75
	Average Loan	104.46	95.38	86.29
	Rate of Interest	9.30%	9.30%	9.30%
	Interest	<b>9.71</b>	8.87	8.03
	Rep Schedule	12 Equal Annual Installments from 07.03.2012		
<b>3</b>	<b>BOND-XXVIII</b>			
	Gross loan opening	<b>73.00</b>	<b>73.00</b>	<b>73.00</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>6.08</b>
	Net Loan-Opening	73.00	73.00	66.92
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	6.08	6.08
	Net Loan-Closing	73.00	66.92	60.83
	Average Loan	73.00	69.96	63.88

	Rate of Interest	9.33%	9.33%	9.33%
	Interest	<b>6.81</b>	<b>6.53</b>	<b>5.96</b>
	Rep Schedule	12 Equal Annual Installments from 15.12.2012		
<b>4</b>	<b>Bond XXXV</b>			
	Gross loan opening	<b>526.04</b>	<b>526.04</b>	<b>526.04</b>
	Cumulative Repayment upto DOCO/previous year	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	Net Loan-Opening	526.04	526.04	526.04
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	526.04	526.04	526.04
	Average Loan	526.04	526.04	526.04
	Rate of Interest	9.64%	9.64%	9.64%
	Interest	50.71	50.71	50.71
	Rep Schedule	12 Equal Annual Installments from 31.5.2015		
	<b>Total Loan</b>			
	Gross loan opening	<b>4279.65</b>	<b>4279.65</b>	<b>4279.65</b>
	Cumulative Repayment upto DOCO/previous year	231.80	306.24	462.13
	Net Loan-Opening	4047.85	3973.41	3817.52
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	74.44	155.89	170.17
	Net Loan-Closing	3973.41	3817.52	3647.35
	Average Loan	4010.63	3895.46	3732.43
	Rate of Interest	<b>3.1634%</b>	<b>3.1802%</b>	<b>3.2099%</b>
	<b>Interest</b>	126.87	123.89	119.81