

TAMIL NADU ELECTRICITY REGULATORY COMMISSION

24th April 2008

PRESENT

Thiru S.Kabilan		Chairman
Thiru B. Jeyaraman		Member
	and	
Thiru R. Rajupandi		Member

Petition No. PPA/AP/1/2006

**In the matter of : Approval of Power Purchase Agreement dated 28.09.2006 between
TNEB and M/s Cuddalore Power Company Ltd**

M/s. Cuddalore Power Company Ltd.
443, Anna Salai,
Teynampet,
Chennai 600 018.

... Petitioner

Vs.

Tamil Nadu Electricity Board
Represented by its Chairman
800, Anna Salai,
Chennai – 600 002

... Respondent

ORDER

M/s Cuddalore Power Company Limited, a company established and incorporated under Companies Act 1956, pursuant to Article 1.1 of Memorandum of understanding signed between TNEB and International Contracting and Marketing Corporation dated 05.12.1992 have filed a petition seeking approval of the Power Purchase Agreement entered into with the Respondent, Tamil Nadu Electricity Board, for sale and purchase of energy of in the proposed 1320 MW Cuddalore Thermal Power Project. In exercise of the power conferred under section 62 read with clause (b) of sub section (1) of

section 86 of the Electricity Act 2003, the Commission considered the petition and grant approval to the power purchase agreement as detailed hereunder.

2. Project profile: The petitioner has proposed to set up a Power generation project and the brief description of the project as revealed from the agreement is as below.

(1)	Capacity	2 x 660 MW (1320 MW) (2 Nos. Coal fired Generating units, including auxiliary equipment and associated facilities. Two Numbers Super critical steam Generators and two Sets of Steam Turbines.) Acknowledged as base load stations								
(2)	Location	To be established at Thiagavalli and Kudikadu villages in Cuddalore District.								
(3)	Access to the site	Adjacent to Cuddalore Town and 200 KMs from Chennai Airport								
(4)	Land for project	Propose to acquire 400 hectares								
(5)	Raw water Source	Captive desalination plant to be set up								
(6)	Coal linkage	To enter into long term coal supply agreement with off shore coal suppliers.								
(7)	Cooling water	The project will adopt closed circuit cooling water system.								
(8)	Environmental Clearance	The Company had obtained No-objection Certificate and consent letter from Tamil Nadu Pollution Control Board and Environmental clearance from the Ministry of Environment and Forest (GOI) for the Project which all need to be revalidated.								
(9)	Capital Cost	Rs.6004 Crores, consisting of the following: <div style="text-align: right;">(Rs.in Crores)</div> <table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">(i) 230 Million Euros @ Rs.58/Euro</td> <td style="text-align: right;">1334.00</td> </tr> <tr> <td style="padding-right: 20px;">(ii) 173.31 Million US\$ @ Rs.45.50/US\$</td> <td style="text-align: right;">788.56</td> </tr> <tr> <td style="padding-right: 20px;">(iii) Indian Rupees</td> <td style="text-align: right;"><u>3881.44</u></td> </tr> <tr> <td></td> <td style="text-align: right;"><u>6004.00</u></td> </tr> </table>	(i) 230 Million Euros @ Rs.58/Euro	1334.00	(ii) 173.31 Million US\$ @ Rs.45.50/US\$	788.56	(iii) Indian Rupees	<u>3881.44</u>		<u>6004.00</u>
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	<u>6004.00</u>									

(The Completed cost shall not exceed Rs.6202 Crores on any account inclusive of all variation in foreign exchange rate except for changes on account of rates of Taxes and duties and change in law).

- | | | |
|------|---------------------------|---|
| (10) | Financial Closing Date | Shall not be later than 12 months from the date of execution of the Agreement |
| (11) | Commercial operation Date | 1 st Unit, 56 months after the financial closing Date. 2 nd Unit, 62 months after the financial closing Date. |
| (12) | Sale of power generated | The entire capacity and the power generated are proposed to be sold to Tamil Nadu Electricity Board. |

3. Procedure: After initial scrutiny, the respondent viz Tamil Nadu Electricity Board was directed in Commission's letter dated 10.10.2006 to clarify certain points. The Tamil Nadu Electricity Board in their letter dated 14.12.2006 furnished replies.

The Power Purchase Agreement, the points raised by the Commission and the reply of the Tamil Nadu Electricity Board were placed before the State Advisory Committee on 23.02.2007. The documents were offered for sale to Public, besides hosting them in the Commission's website inviting comments. A Public Notice was issued on 19.01.2007 in News papers inviting objections / suggestions from the general Public. A public hearing was conducted on 18.04.2007.

4. Issues: The Commission framed the following issues while considering the petition for grant of approval:

- (A) Whether the petition for approval of Power Purchase Agreement under MoU route conforms to the Tariff Policy issued by the Government of India.
- (B) Environmental clearance and land acquisition issues.
- (C) Demand supply projections.
- (D) Approval of capital cost and Financing Plan.
- (E) Whether the operating parameters are in conformity with Regulations.

- (F) Whether the parameters for determination of tariff are in conformity with the Regulation.
- (G) Whether the power purchased from the proposed Cuddalore Thermal Power Project will be cost effective.

The various aspects of the issues, objections, views expressed by the members of the State Advisory Committee and Public, responses of the petitioner and respondent to the objections and Commission's views and conclusions are as below.

5. Issue (A) - Whether the petition falls with in the scope of Tariff Policy?

5 (1) The petition is for grant of approval for the Power Purchase Agreement dated 28.09.2006 between the Petitioner and the Respondent for the sale and purchase of power from the proposed 1320 MW Thermal Power project.

5 (2) Under sub-section (4) of Section 86 of the Electricity Act 2003, *"in discharge of its function, the State Commission shall be guided by the National Electricity Policy, National Electricity Plan and Tariff Policy published under section 3"*.

5 (3) The Central Government has notified the Tariff Policy on 06.01.2006. As per clause 5.1 of the Tariff Policy, **all future requirement of power should be procured competitively by the Distribution licensees.**

5 (4) However, the Government of India in letter No.45/2/2006/R&R/Dated 28.03.2006 have clarified that the following cases would be treated as falling outside the scope of the above clause of the Tariff Policy.

(a) Where the Power Purchase Agreement (PPA) has been signed and approved by the Appropriate Commission prior to 06.01.2006 or PPA has been signed and pending before the Commission on 06.01.2006.

(b) Where the appraisal of any power project has **started** before 06.01.2006 by the relevant financial institution for lending funds to the project on the basis of appropriate evidence of

process of procurement of power by any utility, such procurement would be treated as falling outside the scope of 5.1 of the Tariff Policy.

5 (5) As the Power Purchase Agreement is claimed to be covered by classification (b), the Commission, on 10.10.2006, directed the Respondent to furnish relevant evidence.

5 (6) The Respondent in their reply dated 14.12.2006 stated the following:-

(a) Based on the notification of Government of India, the company informed the Tamil Nadu Electricity Board that they have initialled Power Purchase Agreement on 15.07.1994 for sale of power generated in the proposed thermal power plant and they have subsequently obtained all the clearances / approval.

(b) They had also informed that, they are keen to develop the project either as Independent Power Project or in joint venture with Tamil Nadu Electricity Board.

(c) The Financial Institutions have appraised the Project and they would achieve financial closure within one year.

(d) The Company had submitted a copy of letter dated 14.10.2005 received from State Bank of India, Tirupati, regarding sanction / syndication of loan.

(e) In view of the above, the Tamil Nadu Electricity Board have decided to consider the request of the company under condition 2 (ii) of the Government of India letter dated 28.03.2006.

5 (7) Objections / views of the members of the State Advisory Committee and the Public:

The members of the State Advisory Committee and the public expressed the following objections for grant of approval for the Power Purchase Agreement.

5. (7) (a) Thiru. Bharath Jairaj, Director / Citizen Consumer and Civic Action Group.

(i) Government of India has consciously moved away from MoU route towards competitive bidding route because of the overall benefits of competitive bidding route.

(ii) Despite signing a Power Purchase Agreement in 1994, M/s Cuddalore Power Company Limited did not take any steps towards setting up the Power Plant or other wise fulfilling its obligation under the 1994 Power Purchase Agreement. On the contrary, their conduct in letting

all statutory clearances lapse and not seeking their renewal confirm their abandoning of this Project. The Tamil Nadu Electricity Board on its part also has not placed any document on record that suggests their follow-up or interest in 1994 Power Purchase Agreement. These facts become relevant while examining if this project can be considered as an exception to clause 5(1) of the Tariff Policy.

(iii) The 1994 Power Purchase Agreement and subsequent clearance have since lapsed. It is bewildering that a lending agency could have agreed to finance such a project costing Rs.6004 Crores without detailed project appraisal and that too on the basis of 11 year old Power Purchase Agreement which was never acted on and for which all clearances have lapsed.

(iv) The letter dated 14.10.2005 may be treated as a “letter of intent”, which is quite different from the document envisaged by the Government of India letter dated 28.03.2006.

(v) As per the Government of India letter dated 28.03.2006 there should be an appropriate evidence of procurement of power by any utility. There was no such evidence on 14.10.2005, when SBI / Tirupati agreed to sanction / syndicate the loan. The letter, “**Regarding the sanction / syndication of the loan for the Project**”, can hardly qualify as an appraisal of the project for lending funds, since it is common knowledge that banks offer to syndicate loans for a fee.

(vi) If it is based on 1994 Power Purchase Agreement, it’s not relevant now as all statutory clearances have lapsed and the relevant laws governing system technologies and forecasts have all undergone a change. They have to reapply for fresh clearances and renewal and revalidation is not possible. At that stage, only a competitive bidding route should be adopted.

(vii) The Commission must have wisdom to ensure that the guidelines of the government’s letter dated 28.03.2006 is not misused as a window for any of the 1,00,000 MW worth of PPAs signed by various utilities around the country. It is not meant for reviving or resurrecting the dead PPAs by mere production of a letter of intent from some branch of a Bank.

(viii) It is not clear why the Cuddalore Power Company’s proposal qualifies for a special exemption to the sensible practice laid out in law, especially since no demonstrable public interest is served by granting an exemption.

(5) (7) (b) **Thiru. T.B.Chikkoba / Former Member (Generation) / Tamil Nadu Electricity Board.**

(i) The agreement referred to, is a decade old and lots of development have taken place. Procuring power through bidding route instead of MoU route will be transparent and cost effective.

(ii) The delay for the project has not been outlined in the documents placed. The reason for having failed to take action on the earlier Power Purchase Agreement needs to be examined by the Commission.

(5) (7) (c) **Thiru. K.V. Shetty / Managing Director / IP Rings**

Power is the back bone of the industries. If the project on hand is a fit project, viable on the consumers point of view, ecological, environmental etc. we should go ahead irrespective of whether the route is MoU or competitive bidding.

(5) (7) (d) **Thiru. DE.Ramakrishnan/ President, National Confederation of Small Industry**

(i) If the Policy allows the filing of Power Purchase Agreement till 30th September 2006, it is the fundamental right of the individual to file it on 29th. Even though there is availability of power, there is lot of problem in the quality of power. It should not be looked upon whether the Power Purchase Agreement is dated 1994 or 2006. But it should be looked into taking into account the concessions extended and the methodologies adopted at the relevant time.

(ii) With regard to financial approval, when a bank is giving an in-principle approval, they will go through a process called “**appraisal**”. As an Industrialist, I am optimistic to see the sanction / syndicating both would mean the same.

(iii) What ever method is followed, competitive or cost plus, whether the cost of power will increase exponentially making this a costly proposition should be the criteria to decide on the project. I request the Commission to look into this project in a very positive manner and make the power surplus condition continue in this state in the years to come.

(5) (7) (e) **Dr.U.Sankar / Honorary Professor / Madras School of Economics.**

We can choose a price cap formula in between the MoU route and competitive bidding route.

(5) (7) (f) **Dr.Abdullah Khan / Professor (Retd)/ Anna University**

Competition is all over the world. It is better to go for competitive bidding.

(5) (7) (g) **Thiru. K.Venkatesan IAS (Retd)**

(i) The Commission should function within the frame work of the Acts and Policies. It should go as per the National Electricity Policy which is binding on it.

(ii) The exception (a) in the Government of India notification dated 28.03.2006, is that the Power Purchase Agreement should have been signed and approved by the Commission (before 06.01.2006), which will not apply to this case.

(iii) The exception (b) is that the appraisal of the Power Project should have been started before 06.01.2006. But in the letter of the Tamil Nadu Electricity Board it has been mentioned that the Banks have been “**appraised**”, of this project. It does not mean that the banks have examined the project.

(iv) The rule says where the appraisal of the project started before 06.01.2006 by the relevant funding institutions for lending funds on the basis of appropriate evidence of prices of procurement of any utility. Price decisions have been taken only in August 2006. So it does not fall under the exception (b) of the rule.

(v) Once it is not falling under exception (a) and (b) the Commission has no right to approve it.

(vi) It is important to have more power, good power and efficient power. But the Commission have no power to approve under the above two exceptions which have been given as a transit provision by Government of India to enable transition of MoU cases to the competitive bidding route. Hence the proposal has to be rejected.

(5) (7) (h) **Thiru. S.Machendranathan IAS, Secretary to Government, Consumer Affairs Department.**

There should have been a project appraisal. It cannot be said that an appraisal has been done for this project. This would support the fact that it is not within the competence of the Commission. It does not permit examination.

(5) (7) (i) **Tmt. Swetha Narayanan / Coordinator / Community Environment Monitors and Other Consumer organizations.**

(i) Post Enron and other troubles experienced with Private Power Producers brought in through the Power Purchase Agreement route made the Government of India to abandon MoU route through Electricity Act 2003. Instead competitive bidding was promoted to increase the transparency and give consumers the best deal. The National Tariff Policy 2006 also affirms the process of competitive bidding.

(ii) M/s Cuddalore Power Company Limited had signed a Power Purchase Agreement in 1994 and obtained all clearances. Twelve years have lapsed since ,during which no expression of interest by the company in keeping the project alive have been recorded, suggesting to the local people that the company has given up this project. The Nature of pressing Public interest that has developed over the last year to justify exempting M/s Cuddalore Power Company Limited from the competitive bidding route especially when faced with M/s Cuddalore Power Company's poor track record in making good on clearances already accorded, is unclear and smacks of malafide intent on the part of the Government and Tamil Nadu Electricity Board. If the Power Purchase Agreement route is opened as an exception for M/s Cuddalore Power Company Limited that would throw open possibilities for several unviable projects currently in cold storage to be revived.

6. Reply of the Respondent to the above objections:

During the State Advisory Committee meeting Chairman of the Tamil Nadu Electricity Board expressed the following.

(6) (a) The Tamil Nadu Electricity Board have a mix of options – MoU Options and Board's own projects. The demand supply position in the days to come immensely justifies this project under MoU route.

(6) (b) With regard to lack of action on 1994 Power Purchase Agreement, in the era of MoU age, a large number of MoUs was signed. M/s Cuddalore Power Company Limited was serious enough to pursue the project and come up with a final Power Purchase Agreement which was submitted to the Tamil Nadu Electricity Regulatory Commission.

(6) (c) In Tamil Nadu Electricity Board's perspective, the project is in some stage of development and let us not neglect the project and look at some other options.

(6) (d) Since the project meets the requirement of the exceptions provided for in Government of India letter dated 28.03.2006, for MoU based projects there is no violation of any rule or policy in going ahead with the project. The letter dated 28.03.2006 only stipulates that, "the appraisal of the project should have only been **started** before 06.01.2006", which is certainly the case.

(6) (e) There is no question of other projects being resurrected now, since the deadline of 30.09.2006 is over long back.

(6) (f) The Power Purchase Agreement signed in 1994 could not be acted due to inability on the part of the Respondent to provide escrow arrangement as envisaged in the Power Purchase Agreement (signed in 1994). The Power Purchase Agreement signed in 2006 does not envisage any escrow arrangement.

7. The petitioner (M/s Cuddalore Power Company limited) in the written reply / defence stated the following:

(7) (a) The Tariff Policy notified on 06.1.2006 did not address the state of IPPs Projects which were then in the development stage; but had not signed the final Power Purchase Agreement with distribution licensee. Hence the CERC sought clarification from the Government of India in this regard.

(7) (b) The Government of India in letter dated 28.03.2006 have clarified the status of such IPP Projects.

(7) (c) As per para 2(ii) of the letter dated 28.03.2006 from the Government of India, the following requirements are to be met for a power project to be treated as falling outside the scope of clause 5.1 of the Tariff Policy,

(i) Appraisal of the Power Project by the relevant financial institution should have **started before 06.01.2006**.

(ii) The appraisal should have started on the basis of appropriate evidence of “**process of procurement**” of power by any utility.

(iii) The final Power Purchase Agreement should have been **filed by 30.09.2006** with the Appropriate Regulatory Commission.

(7) (d) The Cuddalore Thermal Power Project meets all the above three requirements stipulated above as below:

(i) The Government of India guidelines stipulate that appraisal of the Project should have **started** before 6.1.2006.

(ii) The Cuddalore Power Company filed its application with State Bank of India on 19.09.2005 and the State Bank of India's letter dated 14.10.2005 makes it clear that they had started the appraisal. Thus the requirement under (a) is met.

(iii) The draft Power Purchase Agreement initialled on 15.07.1994 is valid in law and the initialled Power Purchase Agreement has not been rescinded or terminated by the parties to the Agreement. The signing of final Power Purchase Agreement has confirmed the binding nature of the initialled Power Purchase Agreement.

(iv) In the final Power Purchase Agreement dated 28.09.2006, the following has been stated.

“Whereas the parties (as hereinafter defined) previously initialled a Power Purchase Agreement as of 15th July 1994 which parties desired to amend and restate”.

(7) (e) Thus the initialled Power Purchase Agreement dated 15.07.1994 is the appropriate **evidence of process of procurement of power** by Tamil Nadu Electricity Board on the date of commencement of the National Tariff Policy (on 06.01.2006) in accordance with the clarification issued on 28.03.2006. Thus the requirement of para 7 (c) (ii) is met.

(7) (f) The final Power Purchase Agreement has been signed with Tamil Nadu Electricity Board on 28.09.2006 and filed before the Commission on 29.09.2006 (i.e) before the stipulated date of 30.09.2006. Thus the requirement of para 7 (c) (iii) is also met.

(7) (g) As regards the objection of the Public that the Bank could not act on Power Purchase Agreement which was not acted on for 12 years and with most of the approvals lapsed, the petitioner contended the following.

(i) After the initialing the Power Purchase Agreement, the petitioner obtained statutory clearances etc and also Techno Economic clearances from Central Electricity Authority.

(ii) The petitioner had made necessary arrangements for financing from foreign institutions/ Banks. When they were ready to approach the Tamil Nadu Electricity Board for signing final Power Purchase Agreement, the Tamil Nadu Electricity Board announced that the following key provision of the initialled agreement could not be complied with, because of the financial position prevalent then.

- I. They would not be able to provide escrow mechanism as security for payment against the supply of electricity.
- II. The State Government also would not be able to give its guarantee to secure Tamil Nadu Electricity Board payment obligations.

(iii) After having invested substantial amount for development of the project and purchase of land, they could not proceed with the project as foreign lenders were not willing to lend in the absence of Escrow mechanism and State Government guarantee. However the MoU and the initialled Power Purchase Agreement were kept valid and they were not cancelled.

(iv) With the enactment of Electricity Act 2003, the Government of India encouraged Indian Financial Institutions / Bank to lend to the Indian Power Sector.

(v) By 2005, Tamil Nadu Electricity Board's financial position had improved and the Respondent was regular in paying the operational IPPs.

(vi) The petitioner again went ahead with arranging financing and recommenced the discussion with the respondent.

(vii) As the foreign lenders were still not ready to fund the project in the absence of Escrow cover by the Respondent and GOTN guarantee, they approached their groups Bank viz SBI / Tirupati and State Bank of Travancore / Chennai, in September 2005 who started appraisal of the project.

(viii) The initialled Power Purchase Agreement is alive since it was not cancelled.

(ix) Fresh environment clearances have been sought for.

(x) They have proposed to negotiate with land owners directly to procure land.

(xi) The project will come up if they could get environment clearance and land.

8. The Tamil Nadu Electricity Board in their reply dated 14.12.2006 and also in their submission in the Public meeting endorsed the contention of M/s. Cuddalore Power Company Ltd.

9. Commission's views and conclusions:

(9) (a) As per para 5.1 of the Tariff Policy, all future requirement of power should be procured competitively by distribution licensees.

(9) (b) The Central Electricity Regulatory Commission in letter dated 02.02.2006 requested the Ministry of Power, Government of India to define the phrase "future requirement", in view of the following facts.

- (i) Ministry of Power had been processing a number of Projects through the mechanism of Inter Institutional group so that the required clearances are received and projects achieve financial closure.
- (ii) As a result, some projects have progressed considerably before announcement of Tariff Policy.
- (iii) It may not be desirable to discard those projects in view of huge power shortage in the industry.
- (iv) The Central Electricity Regulatory Commission was of the view that in cases where one of the following conditions for procurement of power has been fulfilled prior to the date of issue of the Tariff Policy (i.e) 06.01.2006, such procurement shall be construed as firm procurement and the provision of para 5.1 shall not attract such procurement.

“3.1 Where Power Purchase Agreement (PPA) has been signed as approved by the Appropriate Commission prior to 06th January 2006.

3.2 Where PPA has been signed and is pending before the Appropriate Commission, but subject finally to approval of the PPA by the Appropriate Commission.

3.3 Where in principle clearance of the project cost and financing plan has been given by the Central Commission, but subject finally to approval of the PPA by the Appropriate Commission.

3.4 Where financial closure has been achieved prior to 06.01.2006.”

- (9) (c) The Government of India in para 2 of letter dated 28.03.2006 have given following clarification.

“2. (i). This matter has been considered taking into account the suggestion of the CERC and all relevant aspects. Accordingly, it is hereby clarified that the power generation projects which satisfy any of the following condition would be well within the provision of the Tariff Policy:

Where the Power Purchase Agreement has been signed and approved by the Appropriate Commission prior to 06.01.2006 or Power Purchase Agreement has been signed and is pending before the Appropriate Commission on 06.01.2006, such procurement would be treated as falling outside the scope of clause 5.1 of Tariff Policy as contractual obligation for procurement of power has been firmly established in such cases.

(ii) Similarly, where the appraisal of any Power Project has **started** before 06.01.2006 by the relevant financial institutions for lending funds to the project on the basis of appropriate evidence of process of procurement of power by any utility, such procurement would be

treated as falling outside the scope of clause 5.1 of the Tariff Policy, provided, that, in all such cases final Power Purchase Agreement is filed before the appropriate Commission by 30th September 2006”.

(9) (d) Though the CERC suggested to the Govt. of India that the provision of para 5.1 shall not attract the procurement where financial closure has been **achieved** prior to 06.01.2006, the Govt. of India have clarified that the procurement shall fall outside the scope of clause 5.1 of the Tariff Policy where the appraisal has **started** before 06.01.2006.

(9) (e) The petitioner claims that the project is outside the scope of clause 5.1 of the Tariff Policy as the project satisfies the condition (ii) above.

(9) (f) The main objection is that State Bank of India/ Tirupati could not have appraised the project for funding based on the Power Purchase Agreement which was not acted upon during the previous 12 years. Further, most of the approvals for the project have lapsed. Their contention was that the draft Power Purchase Agreement initialled on 15.07.1994 cannot be the appropriate evidence for procurement of Power by Tamil Nadu Electricity Board.

(9) (g) It is seen from the letter D386/94 dated 18.07.1994 of the TNEB addressed to the petitioner that the representatives (comprising representatives of Petitioner, representatives of the TNEB and the representatives of Government of Tamil Nadu) have agreed to the following namely:

(i) To negotiate further based on the draft of the Power Purchase Agreement dated 15.07.1994 regarding unresolved items.

(ii) To attempt to conclude negotiations speedily and to cooperate fully with each other in obtaining Government of Tamil Nadu and Government of India clearance for the Power Purchase Agreement and all other Project documents as may be necessary.

(9) (h) The capacity of the Project mentioned in the draft Power Purchase Agreement was 1168 MW.

(9) (i) Subsequently, the TNEB in letter No.SE/PLG-II/EE/PP-1/AEE 1/F.KMC/D 681/94 dated 01.12.1994, have accorded revised permission under section 44 of the Electricity (Supply) Act 1948, for establishing 1320 MW (2 x 660 MW) coal based Thermal Power Project at Cuddalore. It has been stated therein that the entire Power generated is to be sold to the TNEB as per the Power Purchase Agreement.

(9) (j) The draft initialled Power Purchase Agreement has not been cancelled / revoked. Instead the Petitioner has subsequently been informed that the entire power generated shall be sold to the TNEB. The Petitioner had also been obtaining various approvals/ certificates subsequently.

(9) (k) The initialled Power Purchase Agreement and the subsequent correspondence can therefore be **considered as appropriate evidence of process of procurement of power** by the Respondent.

(9) (l) The exceptions provided for in the Government of India letter dated 28.03.2006 is that the appraisal by the financial institution based on the process of procurement of power should have **started prior to 06.01.2006** for lending funds to the project and that the final Power Purchase Agreement should have been filed before the appropriate Commission before 30.09.2006.

(9) (m) In the SAC meeting the following queries were raised:

- What constitutes appraisal?
- What is the crucial date?
- Should appraisal have commenced before the date and what exactly are stages in dealing with financial institutions?

(9) (n) The representative of the petitioner replied the following:

(i) The Detailed Project Report (DPR) and the PPA signed with the TNEB previously along with all statutory reports were submitted to both the banks (SBI Tirupathi and State Bank of Travancore)

(ii) The Banks have taken up appraisal and have given in principle sanction to fund the project.

(iii) In banking parlance the appraisal has started much before the deadline came into being.

(9) (o) In the guidelines on Infrastructure financing issued by Reserve Bank of India to all scheduled Commercial Banks and the financial institutions, the term "infrastructure lending" has been defined as below:

"Any credit facility in what ever form extended by lenders (i.e Banks, FIs, NBFCs) to an Infrastructure facilities as specified below falls within the definition of "Infrastructure lending". In other words, a credit facility provided to a borrower company engaged in:

- Developing
- Operating and Maintaining or

- Developing, operating and maintaining any infrastructure facility that is a project in any of the following section
 - i. a road, including a toll road, a bridge or a rail system
.....
 - vii. Generation or generation and distribution of power

The following guidelines have been issued with regard to criteria for financing.

“Banks are free to finance technically feasible, financially viable and bankable projects undertaken by both Public sector and Private sector undertakings.

Banks should have the requisite expertise for appraising technical feasibility, financial viability and bankability of the project with particular reference to the risk analysis and sensitivity analysis.”

Banks may also lend to Special Purpose Vehicle (SPV) in private sector, registered under Companies Act for directly undertaking infrastructure projects which are financially viable and not for acting as financial intermediaries.

(9) (p) Thus the banks can undertake to lend funds for Infrastructure projects such as CPCL.

(9) (q) The Respondent has furnished the copy of their letter dated 19.09.2005 addressed to State Bank of India, Tirupati, and the reply received from State Bank of India, Settipalli Branch to take up project appraisal, lending and syndication of debt to the company. As per the letter, the Petitioner is reported to have sent the following documents.

- Detailed Project Report.
- Copy of Statutory and Non-Statutory approvals/sanctions/permission.
- Initialled Power Purchase Agreement

(9) (r) The Chief Manager, State Bank of India, Settipalli Branch in his letter dated 14.10.2005 has advised the petitioner to furnish the following for further process of approval.

- (i) Signed Power Purchase Agreement as soon as it is executed to enable them to take note of any significant changes to Power Purchase Agreement.
- (ii) Revised Project estimate and all other statutory approvals.
- iii) All other relevant documents.

(9) (s) The Commission directed the Regional Manager, State Bank of India, Tirupati to furnish following information:

(i) Whether the Chief Manager, State Bank of India, Settipalli Branch is competent to appraise the project costing more than Rs.6004/- Crores.

(ii) If not, the Authority who is competent to appraise the project for lending funds for the project.

(iii) Whether the State Bank of India Branch is authorized to receive application for appraisal of projects.

(9) (t) The Deputy General Manager, State Bank of India, Region III, Tirupati Zonal Office, replied as follows:

(i) Their Settipalle Branch which handles high value advances is headed by a Chief Manager and he is authorized to accept and process the proposals/financial appraisals of the project and put up the same to the competent authority for approval / sanction.

(ii) The Chief Manager of Settipalli Branch is competent to process Financial Appraisal of the Project.

(iii) The specified SBI Branches such as Settipalli Branch can accept the loan proposals and forward to the competent authority for necessary action.

(iv) The petitioner has furnished a copy of letter dated 28.06.2006 from State Bank of Travancore, Chennai, wherein the Bank has informed that they have received the project documents in September 2005 and had started detailed appraisal of the proposed project for purpose of lending / syndication. They have also noted that the debt requirement for the project was Rs.4620/- Crores.

(v) The petitioner have furnished along with the DPR project cost and financial projections of revenue through tariff, projected debt repayment schedule for the purpose of appraisal and to ascertain the financial viability.

(9) (u) The bank has acknowledged the receipt of documents and has advised the petitioner to submit further documents along with signed final PPA

(9) (v) The final Power Purchase Agreement has been **filed before 30.09.2006**.

(9) (w) Therefore the Commission rules **that the appraisal of the project for lending funds has started before 06-01-2006** and that Power Purchase Agreement filed by the Petitioner falls outside the scope of para 5.1 of the Tariff Policy.

10. Issue (B) - Environmental and land acquisition

Issues:

(10) (1) The Petitioner submitted the following exhibits along with petition.

(a) The letter dated 31.08.1995 of the Tamil Nadu Pollution Control Board in which, "No objection Certificate", for setting up of the unit of the Petitioner at Thiagavalli and Kudikadu village has been issued. Tamil Nadu Pollution Control Board has informed the Petitioner that the consent for the power project under the Water (prevention and control of pollution) Act, 1974 would be issued only after the Petitioner obtains Environmental clearances from the Ministry of Environment and Forests, Government of India and from Tamil Nadu State Environmental Council / Committee.

(b) No objection certificate issued by the Airport Authority of India valid up to 10-10-1997.

(c) The letter dated 21.03.1997 of the Ministry of Environment & Forests, Government of India in which Environmental clearances have been accorded.

(10) (2) It was noticed that Environmental clearance from Tamil Nadu State Environment Council has not been obtained and consequently the consent for the power project under Water (Prevention and control of Pollution) Act 1994 has not been obtained from the Tamil Nadu Pollution Control Board.

(10) (3) The Respondent was directed in Commission's letter dated 10.10.2006, to intimate as to whether environmental clearance of Tamil Nadu Environmental Council and the consent of Tamil Nadu Pollution Control Board was ascertained before signing the Agreement.

(10) (4) The Respondent in their reply dated 14.12.2006 stated that the Petitioner has assured that they would arrange to get all statutory clearances prior to financial closing.

(10) (5) **Objections / Views expressed by the State Advisory Committee Members and Public.**

(10) (5) (a) **Thiru. Bharath Jairaj, Director, Citizen Consumer and Civic action group.**

The No objection certificate received from TNPCB, airport Authority etc have all lapsed and no attempts have been made to renew them and the conduct of the petitioner was one of abandoning the project.

(10) (5) (b) **Thiru. T.B.Chikkoba /Former Member Generation / TNEB**

The project may face objections for utilizing agricultural lands for industrial use.

(10) (5) (c) **Thiru.Duraisingam / Chairman /FEDCOT**

The area required for the project is Tsunami affected area and whether clearances obtained five years back could be applicable now.

(10) (5) (d) **Tmt. Swetha Narayanan / Coordinator / Community Environmental Monitoring and Other Environmental and Consumer protection organizations.**

(i) SIPCOT, Cuddalore is extremely polluted with a number of highly polluting chemical and other industries operating there. Industrial operation has converted Cuddalore into a disaster zone and toxic hotspot.

(ii) Numerous reports, including the report of State Human Rights Commission admit that Cuddalore is over polluted and that no new polluting industries should be set up in the Region.

(iii) Electric Power Plants contribute heavily to NOx emissions, which are precursor chemicals that react in the atmosphere in the presence of sunlight to form ozone. Strong concentration of ozone often occurs in and downwind of large urban areas. Exposure to ozone at concentration both above and below 120-part-per –billion has been shown to result in transient respiratory problems.

(iv) Rather than mitigate the pollution the Government is planning to target Cuddalore residents with more and more polluting industries.

(v) As the people of SIPCOT and nearby areas are totally convinced that the Govt. is incapable of controlling pollution from industries in their area, they have decided to ensure themselves that no new polluting chemical or water intensive units is located in their neighborhood. There is an increased resolve among the local residents to oppose and legally challenge any move to locate new polluting industries in SIPCOT or nearby villages. The proposal of location 1320 MW coal fired thermal power plant will be challenged by the residents as it threatens to increase the pollution level of the area

(10) (5) (e) **The residents of village around the location of the proposed project have raised the following objections.**

They are small agriculturists or agricultural labourers and they cultivate paddy groundnut, cashew, casuarinas, khas khas and coconut. In case thermal power plant is established, the

ground water will be depleted and the ground will become salinated to the detriment of cultivation. They also object to the acquisition of land for setting up the Power Project.

(10) (6). **Petitioner's reply to the above objections.**

(10) (6) (a) The petitioner, during the public hearing stated that all the clearances will be obtained and they will negotiate individually with the land owners for acquisition of land. They will establish the project only if the clearances are received and required land acquired, otherwise the project would have to be given up.

(10) (7) **Commission's Views and Conclusions:**

(10) (7) (a) Under section 7 of the Electricity Act 2003, "Any generating company may establish, operate and maintain a generating station without obtaining a licence under this Act, if it complies with the technical standards relating to connectivity with the grid referred to in clause (b) of section 73.

(10) (7)(b) The Commission's function in regard to a generating station is to determine tariff for generation and to regulate the electricity purchase and procurement process of distribution licensees including the price at which the electricity shall be procured from the generating companies.

(10) (7) (c) It is for the appropriate authority under appropriate Act to ensure that the generating company obtains environmental clearance as per the requirements of the Act.

(10) (7) (d) The petitioner shall obtain all required clearances / approvals before establishing the generating stations.

11. Issue (C) - Demand supply projections and justification for the project

(11) (1) Since the petition for approval for the PPA was filed by M/s Cuddalore Power Company Ltd., details on demand- supply projections and technical justifications for entering into this PPA were not produced before the Commission. The Commission, after initial scrutiny raised the following issues in this regard, for the respondent (TNEB) to clarify

(a) The demand forecast at the end of the eleventh plan period (2011-12) is 11472 MW and the deficit would be 1956 MW (including spinning reserve of 1000 MW).

(b) In the above projection, TNEB have not taken into account the additional generation due to the approval accorded by them for group captives, private wind generators, additional units proposed at Ennore, Tuticorin, Mettur, North Chennai, Lignite based TPS at Jeyamkondan and Ultra Mega projects under the consideration of Gol.

(c) When the National Electricity Policy / TNERC Regulations allow for setting off certain capacity as free capacity to be traded, why TNEB should enter into a contract for the full capacity.

(11) (2) The peak demand forecast for Tamil Nadu as per the National Electricity Plan, 17th Electrical power survey and the peak reached are as below:

Year	National Electricity Plan (MW)	17 th Power Survey (MW)	Peak reached	
			Peak Demand (MW)	Date
2006-07	8847	8966	8826	27-03-2007
2007-08		9741	9076	02-02-2008
2011-12	11411	14224		

(11) (3) TNEB, in their reply dated 16-5-2007, have revised their forecast and justified the procurement of power from M/s CPCL:-

(11) (3) (a) The peak demand reached on 27-3-2007 is 8826 MW. Effective Capacity availability as on 1-4-2007 is 8335 MW and the resultant deficit as on date is 631 MW without providing for any spinning reserve. Based on the 17th Power Survey Report of CEA, the peak demand at the end of 11th Plan period 2011-12 will be 14224 MW plus a spinning reserve of 1000 MW (the capacity of the largest unit at Kudankulam).

Note: The minimum spinning reserve as per the National Electricity Policy (section 5.2) should be at least 5 %

(11) (3) (b) Capacity addition and power availability as forecast by TNEB (assuming the availability level as 80 % for thermal and 50% for hydro units) are as below for the period from 2007-08 to 2011-12:

Year	Project added	Capacity (MW)	Availability (MW)
2007-08	Valuthur Gas (Addl)	95	85
	Bhavani Kattalai Barrage II &III	60	30
	Bhavani Barrage I	10	5
	Koodankulam Unit 1	463	357
	Kaiga	103	80
2008-09	Bhavani Barrage II HEP	10	5
	Koodankulam Unit 2	463	357
2009-10	NCTPS Extension	500	400
	Kollimalai HEP	20	10
	Koodankulam Unit 3	600	462
2010-11	Koodankulam Unit 4	600	462
	NLC TS II Expansion	325	260
	MAPS Fast Breeder Reactor	167	129
	NTPC JV	716	573
	NLC JV	495	396
2011-12	Mettur Stage III	500	400
	Ennore Expansion	500	400
	Kundah Pumped Storage	500	250
	Moyar Ultimate Stage	25	12
	Simhadrai II (NTPC)	500	400
	Cuddalore (IPP)	1320	1056
	Periyar Vaigai Barrages	50	25
Total at end of 11 th Plan period 2011-12			6154

(11) (3) (c) The TNEB in their recent presentation to the Commission, have furnished the following capacity addition during the XI Plan period.

Name of the Project	Capacity (MW)	Availability (MW)
2007-08		
Share from Kaiga State II	91	71
Availability from Valuthur GTPP	95	85
Sub Total	186	156
2008-09		
Share from NPC Kudankulam NPP Unit I	463	357
Neyveli TS II	163	130
	626	487
2009-10		
Bhavani Barrage HEP I and II	20	10
Bhavani Kattalai HEP II and III	60	30
Kollimalai HEP (20 MW)	20	10
Share from NPC - Kudankulam NPP Unit II	462	357
Neyveli TS II Expansion Unit II	162	130
Sub Total	724	537
2010-11		
North Chennai Thermal Power Station Stage II	500	400
NTPC - TNEB Joint Venture	716	573
NLC - TNEB Joint Venture	247	198
Mettur State III	500	400
Share from PFBR Kalpakkam	167	129
Sub Total	2130	1700
2011-12		
Cuddalore IPP	1320	1056
Ennore Expansion	500	400
Tuticorin Stage IV	1000	800
Kundah pumped storage electric project VII	500	250
Modified Moyar ultimate Stage HEP	25	12
Periyar Vaigai Barrages	50	25

NLC - TNEB Joint Venture Unit II	247	198
Simahadri 1000 MW	500	400
Sub Total	4142	3141
Total addition	7808	6021

(11) (4) In the context of the projections as above, TNEB claims that, even after including the proposed 2x 660 MW project of CPCL, the position will be as follows:

Peak Demand during 2011-12 as per 17 th Power Survey	14224 MW
Spinning Reserve	1000 MW
Total Requirement	15224 MW
Available capacity at the beginning of 2007-08 is 8335 MW	
Addition of capacity (available) up to 2011-12 is 6021 MW	
Capacity Available as on 31-3-2012 will be	14356 MW
Net Deficit (which includes the provision of 1000 MW reserve)	868 MW

(11) (5). **Views expressed in State Advisory Committee on the technical justification for the proposed power procurement from CPCL**

(11) (5) (a) **Thiru Chikkoba / Member/ SAC:**

(i) Do we need this project at all? Whether this project is required, based on the demand, generation forecast, etc.? Whether the demand supply gaps over the project period justify the additional capacity?

(ii) TNEB's justification is based on the 5 year forecast of peak demand and available capacities and the projects on the anvil.

(iii) They have not attempted the energy balance. Energy availability and energy requirement has not been taken into account. In the absence of energy balance, we cannot assess the requirement of this project and whether there is any energy shortage or peaking shortage.

(iv) Any new project should be for 15 years. Work out the demand and energy availability with and without the new project. If any other options are available it should be studied and one should choose the techno economically best option.

(v) The spinning reserve of 1000 MW adopted in the demand forecast to justify the project is on the higher side. The thumb rule is 5% of peak demand which would work out to 500 to 600 MW.

(11) (5) (b) **Thiru. Pancharathnam / Member / SAC :**

(i) It has been reported that the TNEB is buying power from CPCL to meet the shortfall of 3000 MW during the 11th plan. This is not correct.

(ii) As per the report of Hon'ble Minister for Electricity on 16.11.2006, the addition to capacity planned for 11th plan period was 3459 MW including the share from Central sector. Subsequently on 25.01.2006 consequent to the agreement between India and Russia additional 6000 MW is to be installed at Koodankulam Nuclear power project and Tamil Nadu is to get 3000 MW. Thus at the end of 11th plan Tamil Nadu would be having additional capacity of 6459 MW.

(iii) The Minister has also reported about the 2000 MW lignite based power plant in Jeyamkondan, 2000 MW Cheyyur project and 4000 MW project at Thirukuvalai. It is therefore appropriate that the SAC reject the proposal of CPCL.

(11) (5) (c) **Thiru Kumaravelu / Member / SAC:**

(i) Today's news is that in Kancheepuram District, PFC promotes a project for 4000 MW and work starts from April 2007 in which 1600 MW is allotted to TNEB and the commitment money has also been paid by the TNEB.

(ii) In Krishnapatnam NTPC project, out of 2000 MW, 800 MW has been allotted for TNEB for which Rs. 8 Crores commitment money has been paid.

(iii) These capacities have not been taken into account in the load forecast.

(11) (6) **Objections raised in respect of technical justification for the proposal in public hearing:**

Regarding the technical justification and necessity for such a PPA by TNEB, objections were raised mainly by the Power Engineers Society of Tamil Nadu, Tamil Nadu Electricity Board Accounts and Executive Staff Union, Tamil Nadu Electricity Board Engineers Sangam and Tamil Nadu Electricity Employees Congress. The objections are:

(a) The reasoning for projected load growth citing 17th Power Survey, to sustain and justify the agreement has terribly missed a valid point that future load growth is not the sole burden of TNEB as in the past. De-licensing of generation and liberalized captive generation has changed the scenario of sole play by TNEB. Growing load equations by self source keeps waiting TNEB's generation expansion. Most incidentally, now over 653 MW in live and another more than 1000 MW await in the queue during this year alone as captive power.

(b) TNEB have lost more than 20 % HT consumers (along with the resultant revenue) due to the CPP. There is a greater possibility that the growing grid demand and even a part of the existing ones will go to captive or other sources outside the State territory.

(c) The contracted capacity through the present agreement is least warranted since TNEB have omitted some of the projects like Ultra mega Power Project with a share of 2100 MW and the share of 500 MW in Simhadri II , which if included will be more than adequate to meet the demand at the end of the 11th plan period.

(11) (7). **Commission's Views and Conclusions:**

(11) (7) (a) The Commission considered the following demand supply-projections and justification for the project.

Forecast by	Base peak demand assumed in 2007-08	Forecast for 2011-12
TNEB as required in the Distn., Code	8890 MW	11472 MW
National Elec. Plan		11411 MW
TNEB based on 17 th Power Survey Report	9741 MW	14224 MW

Capacity available at the end of XI plan will be 14356 MW

(11) (7) (b) The difference between the forecasts is around 2800 MW and is mainly due to the assumptions adopted in growth rates. TNEB claims that the assumed growth rate of 8 % may touch even 10% on the basis of the prevailing conditions and the spurt in growth of IT, automobile and other industrial sectors. Since the peak demand of 8966 MW, at the beginning of 2007-08, is actual recorded value, the forecast as per 17th power survey at the end of 11th plan period as 14224 will amount to a CAGR of 9.66 %.

(11) (7) (c) Over and above, we need to include the spinning reserve for grid stability and operational necessity. The suggested reserve as per National Plan / Power survey is 5 %. But TNEB assumes 1000 MW, which is the capacity of the largest plant (Koodankulam unit) expected to be in the grid. This has resulted in addition of 300 MW over the conservative estimate of 14224 MW.

(11) (7) (d) It was pointed by TNEB unions that *“the reasoning for projected load growth citing 17th Power Survey, to sustain and justify the agreement has terribly missed a valid point that future load growth is not the sole burden of TNEB as in the past. De-licensing of generation and liberalized captive generation has changed the scenario of sole play by TNEB. Growing load equations by self source keeps waiting TNEB’s generation expansion. Most incidentally, now over 653 MW in live and another more than 1000 MW await in the queue during this year alone as captive power. TNEB have lost more than 20 % HT consumers (along with the resultant revenue) due to the CPP. There is a greater possibility that the growing grid demand and even a part of the existing ones will go to captive or other sources outside the State territory”*

(11) (7) (e) The Commission, after considering the past dismal performance in achieving targets, the fast industrial growth and the consequent demand for power accepts the conservative forecast, based on the 17th Power Survey. After all, at the end of the plan period, if the State has more generating capacity, the excess power can be traded in the open market in view of the overall deficit at the national level.

(11) (7) (f) The next question is what is the strategy to meet the expected demand at the end of the Plan period? Has the TNEB considered all the options available to them during this period? The objections raised in the SAC and public hearing relate to this. In this regard, the following are to be noted:

- (i) TNEB have included only those projects which have reached a certain level of finality. They have not taken into account (i) the agreement said to have been entered recently, between India and Russia for additional 6000 MW at Koodankulam Nuclear power project with a share of 3000 MW to Tamil Nadu, (ii) 2000 MW lignite based power plant in Jeyamkondan, (iii) 2000 MW Cheyyur project, (iv) ultra mega project in Tamil Nadu, (v) 4000 MW project at Thirukuvalai, (vi). PFC project for 4000 MW in Kancheepuram District, in which 1600 MW is allotted to TNEB, and (vii)

Krishnapatnam NTPC project 2000 MW, out of which 800 MW has been allotted for TNEB. These projects are not on firm footing.

(ii) TNEB have not taken into consideration the promotional measures in the Electricity Act 2003 and the resultant orders of the Commission for the CPP in the State. TNEB themselves, in a letter with respect to intra state ABT implementation have noted that the **projects in pipeline** under CPP, Co-gen and bio mass are as follows:

I. Captive Generating Plant	183.12 MW
II. Co- Generation Plant	22.00 MW
III. Bio mass Plants	124.50 MW
IV. Bio Mass gasifier	7.25 MW
V. Total of the above	336.87 MW

Note: The above additions are immediate ones and there could be many more by 2012.

(iii) TNEB have projected a capacity addition of 7828 MW during XI plan period. At 80 % availability for thermal units and 50 % for hydro units, the additional capacity available at the end of XI plan will be 6021 MW. Assumption of 50 % for hydro is very ambitious and may not come true. With all the above, TNEB's estimation shows a deficit of 868 MW (with a spinning reserve of 1000 MW) after including the proposed IPP with 1320 MW at Cuddalore.

(iv) The Commission accepts the proposal of TNEB to purchase the energy and capacity from the proposed 1320 MW Cuddalore Power Company Ltd for the following reasons.

- The Tariff Policy notified by the Govt. of India specified the following:
 - I. Accelerated growth of generation capacity is essential to cope with growth in demand.
 - II. Adequacy of generation is also essential for efficient functioning of power market.
- There has been a slip in achieving the target in capacity addition during 10th plan. As against the targeted capacity addition of 41110 MW in 10th Plan at the national level only 22194 MW was added up to 31.03.2007. The balance 18916 MW capacity is to be carried forward to 11th Plan.
- As per the tariff policy, it is to be ensured that new capacity addition should deliver electricity at most efficient rates to protect the interest of the consumers.
- The key element of capacity addition is the economy of electricity generation.
- Taking into consideration all the above, even if the spinning reserve is reduced to 5% and capacity addition through CPP / Co-Gen / bio mass etc. is reckoned, the TNEB would inch towards demand-supply balance.

12. Issue (D) - In principle approval of

capital cost and financing.

(12) (1) In schedule 9 to the Power Purchase Agreement under the head Government Authorization, it has been stated, “In-principle approval of capital cost and Financing Plan”, is pending before the Appropriate Commission.

(12) (2) The proviso under sub-regulation 8 of Regulation 18 of Tariff Regulations specifies the following

“Provided that any person intending to establish, operate and maintain a generating station may make an application before the Commission for “in principle” acceptance of the project capital cost and financing plan before taking up a project through a petition in accordance with the Tamil Nadu Electricity Regulatory Commission (Conduct of Business) Regulations, 2004. The petition shall contain information regarding salient features of the project including capacity, location, site specific features, fuel, beneficiaries, breakup of capital cost estimates, financial package, schedule of commissioning, reference price level, estimated completion cost including foreign exchange component, if any, consent of beneficiary / licensees to whom the electricity is proposed to be sold etc.

Provided further that where the Commission has given “in principle” acceptance to the estimate of project capital cost and financing plan, the same shall be the guiding factor for applying prudence check on the actual capital expenditure”.

(12) (3) Regulation 18, (Capital cost) of TNERC Tariff Regulation specifies the following:

“a. The capital expenditure on the date of commercial operation based on audited accounts of the licensee limited to approved cost may be considered subject to prudence check by the Commission.

b. Wherever Power Purchase Agreement or Agreement for Transmission / Wheeling **provides for a ceiling of capital cost, the capital cost to be considered shall not exceed such ceiling.”**

(12) (4) While proposing amendment to Tariff Regulation to incorporate the provisions relating to “in-principle” acceptance of capital cost, the CERC’s order dated 11.08.2005 in petition No.67/2003 (suo-motu) runs as follows:

“The amendment was proposed essentially with the intention to promote private participation in power sector. Such a procedure also becomes desirable in view of the fact that the Electricity Act 2003, has dispensed with the Techno Economic clearance of CEA. It was felt that the regulatory comfort in the form of “in principle” acceptance would help the future investors including the companies owned or controlled by the Government to achieve financial closure expeditiously”.

(12) (5) The petitioner has not filed a separate application seeking “in principle” approval of capital cost and Financing plan, but has sought approval of Power Purchase Agreement which includes capital cost.

(12) (6) Under clause 11 of schedule 3 to the Agreement, “Capital Cost” of the project has been defined as, the cost actually incurred in completing the project amounting to Rs.6004/- Crores comprising the following components.

(a) 230 Million Euro @ Rs.58 / Euro	Rs.1334 .00 Crores
(b) 173.31 Million US \$ @ Rs.45.50/US\$	Rs. 788.56 Crores
(c) Indian Rupees	<u>Rs. 3881.44 Crores</u>
	<u>Rs. 6004.00 Crores</u>

(12) (7) The above cost is subject to variation in the exchange rate of foreign currencies, changes in taxes and duties etc.

(12) (8) It has also been agreed that the completed cost shall not exceed Rs.6202 Crores on any account inclusive of all variation in foreign exchange rate variation except for changes on account of rates of taxes and duty and changes in law.

(12) (9) The cost of the project is Rs. 4.55 Crores per MW subject to the ceiling of Rs.4.70Crores. per MW.

(12) (10) The Commission in letter dated 10.10.2006, directed the Respondent to inform as to how they had agreed for a capital cost of Rs.4.55 Crores/ MW / 4.70 Crores/ MW for the proposed project to be developed by a Private Power Producer while the Tamil Nadu Electricity Board themselves are considering an average capital cost of Rs.4 Crores / MW.

(12) (11) The Respondent in their letter dated 14.12.2006 informed the following:

(a) The capital cost of Petitioner was compared with the new project of NTPC as detailed below.

Serial No.	Name of the Project	Capacity	Capital cost /MW Rs. in Crores
1	M/s Cuddalore Power Company Limited	2 x 660 MW	Rs.4.548
2	SIPAT (NTPC) Stage – I	3 x 660 MW	Rs.4.55
3	BARH STPS	3 x 660 MW	Rs.4.59
4	North Karanpura	3 x 660 MW	Rs.4.71

(b) The capital cost offered by the Petitioner is found reasonable when compared to the capital cost accepted for SIPAT stage I and BARH STPS.

(c) Further, the project of the Petitioner provides for a coal jetty and a desalination plant. The project does not enjoy mega power project status.

(d) The order for SIPAT and BARH Projects were placed about 4 years back and providing for escalation, the rate offered by the Petitioner is reasonable.

(12) (12) During the Public hearing, **Thiru. V.R.Kothandaraman, a retired Chief Engineer of Tamil Nadu Electricity Board** expressed the following views.

(a) The cost of the project was estimated at Rs.6200Crores in 1993 – 94 and for the 1320 MW, the cost per MW would be Rs.4.70 Crores.

(b) The capital cost per MW would not be as low as Rs.4.55 Crores /MW but it should be Rs. 5.50Crores./MW considering the following.

(i) Recently MOU has been signed with an Ireland company viz, McNamara Corporation for the Mega Power Project of 2000MW and the project cost is Rs.10, 000 Crores. The cost of development of Greenfield port is Rs.750 Crores.

(ii) The Petitioner has not indicated the cost of coal jetty and the Desalination plant.

(iii) The cost of installation of Flue gas desulphurization is also to be taken into account.

(iv) Considering the above, the cost of project per MW should be more than Rs.4.70Crores

(12) (13) The petitioner in letter dated 09.03.2007 was directed to furnish the breakup details of capital cost in the format prescribed in the Tamil Nadu Electricity Regulatory Commission Tariff Regulations. Also, as the draft initialled Agreement for 1168 MW does not contain the

capital cost details, the petitioner was directed to furnish the document containing the capital cost.

(12) (14) The petitioner in the written defence has stated the following.

(a) In the (draft) initialled Power Purchase Agreement; it was incorporated that the project capital cost would be as approved by the Central Electricity Authority.

(b) The project capital cost as approved by the Central Electricity Authority in the Techno-economic clearance dated 13.08.1999 was Rs.6379.16 Crores.

(Rs. in Crores)

488.193 Million US \$ dollar @ Rs.42.50/US \$	2074.82
203.922 Million GBP @ Rs.68/GBP	1386.67
1258.811 Million F.Fr @ Rs.7 / F.Fr.	881.17
Indian Rupees	2036.50
	6379.16**

** The breakup of cost approved by CEA was as below:

Sl. No.	Description	US\$ in Million	GB Pounds in Million	France Francs in Million	INR in Crores	Total cost Rs. in Crores
1	Land including Development Cost	0.333			44.048	45.463
2	EPC Cost excluding Taxes and Duties.	318.660	180.371	1139.548	920.102	4298.612
3	Taxes and Duties				664.775	664.775
4	Non EPC Cost	6.732			30.40	59.01
5	Overheads	42.500			15.00	195.63
6	IDC & Financing Cost	119.968	23.551	119.263	362.176	1115.666
7	TOTAL	488.193	203.922	1258.811	2036.501	6379.151

(c) The cost includes Rs.664.78 Crores towards taxes and duties.

(d) During the final Power Purchase Agreement negotiation, there was pressure from the Respondent to reduce the capital cost on the ground that, had the project been decided through competitive bidding, it would have been possible to avail duty exemption or refund of countervailing customs duty and excise duty to a large extent. Accordingly the quantum of

taxes and duties in the project capital cost was reduced by Rs.443.85 Crores. (i.e) from Rs.664.78 Crores in the CEA Techno Economic Clearance to Rs.220.93 Crores.

(e) With this reduction in quantum of taxes and duties, the Project cost cleared by the CEA would get reduced to Rs.6241.84 Crores.

(f) In the final Power Purchase Agreement, the project capital cost of Rs.6004 Crores has been accepted and the cost is Rs.237.84 Crores less than the CEA approved cost.

(g) The effect of the reduction in project cost as well as the effect of inflation between 1999 and 2006 is sought to be mitigated by increasing the indigenous content in the project cost and by sourcing equipment from suppliers other than European suppliers envisaged earlier.

(12) (15) The petitioner in response to the Commission's letter dated 09.03.2007 furnished break up for the accepted project cost of Rs.6004 Crores as below:

Particulars	Foreign Component (in Million)			Indian Component (Rs.in Crores)	Total (Rs.in Crores)
	Euro	US \$	Equivalent Rs.		
Land & Site development				35.00	35.00
Plant & Equipment					
- Steam Gen. Island	64.50	169.10	1143.50	288.00	1431.50
- Turbine Gen. Island	160.0	0.0	928.0	0.0	928.0
- Total BOP Mechanical				442.72	442.72
- Total BOP Electrical				225.88	225.88
- C & I Package				100.00	100.00
- Taxes & Duties				220.93	220.93
Total Plant & Equipment	224.50	169.10	2071.50	1277.53	3349.03
Initial Spares	5.50	4.21	51.06	26.00	77.06
Civil Works				1011.57	1011.57
Coal Jetty				331.75	331.75
Cons.& Pre commissioning Exp				254.96	254.96
Overheads				75.00	75.00
Capital cost excluding IDC & FC	230.00	173.31	2122.56	2976.81	5099.37
Interest during Constructions				882.63	882.63
Financing Charges				22.00	22.00
Capital cost including IDC & FC	230.00	173.31	2122.56	3881.44	6004.00

(The total cost of Rs. 6004 Crores is exclusive of land & site development cost Rs. 35/- Crores)

(12) (16) **Commission's views and Conclusions:**

(12) (16) (a) The Respondent in their letter dated 14.12.2006 intimated that the total capital cost of Barh Super Thermal Generating Station of 3 x 660 MW was Rs. 9092.93 Crores and per megawatt cost was Rs. 4.59 Crores which compares favourably with the capital cost of the Petitioner's project.

(12) (16) (b) It was ascertained from Barh Super Thermal Generating Station, that the approved capital cost of the project is Rs. 8692.93 Crores, which works out to per megawatt capital cost of Rs. 4.39 Crores. The Barh Super Thermal Generating Station is to run on indigenous coal transported through rail and to have Ganges as its raw water source.

(12) (16) (c) The Tariff Policy specified that, in case of coal based generating stations, the cost of project will also include reasonable cost of setting up coal washeries, coal beneficiation system and dry ash handling & disposal system.

(12) (16) (d) The Capital cost offered by the Petitioner includes the cost of coal jetty, ash handling and ash disposal area development and desalination plant. As per the breakup cost furnished by the petitioner, the cost of coal jetty and water treatment plant works out to Rs.382.05 Crores. The capital cost per MW excluding the cost of coal jetty and water treatment plant would be Rs.4.26 Crores.

(12) (16) (e) The Commission considers the Capital cost of Rs.6004/- Crores offered by the Petitioner as justified considering the above additional facilities to be created and the escalation for the past four years.

(12) (16) (f) As per sub-Regulation (4) of Regulation 18 of the Tamil Nadu Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulation 2005, wherever Power Purchase Agreement provides for a ceiling of capital cost, the capital cost to be considered shall not exceed such ceiling.

(12) (16) (g) The Power Purchase Agreement in this case provides for the following Provision under clause 9.11 (vii) in schedule 3 of the Power Purchase Agreement, "The completed cost shall not exceed Rs.6202 Crores on any account inclusive of all variation in foreign exchange rate variation except for changes on account of rate of taxes and duties and changes in law."

(12) (16) (h) The petitioner in reply to the various queries has stated that consequent to the Power Purchase Agreement negotiation, taxes and duties have been reduced to Rs.220.93Crores and that the total cost of Rs.6004 Crores includes this amount. But the ceiling cost of Rs.6202 Crores does not show the breakup including taxes and duties.

(12) (16) (i) The Commission approves the estimated completion cost as Rs.6004 Crores (including land cost) and shall not exceed the ceiling cost of Rs.6202 Crores inclusive of all variation in foreign exchange rates and exclusive of variation in taxes and duties paid as per changes in law. The petitioner shall furnish breakup for the customs duty of Rs.103.57 Crores and other taxes and duties of Rs.117.35 Crores included in the total capital cost of Rs.6004 Crores.

(12) (16) (j) Special levies if any may be brought to the Commission's notice at the time of approval of the final completed cost.

(12) (16) (k) As the cost of captive coal jetty is included in the project capital cost, the revenue if any earned by the project by using the coal jetty for the purpose other than for the generation capacity contracted with the TNEB, should go to reduce the tariff.

(12) (16) (l) The cost of project shall be met in the Debt Equity Ratio of 70:30.

(12) (16) (m) Where equity employed is more than 30% the amount of equity shall be limited to 30% and the balance amount shall be considered as loans, advanced at the weighted average rate of interest for weighted average tenure of the long term debt component of the investment.

(12) (16) (n) The petitioner shall furnish the final financial package to meet the capital cost immediately after financial closure for approval by the Commission.

13. Issue (E) - Whether the operating parameters are in conformity with Regulations.

(13) (1) **Plant Load Factor:**

(13) (1) (a) The Normative plant load factor for recovery of full capacity charges stipulated in the agreement is 80%.

(13) (1) (b) As per the agreement the electrical output supplied to TNEB upto and including such month in excess of that corresponding to a PLF of 80% shall be entitled for incentive of 25 paise per Kwh.

(13) (1) (c) These are in conformity with the provisions in the Tamil Nadu Electricity Regulatory Commission (Terms and conditions for determination of Tariff) Regulations 2005.

(13) (1) (d) Hence, the Commission accepts the Plant Load Factor stipulated in the agreement.

(13) (2) **Gross Station Heat Rate:**

(13) (2) (a) The following norms of Station Heat Rates for coal based Thermal Stations of 500 MW and above sets have been specified in the Tariff Regulations.

During stabilization period	2550 Kcal / Kwh
Subsequent period	2450 Kcal / Kwh

(13) (2) (b) Where boiler feed pumps are electrically operated the Gross Station Heat Rate shall be 40 Kcal / Kwh lower than the above Station Heat Rate.

(13) (2) (c) The above norms are for sub critical technology and the Central Electricity Regulatory Commission has not specified any normative station heat rate for 660 MW super critical units. The Commission has not specified any normative parameters for super critical units as no such unit exist.

(13) (2) (d) Clarification was sought from the CEA as to whether normative station heat rate has been prescribed for 660 MW super critical thermal units. The CEA replied as follows:

(i) CEA has not specified any normative heat rate for 660 MW super critical units. The norms for heat rates and other operational parameters are being prescribed by the CERC for central utilities and by State regulators for state utilities.

(ii) The station heat of any station is dependent on steam parameters, equipment design, coal quality and ambient conditions. Wide variations in heat rate may occur due to any of the above factors. Super critical steam parameters also vary over a wide range and the cycle efficiency varies considerably depending on the actual steam parameters adopted. For a typical Indian station such variation in Turbine cycle Heat Rate may range from about 1900 to 1850 kcal/kWh for super critical parameters of 247 kg/cm² 535/565 °C to 247 kg/cm² 565/593 °C normally being envisaged in India. Even for the same steam parameters, the station heat rate offered by

various manufacturers may vary by about 20 to 30 kcal/kWh due to difference in equipments design/configuration.

(13) (2) (e) The CEA in letter dated 07-03-2008 suggested the following

“TNERC may fix plant specific “Station heat rate” and for this purpose, a) boiler efficiency guaranteed by the boiler supplier and b) turbine cycle heat rate guaranteed by the TG supplier may be called for from the project developer. The guaranteed values for the boiler efficiency is expected to be in the range of 89-90% for the given imported coal and turbine cycle heat rate is expected to be about 1890 kcal / kwhr for steam parameters of 247 kg/cm², 537 / 565 deg C and 1860 kcal / KWhr for steam parameters of 247 kg/cm², 565 / 593 deg C at turbine inlet. Incase the guaranteed values of boiler efficiency and turbine cycle heat rate are not available, values as given above may be assumed.

The station heat rate may then be arrived at after providing allowance of about 5% over the guaranteed heat rate for normal operational variations / constraints and performance degradation over life time. This heat rate would be applicable for life of the plant.”

Thus normative heat rate for any station may be considered with respect to the design or guaranteed heat rate and allowing certain allowance for normal operational variation/constraints. An allowance of about 5% over the guaranteed station heat rate or heat rate actually tested in performance guarantee test (which ever is lower) may be considered for new stations.

(13) (2) (f) As per the model Request for Proposal (RFP) for long term power procurement of Govt. of India,

“Super critical technology mean, technology with minimum steam parameters at steam turbine inlet as mentioned below

-Main steam pressure	247 kg/cm ²
- Main steam temperature	535 deg C
- reheat steam temperature	565deg C

(13) (2) (g) Under the plant parameters under schedule 10 the petitioner has furnished the following specifications.

Steam Generator

- (i) Pressure at SH outlet -254 kg/cm²
- (ii) Temperature at SH outlet - 542 deg C

Steam turbine

- (i) Pressure at TMCR - 247 kg / cm²
- (ii) Temperature at TMCR - 540 deg C

(13) (2) (h) The project being promoted by the Petitioner is to have super critical boiler technology.

(13) (2) (i) In article 1.62 of the agreement it has been mentioned that Heat rate for purpose of calculation of tariff shall be 2375 Kcal/Kwh.

(13) (2) (j) The Respondent in their letter dated 14.12.2006 informed that the Petitioner had agreed to reduce the Station heat rate from 2450 Kcal/KWh to 2375 Kcal/Kwh.

(13) (2) (k) The basis for adopting the Heat rate of 2375 Kcal/Kwh for the super critical boiler has not been furnished in the agreement.

(13) (2) (l) The following is the extract relating to “**Heat rate**” in the Report of the Committee to Recommend Next Higher Unit Size of Coal Fired Thermal Stations set up by the Central Electricity Authority.

“With the increase in unit size and higher parameters, there has been a remarkable increase in the design efficiencies of the thermal units. Heat rates of different sizes of thermal units are indicated in Table2. However, based on the data received from power plants and also energy audits carried out by CEA at various stations, it is seen that large number of power plants are operating with heat rates significantly above their design values.

TABLE – 2 Heat Rate of Different Unit Sizes

S.No.	Unit Size	Parameter Pressure (Kg/ Sq cm) MS temp deg C/ RH temp deg C	Turbine Cycle Heat Rate at 0% make up and 33'C CW. Temperature (Kcal/hr)
1	200 / 210 MW LMZ	130 / 535 / 535	2060
2	210 MW KWU	150 / 535 / 535	1980
3	500 MW	170 / 537 / 537	1940 (Turbo BFB)

The efficiency of 210 to 500 MW units has been generally higher than the smaller size units with respect to their design values. The reasons for higher heat rates are mainly lack of adequate stress on efficient operation, part load operations of the units, outage of unit HP heaters etc. The operating utilities would therefore be required to upgrade their

operation practices and skills to really achieve the benefits of higher efficiency associated with higher size of super critical units.”

(13) (2) (m) **Commissions’ views and conclusions:**

(i) As the Station Heat Rate depends on steam parameters, equipment design, coal quality and ambient conditions, it cannot now be precisely determined and quantified in the agreement.

(ii) The petitioner shall ensure that the super critical parameters are not less than the following minimum steam parameters at steam turbine inlet

-Main steam pressure	247 kg/cm ²
- Main steam temperature	535 deg C
- reheat steam temperature	565deg C

(iii) The petitioner shall furnish the boiler efficiency guaranteed by the boiler supplier and the turbine cycle heat rate guaranteed by the TG supplier along with the proposal for final capital cost approval.

(iv) The Article 1.62 is amended as below:

“Heat rate means heat energy input to the project in terms of gross calorific value, to deliver one kWh energy output at generator terminal.”

(iv) The Petitioner shall file a petition for approval of heat rate with all the technical, pressure and temperature parameters along with the petition for approval for actual capital cost.

(13) (3) **Auxiliary Consumption:**

(13) (3) (a) The normative auxiliary consumption for 500 MW series (500MW and above) as per the Central Electricity Regulatory Commission (Terms and conditions for Tariff) (Amendments) Regulation 2007, is as below:

With cooling Tower

Steam Driven Boilers Feed Pumps	7.5%
Electrically Driven Boilers Feed Pumps	9%

(13) (3) (b) The term auxiliary consumption defined in article 1(9) of the agreement conforms to the above specification and is accepted.

(13) (4) **Gross Calorific value of Fuel:**

(13) (4) (a) As per article 1(60) of the agreement “Gross Calorific Value “ means the monthly weighted average amount of heat energy in Kcal (HHV or Higher Heating Value) contained in

either one milliliter of secondary fuel or one kilogram of coal as received at site basis. Such value shall be determined by established methods under Indian standards or internationally recognized standards.

(13) (4) (b) In schedule 1, (Fuel Specification) the design Gross Calorific Value (GCV), has been furnished as 6300 Kcal /Kg in the range of 5400 – 6800 Kcal /Kg. Under item 12 of schedule 3, the word GCV has been expanded to mean “Weighted average Gross Calorific Value (As received) of coal as received at the project during applicable month expressed in Kcal /Kg.

(13) (4) (c) However, the petitioner, in the calculation for levelised tariff to justify the cost benefit of the Project, has adopted the GCV of 6200 Kcal / Kg. The petitioner during the Public hearing has stated that for purpose of calculation of Tariff the GCV would be adopted as 6200 Kcal /Kg.

(13) (5) **Specific consumption of Secondary Fuel:**

As per article 1(112) of agreement , “ Specific Consumption “ means Secondary Fuel Consumption rate for the project which shall be 2.0ml of secondary fuel / Kwh generated. This conforms to the norms prescribed in the Tariff Regulation and therefore is accepted.

14. Issue (F) - Whether the parameters of tariff are in conformity with the Regulation

Schedule 3 of the Agreement deals with the determination of Tariff. Provisions on the above components in the agreement are discussed below.

(14) (1) **Base interest on the capital.**

(14) (1) (a) The Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (1st amendment) Regulation 2006 and TNERC (Terms and conditions for determinations of Tariff) Regulations, provide the following.

“Interest on loan capital shall be computed loan wise on the loans (arrived at as 70% of the Capital cost). The generating company shall make every effort to refinance the loan as long as it results in net benefit to the beneficiaries. The cost associated with such refinancing shall be borne by the beneficiaries. The changes to loan terms and conditions shall be reflected from the date of such re-financing and the benefits shall be passed on to such beneficiaries. In case of dispute, any of the parties may approach the Commission with

proper application. However, the beneficiaries shall not withhold any payment ordered by the Commission to the Generating Company during pendency of any dispute relating to re-financing of the loan. In case any moratorium period is availed by the generating company, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and the interest on loan capital shall be calculated accordingly. The generating company shall not make any profit on account of re-financing of loan and interest on loan.”

The generating company may at its discretion swap loans having floating rate of interest, or vice-versa, at its own cost and gains or losses, as a result of such swapping shall accrue to the generating company.

Provided that the beneficiary shall be liable to pay interest for the loans initially contracted, whether on floating or fixed rate of interest.”

(14) (1) (b) The following provision has been made under item 2(a) (i) of the agreement.

Projections of Base Interest on Loan Capital shall be made in accordance with the approved Capital Cost and Financing Plan and the definition of the Base Interest on Loan Capital converting all currencies into Rupees using the Base Exchange Rate. Projections of variable interest rates indicated in the approved Capital Cost and financing plan shall be equal to the amount of such interest rates that would be in effect on the date the Company computes the FCC pursuant to Section 1(c) of this Schedule 3 (the “Fixed Charge Computation Date”). The Loan Capital should bear the fixed interest rate for the entire loan tenure and the fixed interest rate shall not exceed 10.5% per annum.

(14) (1) (c) Under item 9 (7) of the Schedule 3 of agreement, Base interest on Loan Capital is defined as below.

“Base interest on Loan Capital” with respect to any Year shall mean those amounts representing the sum of all interest on loan capital(or currency exchange rates hedging arrangements which are acceptable to Tamil Nadu Electricity Board recomputed in the case of variable interest rate loans by substituting the applicable interest rates in effect on the relevant Fixed Charge Computation Date) and other charges for guarantees issued in respect of the financing of the Project due to the Lenders in such Year, converted to rupees from the currencies in which they are payable by employing the applicable Base Exchange Rate”.

(14) (1) (d) It has been accepted in the later part of the clause under item 2(a) (1), that the loan capital should bear the fixed interest rate for the entire loan tenure and it shall not exceed 10.5% p.a.

(14) (1) (e) In the volatile interest regime, the variable rate and provision for swapping / re-financing with a cap could be accepted and the provision that,

"The loan capital should bear the fixed interest rate for the entire loan tenure", shall be deleted.

(14) (1) (f) The agreement does not have any provision for swapping of loan or refinancing of loan. However it has been specified that the loan capital should bear fixed interest rate for the entire loan tenure and the fixed interest shall not exceed 10.5%p.a. The Respondent in their letter dated 14.12.2006 have stated that they insisted on acceptance of a ceiling rate but the Petitioner initially expressed difficulty in capping the interest rate but finally agreed for a fixed interest rate capped at 10.5%. The respondent has also accepted that the interest plus the foreign exchange fluctuation should be limited to the above ceiling interest.

(14) (1) (g) Incorporation of provisions relating to Swapping has been considered.

(14) (2) **Operation and Maintenance and Insurance expenses:**

Tamil Nadu Electricity Regulatory Commission (Terms and Conditions for determination of Tariff) Regulations have the following Provisions.

(14) (2) (a) **Operation and Maintenance Expenses:**

(i) The operation and maintenance expenses shall be derived on the basis of actual operation and maintenance expenses for the past five years previous to current year based on the audited Annual Accounts excluding abnormal operation and maintenance expenses, if any, after prudence check by the Commission. The Commission may, if considered necessary engage Consultant / Auditors in the process of prudence check for correctness.

(ii) The average of such normative operation and maintenance expenses after prudence check shall be escalated at the rate of 4% per annum to arrive at operation and maintenance expenses for current year i.e. base year and ensuing year.

(iii) In case of the thermal power Generating Stations, which have not been in existence for a period of five years the operation and maintenance expenses shall be fixed at 1.0% of the capital cost (as admitted by the Commission) and shall be escalated at the rate of 4% per annum from the subsequent year to arrive at base operation and maintenance expenses. The

base operation and maintenance expenses shall be further escalated at the rate of 4% per annum to arrive at permissible operation and maintenance expenses for the relevant year.

(14) (2) (b) **Insurance:**

(i) The Generating Company and licensee may adopt the practice of Self Insurance and a provision up to 0.5% of the capital cost shall be allowed by the Commission in their revenue requirement. The reserves shall be utilized to replace the assets lost due to accident, fire, flood, cyclone and other force majeure conditions.

(ii) In the Central Electricity Regulatory Commission's Tariff Regulations no norms for O&M expenses have been specified for the new generating stations. For the existing coal based generating stations of 500 MW and above sets, Rs.10.52 lakhs / MW has been specified for the year 2007 – 2008. Taking the capital cost per MW as Rs.4.55 Crores the O&M expenses for 500 MW & above sets will be 2.31%. The Regulation does not contain any separate norms for Insurance.

(iii) However in the Tamil Nadu Electricity Regulatory Commission Tariff Regulation the O&M expenses for the new generating station has been specified as 1% of the capital cost and shall be escalated @ 4% per annum from the subsequent year to arrive at the base operation and maintenance expenditure. In addition, norms for the following provisions have been made.

Bad & Doubtful Debts : - Provision up to 0.25% of the receivables

Insurance : - 0.5 of the capital cost.

Contingency Reserve :- 0.5% of the value of assets at the beginning of the year.

(iv) In schedule 3 of the agreement the following has been accepted for O&M and Insurance Expenses,

“**O&M and Insurance Expenses** with respect to any Month shall mean amount equal to one twelfth of the applicable amount for the Year in which the Month falls. O&M and Insurance Expenses for any Year shall be the amount computed based on 2.12% of the Capital Cost during the first Year after Commercial Operation Date escalated thereafter at the rate of 4% per annum;”

(v) However as per the Tamil Nadu Electricity Regulatory Commission Tariff Regulations O&M expenses and Insurance for the new generating stations is to be allowed at 1.5% of the Capital cost. In letter dated 10.10.2006 Tamil Nadu Electricity Board was directed to clarify the basis for accepting O&M and Insurance expenses at 2.12% of the Capital cost. The Tamil Nadu Electricity Board in their letter dated 14.12.2006 informed the following

(A) "As per the initialled Power Purchase Agreement, the rate of O&M expenses indicated is 2.5% inclusive of insurance at 0.5%. The O&M expenses was directed to be limited to the norms indicated by Tamil Nadu Electricity Regulatory Commission namely 1.5% of the capital cost for the first year of operation inclusive of Insurance charges. The Central Electricity Regulatory Commission norm is on a flat rate of Rs.10.95 Lakhs per MW for the year 2008-09 with an annual escalation of 4%.

(B) After much hard bargaining, the company and Tamil Nadu Electricity Board agreed to a rate of 2.12% of the capital cost. This has been accepted subject to review and approval by Tamil Nadu Electricity Regulatory Commission."

(vi) The PESOT and other labour unions of Tamil Nadu Electricity Board in their written objection have stated that O&M expense at 2.12% of capital cost appears, too high.

(vii) The Tamil Nadu Electricity Board replied that the O&M expenses including Insurance of 2.12% of the Capital cost are below the norms stipulated by Central Electricity Regulatory Commission.

(viii) The Petitioner in their written defence submitted the following:

(A) The Central Electricity Regulatory Commission Regulations, 2004 provide for Operation & Maintenance expenses including insurance (O&M Cost) at Rs.10.95 Lakhs / MW for unit size of 500 MW and above for the year 2008-09 escalated annually at 4%. For the 2 x 660 MW Cuddalore Power Project, the first year of operation is 2011- 12 and the applicable O&M Cost for this year as per Central Electricity Regulatory Commission Regulations is Rs.12.32 lakhs / MW i.e Rs.162.59 Crores per year for the 1320 MW Plant. This works out to 2.7% of Project Cost based on the Project Cost of Rs.6004 Crores.

(B) The Central Electricity Regulatory Commission Regulations with regard to O&M Cost were evolved based on a study conducted for Central Electricity Regulatory Commission by Development Consultants Limited in August 2000.

(C) Based on a perusal of the SERC Regulations of various States, it can be seen that all States, except Tamil Nadu have provided for O&M Cost in line with Central Electricity Regulatory Commission Regulations. However, Tamil Nadu Electricity Regulatory Commission Regulations provide for only 1% of the Project Cost towards O&M and 0.5% of the Project Cost towards insurance. These figures do not appear to be supported by any comprehensive study of O&M costs. As can be seen from the Central Electricity Regulatory Commission report, even the Power Stations in Tamil Nadu such as the Neyveli and North Madras Thermal Power Stations have O&M Costs in the range of 2.40% to 3.23% of Project Cost.

(D) Clause 5.3 (f) of the National Tariff Policy dated 06.01.2006 pertaining to “Operating Norms” reads as follows:

“Suitable performance norms of operations together with incentives and dis-incentives would need be evolved along with appropriate arrangement for sharing the gains of efficient operations with the consumers. Except for the cases referred to in para 5.3(h)(2), the operating parameters in tariffs should be at “normative levels” only and not at “lower of normative and actuals”. This is essential to encourage better operating performance. The norms should be efficient, relatable to past performance, capable of achievement and progressively reflecting increased efficiencies and may also take into consideration the latest technological advancements, fuel, vintage of equipments, nature of operations, level of service to be provided to consumers etc. Continued and proven inefficiency must be controlled and penalized. The Central Commission would, in consultation with the Central Electricity Authority, notify operating norms from time to time for generation and transmission. The SERC would adopt these norms. In cases where operations have been much below the norms for many previous years, the SERCs may fix relaxed norms suitably and draw a transition path over the time for achieving the norms notified by the Central Commission.

Operating norms for distribution networks would be notified by the concerned SERCs. For uniformity of approach in determining such norms for distribution, the forum of Regulators should evolve the approach including the guidelines for treatment of state specific distinctive features.”

(E) It may be seen from the underlined sentences that in the above paragraphs that SERCs are required to adopt the operating norms specified by the Central Electricity Regulatory Commission for generation and transmission. Notification of separate operating norms by the SERCs is envisaged only for distribution networks. While there is a provision for relaxation of the norms in the case of existing operations, there is no provision for stipulating more stringent norms than that specified by the Central Electricity Regulatory Commission. Therefore, in our opinion, in order to conform to the National Tariff Policy dated 06.01.2006, the Tamil Nadu Electricity Regulatory Commission norm with regard to O&M and insurance expenses needs to be revised to bring it in line with the Central Electricity Regulatory Commission norm.

(F) Based on extensive discussions with Tamil Nadu Electricity Board at the Power Purchase Agreement finalization stage, the O&M Cost including insurance was negotiated at 2.12% of the Project Cost. Since this itself is a difficult cost target to be achieved in reality and is well below Central Electricity Regulatory Commission norms, the petitioner requested that Tamil

Nadu Electricity Regulatory Commission allow for the O&M Cost provided in the Power Purchase Agreement.

(ix) **Commission's views and conclusions:**

(A) The agreement does not have any provision for bad & doubtful debts and contingency reserve. The provision for bad & doubtful debts may be applicable for distribution licensees. The Tamil Nadu Electricity Board have been following the procedure of self insurance scheme, whereby 1% of the cost of generation asset is provided towards insurance and the provision is included in the O&M expenses. Thus the total provision for O&M expenses and Insurance including the contingency reserve (excluding provision for bad & doubtful debts) as provided for in the Tamil Nadu Electricity Regulatory Commission Tariff Regulation shall be 2%.

(B) The operating norms under clause 5.3 (f) of the National Tariff Policy referred to by the Petitioner may relate to operating norms like Plant load factor, Auxiliary Consumption, specific consumption of fuel , Gross station heat rate, etc.

(C) The O&M expenses and Insurance are approved initially at 2.00% including contingency reserve with 4% escalation.

(D) The petitioner is directed to come before the Commission for fixing the normative O&M expenses with actual for five years period commencing from the financial year subsequent to the date of commencement of operation.

(14) (3) **Depreciation:**

(14) (3) (a) Para 5 (c) of the Tariff Policy specifies the following

“The Central Commission may notify the rates of depreciation in respect of generation and transmission assets. The depreciation rates so notified would also be applicable for distribution with appropriate modification as may be evolved by the Forum of Regulators.”

The rates of depreciation so notified would be applicable for the purpose of Tariff as well as accounting.

(14) (3) (b) The CERC has specified the manner for computation of depreciation and also the schedule containing rates of depreciation. The Commission has adopted the same.

The definition of depreciation in *Schedule -3* of the Power Purchase Agreement conforms to the provisions of the Tariff Regulation. However, the definition is amended as below for the purpose of clarity.

“The depreciation shall mean the annual allowance for depreciation calculated at the rates given in depreciation schedule in the annexure to the Tamil Nadu Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2005 and in Form No.11 and 12 prescribed in Appendix 1 of Tamil Nadu Electricity Regulatory Commission tariff Regulation.

Provided that the allowance shall be zero from and after the date on which the aggregate of all payment for depreciation over life of this agreement under the *Schedule -3* equals 90% of the capital cost.

Provided that for calculation of depreciation for tariff purposes, the capital costs shall exclude cost of land.”

(14) (4) **Advance against Depreciation:**

(14) (4) (a) The following definition has been made in *Schedule -3*

Advance against Depreciation shall mean the annual loan principal repayment amount (subject to a ceiling of one tenth of the loan amount) minus the annual allowance for Depreciation.

(14) (4) (b) The CERC Tariff Regulation has the following provision towards Advance against Depreciation:

“In addition to allowable depreciation, the generating company shall be entitled to Advance against Depreciation computed in the manner given hereunder

AAD = Loan repayment amount as per regulation 21 (i) subject to a ceiling of 1/10th of loan amount as per regulation 20 minus depreciation as per schedule

provided that Advance against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation upto that year.

Provided further that Advance against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

(14) (4) (c) TNERC Tariff Regulations did not provide for Advance Against Depreciation in accordance with para 5(c) of National Tariff Policy which stipulates that **there should be no need for any Advance Against Depreciation.**

(14) (4) (d) The CERC did not amend their Regulations in conformity with the National Tariff Policy.

(14) (4) (e) In letter dated 10.10.2006, the respondent (TNEB) was directed to explain why advance against depreciation was proposed contrary to the TNERC Regulations.

(14) (4) (f) The respondent in their letter dated 14.12.2006, replied as follows:

“The Commission’s view regarding Advance Against Depreciation was discussed by TNEB with the company at the Power Purchase Agreement negotiation stage. The company indicated that in the absence of Advance Against Depreciation, there would be inadequate cash flow to repay the loan as per agreed terms and hence it would not be possible to finance the project. It may also be noted that Advance Against Depreciation is still provided for in the current CERC guidelines. In view of the above, Advance Against Depreciation was allowed in the Power Purchase Agreement. They even indicated that the project is not viable in the absence of Advance against Depreciation and opt out of the project”.

(14) (4) (g) The PESOT and other Trade Unions have stated that the clause relating to Advance against Depreciation is unacceptable.

(14) (4) (h) The petitioner in their written defence has submitted the following:

(i) “Till the Electricity Act 2003, came into force, only depreciation was included in the fixed capacity charge and not Advance Against Depreciation. However, the rate of depreciation specified by the Ministry of Power in March 1994 was about 7.5% of project cost per annum (average value over various categories of power plant equipment) which was adequate to provide enough cash flow for repaying the principal instalment of the debt (the principal instalment per annum was usually around 7% of project cost based on a project debt: equity ratio of 70: 30 and loan tenure of 10 years). This arrangement gave the generating company some excess cash flow (difference between 7.5% and 7% each year). If the debt was negotiated for a longer tenure (say twelve years), there was comfortable cash flow each year.

(ii) After Electricity Act 2003 came into force, the CERC Regulation 2004 was issued. In these Regulations in order to ensure that the generating companies have just adequate cash flow to serve debt and do not generate excess cash flow, the depreciation rate was reduced to 3.6% of the project cost per annum and the concept of Advance against Depreciation (AAD) was introduced. “The Advance against Depreciation” was an amount equal to annual principal debt repayment minus depreciation. After loan was fully repaid, the accumulated Advance against

Depreciation was to be set off against the depreciation in subsequent years till the accumulated Advance against Depreciation was fully recovered.

(iii) Apart from CERC Regulation the other SERCs like Maharashtra, Orissa, UP, HP, MP, Jharkhand, Punjab, Assam, Chattisgarh, Kerala and Delhi have also incorporated the provision of Advance against Depreciation in line with the CERC Regulations. However, the TNERC Regulation 2005 provided for only Depreciation at 3.6% per annum and not for Advance against Depreciation. Since, no other MOU based project has come up in Tamil Nadu since notification of TNERC Regulation 2005, the lack of the provision of Advance Against Depreciation has not had impact on any project till date and the petitioner's project is the first project to be impacted. In the absence of the provision for Advance Against Depreciation, the cash flow generated from depreciation alone is not adequate to pay the principal instalment of the debt and hence, no power project can be financed without this provision.

(iv) The provision in the 5.3(c) of the National Tariff Policy appears to envisage that the rates of Depreciation should be notified in such a manner that there should be no need for any Advance Against Depreciation. This implies that the depreciation rate should be adequate or sufficient to cover repayment of the principal instalment of the debt. The depreciation rate of 3.6% per annum notified in the CERC Regulation 2004 has not been enhanced till date by the CERC nor has the concept of Advance against Depreciation been done away with in the CERC Regulation.

(v) In view of the above TNERC is requested to either allow Advance Against Depreciation in tune with the CERC Regulations as well as the Regulations of all other State ERCs, or provide any other suitable mechanism to enable generation of adequate cash flow for repayment of principal instalment of debt”.

(14) (4) (i) The petitioner made the following submission on Depreciation and Advance against Depreciation:-

(i) The petitioner has sent a note on the following to the Government of Tamil Nadu

(ii) “In order to enable financing of the 2 X 660 MW Cuddalore Thermal Power Project the following options are available:

- As permitted by CERC Regulations 2004 and that of 12 State ERC Regulations, AAD may be allowed as per the PPA dated 28.09.2006 between TNEB and Cuddalore Power Company.

- Increase of any other component of tariff may be allowed to generate enough cash flow for principal repayment of loan.”

(14) (4) (j) The Government of Tamil Nadu forwarded the letter to the Commission and in letter dated 28.09.2007 requested the Commission to consider the adoption of CERC’s Regulations on advance against depreciation in Tamil Nadu Electricity Regulatory Commission’s Regulations at the appropriate time in respect of Cuddalore Power Company.

(14) (4) (k) Para 5.3.(c) of draft tariff policy circulated by Government of India, on 15-03-2005 had the following provision

“The Central Commission may notify the rate of depreciation in respect of generation and transmission assets. The depreciation rate so notified for transmission asset would also be applicable for distribution. The same rates of depreciation would be applicable for the purpose of tariff as well as accounting. **The depreciation rates should adequately take care of debt repayment liability considering the prevalent market conditions and loan tenures etc, for average situation.**”

(14) (4) (l) While Central Commission would take care of repayment obligation of long term debt through depreciation, all efforts should be made for aligning tenure of long term debt with permissible rate of depreciation to reduce front loading of tariff through various mechanism including resort to takeout finance to elongate debt repayment period. **Accordingly, there will be no need for any advance against depreciation.**

(14) (4) (m) In the final tariff policy notified on 06.01.2006, the provision that the “depreciation rates should adequately take care of debt repayment liability” has not been included. On the other hand it has stipulated that **there should be no need for any advance against depreciation.** This implied that the depreciation rates should be adequate to take care of debt repayment liability.

(14) (4) (n) The secretariat of Forum of Regulators in letter dated 22.06.2006 informed all the Commissions that the depreciation rates as specified in CERC (Terms and conditions of tariff) Regulations 2004 may be treated as rates of depreciation for the purpose under para 5.3 (c) of the tariff policy dated 06.01.2006. The CERC (Terms and conditions of tariff) Regulations 2004 has provision for advance against depreciation to meet debt repayment obligation. Thus the principle that the depreciation rates should adequately take care of debt repayment liability is accepted.

(14) (4) (o) Considering the fact that CERC and all State Commissions have provided for AAD in addition to the depreciation rate as per the schedule, it was felt that there is a case for amending the TNERC's regulations to fall in line with the rest of the Country.

(14) (4) (p) However, in Appeals No.71/2006, 72/2006 and 73/2006 filed by the Discoms in Orissa before the Appellate Tribunal for Electricity against the orders of Orissa Electricity Regulatory Commission, the Appellate Tribunal for Electricity has ordered the following in para 22 and 23 of its order dated 13.12.2006.

“22 The Commission allowed Advance Against Depreciation and this is being challenged. It is contended by the counsel for the appellant that the amount allowed as Advance Against Depreciation is illegal and liable to be interfered, on the sole reasoning that such an allowance runs counter to the National Tariff policy published by the Central Government on 06.01.2006 under section 3 of Electricity Act 2003. We have already referred to section 61 of the Electricity Act 2003 in this respect. It is a fact that the National Tariff Policy prescribes that the advances against depreciation is not to be permitted. The National Tariff Policy was published on 06.01.2006. Factually the Regulatory Commission the second respondent herein held in its sitting on 06.02.2006, with respect to approval of ARR and determination of transmission tariff. The tariff order came to be passed by the second respondent on 23.03.2006. In our considered view, the Commission ought to have taken into consideration of the National Tariff Policy and ought not to have allowed advance against depreciation.

23. Mr.M.G.Ramachandran, learned counsel appearing for Regulatory Commission contended that the time gap between the publication of the tariff policy and the determination of transmission tariff is so close and therefore the Commission cannot be found faulty. Though this contention is attractive, the Commission had more than two months time and it is not the stand of the respondent that the Commission was not aware of the tariff policy published on 06.01.2006. The Regulatory Commission being responsible and the highest specialist forum at the State level may not be justified in pleading ignorance of the National Tariff Policy. The Transmission Corporation, it is pointed out, has not even made a claim in this respect. We are of the considered view that the Regulatory Commission ought not to have allowed Advance Against Depreciation and the order of the Commission to this extent deserves to be interfered. In the circumstances, we set aside the allowances of Advance Against Depreciation of the sum of Rs.48.09 Crores”

(14) (4) (q) The above orders of the Appellate Tribunal are, in spite of the following contentions as in paras 12, 13 and 16 of the orders before the Tribunal.

“12. On behalf of the first respondent OPTCL, it is contended that no interference is called for with respect to the approval of revenue requirement and transmission tariff determination ordered by the Regulatory Commission. It is contended that the depreciation allowed by Regulatory Commission is too low, and it is not even one fourth of the total depreciation claimed by the OPTCL. The rate of depreciation allowed by the Regulatory Commission is in accordance with the Regulations framed by the Regulatory Commission. It is further contended that there is no illegality in allowing advance against depreciation when allowable depreciation is not sufficient to cover up loan repayment liability.

13. Next, it is contended that there is no illegality in allowing depreciation in advance nor there is a contravention of section 61 and 62 of the Electricity Act 2003, nor it is violative of Regulation 56 (2) (i) (b) of the CERC (Terms and conditions of Tariff) Regulation 2004. The allowance of Rs.43.51 Crores towards advance against depreciation is not liable to be interfered. It is contended that the provisions of National Tariff Policy is only a guideline and not mandatory in nature.

16. Mr.M.G.Ramachandran learned counsel appearing for OERC contended that the Commission has rightly allowed the advance against depreciation as provided by the Tariff regulations and there could be advance against depreciation and it is not liable to be interfered and more so when the Regulations in force provide and or binding on the parties.”

(14) (4) (r) In view of the above decision, it was considered as to whether amendment to TNERC (Terms and Conditions for Tariff) Regulations 2005 to incorporate the provision for Advance Against Depreciation to meet debt repayment obligation would amount to contempt of Appellate Tribunal's Order.

(14) (4) (s) The opinion of the Advocate General of Tamil Nadu was sought who gave the following opinion:

- (i) The TNERC can amend the Regulations and provide for advance against depreciation.
- (ii) If the amended Regulations are considered as repugnant to section 61 of the Electricity Act 2003, only the High Court or the Supreme Court can declare the Regulations as illegal and ultra-vires of the Act and not the Tribunal.
- (iii) An order disallowing advance against depreciation by Appellate Tribunal for Electricity can be successfully challenged before the Supreme Court so long as the Tariff Regulations

provide for such advance against depreciation on the ground that the statutory regulations cannot be declared as illegal by Appellate Tribunal.

(iv) The provisions of section 61 of the Act contain only guidelines and not mandatory directions may be one plausible view.

(v) The power of contempt can be exercised by the Appellate Tribunal for Electricity only for enforcing its order passed in a case brought before it.

(vi) Contempt Proceedings could be initiated only as against the parties to the order or parties to the decision or judgment and not against any other State Regulatory Commission against whom no case was filed or decided by the Appellate Tribunal.

(vii) Not following the principle underlined in the order of Appellate Tribunal for Electricity, will not invite action for contempt.

(14) (4) (t) The Commission therefore proposed to amend the TNERC Tariff Regulations to provide for Advance Against Depreciation and accordingly prepared and published the draft amendment in the Commission's website inviting the views of Public and TNEB.

(14) (4) (u) Thiru S.Sivarama Krishnan, Director, Power and Energy Pvt Limited, Singapore expressed the following views:

(i) The proactive initiative taken by the Commission to amend the regulations providing AAD will be the right move in the present power scenario.

(ii) AAD will definitely take care of debt repayment liability concerned with present market condition and loan tenure.

(iii) If AAD is not provided, as proposed in the notification, it will not be viable for mega and medium projects to establish.

(iv) It is a welcome move by TNERC.

(14) (4) (v) The TNEB in letter dated 11-12-2007 expressed the view that the proposed amendment need not be made for the following reasons

(i) The National Tariff Policy has stated that there should be no need for any AAD

(ii) The Appellate Tribunal for Electricity has held that the depreciation is an expense and not an item allowed for repayment of loan

(iii) If AAD is allowed, the tariff in the initial period will be higher and the distribution licensee has to shell out more money.

(iv) The above views of TNEB were contrary to their earlier views discussed in para (14) (4) (f); they are also inconsistent with the terms of PPA.

(14) (4) (w) The TNEB was therefore directed to inform as to whether the clauses relating AAD in the PPA had been scrapped.

(14) (4) (x) The TNEB in their letter dated 07-01-2008 informed the following”

“In as much as Board has consciously accepted the provision of AAD in the PPA entered into with the Cuddalore Power Company, it is requested that the amendment proposed relating to AAD may be incorporated in the TNERC (Terms and conditions for determination of Tariff) Regulations, 2005.

(14) (4) (y) TNERC Tariff Regulations were therefore amended to provide for Advance against Depreciation.

(14) (4) (z) The provision relating to advance against depreciation under item 2.a (iv) and 9.16 of schedule -3 in the agreement is in conformity with the Commission’s Tariff Regulations as amended.

(14) (4) (aa) The Commission approves the provision for advance against depreciation in the agreement.

(14) (5) **Taxes:**

The following provisions shall be added to the provision in the Power Purchase Agreement

“Provided that the benefits of Tax-holiday as applicable in accordance with the provisions of the Income Tax Act 1961 shall be passed on to the beneficiaries”.

(14) (6) **Base Paid Up Capital:**

This shall be changed as **Equity capital** and the following provision shall be substituted

“The Equity shall be equivalent to 30% of the completed capital cost on the date of commencement of commercial operation. Where the actual equity employed is more than 30% the amount of equity shall be limited to 30% and balance amount shall be considered as loans advanced at weighted average rate of interest for a weighted average tenure of the long term debt component of the completed capital cost.

Provided that the actual equity employed is less than 30%, the actual loan and equity shall be considered for determination of return on equity in tariff computation.

Provided that the premium raised while issuing capital shall also be reckoned as equity provided such premium amount is actually used for meeting capital expenditure of the project subject to the debt equity ratio of 70:30

(14) (7) **Return on Equity:**

The provision conforms to the Regulations and Tariff policy and therefore may be approved.

(14) (8) **Interest on Working Capital:**

(14) (8) (a) The norms to arrive at the working capital conform to the provisions in the Tariff Regulations.

(14) (8) (b) The PESOT, Tamil Nadu Electricity Board Accounts and Executive Staff Union, Tamil Nadu Electricity Employees Congress and CITU have raised the following objections:

(i) "Receivables for two months do not convey meaning. The sole buyer and bill is regulated with incentive discount or interest. The additional interest has no justification. Further components of capacity charges are based on yearly accounts. It cannot be implied for monthly working capital"

(ii) The working capital component for "Accounts Receivables" purpose may be assessed and made liable for interest charges without any non-cash expenses like depreciation, amortization and also any return on equity and adjustment thereof.

(14) (8) (c) Tamil Nadu Electricity Board in their reply have stated that the provision of Power Purchase Agreement is in accordance with CERC and TNERC guidelines. Since, payment by TNEB upto 60 days after submission of bill does not constitute late payment; the working capital computation needs to include two months receivables.

(14) (8) (d) While the rate of interest on working capital specified in the Regulation is on normative basis and shall be equivalent to the short term primary lending rate of State Bank of India as on 1st April of the relevant year, the rate agreed to in the Power Purchase Agreement is the medium term prime lending rate of the State Bank of India (in percent) minus 2% on the 1st day of April in such year.

(14) (8) (e) The contention that the accounts receivable for the purpose of working capital component have to exclude non-cash expenses like depreciation and return on equity is untenable as these components in accounts receivable are required to meet the capital loan repayment commitment.

(14) (8) (f) As the provision for computation of working capital is as per the norms specified in the Regulations and also lesser rate on working capital has been proposed, the Commission approves the provision relating to interest on working capital.

15. Other Issues:

(15) (1) Fuel Supply Agreement:

(15) (1) (a) As per Article 6.1 (A) (o) of the agreement the Petitioner shall enter into arrangements relating to the supply of coal through competitive bids reviewed by Tamil Nadu Electricity Board and not to amend in any of the terms relating coal supply without Tamil Nadu Electricity Board's prior consent.

(15) (1) (b) As per item 9.12 of Schedule 3 of agreement, the coal supply agreement, coal transportation, coal handling agreement and hedging arrangements are **subject to approval of Tamil Nadu Electricity Board.**

(15) (1) (c) In letter dated 09.03.2007, the respondent was asked to furnish the following information:

(i) details of hedging proposed to be undertaken for Foreign Exchange Rate Variation and Fuel Escalation

(ii) the period proposed for hedging

(iii) the impact of proposed hedging and their commitment with the FERV and fuel escalation under the cap.

(15) (1) (d) The respondent in their letter dated 16.04.2007, stated the following:-

(i) At the time of finalization of the PPA,, the tariff covering PPA period have not been finalized by the petitioner company and they have not made any firm arrangements for fuel. Therefore the, landed cost of 55 US \$/ MT was considered for working out the variable cost.

(ii) During PPA negotiation the petitioner company was asked to explore the possibility of keeping cost of fuel firm for period of five years and to revise the rate thereafter at prevailing market rate. The respondent indicated that they would explore the possibilities at the time of finalization of FSA.

(iii) Hedging is normally done for a period of four to five years and this cannot cover the entire agreement period. Therefore, fuel escalation was not considered for first five years.

(15) (1) (e) Since the Commission is mandated to approve the price of electricity, Commission in letter dated 26.04.2007 informed the respondent that the fuel supply agreement, which is an essential component of price, should have the approval of Tamil Nadu Electricity Regulatory Commission. The respondent was also asked to inform the probable fuel cost (Variable cost).

(15) (1) (f) The respondent in their letter dated 16.05.2007, informed the following:

(i) The FSA was not finalized at the time of finalization of PPA.

(ii) The promoters were negotiating with prospective suppliers in Indonesia and Australia to supply coal on long term basis.

(iii) The petitioner did not produce any document in support of their negotiation with the prospective foreign coal supplier.

(iv) Based on indicative rate of coal i.e 55 \$ per MT, the variable cost was worked out as Rs.1.08 / kWh and the Levilised tariff arrived as Rs. 2.33 / kWh (with the cap of FERV).

(v) Fuel being imported coal, will be subject to exchange variation and price variation.

(vi) Variation in coal and maritime freight charges will be bench marked to a mutually acceptable reputed international index.

(vii) After the Company firms up the fuel supply agreement, approval of the Board will be obtained and submitted to Tamil Nadu Electricity Regulatory Commission for its final nod.

(15) (1) (g) In this context the Commission orders that the fuel supply agreement shall be submitted for the approval of the Commission since it forms an essential component of electricity pricing.

(15) (1) (h) The petitioner shall explore the possibility of keeping the price firm for the first five years.

(15) (2) **Cost Effectiveness of the Project:**

(15) (2) (a) The petitioner in the presentation made before the Commission claimed that the Levilised tariff of the project would be as below:

(i) At the capital cost of Rs. 6004 Crores

Fixed cost	Rs. 1.22 per unit
Variable Cost	Rs. 1.08 per unit
Total	Rs.2.30 per unit

(ii) At the maximum capital cost of Rs 6202 Crores.

Fixed Cost	Rs.1.25 per unit
Variable Cost	Rs.1.08 per unit
Total	Rs. 2.33 per unit

(15) (2) (b) The following view / objections were raised by the members of the State Advisory Committee and the public on the justifiability of project on financial grounds and the cost of power.

(i) **Thiru S. Pancharatnam, President / CITU:**

(A) Already there are five IPPs and Tamil Nadu Electricity Board is paying Rs.100 Crores as Fixed Charges per month even when no power is purchased from them. Tamil Nadu Electricity Board cannot afford to bear another IPP to pay fixed charges commitment.

(B) The coal for the project is to be imported from Indonesia and it will be costly. The cost could further increase due to middlemen. Indonesia is prone to earthquake and tsunami and hence coal supply could be affected.

(ii) **Thiru S. Rathnasabapathy, General Secretary, Tamil Nadu Electricity Workers Progressive Union:**

(A) Tamil Nadu Electricity Board is getting power from IPPs and paying them administrative charges even when Tamil Nadu Electricity Board is not getting power from them.

(B) Power Purchase Agreement now signed is better than one signed in 1994. For Tamil Nadu Electricity Board requirement of power is known factor.

(iii) **Power Engineers Society of Tamil Nadu, Tamil Nadu Electricity Board Accounts and Executive Staff Union and Tamil Nadu Electricity Employees Congress:**

(A) TNEB has no economical and commercial space to opt for further such power purchase agreement of fashion in 90's which withered away as it was shunned by all players in the power industry after serious and a series of economical debacle. Even the earlier 5 PPAs out of 7 now in force, in Tamil Nadu Electricity Board more particularly with PPN, has imprisoned Tamil Nadu Electricity Board, their expansion and sucked all its healthy revenue in the last five years. Therefore, a similar ploy to lose another costly wicket, at this Crucial juncture, where bail out is most urgently wanted, is commercially unwise and unfounded of.

(B) Tamil Nadu Electricity Board has been paying Rs.1006 Crores (per annum) just for 988 MW capacities. Adding this burden further, by Rs.1358 Crores totaling Rs.2364 Crores annually, is an expensive extravagance.

(C) The capacity a charge in proportion to capital outlay works out to 22.62% and annual capacity charges is around Rs.1358.1 Crores. At 80% PLF and 7.5% auxiliary consumption, the actual fixed charge is Rs.1.588 per unit and Rs.1.563 per unit if the auxiliary consumption is 9%.

(D) As for the variable cost, the cost proposed to by Tata power in Mundhra Ultra Mega Power Project is Rs.0.98 per unit.

(E) Thus the project is unviable and will not be beneficial to Tamil Nadu Electricity Board.

(iv) **Tmt. Swetha Narayan, Community Environmental Monitoring:**

(A) The indicative Levilised tariff of Rs.2.30 has no meaning as long as the project does not come under competitive based bidding. The document does not clarify how the above rate has been arrived at.

(B) At an expected heat rate of 2375 kcal. / kwhr, the cost of coal alone works out to Rs.1.135 per unit all through the Power Purchase Agreement period. The Levilised total variable cost works out to Rs.1.257 as against the indicated level of Rs.1.08. The landed cost per tonne of coal has been taken as Rs.2533. Is it a constant price for the entire PPA period, or will it have its own escalation clause? The absence of such consideration and clarity on such matter raises serious questions regarding the pricing scheme followed by the Company.

(15) (2) (c) **Petitioner's reply:**

(i) The petitioner furnished a detailed working sheet for computation of tariff. It has been stated that actual foreign exchange rate and fuel cost in Rupees are pass through.

(ii) Discount rate for computation of tariff has been adopted as 12%.

(iii) As regards the payment of idle capacity charges for IPPs the respondent has deposed during the public meting that the present IPPs for which fixed charges are being paid without purchase are all LSHS based generating stations carrying higher variable cost. This would not be the case with the petitioner's generating station as the fuel for the proposed station is imported coal.

(15) (2) (d) **Commission's views and conclusions:**

(i) Levilised tariff is relevant for the project to be selected under competitive tariff based bidding route and is required for comparison of financial bids and quoted escalable capacity and energy charges.

(ii) The petitioner's project comes under MOU route and the Levilised tariff rate calculated by the petitioner does not take into account any escalation.

(iii) As the project has been selected through MOU route the Commission approves various parameters required for determination of tariff with reference to the provisions in the tariff regulations.

16. Grant of Approval:

Considering the above, the Commission accords approval to the PPA subject to the following conditions:

(16) (1) **Environment Clearances:**

The petitioner shall obtain all statutory clearances and consent from the following authorities before financial closure:-

- (a) Tamil Nadu Pollution Control Board
- (b) Ministry of Environment and Forest of Government of India
- (c) Tamil Nadu State Environment Council / Committee if applicable
- (d) Airport authority of India

(16) (2) **Fuel Supply Agreement:**

- (a) The fuel supply contract should be finalised through international competitive bidding.
- (b) The fuel supply agreement shall be submitted for the approval of the Commission

(16) (3) **Gross Calorific Value of Fuel:**

In item 12 of schedule 3, the following shall be added under the description for GCV:

“The gross calorific value of coal and price of coal as indicated in the fuel supply agreement approved by the Commission shall be adopted for the purpose of tariff.”

(16) (4) **Capital Cost:**

(16) (4) (a) The Commission accords “in principle” approval of capital cost as Rs. 6004 Crores as detailed below:

Particulars	Foreign Component (in Million)			Indian Component (Rs.in Crores)	Total (Rs.in Crores)
	Euro	US \$	Equivalent Rs.		
Land & Site development				35.00	35.00
Plant & Equipment					
- Steam Gen. Island	64.50	169.10	1143.50	288.00	1431.50
- Turbine Gen. Island	160.0	0.0	928.0	0.0	928.0
- Total BOP Mechanical				442.72	442.72
- Total BOP Electrical				225.88	225.88
- C & I Package				100.00	100.00
- Taxes & Duties				220.93	220.93
Total Plant & Equipment	224.50	169.10	2071.50	1277.53	3349.03
Initial Spares	5.50	4.21	51.06	26.00	77.06
Civil Works				976.57	976.57
Coal Jetty				331.75	331.75
Cons.& Pre commissioning Exp				254.96	254.96
Overheads				75.00	75.00
Capital cost excluding IDC & FC	230.00	173.31	2122.56	2976.81	5099.37
Interest during Constructions				882.63	882.63
Financing Charges				22.00	22.00
Capital cost including IDC & FC	230.00	173.31	2122.56	3881.44	6004.00

(16) (4) (b) The completed capital cost shall not exceed Rs.6202/- Crores including all variations in foreign exchange and exclusive of tax and duties paid as per changes in law.

(16) (4) (c) The petitioner shall furnish further breakup (component wise) details for the customs duty of Rs.103.57 Crores and other taxes and duties of Rs.117.36 Crores included in the Capital cost of Rs. 6004 Crores along with the petition for approval of final completion cost.

(16) (4) (d) The petitioner shall achieve financial closure within 12 months from the date of approval of PPA by the Commission.

(16) (4) (e) The financial packages to meet the capital cost shall be submitted to the Commission immediately after financial closure.

(16) (5) **Heat Rate:**

(16) (5) (a) The Article 1.62 of the agreement is amended as

“Heat rate means heat energy input to the project in terms of gross calorific value, to deliver one kWh energy output at generator terminal.”

(16) (5) (b) As the Station Heat Rate depends on steam parameters, equipment design, coal quality and ambient conditions, it cannot now be precisely determined and mentioned in the agreement.

(c) The petitioner shall ensure that the super critical parameters are not less than the following minimum steam parameters at steam turbine inlet

-Main steam pressure	247 kg/cm ²
- Main steam temperature	535 deg C
- reheat steam temperature	565deg C

(16) (5) (d) The petitioner shall file a petition for approval of heat rate with all the technical pressure and temperature parameters along with the petition for approval for actual capital cost.

(16) (5) (e) The petitioner shall furnish the boiler efficiency guaranteed by the boiler supplier and the turbine cycle heat rate guaranteed by the TG supplier along with the petition for approval of Gross Station Heat rate.

(16) (6) **Interest rate:**

(16) (6) (a) The last sentence in clause under item 2(a)(i) of schedule 3, of agreement which reads as, “The loan capital should bear the fixed interest for the entire loan tenure and the fixed interest rate shall not exceed 10.5% per annum” shall be substituted with the following sentence,”

“The interest on loan capital shall not exceed 10.5% per annum”.

The following clauses may also be added:

“The company shall put in every effort to refinance the loan as long as it results in net benefit to the beneficiaries. The company shall not make any profit on account of refinancing of loan and interest on loan”.

(16) (6) (b) Swapping of Foreign debt and equity shall be permitted, provided the benefit accruing from such swapping is passed on to consumers / beneficiaries in the year following the year of such swapping. The generating company and licensee (TNEB) shall not make any profit on account of swapping of loan and interest on loan.

(16) (6) (c) In case any moratorium period is availed of by the generating company depreciation provided for in tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.

(16) (7) **Project Testing Specification:**

The following shall be added as item (7) under para 8.2 (3) in schedule 8 of the agreement:

“7. As part of the Performance Test, the units shall be tested for compliance with parameters of super critical technology.”

(16) (8) **Operation and Maintenance and Insurance Expenses:**

(16) (8) (a) The O&M expenses and Insurance shall be 2% inclusive of contingency reserve with 4% escalation.

(16) (8) (b) The petitioner is directed to come before the Commission for fixing the normative O&M expenses with actual for five years commencing from the financial year subsequent to the date of commencement of operation.

(16) (9) **Depreciation:**

The definition for depreciation in the schedule No.3 shall be amended as given below.

“The depreciation shall mean the annual allowance for depreciation calculated at the rates given in depreciation schedule in the annexure to the Tamil Nadu Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2005 and in Forms Nos.11 and 12 prescribed in Appendix 1 of the said Regulations.

Provided that the allowance shall be zero from and after the date on which the aggregate of all payment for depreciation over life of this agreement under the schedule 3 to this agreement equals 90% of the capital cost.

Provided further that for calculation of depreciation for tariff purposes, the capital cost shall exclude cost of land.”

(16) (10) **Advance Against Depreciation:**

The provision is in conformity with Tariff Regulations and hence approved.

(16) (11) **Tax:**

The following proviso shall be added under item 27 in schedule 3 of the agreement:

“Provided that the benefits of tax holidays as applicable in accordance with the provisions of the Income Tax Act 1961 (Act 43 of 1961) shall be passed on to the beneficiaries.”

(16) (12) **Financing Plan:**

The entire project cost shall be financed in the Debt Equity ratio of 70:30. The petitioner shall file copies of financing documents soon on achieving financial closure for approval.

(16) (13) **Other Amendments:**

(16) (13) (a) The first line in article 1.19 (page 5 of the agreement) shall be read as:

“Changes in Law” means the occurrence of any of the following events after the date of this agreement.

(16) (13) (b) In Para 3 in page 2 of the agreement the date of memorandum of Understanding (MOU) signed between Tamil Nadu Electricity Board and International contracting and Marketing Corporation shall be changed as 5th December 1992.

(16) (13) (c) The last para of the agreement in page 2 shall be amended as below:

NOW THEREFORE in view of the foregoing premise and in consideration of the mutual covenants and agreements hereinafter set forth, TNEB and the company **together with their respective successors and assignees** (each individually a “party” hereto and collectively the “parties”) hereby agree as follows.

(16) (13) (d) The article 1.10 of agreement may be amended as below

“**Availability Based Tariff**” or “**ABT**” shall mean all the regulations contained in the Central Electricity Regulatory Commission (terms and conditions of tariff) Regulations, 2004 and Intra-State ABT Regulations to be notified by the Tamil Nadu Electricity

Regulatory Commission, as amended or revised from time to time, to the extent applied as per the terms of the Agreement.

(16) (13) (e) Article 3.5 (d) (page 28 of the agreement) shall be deleted

(16) (13) (f) Article 5.3(a) (page 36 of the agreement) shall be amended as below”

“The reorganization of TNEB as per part XIII of the Electricity Act, 2003 or transfer of either (i) the rights or obligations of TNEB hereunder or (ii) all or a substantial portion of the assets of TNEB, except where the transferee is able to perform TNEB’s obligations;”

(16) (13) (g) The provision relating to “Mis-declaration Penalty Factor” article 6.1(j) (page 44 of the agreement) may be substituted with the following:

“Following the Commercial Operation Date, require to demonstrate the declared capability of its generating stations to Tamil Nadu Electricity Board / State Load Despatch Centre. In the event of failing to demonstrate the declared capability, the capacity charges due to the company shall be reduced as a measure of penalty. The quantum of penalty for the first mis-declaration for any duration / block in a day shall be the charges corresponding to two days fixed charges. For the second mis-declaration the penalty shall be equivalent to fixed charges for four days and for subsequent mis-declarations, the penalty shall be multiplied in geometrical progression.”

(16) (13) (h) The following shall be added as first sentence to article 7.1 (a) (page 51) of the agreement

“The company shall follow the procedure of scheduling as per the provisions in Tamil Nadu Electricity Grid Code”

(16) (13) (i) Article 18.2. (i) (Page 88 of the agreement) shall be amended as below:

TNEB, being a deemed licensee under the Electricity Act, 2003 and the Regulations framed there under, has all requisite legal power and authority to execute this agreement to carryout the terms, conditions and provisions hereof;

(16) (13) (j) (Base Paid Up Capital) mentioned as Item No.9.8 under schedule 3 (page 104 of the agreement) shall be changed as Equity Capital and shall be substituted with the following:

Equity Capital - “The Equity shall be equivalent to 30% of the completed capital cost on the date of commencement of commercial operation. Where the actual equity employed is more than 30% the amount of equity shall be limited to 30% and balance amount shall be

considered as loans advanced at weighted average rate of interest for a weighted average tenure of the long term debt component of the completed capital cost.

Provided that the actual equity employed is less than 30%, the actual loan and equity shall be considered for determination of return on equity in tariff computation.

Provided that the premium raised while issuing capital shall also be reckoned as equity provided such premium amount is actually used for meeting capital expenditure of the project subject to the debt equity ratio of 70:30.

(By Order of the Tamil Nadu Electricity Regulatory Commission)

**(R.Balasubramanian)
Secretary**