

**GUJARAT ELECTRICITY REGULATORY COMMISSION  
AHMEDABAD**

**In the matter of:**

**Approval' of Power Purchase Agreements between Ahmedabad Electricity Co. Ltd and Torrent Power Generation Ltd & Surat Electricity Co. Ltd and Torrent Power Generation Ltd.**

**Petitioners: Ahmedabad Electricity Co. Ltd Petition No. 813/2004  
(now named as Torrent Power AEC Ltd)**

**Surat Electricity Co. Ltd. Petition No. 814/2004  
(now named as Torrent Power SEC Ltd)**

**Represented by :**

1. Shri Murali Rangnathan, CEO, TP AL
2. Shri S.K. Dugal, CEO, TPSL
3. Shri Markand Bhatt, MD, TPGL
5. Shri Sudhir Shah, ED, TPGL
4. Shri Ahsok Modi, ED,TPAL

**CORAM: Shri G. Subba Rao, Chairman  
Shri K.P. Gupta, Member  
Shri Man Mohan, Member**

**ORDER  
23/12/2005**

**Background**

1. The Ahmedabad Electricity Company Limited (now renamed as Torrent Power AEC Limited) (hereinafter referred to as TPAL) has



filed a petition (813/2004) seeking approval of the Power Purchase Agreement (hereinafter referred to as PPA) that it entered into with Torrent Power Generation Limited ( hereinafter referred to as TPGL). Similarly, the Surat Electricity Company Limited ( now renamed as Torrent Power SEC Limited) (hereinafter referred to as TPSL) has filed a petition (814/2004) seeking approval of its PPA with TPGL.

### **TPAL**

2. TPAL is a registered company under the Companies Act, which started its operations as licensee in 1911. The area of license includes cities of Ahmedabad (293 sq.kms) and Gandhinagar (63 sq.kms) , totaling to an area of 356 sq. kms. It is an integrated company having generating capacity of 500 MW and for its balance power needs, it relies on Gujarat Urja Vikas Nigam Limited (hereinafter GUVNL).

### **TPSL**

3. TPSL was incorporated and registered at Bombay on 22/6/1920 under the Indian Companies Act 1913. It got the license assigned to it, under the Indian Electricity Act 1910, from Killick Nixon & Co and Calender Cable & Construction Company Limited. Later on, Government of Gujarat, in exercise of powers conferred under section 28 of the Indian Electricity Act 1910 gave sanction to the company which thereby became a sanction holder. The period of sanction was extended subsequently. The last such extended term is for thirty years i.e. up to 11/4/2028. Under section 14 of the Electricity Act, 2003, this company is deemed a licensee. TPSL is



distributing electricity in 52 sq. km. area in the city of Surat ( Surat Municipal Area is 112 sq.k.m ).

### **TPGL**

4. TPGL has been promoted by TPAL, TPSL and Torrent Pvt Ltd as a special purpose vehicle for implementing the generation project. Thus TPGL belongs to Torrent Group of companies. It has been registered under the Companies Act, 1956. TPAL and TPSL entered into PPAs with TPGL on 8/5/2004.

### **Clubbing of the petitions**

5. The Commission is empowered to examine and approve the PP As under section 86(1)(b) of the Electricity Act, 2003. It is observed that both the PP As are identical except for the generation capacity contracted for offtake (from TPGL), which is 25% for TPAL and 50% for TPSL. The Commission therefore decided to club both the petitions Nos 813/2004 and 814/2004 and dispose them of by a common order.

### **Facts mentioned in the petition**

#### **TPAL**

6. In its petition, TPAL/TPGL has given various details regarding the project such as : its location; expected benefits; approval received from Government of Gujarat for setting up the project; Mega Power Project status received from MOP; NOC from Gujarat Pollution Control Board, other statutory clearances received; ICB procedure followed for awarding EPC contract; technical features of the proposed power station; infrastructure already created; power



evacuation arrangements; fuel supply modalities envisaged; financing plan including likely capital cost and expected generation tariff level, etc.

7. Para. 5.05 of the petition contains details covering TPAL's own generation, import from GEB and power demand within the license area for the period from 1999-00 to 2003-04 as in the following table:-

Year	Total Demand (MU)	Generation (MU)	Import (MU)	Demand (MW)
1999-00	3703	3393	310	621.9
2000-01	3798	3361	437	668.2
2001-02	3761	3134	627	657.7
2002-03	3929	3169	760	693.5
2003-04	4092	2952	1140	708.8

The petitioner argues further that considering the expected growth trends for power demand in the license area, it is essential to tie up power requirement from a reliable, stable, long term and economical source of supply. TPAL also mentions about alternative options for sourcing of power and their economy in para 5.08 of the petition. TPAL considers that PPA with TPGL would be the most beneficial for both TPAL and its consumers in terms of long term supply of qualitative and uninterrupted power at a competitive price. As the PPA is for a period of 20 years, it will ensure reliable, long term power supply. TPAL's PPA with TPGL for 25% of TPGL's total



project capacity, in addition to its own generation, would be adequate to meet the power requirements of its license area.

8. In para 5.14, the petitioner mentions, that the tariff based on various principles mentioned in para 5.13 and considering the regulations of CERC, comes to Rs. 2.18 per kWh in the first year of operations. The levelised tariff over the period of PPA comes to Rs. 2.38 per kWh., The estimated final cost of power at petitioner's receiving station ranges between Rs. 2.43 to Rs. 2.63 per kWh which they consider, is quite reasonable in comparison to the current purchase price of Rs. 3.35 per kWh.

#### **TPSL**

9. In its petition No. 814/2004, TPSL submitted details about the generation project as in TPAL's above mentioned petition. It also covers in similar terms the power scenario at the national, (western) regional and (Gujarat) state level.

In para 1.02, it has submitted that its sanction was extended by the State Government for a further period of 30 years (upto 2028) with a condition that it should set up its own generation capacity within a period of three years. Instead of setting up its own generation unit, the company has opted for joining as a promoter in this special purpose vehicle as one of the founder equity holders. After considering the various options of fuel, the project promoters, opted for LNG/natural gas for the reasons as stated in para 4.05 of the



petition. The demand and energy growth in TPSL license area over the last five years, as stated in the petition are as under:-

Year	Total Energy (MU)	Demand (MW)
1999-00	2073	344
2000-01	2044	362
2001-02	2069	377
2002-03	2559	440
2003-04	2624	464*

(\* This is the correct figure although through a typographical error 496 MW is shown in the petition)

10. TPSL has forecast that the system demand will increase from 464 MW in 2003-04 to 670 MW in 2009-10. The petitioner mentions that the tariff based on the principles mentioned in para 5.13 works out to Rs. 2.18 per kWh in the first year of operation. Levelized tariff over the period of PPA as submitted by TPSL is Rs. 2.38 per kWh. The petitioner submits that this tariff will be quite favourable in comparison with the current purchase price from GUVNL of Rs. 2.70 per kWh. The petitioner further mentions that GUVNL has filed a petition before the Commission for upward revision in tariff and that if the Commission approves the revision in GUVNL tariff, then the purchase price of TPSL would be even higher.



**Examination process of PPAs**

11. The Commission had appointed the Central Electricity Authority as its consultant for getting advice on these PPAs. The Commission thought it fit to appoint CEA as its consultant considering its long standing as a national governmental institution and its experience and expertise in addressing critical issues in the electricity sector. The CEA has wide and varied experience and carried out many technical, economical and financial feasibility reports/analyses of various projects.
12. After appointing CEA as a consultant, the Commission gave copies of the petitions, PPAs and other relevant documents/ data to CEA. After examining the PPAs and other materials the consultant had raised certain queries and issues. The issues/queries were communicated to the petitioners and TPGL. The Consultant also held discussions with Commission and the concerned officers of TP AL, TPSL and TPGL. The petitioners and TPGL have replied to the various queries and also submitted a draft Supplementary Agreement substantially complying with the various issues raised by the Consultant.
13. The Commission has also made on its own a detailed analysis of the PPAs. As will be indicated hereinafter, the draft Supplementary Agreement also incorporate the other points made by the Commission. The CEA has given its report vide their letter dated 2/12/2005. The Commission fully considered the report of the CEA while issuing this order.



## **Hearings & invitation of objections and suggestions**

### **Hearing**

14. The petitions were heard on 15/10/05, 25/10/05 and 22/11/05. In the first hearing, Commission asked for information on EPC contract, project appraisal by the financial institutions, demand forecasts and evacuation arrangements etc. The petitioners and TPGL submitted the information/documents. As mentioned earlier, the petitioners also submitted the draft supplementary agreements in substantial compliance of the various points/issues communicated to them based on the comments of CEA and Commission's analysis of the PPA. During the hearing on 25/10/05, the Commission examined the draft supplementary agreement through detailed discussions with the petitioners and TPGL. Most of the comments and suggestions of the Commission were incorporated by the petitioners in the draft supplementary agreements.. On a few issues, detailed explanations were submitted by the parties and were found to be broadly acceptable. The Commission as mentioned later, decided to include a few more points (which it considered necessary) as stipulations in the order.

### **Invitation of objections/suggestions.**

15. With a view to invite suggestions and objections from the public, the Commission, in its oral order dated 22/11/05 directed that the petitions, PPAs, Supplementary Agreements and salient features of the project should be uploaded on the website of the petitioners and the TPGL. It also ordered the parties to give public notice to that



effect for general information in the daily newspapers. The Commission also uploaded the above mentioned documents on its website. All the documents were kept on the website for more than 21 clear days from 25/11/05 to 19/12/05. The petitioners complied with the Commission's directions by publication of public notice in two Gujarati dailies and one English newspaper. During this period, the Commission's staff visited the website daily at regular intervals and made sure that the said documents were available on the websites.

16. These petitions were finally heard on 23/12/05 i.e. after the period prescribed for inviting suggestions/objections from the stake holders was over. The petitioners/TPGL stated before the Commission that they had not received any objections /suggestions. The Commission did not also receive any objections/suggestions. However, the Commission in its examination of the PPA kept the consumers' perspective in view. During this hearing, the petitioners and TPGL gave an update on the status of the project and the related activities.

#### **Examination of the PPA clauses and modifications**

17. As mentioned above, the Commission appointed CEA as its consultant for examining the PPA. Further the Commission also examined the various articles of the PPAs. This examination was based on (besides the comments made by CEA) CERC terms and conditions for tariff determination; relevant provisions of the model PPA document brought out earlier, in Ministry of Finance, Department of Economic Affairs notification dated 28/8/1996; and



the need to make the PPAs conform to the ABT system in the power sector. The Commission also kept in view the existing PPAs in the State. The Commission also considered the PPA between PTC and TPGL.

18. While examining the present PPAs clause by clause a number of queries / issues were raised. The petitioners and TPGL were asked to clarify such issues/queries and/or suitably change the relevant clauses of the PPAs. The petitioners and TPGL have sent their replies with necessary details. Most of the queries and clarifications raised by the Commission have been complied through necessary changes in the draft Supplementary Agreements submitted by the petitioners. The draft supplementary agreements have been examined at length in the hearing on 25/10/2005. Further necessary changes have been made in the draft Supplementary Agreements and these are now called Supplementary Agreements. The original PPAs are at Annexure-I to this order. The Supplementary Agreements are at Annexure-II to this order. The original PPAs, alongwith the Supplementary Agreements form the approved PPAs. To avoid prolixity, no enumeration of the individual changes in clauses of the PPAs has been separately made in the main body of this order.
19. The Commission noted that the following further modifications would also be necessary in the PPAs. Accordingly the PPAs/Supplementary Agreements would stand further modified to that extent.



- (a) New item No. (29-A) shall be added in the Supplementary Agreements as follows:

"(29-A) In the Clause 5.5 figures of Liquidated -Damages Rs. '6000/MWIDay should be replaced by Rs. 4000/MW/Day')

- (b) In item No.9 of the Supplementary Agreements, the words 'to be' inserted before the word 'delivered'.

- (c) Item No. (4 ) of the supplementary agreement shall be replaced as under:-

**"(4) The definition of "Rated Capacity or Installed Capacity" shall be replaced by the following definition:**

**Installed Capacity' or 'IC' means the summation of the name plate capacities of all the units of the generating station or the capacity of the generating station (reckoned at the generator terminals) as approved by the (the Ccntral Electricity Regulatory Commission) Commission from time to time;"**

- (d) Item No. (23) of the Supplementary Agreements shall be replaced as under :  
(23) in clause no. 4.1 last two lines shall be replaced as 'No capacity charges shall be payable for the period during \which any Gnerating unil is under !\aintenance Schedule or Forccd Outage'.
- (c) Item No. (24 A) shall be inserted in the Supplementary Agreement as under:



**“(24-A) In clause 4.2 (I) (c)(ii) the words i.e. 'Fuel stock for ½ month;' shall be deleted.**

- (f) Item No. (28) of the supplementary agreement shall be replaced as follows

“(28) The Clause 4.4 shall be replaced by -

Incentive -Incentives shall be payable to TPGL,- at a flat rate of 25 paise /kWh by the buyer whose schedules ex-bus energy in excess of its share. And the excess energy is actually delivered by TPGL out of excess ex-bus generation over and above the target plant load factor of 80%) of the installed capacity and not by diverting the share of the other beneficiary.

- (g) Item No. (29) of the supplementary agreement shall be replaced as below

**“(29) The following clause shall be replaced in place of Clause 4.8 "Unscheduled Interchange Charges".**

**4.8 Unscheduled Interchange Charges (UI Charges)**

**For any deviation in generation/drawl of active energy from their respective schedule, TPGL and the Buyer, as the case may be, shall pay VI charges to RLDC/SLDC, according to the provisions and frequency linked rates notified by the CERC from time to time as mentioned in the CERC /SERC Regulations."**



## **Demand forecast**

### **TPAL**

20. As mentioned in para 5.06 of the petition, the total peak demand was 708.8 MW in 2003-04. Based on the growth trends, the petitioner estimates that the system peak demand will increase from 708 MW in 2003-04 to 910 MW in 2009-10. According to the elaborate Information Memorandum (August 2005) on the project prepared by the IDFC (Appraisal Report hereinafter), the energy requirement of TPAL would increase from 4096 MUs in 2006 to 5992 MUs in 2015. The projected peak demand in MW would be 742 MW in 2006 and 1086 MW in 2015. The projected peak demand, according to the petition will be 910 MW in 2009-10. But the appraisal report places it at 875 MW. 16thEPS of the CEA provides estimates for the years from 1999 -00 to 2004-05. While Wf;have considered the actual data for those years for the forecasting.

### **TPSL**

21. As stated in para 5.06 of the petition, the peak demand for the year 2003-04 is 464 MW and the forecast peak demand will increase to 610 MW in 2009-10. The Appraisal Report places the demand at 558 MW for 2006 and at 1129 MW in 2015. The Cumulative Annual Growth Rate for the 10 year period (2006-2015) has been taken as 8.1 % considering the rapid growth of demand for power in Surat (energy and demand growth) and considering its status as a rapidly growing industrial hub in Gujarat and in India.



22. The overall energy projections and peak demand projections for TPAL and TPSL in their respective license areas, as indicated in the Appraisal Report, are as under:-

Category For year Ended March 31	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	CAGR 10-yr (%)
Energy Requirement											
-SEC	3081	3329	3599	3890	4206	4549	4920	5323	5759	6232	8.1%
-AEC	4096	4266	4444	4632	4830	5039	5258	5490	5734	5992	4.3%
<b>Sub Total</b>	<b>7177</b>	<b>7595</b>	<b>8043</b>	<b>8522</b>	<b>9036</b>	<b>9588</b>	<b>10179</b>	<b>10813</b>	<b>11493</b>	<b>12224</b>	<b>6.1%</b>
Peak Demand											
-SEC	558	603	652	705	762	824	892	964	1044	1129	8.1%
-AEC	742	773	805	839	875	913	953	995	1039	1086	4.3%
<b>Sub Total</b>	<b>1300</b>	<b>1376</b>	<b>1457</b>	<b>1544</b>	<b>1637</b>	<b>1737</b>	<b>1844</b>	<b>1959</b>	<b>2083</b>	<b>2215</b>	<b>6.1%</b>

The Commission noted that the Appraisal Report has calculated the consumer categorywise compounded annual growth rate (CAGR) both for the TPAL license area and the TPSL license area. The CAGR has been calculated over a 12 year period from 1993 to 2005 and for a 4 year period 2001-05. The individual consumer categorywise CAGRs have been averaged to arrive at the CAGR' for projected gross energy requirement. Further the Appraisal Report (to be on the conservative side) has adopted the lower of the two CAGRs. It is also noted that 16thEPS of the CEA provides estimates for the years from 1999-00 to 2004-05( which are found to be lower than the actual achievements). The Commission of the view that the projections of



energy requirement (and also of peak demand requirement) made on this basis in the Appraisal Report are reasonable and can be relied upon.

23. The Commission also examined the off peak demand of TPAL/TPSL. Initially for 1-2 years there may be some surplus power considering the allocated capacity to TPSL/TPAL. Even if some small excesses arise initially, adequate mechanisms exist in the PP As for their sale in the open market. However, the total energy and peak demand requirement of Gujarat significantly exceed the availabilities. The energy and demand shortages are even higher in (western) regional and national levels. Further the current high levels of economic growth will add significantly to demand pressure. Hence the Commission does not foresee any difficulty in the absorption of the contracted capacities by the licensees.

#### **Approvals and Clearance**

24. The Commission broadly looked at the various approvals and statutory clearances required for the project. The following are among the important approvals given by the concerned authorities:-

- (i) Land: Entire land for the project aggregating 139.55 hectares has been acquired and possession taken.
- (ii) Pollution (Control) Clearance: The project received clearance from pollution control angle from the Gujarat Pollution Control Board, Gandhinagar (GPCB), on 6th May, 2004 (water and air)



- (iii) No-objection certificate for setting up the facility: GPCB issued NOC on 9th January, 2004 to the company for setting up the facility.
- (iv) Environment clearance: Ministry of Environment and Forest has given environment clearance on 12th July, 2004.
- (v) Water drawal : The State Government has granted approval to draw 15 MGD of water from the Tapi river.
- (vi) Civil aviation clearance: Airport Authority of India has given civil aviation clearance on 17th March, 2004 for the height of chimney.
- (vii) Mega Project status: Ministry of Power, Government of India has granted Mega Project status to TPGL on 1st September, 2005.
- (viii) The State Government gave an in-principle approval to the then proposed 675 MW project vide letter No. IPP-099-320-PP Cell ( E&PC Department) dated 4th June, 2002 (in compliance of one of the license conditions). The State Government has also given its approval vide letter No IPP-2003-278-PPcell dated 19th Nov, 2003 for setting up of this gas based power project.

The petitioners and TPGL should obtain other necessary approvals and statutory clearances, as maybe needed, for the various activities connected with the project such as transmission system needed for evacuating the maximum possible generation from the TPGL project.



**International Competitive Bidding (ICB)**

25. TPGL appointed Tata consultancy Engineers Ltd (TCE), Development Consultant Pvt. Ltd. and CRISIL as their consultants for preparing international competitive bidding documents and appraisal of such bidding. It gave a public advertisement on 6<sup>th</sup> October, 2003 for inviting international competitive bids. The bids were opened on March 1, 2004. There were two final bidders namely *Mis.* Alstom (Sweden) and *Mis.* Siemens AG (Germany). MD, TPGL stated during the hearing that they had followed the world Bank guidelines for ICB process. After evaluation of the bids from technical and commercial view points, *Mis.* Siemens AG was awarded the EPC contract and Notice to Proceed was issued.

**EPC contract**

26. TPGL signed the EPC contract - Principles and Basis with Siemens AG on May 11, 2005 and complete EPC contract was executed on June 17, 2005. The agreements, according to the Appraisal Report, is in the nature of turnkey, fixed-price and date certain EPC contract. The appraisal report by the financial institutions states that Siemens AG Germany has been identified as consortium leader and shall be collectively responsible for timely, satisfactory completion of performance and obligations under the contract. The effective date of EPC contract is 17/6/2005. The period for execution of contract in phased manner is 32 months, which includes block no.1 - 26



months, block no.2 -30 months and block no. 3 -32 months from the notice to proceed. According to present status, block no. 1 would be commissioned in August 2007, block no. 2 in December 2007 and block no. 3 in February 2008. The lenders engineer has noted, according to Appraisal Report, that the terms of the EPC contract may be considered to be satisfactory. TPGL has submitted soft copy of EPC contract which also provides technical feature of the plant and that will be co-related with PPAs.

### **Capital cost**

27. As the project is given Mega Power Project status by the Government of India, the approval of the project cost falls within the purview of Central Electricity Regulatory Commission (CERC). As such, the final figure of the capital cost would be in accordance with CERC's approval. .
28. The project cost according to the Appraisal Report is Rs. 3096 crores. At the installed capacity of the project which according to the technical specifications in the EPC is 1128 MW, its per MW cost works out to Rs. 2.74 crores. If the installed capacity is taken as 1100 MW as shown in the Mega Power Project status notification, the capital cost per MW comes to Rs. 2.81 crores. The project cost has been reviewed by the lenders engineer. According to him, as mentioned in the Appraisal Report, the project cost of Rs. 3096 crore may be considered to be competitive and comparable to that of other similar projects.



As the project cost falls within the purview of the Central Electricity Regulatory Commission, it will have to be based on their determination.

### **Financial Arrangements**

29. The project cost as stated earlier comes to Rs. 3096 crores. The debt equity ratio of the project is 70:30. TPGL has already finalized debt arrangements with financial institutions and financial closure was achieved in September, 2004. The lenders Consortium have evaluated the technical and financial viability of the project. Infrastructure Development Finance Corporation (IDFC) is the consortium leader of the lending financial institutions. IDFC, Industrial Development Bank of India (IDBI), Power Finance Corporation Limited (PFC), Punjab National Bank, UCO Bank and Canara Bank are the members of the consortium. The total debt sanctioned by financial institutions is Rs. 2167 crores with individual shares being: Rs. 400 crores of IDFC, Rs. 300 crores of IDBI, Rs. 600 crores of PFC, Rs. 267 crores of PNB, Rs. 300 crores of UCO bank and Rs. 300 crores of Canara Bank.
30. The equity requirement is Rs. 929 crores. This equity will be raised by the Torrent group companies for an amount of Rs. 836 crores and Rs. 93 crores will be subordinate debt from the Siemens Ltd. The Torrent group or companies have already contributed more than 50% of the total equity amounting to Rs. 420.15 crores. The Siemens Limited has also contributed more than 50% of the subordinate debt.



### Fuel Supply Arrangements (FSA)

31. The Appraisal Report contains a detailed analysis of the outlook for fuel supplies to the project, including the likely price range. TPGL project is based on LNG/ natural gas as fuel. The fuel requirements at 80% PLF and full capacity build up are given below:-

	(All figures in Tbtu on NHV basis)		
	August 2007	December 2007	February 2008
Cumulative Capacity (MW)	368.7	737.4	1106.1
Month of commissioning	August 2007	December 2007	February 2008
Fuel requirement at 80% PLF	17.71	35.42	53.14
Fuel requirement at full capacity	22.13	44.26	66.39

32. The gas requirement is likely to be marginally higher for the full capacity considering 1128 MW as the installed capacity. TPGL has entered into Heads of Agreement (HoA) with Indian Oil Corporation on 15/7/2005 for the medium term/long term gas requirement. It also submitted a Memorandum of Understanding with Gujarat State Petroleum Corporation Limited (GSPC) for its short term requirement. During the last hearing, Managing Director, TPGL made a statement before the Commission that they are also in dialogue with Oil and Natural Gas Commission (ONGC) for procurement of gas.

### HoA for gas supply



33. The agreement refers to an annual contracted quantity of 62 trillion BTU at gross calorific value. This gas quantity seems to be sufficient for generating power at a PLF: of 90% at a heat rate of 1750 Kcal/kWh. The supply would start from 1/1/2009 and the full quantity would be made available by 1/1/2010. The term of the agreement is for 15 years from 1/1/2009. TPGL will have to make some short term arrangements for supply of gas beginning from commissioning of its first block i.e. August 2007. IOC will supply gas from Petronet LNG where it has its own offtake share. The gas prices have not been firmed up in the HoA. The currently quoted gas price is around US\$ 3.6 to 3.7 per MMBTU excluding royalty/ transportation/sales tax etc. The petitioners have stated that the gas price in 2008 may be in the range of US\$ 4.6 to \$5 per MMBTU excluding royalty /transportation/sales tax etc.
34. The variable tariff and the total tariff at gas price of US \$ 4.5 tu US \$ 6.00 per MMBTU as stated in the Appraisal Report are given:

Delivered price or gas (USD/mmbtu)	Variable tariff * (Rs/unit )	Total tariff** (Rs/ unit)
4.5	1.59	2.43
5.0	1.77	2.61
5.5	1.95	2.79
6.0	2.13	2.97

\* At 1 USD=46.86 Indian Rupees, gross heat rate of 1850 kCal/kWh, auxiliary consumption of 3% (as per CERC norms)

\*\* Including fixed tariff of Rs'.0.84 per un it.



The Appraisal Report mentions that even at these levels the project will be an economical source of supply for offtakers.

35. The Commission notes that IOC is a public sector undertaking . of Government of India and it has stated in the HoA that contract price shall be less than or equal to the prices offered / contracted with any other customer in the western region. It is also stated that should LNG or natural gas supplies become available to IOC from Iran, and should that price be lower, that will become applicable.
36. The HoA has a take or pay clause and it is in PPAs as well. However the Commission has noted that the proposed clause has inbuilt provisions for carrying forward of the unused quantity, which reduce the risks of the offtakers and ultimately of the consumers.

#### **MoU with GSPC**

37. The MOU with GSPC is for the requirement of gas from August 2007 , when the first block will be commissioned.( As mentioned earlier, supplies from C will commence from 1-1-2009 However the term of the FSA as mentioned in the MOU is upto Decmber 31, 2012 with a provision of extension for 10 years. The MOU provides that the further gas price would be decided in line with and comparable to the market determined gas price being charged by GSPC in Gujarat to similarly placed gas consumers. The arrangements with GSPC would

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ensure availability of gas from August 2007 for block I and for blocks 2&3 till IOC gas is made available.

## ONGC

38. The Managing Director, TPGL has mentioned during the hearings that they are also in dialogue with ONGC authorities for procurement of gas. The discussions have reached an advanced stage and they hope to finalize an agreement within the next two months or so. This would also help them in tying up of any loose ends in procurement of gas for the project.
39. The Commission further notes the following observations contained in the Appraisal Report.

*"Thus, between IOC and GSPC, TPGL has been able to secure gas on affirm basis fr'om August 2007 upto 1-7-2009 for Block 1 and for the cntire capacity of 1106.1 MW @ PLFs in excess of 80% thereafter. Both GSPC and IOC have on a best endeavourbasis, agreed to supply gas for the entire capacity in line with project commissioning during the intial period upto 1-7-2009".*

## Gas Transportation

40. TPGL is making gas transportation arrangements with GAIL and GSPC. As facilities like GAIL/ GSPC gas pipelines and LNG



terminals are available in close vicinity of the project site, no difficulties are envisaged in transportation of gas.

### **Tariff**

#### **Fixed tariff**

41. The petitioners have stated that the fixed tariff, based on the Project Cost, comes to Rs. 0.83 per KWH. The Appraisal Report also mentions similar figure for fixed cost per unit. In TPGL's PPA with PTC, fixed cost has been capped at Rs. 0.83 per KWh. As stated earlier, the approval of the capital cost of the project is within the jurisdiction of CERC and as such the final capital cost for determining tariff would be based on CERC's approval.

#### **Variable tariff**

42. Variable tariff will depend upon the price arrived at in the fuel supply agreement. Variable component of tariff also falls within CERC's ambit. As discussed in the earlier paras with regard to fuel supply arrangements, the fuel price is still to be decided. The Commission generally looked at the likely variable tariff at various levels of fuel prices as mentioned in para 34.

#### **Evacuation of Power**

43. According to Article 7 (seven) of the PPA the buyer has to make necessary agreements for evacuation of power from the bus-bar of



TPGL. Therefore, TPAL & TPSL have to make the arrangements for evacuation of power in a time schedule which matches with the EPC Contract and expected times of commissioning. This issue was raised by the Commission during the earlier hearings and buyers were directed to explore all possibilities and come out with a final arrangement for evacuation of power. Shri Murli Ranganathan, CEO, TPAL and Shri S.K. Duggal, CEO, TPSL stated before the Commission in the last hearing on 23rd December 2005 that they had applied for long term Open Access to the Power Grid Corporation of India (PGCIL) for evacuation of power from TPGL. However, as advised by the PGCIL., TPGL as a Generating Company submitted the open access application to the PGCIL in April 2004. Subsequently, PGCIL informed that their existing 400 KV infrastructure does not have adequate capacity for evacuating the TPGL power. Therefore, TPGL requested PGCIL to carry out the system study and accordingly PGCIL submitted the arrangement for evacuation of power. They had a meeting on 25/8/05 with the Secretary, Ministry of Power, Government of India, in the presence of representatives of the Central Electricity Authority (CEA) and PGCIL. They indicated that following power evacuation arrangements will be made for TPAL and TPSL.

**For TPAL**

- 44: PGCIL will allow Loop-in-Loop-Out (LILO) of its 400 kV single circuit Jhanor-Padghe line. TPAL and TPSL propose to form a Joint



Venture with the PGCIL for executing the 400 KV double circuit line from TPGL to PGCIL's Dehgam Sub-Station via TPAL's Pirana Sub-station. The Power will be stepped down from 400 KV to 132 KV at TPAL's Pirana sub-station and will be interconnected with the existing 132 KV network of TPAL: They have also approached the PGCIL for preparing detailed project report and the survey work is in progress.

### **For TPSL**

45. Three 220KV double circuit lines have been decided from TPGL to TPSL's licensed area. Necessary permission from the State Government under the Indian Telegraph Act for laying such lines has been obtained. The power would be stepped down from 220 KV double circuit line to 66 KV at the sub-stations of TPSL and integrated with its existing network for further distribution. Necessary orders for supply, installation, testing and commissioning of 3 x 220 KV lines have been placed by TPSL. Land has been acquired for two 220 sub-stations and land acquisition for the third 220 KV sub-station is in progress. TPSL has floated enquiries for long delivery equipments.

### **Stand-by Arrangements**

46. The Commission asked the petitioners regarding supply of power in case of any exigencies i.e. non availability from TPGL, TPAL/TPSL



being distribution licensees in the cities, necessary arrangement for stand-by supply is essential. The Chief Executive Officers of both the licensees stated before the Commission that they had preliminary discussions with GUVNL on the subject and would soon finalize the necessary stand-by arrangements.

47. They added that the project needs to be interconnected with the State grid for start up of power and for back up of power during system exigencies. They have approached GETCO for interconnections with the 220 KV Kim Sub-station through dedicated 220 KV double circuit lines from TPGL. The arrangements for dedicated lines and interconnections with the GETCO sub-stations are being worked out. They have assured the Commission that necessary arrangements would be completed in time (March 2007).

### **Operation and Maintenance**

48. (a) TPGL has formed a joint venture with the Siemens AG, Germany for long term maintenance and operation of the project.
- (b) TPGL will invest in connecting gas pipe line from the main pipeline of GAIL/GSPL. They have also entered into a long term agreement with GAIL and GSPC for maintenance of such pipelines.
- (c) TPGL has also entered into a long term service agreement with Siemens AG, for ensuring after sale service of the gas turbines



## CONCLUSION

49. As brought out in the preceding paragraphs, we looked at the matters arising in these petitions from two major angles : (1) provisions contained in the PPAs; and (2) the important aspects connected with the TPGL project. The PPAs have been examined by CEA. We also examined the PPAs in detail as mentioned in earlier paras. We also considered the IDFC Consortium's Appraisal Report of the TPGL project. During the final hearing, MD, TPGL gave an account of the upto date status of the progress made in fuel supply arrangements. In response to our questions, he mentioned that all possible efforts are being made by them for securing gas supply on advantageous and economical terms. He added that the gas supply agreements for the required quantity would be finalized within three months.

In view of the foregoing examination, we accord approval to the PPAs between TPAL & TPGL and TPSL & TPGL subject to the following:

- (i) The original PPAs filed by the petitioners are at Annexure – I to this order. These are approved subject to modifications contained in the Supplementary Agreements (Annexure – II) to this order.**
  
- (ii) As TPGL project has been notified as Mega Power Project by the MOP, the generation tariff will have to be**



fixed by CERC in accordance with the provisions of the Electricity Act, 2003. CERC's approval will also be needed for approval of capital cost of the project.

- (iii) The petitioners have submitted that they have filed a petition before the CERC for securing approval of capital cost. After CERC's orders on capital cost and generation tariff, Commission will accord final approval to the PPAs.
- (iv) In accordance with the perspective presented to the Commission by the petitioners as highlighted in para 10 ante, TPAL & TPSL should arrange matters in such a manner that consumer tariffs in their license areas during any period do not diverge significantly from those then prevailing' in other distribution areas of the State. According to the general principle enunciated in the National Tariff Policy, if offtakers incur any penalties to TPGL, before passing on these to the consumers, the approval of the Commission should be obtained.
- (v) TPGL should submit inter-se agreement between off takers.
- (vi) TPGL should expeditiously finalize fuel supply agreements with IOC, ONGC and GSPC and submit



the same to the Commission. Fuel supply agreements should also be submitted to CERC.


- (vii) TPGL should expeditiously finalize and submit the gas transportation agreements. These agreements should also be filed before the CERC.
- (viii) TPAL and TPSL should expeditiously plan and execute the power evacuation arrangements to their respective license areas. Those plans shall match the system of evacuation of power from TPGL as conceived by CEA in their overall system planning studies. In doing so, they should take all necessary statutory clearances and other consents from the concerned agencies.
- (ix) TPAL and TPSL should make necessary arrangement for standby supply of power to their respective license areas (in case of any generation problems at TPGL' station). The stand-by arrangements should be submitted to the Commission for approval.
- (x) TPGL, TPAL and TPSL should intimate the Commission every quarter about the progress of the project indicating whether the execution is in accordance with the schedule.




- (xi) The stipulations contained in this Order will be applicable to the PPAs including Supplementary Agreements between TPAL & TPGL and TPSL & TPGL.

With this order, the petitions stand disposed of.

  
(G.SUBBA RAO)  
CHAIRMAN


  
(K.P.GUPTA)  
MEMBER (F)

  
(MAN MOHAN)  
MEMBER (T)

Place: Ahmedabad  
Date: 23/12/05



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Secretary  
Guj. Elect. Regu. Commission  
AHMEDABAD

