Appellate Tribunal for Electricity
(Appellate Jurisdiction)

Appeal nos. 150, 166, 168, 172, 173 of 2011 and 9, 18,26, 29, and 38 of 2012

Dated: 20th December, 2012

Present: Hon'ble Mr. Rakesh Nath, Technical Member
Hon'ble Mr. Justice P.S. Datta, Judicial Member

Appeal No. 150 of 2011

In the matter of:

M/s. SLS Power Limited,
No. 30, 14th Cross, 2nd Phase,
2nd Stage, West of Chord Road,
Mahalakshmipuram, Behind Nandhini Theatre,
Bangalore-560 086 **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
   4th & 5th Floor, Singareni Bhavan, Red Hills,
   Hyderabad-500 004.

2. **Transmission Corporation of Andhra Pradesh,**
   Vidyut Soudha, Khairatabad,
   Hyderabad-500 049,
   Andhra Pradesh

3. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
   Represented by its Managing Director,
   11-5-423/1/A, First Floor, Singareni Collieries Bhawan,
   Lakdi-ka-pul, Hyderabad-500 063

4. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
   Represented by its Managing Director,
   Upstairs, Hero Honda Showroom,
   Renigunta Road, Tirupati-517 501

5. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
   Represented by its Managing Director,
   11-5-423/1/A, First Floor, 1-7-668 Postal Colony
   Hanamkonda, Warangal (AP)-506 004

6. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Sai Shakti, Opp: Saraswati Park,
Daba Gardens, Visakhapatnam-530 013

7. **Indian Renewable Energy Development Agency (IREDA)**
Indian Habitat Centre, Eastern Core,
Core-4A, 1st Floor, Lodhi Road,
New Delhi-110 023

8. **Non-Conventional Energy Development Corporation of A.P. Ltd. (NEDCAP),**
5/8-207/2, Paigah Complex,
Nampally, Hyderabad-500 001

9. **The Government of Andhra Pradesh**
The Principal Secretary, Energy Department,
D-Block, Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022. **...Respondent(s)**

Counsel for the Appellant (s): **Mr. M.G. Ramachandran**
Ms. Swapna Seshadri
Ms. Swagatika Sahoo

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6
Mr. K.V. Balakrishnan
Mr. K.V. Mohan for APERC

Appeal No. 166 of 2011

In the matter of:

1. **Biomass Energy Developers Association,**
6-2-913/914, Progressive Towers, 1st Floor,
Khairatabad,
Hyderabad-500 004,
rep. by its Vice-President,
Sri. B. Jayarami Reddy, R/o Hyderabad

2. **Suryateja Power Projects Pvt. Ltd.,**
Giri Sikara Apartments,
Flat No. A3, 6-3-600/2/B, Padmavathi Nagar,
Khairatabad,
Hyderabad-500 004,
Andhra Pradesh.
rep. by its Managing Director,
Sri. B. Jayarami Reddy, R/o Hyderabad

3. **Balaji Agro Oils Ltd.,**
74-2-19, Old Checkpost Centre, Krishna Nagar,
Vijawada-520 007
Rep. by its Joint Managing Director,
Sri V. Suraj Kumar, R/o Vijayawada

4. **Gowthami Bio Energies Pvt. Ltd.,**
E-506, Keerti Apartments,
Behind Sarathi Studios Ameerpet,
Hyderabad-500 073
rep. by its Managing Director,
Sri. M.Ravikanth Reddy, R/o Hyderabad

5. **The Gowthami Solvent Oils Pvt. Ltd.,**
Post Box No. 7, Pydiparru,
Tanuku-534211, West Godavari District,
rep. by its Managing Director,
Sri. M.Ramachandra Rao, R/o Tanuku

6. **Indur Green Power Pvt. Ltd.,**
NSL Icon, Plot No. 1 to 4, 4th Floor,
8-2-684/2/A, Road No. 12, Banjara Hills,
Hyderabad-500 034,
rep. by its Managing Director,
Sri. M.Ramakoteswara Rao, R/o Hyderabad.

7. **Jocil Ltd.,**
Box No. 216, Arundalpet, Guntur-522 002,
rep. by its Managing Director,
Sri. J. Muralimohan, R/o Guntur

8. **Jyothi Bio Energy Ltd.,**
4th Floor, Mayank Towers,
Raj Bhavan Road,
Hyderbad-500 082
rep. by its Executive Director,
Sri. N. Padma Rao, R/o Hyderabad

9. **Greenko Energies Pvt. Ltd.,**
Plot No. 1071, Road No. 44,
Jubilee Hills, Hyderbad-500 034
rep. by its Director,
Sri. Ch. Anil Kumar, R/o Hyderabad

10. **Sri Kalyani Agro Industries,**
Prathipadu-534146, Penatapadu Mandal Tadepalligudem,
W.G. Distt.,
rep. by its Managing Director,
Sri. V. Narayana Rao, R/o Tadepalligudem

11. **Matrix Power Pvt. Ltd.,**
8-2-269/3/1, No. 257, Road No. 2,
Banjara Hills, Hyderabad-500 034
rep. by its Managing Director,
Sri. K.V. Krishna Reddy, R/o Hyderabad

12. **My Home Power Ltd.,**
My Home Hub, 3rd Block,
5th Floor, Hi Tech City,
Madhapur, Hyderabad-500 081
rep. by its Director,
Sri. R.K. Roy Choudhury, R/o Hyderabad

13. **Om Shakti Renergies Ltd.,**
Plot No. 1115, Road No. 54, Jubilee Hills,
Hyderabad-500 034,
rep. by its Managing Director,
Sri. G. Sivaramakrishna, R/o Hyderabad

14. **Perpetual Energy Systems Ltd.,**
NSL Icon, Plot No. 1 to 4,
4th Floor, 8-2-684/2/A, Road No. 12,
Banjara Hills, Hyderabad-500 034
rep. by its Managing Director,
Smt. K. Asha Priya, R/o Hyderabad

15. **Ritwik Power Projects Ltd.,**
Flat No. 201, Plot No. 20,
Sri Chaitanya Residency, Sagar Society,
Road No. 2,
Banjara Hills, Hyderabad-500 034
rep. by its Director,
Sri. D. Radhava Rao, R/o Hyderabad

16. **Roshini Powertech Ltd.,**
Plot No. 1071, Road No. 44,
Jubilee Hills, Hyderbad-500 034,
rep. by its Director,
Sri. Ch. Anil Kumar, R/o Hyderabad

17. **Satyamahrshi Power Corpn. Ltd.,**
Flat No. 202, Plot No. 20,
Sri Chaitanya Residency, Sagar Society,
rep. by its Director,
Sri. D. Raghava Rao, R/o Hyderabad

18. **Shalivahana Green Energy Ltd.,**
7th Floor, Minerva Complex,
S.D. Road, Secunderabad-500 003,
rep. by its Managing Director,
Sri. M. Komaraiah, R/o Secunderabad

19. **Shree Papers Ltd.,**
Post Box No. 6, G. Ragampet,
Samalkot-533 440,
rep. by its Executive Director,
Sri P. Sreedhar Chowdary, R/o Rajahmundry

20. **Sree Rayalaseema Green Energy Ltd.,**
KPS Complex, Station Road, Gooty-515402,
rep. by its Managing Director,
Sri. K. Madhusudhan, R/o Gooty

21. **Satyakala Power Projects Pvt. Ltd.,**
Ganguru-521139, Penamaluru Mandal,
Krishna Distt.
rep. by its Managing Director,
Smt. Bhavani Prasad, R/o Vijayawada

22. **Saro Power & Infrastructure Ltd.,**
19-2-217/2, Mir Alam Tank Road,
Hyderbad-500 064
rep. by its Managing Director,
Sri Mirza Hasan, R/o Hyderabad

23. **Suchand Powergen Pvt. Ltd.,**
309, Bachupally, Khurbullapur Mandal,
Hyderbad-500 072
rep. by its Managing Director,
Sri. T. Subbarayudu, R/o Hyderabad

24. **Veeraiah N C Power Projects Ltd.,**
Kurumaddali-51157, Pamarru Mandal,
Krishna Distt.
rep. by its Joint Managing Director,
Sri P. Poorna Veeraiah, R/o Gudivada.

25. **Velagapudi Power Generation Ltd.,**
74-2-12A Ashok Nagar,
Vijayawada-520 007
rep. by its Managing Director,
Sri. V. Sambasiva Rao, R/o Vijayawada

26. **Varam Power Projects Ltd.,**
8-4-120/3, Raja Complex,
G.T. Road, Srikakulam-532001,
rep. by its Managing Director,
Sri. A. V. Narasimham, R/o Srikakulam

27. **Vijaya Agro Products Pvt. Ltd.,**
Enikepadu-521108, Vijayawada,
rep. by its Chairman,
Sri. M. Rajaiah, R/o Vijayawada **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
11-4-660, 4th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Corporate Office, 6-1-50,
Mint Compound,
Hyderabad-500 063
Rep. by its Managing Director

3. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Upstairs, Hero Honda Showroom,
Renigunta Road, Tirupati-517 501

4. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
1-1-504, Chaitanyapuri,
Hanamkonda, Warangal (AP)-506 004

5. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
P & T Colony,
Seethammadhara, Visakhapatnam-530 013

6. **Transmission Corporation of Andhra Pradesh,**
Vidyut Soudha, Khairatabad,
Hyderabad-500 082,
Represented by its Managing Director

7. **The State of Andhra Pradesh**
Rep. by its Principal Secretary, Energy Department,
Andhra Pradesh Secretariat,
Hyderabad-500 063. **...Respondent(s)**

Counsel for the Appellant (s): **Mr. K. Gopal Choudhary**
Mr. Rama Sudershan Biswas

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6
Mr. K.V. Mohan &
Mr. K.V. Balakarishnan (APERC)

Appeal No. 168 of 2011

In the matter of:

1. **M/s. The South Indian Sugar Mills Association,**
Andhra Pradesh having its Registered Office,
At Door No. 5-9-22/69,
Adarshnagar,
Hyderabad-500 063

2. **M/s. Parrys Sugar Industries Ltd.,**
Formerly M/s. GMR Technologies & Industries Ltd.,
Sankali Village, R. Amudalavalasa Mandal,
Srikakulam District.

3. **M/s. the Jeypore Sugar Company Limited.**
Regd. Office at Ramakrishna Buildings, 239,
Annasalai, Chennai-600 006.

4. **M/s. Sagar Sugars & Allied Products,**
Rayala Towers, IInd Floor, 158, Anna Salai,
Chennai-600 002.

5. **M/s. Ganapathi Sugars,**
Post Box No. 29,
Kulbgoor/Fasalwadi Village,
Sangareddy- 502 294,
Medak District

6. **M/s. Gayatri Sugars,**
B-2, 2nd Floor, 6-3-1090, TSR Towers,
Rajbhavan Road,
Somajiguda,
Hyderabad- 500 082

7. **M/s. Navabharat Ventures Limited,**
Samalkot-533 440,
East Godavari District. **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
4th & 5th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **Transmission Corporation of Andhra Pradesh,**
Vidyut Soudha,
Hyderabad-500 082,
Represented by its Chairman & Managing Director

3. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, Singareni Collieries Bhawan,
Lakdi-ka-pul, Hyderabad-500 063

4. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Upstairs, Hero Honda Showroom,
Renigunta Road, Tirupati-517 501

5. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, 1-7-668 Postal Colony
Hanamkonda, Warangal (AP)-506 001

6. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Sai Shakti, Opp: Saraswati Park,
Daba Gardens, Visakhapatnam-530 013

7. **The Government of Andhra Pradesh**
The Principal Secretary, Energy Department,
D-Block, Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022. **...Respondent(s)**

Counsel for the Appellant (s): **Mr. Challa Kodandaram, Sr. Adv.**
Mr. Challa Gunaranjan

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6

Appeal No. 172 of 2011

In the matter of:

Sardar Power Pvt. Ltd.,
104, Swarganivas Enclave,
71-619/A, East Srinivas Nagar,
Ameerpet, Hyderabad-500 038
Represented by its Managing Director,
Movva Shrinivas, S/o Sri Satyanarayana,
R/o Hyderabad **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
#11-4-660, 4th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Corporate Office, 6-1-50, Mint Compound,
Hyderabad-500 063

3. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Renigunta Road, Tirupati-517 501

4. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
1-1-504, Chaitanyapuri,
Hanamkonda, Warangal (AP)-506 004

5. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
P&T Colony, Seethammadhara,
Visakhapatnam-530 013

6. **Transmission Corporation of Andhra Pradesh,**
Rep. by its Managing Director,
Vidyut Soudha, Khairatabad,
Hyderabad-500 082

7. **State of Andhra Pradesh,**
Represented by its Principal Secretary,
Energy Department,
Andhra Pradesh Secretariat,
Hyderabad-500 063 **...Respondent(s)**

Counsel for the Appellant (s): **Mr. K. Gopal Choudhary**

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao,
Mr. A.T. Rao,
Mr. Yusuf Khan for R-2 & 6

Appeal No. 173 of 2011

In the matter of:

1. **M/s. K.M. Power Private Limited,**
6-3-883/3, 1st Floor R.K. Plaza,
Panjagutta, Hyderabad-500 082

2. **PMC Power Private Ltd.,**
10-3-152/B-203,
East Marredpally, Secunderabad-500 026

3. **Manihamsa Power Projects Limited,**
Maphar Anurag Apartments,
Flat No. 402, 11-4-636/1& 2,
A.C. Gaurds, Hyderabad-500 004

4. **Srinivasa Power Private Limited,**
7-1-619/A/11/A, Sri Srinivasa Enclave,
Flat G-1, Gayathri Nagar,
Hyderabad-500 038

5. **Bhavani Hydro Power Projects Pvt. Ltd.,**
6-3-347/17/5, Dwarakapuri Colony,
Punjagutta, Hyderabad-500 082

6. **NCL Industries Ltd.,**
Plot No. 150 NCL Enclave,
Petbasheerabad, Hyderabad-500 855

7. **Janapadu Hydro Power Projects Pvt. Ltd.,**
H. No. 2-14-120, 5th Lane.,

Syamala Nagar, Guntur-522 006

8. **Saraswati Power & Industries Private Limited,**
8-2-269/4/B, Road No. 1,
Banjara Hills,
Hyderabad-500 034 **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
4th & 5th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **Transmission Corporation of Andhra Pradesh,**
Vidyut Soudha, Khairatabad,
Hyderabad-500 049,
Andhra Pradesh

3. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Mint Compound,
Lakdi-ka-pul, Hyderabad-500 004

4. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Behind Srinivasakalyana Mandapam,
Tiruchanoor Road, Tirupati-517 501

5. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, 1-7-668 Postal Colony
Hanamkonda, Warangal (AP)-506 004

6. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Sai Shakti, Opp: Saraswati Park,
Daba Gardens, Visakhapatnam-530 013

7. **Indian Renewable Energy Development Agency (IREDA)**
India Habitat Centre, Eastern Core,
Core-4A, 1st Floor, Lodhi Road,
New Delhi-110 023

8. **Non-Conventional Energy Development Corporation of A.P. Ltd. (NEDCAP),**
5/8-207/2, Paigah Complex,
Nampally, Hyderabad-500 001

9. **The Government of Andhra Pradesh**
The Principal Secretary, Energy Department,
D-Block, Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022. **...Respondent(s)**

Counsel for the Appellant (s): **Mr. M.G. Ramachandran**
Ms. Swapna Seshadri
Ms. Swagatika Sahoo

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6

Appeal No. 9 of 2012

In the matter of:

1. **M/s. K.C.P. Sugar & Industries Corpn. Limited,**
"Ramakrishna Buildings", No. 239, Anna Salai,
Chennai-600 006
Rep. by its Asstt. General Manager
Shri Dasari Ranganayakulu

2. **M/s. Nizam Deccan Sugars Limited,**
Having its Office at 6-3-570/1,
201, Diamond Block,
Rock Dale Compound, Somajiguda,
Hyderabad-500 082
Rep. by its Chief Executive Officer
Mr. M. Subba Raju

3. **M/s. Empee Power Company (India) Limited,**
Having its Office at : Ayyappareddypalm,
Naidupet Mandal,
SPSR Nellore District-524126
Rep. by its Vice-President,
Sri. Ch. Hanumantha Rao **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
4th & 5th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **Transmission Corporation of Andhra Pradesh,**
Vidyut Soudha, Somajiguda,
Hyderabad-500 082,
Represented by its Chairman & Managing Director

3. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director, 6-1-50,
Mint Compound,
Hyderabad-500 063

4. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Upstairs, Hero Honda Showroom,
Renigunta Road, Tirupati-517 501

5. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
1-1-504, Chaitanyapuri,
Hanamkonda, Warangal (AP)-506 004

6. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
P & T Colony,
Seethammadhara, Visakhapatnam-530 013

7. **The Government of Andhra Pradesh**
The Principal Secretary, Energy Department,
D-Block, Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022. **...Respondent(s)**

Counsel for the Appellant (s): **Mr. Challa Kodandaram, Sr. Adv.**
Mr. Challa Gunaranjan

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6

Appeal No. 18 of 2012

In the matter of:

1. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by the Chairman & Managing Director,
Corporate Office, 6-1-50, Mint Compound,
Hyderabad-500 063

2. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by the Chairman & Managing Director,
Renigunta Road, Tirupati-517 501,
Andhra Pradesh
3. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Chairman & Managing Director,
1-1-504, Chaitanyapuri,
Hanamkonda, Warangal (AP)-506 004
Andhra Pradesh
4. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by the Chairman & Managing Director,
P & T Colony, Seethammadhara,
Visakhapatnam-530 013,
Andhra Pradesh
5. **Transmission Corporation of Andhra Pradesh,**
Rep. by the Chairman and Managing Director,
Vidyut Soudha, Khairatabad,
Hyderabad, Andhra Pradesh **... Appellant (s)**

Versus

1. **M/s. Bollineni Castings Ltd.,**
6-2-912/913, 1st floor,
Progressive Towers,
Khairatabad,
Hyderabad-500 004, Andhra Pradesh
2. **Biomass Energy Developers Association,**
rep. by its Vice-President,
6-2-913/914, Progressive Towers, 1st Floor,
Khairatabad,
Hyderabad-500 004,
Andhra Pradesh.
3. **Small Hydro Power Developers Association,**
Rep. by the Secretary,
6-3-347/17/5, Dwarakapuri Colony,
Pangagutta, Hyderabad
4. **M/s. Agri Gold Power group**
Rep. by its Managing Director,
40-1-21/2, 2nd Floor,
Catholic Complex, M.G. Road,
Vijayawada, Andhra Pradesh
5. **M/s. PMC Power Private Ltd.,**
Rep. by its Managing Director,
Saincher Palace,
10-3-152/B-203,
East Marredpally, Secunderabad-500 026

Andhra Pradesh

6. **M/s. Matrix Power Ltd.,**
Rep. by the Managing Director,
8-2-269/3/1, No. 257, Road No. 2,
Banjara Hills, Hyderabad-500 034,
Andhra Pradesh

7. **M/s. GMR Industries Ltd.,**
Rep. by the Managing Director,
6-3-866/868, Greenlands, Begumpet,
Hyderabad, Andhra Pradesh

8. **M/s. Sagar Sugars & Allied Products,**
Rep. by its Managing Director,
Rayala Towers, Ist Floor, 158, Anna Salai,
Chennai-600 002.

9. **South India Sugar Mills Association,**
Rep. by the Secretary,
5-9-22/69,
Adarsh Nagar,
Hyderabad-500 063.

10. **M/s. Balaji Energy Pvt. Ltd.,**
Rep. by the Director,
1-2-234/13/37 & 38,
Arvind Nagar Colony, Domalguda,
Hyderabad.

11. **Andhra Pradesh Electricity Regulatory Commission,**
Rep. by the Secretary,
4th & 5th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

12. **Indian Renewable Energy Development Agency (IREDA)**
Rep. by its Managing Director,
Indian Habitat Centre, Eastern Core,
Core-4A, 1st Floor, Lodhi Road,
New Delhi-110 003

13. **Non-Conventional Energy Development Corporation of A.P. Ltd. (NEDCAP),**
Rep. by the Managing Director,
5/8-207/2, Paigah Complex,
Nampally, Hyderabad-500 001

14. **The Government of Andhra Pradesh**
Rep. by the Principal Secretary, Energy Department,
D-Block, Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022.
Andhra Pradesh **...Respondent(s)**

Counsel for the Appellant (s): Mr. A. Mariarputham, Sr. Adv.
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6

Counsel for the Respondent(s): Mr. Gopal Chaudhary
Ms. Swapna Seshdari for R-5

Appeal No. 26 of 2012

In the matter of:
M/s. Kakatiya Cement Sugar and Industries Limited,
1-10-140/1, Gurukrupa, Ashok Nagar,
Hyderabad-500 020
Represented by its Managing Director,
P. Venkateswarlu, S/o Veeraiah,
R/o Hyderabad **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
Through its Secretary
11-4-660, 4th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **State of A.P.,**
Represented by Special Chief to Govt.,
Energy Department, D-Block,
Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022

3. **Transmission Corporation of Andhra Pradesh,**
The Chairman and Managing Director,
6th Floor, Room No.359,
Secretariat, Hyderabad-500 022

4. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, Singareni Collieries Bhawan,
Lakdi-ka-pul, Hyderabad-500 063

5. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Upstairs, Hero Honda Showroom,
Renigunta Road, Tirupati-517 501

6. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, 1-7-668 Postal Colony
Hanamkonda, Warangal (AP)-506 004

7. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Sai Shakti, Opp: Saraswati Park,
Daba Gardens, Visakhapatnam-530 013

8. **Indian Renewable Energy Development Agency (IREDA)**
Indian Habitat Centre, Eastern Core
Core-4A, 1st Floor, Lodhi Road,
New Delhi-110 023

9. **Non-Conventional Energy Development Corporation of A.P. Ltd. (NEDCAP),**
5/8-207/2, Paigah Complex,
Nampally, Hyderabad-500 001 **...Respondent(s)**

Counsel for the Appellant (s): **Mr. C. Hanumanta Rao**
Mr. Mullapudi Rambabu

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6
Mr. K.V. Balakrishnan
Mr. K.V. Mohan for APERC

Appeal No. 29 of 2012

In the matter of:

M/s. Bollineni Castings & Steel Ltd.,
Having its Regd. Office at 6-2-913/914
1st Progressive Towers,
Khairatabad,

Hyderabad-500 004 **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
Through its Secretary
11-4-660, 4th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **State of A.P.,**
Represented by Special Chief to Govt.,
Energy Department, D-Block,
Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022

3. **Transmission Corporation of Andhra Pradesh,**
The Chairman and Managing Director,
6th Floor, Room No.359,
Secretariat, Hyderabad-500 022

4. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, Singareni Collieries Bhawan,
Lakdi-ka-pul, Hyderabad-500 063

5. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Upstairs, Hero Honda Showroom,
Renigunta Road, Tirupati-517 501

6. **Northern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, 1-7-668 Postal Colony
Hanamkonda, Warangal (AP)-506 004

7. **Eastern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Sai Shakti, Opp: Saraswati Park,
Daba Gardens, Visakhapatnam-530 013

8. **Indian Renewable Energy Development Agency (IREDA)**
Indian Habitat Centre, East Court
Core-4A, 1st Floor, Lodhi Road,
New Delhi-110 023

9. **Non-Conventional Energy Development Corporation of A.P. Ltd. (NEDCAP),**
5/8-207/2, Paigah Complex,

Nampally, Hyderabad-500 001 **...Respondent(s)**

Counsel for the Appellant (s): **Mr. C. Hanumantha Rao**
Mr. Mullapudi Rambabu

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6
Mr. K.V. Balakrishnan
Mr. K.V. Mohan for APERC

Appeal No. 38 of 2012

In the matter of:

1. **M/s. Agri Gold Projects Ltd.,**
Agri Gold House # 40-6-3,
4th Floor, Hotel Murali Fortune Lane,
Labbipet, M.G. Road,
Vijayawada, Andhra Pradesh-520 010
Rep. by its Managing Director,
K. Ram Babu, S/o Durga Prasad,
R/o Hyderabad.

2. **M/s. Rethwik Energy Systems Limited**

3. **M/s. Clarion Power Corporation Limited** **... Appellant (s)**

Versus

1. **Andhra Pradesh Electricity Regulatory Commission,**
Through its Secretary
11-4-660, 4th Floor, Singareni Bhavan, Red Hills,
Hyderabad-500 004.

2. **State of A.P.,**
Represented by Special Chief to Govt.,
Energy Department, D-Block,
Floor-2, Room No. 359,
Secretariat, Hyderabad-500 022

3. **Transmission Corporation of Andhra Pradesh,**
The Chairman and Managing Director,
6th Floor, Room No.359,

Secretariat, Hyderabad-500 022

4. **Central Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
11-5-423/1/A, First Floor, Singareni Collieries Bhawan,
Lakdi-ka-pul, Hyderabad-500 063

5. **Southern Power Distribution Company of Andhra Pradesh Ltd.,**
Represented by its Managing Director,
Upstairs, Hero Honda Showroom,
Renigunta Road, Tirupati-517 501

6. **Non-Conventional Energy Development Corporation of A.P. Ltd. (NEDCAP),**
5/8-207/2, Paigah Complex,
Nampally, Hyderabad-500 001 **...Respondent(s)**

Counsel for the Appellant (s): **Mr. C. Hanumantha Rao**
Mr. Mullapudi Rambabu

Counsel for the Respondent(s): **Mr. A. Mariarputham, Sr. Adv.**
Mr. A. Suba Rao
Mr. A.T. Rao
Mr. Yusuf Khan for R-2 & 6
Mr. K.V. Balakrishnan
Mr. K.V. Mohan for APERC

JUDGMENT

SHRI RAKESH NATH, TECHNICAL MEMBER

Appeal nos. 150, 166, 168, 172 and 173 of 2011 and 9, 26, 29 and 38 of 2012 have been filed by the generating companies supplying electricity from renewable sources of energy such as biomass, baggasse and mini-hydel power plants to the distribution licensees, challenging the orders communicated to them on 12.9.2011 comprising three different and separate orders by each of the three members of the Andhra Pradesh Electricity Regulatory Commission ("State

Commission") determining the tariff for the renewable energy generators for the period 1.4.2004 to 31.3.2009, in pursuance of the directions of the Hon'ble Supreme Court. Appeal no. 18 of 2012 has been filed by the distribution licensees against the same orders of the State Commission.

2. The brief facts of the case are as under:-

2.1 Ministry of Non-Conventional Energy Sources, since renamed as Ministry of New & Renewable Energy, Government of India in the year 1993-94 formulated policy framework for incentives to be given by the State Governments for energy generation from the Non-Conventional Energy Sources. The Ministry of Non-Conventional Energy Sources on 25.11.1994 notified the guidelines ("MNES guidelines") for promotional and fiscal incentives by State Governments including fixation of power purchase price for power procured from Non-Conventional Energy Sources. Keeping in view the Government of India guidelines, the State Government of Andhra Pradesh with a view to encourage generation from Non-Conventional Energy Sources issued order dated 18.11.1997 notifying uniform incentives to such projects. The State Government by order dated 22.12.1998 removed certain ambiguities in the implementation of the uniform incentive scheme. The State Government notified the price for purchase of electricity from Non-Conventional Energy Sources by the erstwhile Electricity Board at Rs. 2.25 with escalation of 5%

per annum with 1997-98 as base year and also permitted third party sale and wheeling and banking of energy. The State Government's order dated 22.12.1998 provided that the incentive scheme would be watched for a period of 3 years from 18.11.1997 and thereafter, the State Electricity Board would come up with suitable proposals for review for further continuance of incentive in the present form, or in a suitably modified manner to achieve the objective of promotion of power generation through Non-Conventional Sources.

2.2 The State Government notified the Transfer Scheme under the State Reforms Act of 1999 wherein all functions, assets and liabilities relating to transmission and distribution of the erstwhile Electricity Board were vested with APTRANSCO. All Power Purchase and Wheeling Agreements entered into earlier with the erstwhile Electricity Board came to be vested in the APTRANSCO. The developers of power projects which were commissioned after 1.2.1999 also entered into similar Power Purchase and Wheeling Agreements with APTRANSCO. On 3.4.1999 the State Commission was constituted under the provisions of the State Reforms Act, 1998.

2.3 On 06.3.2000 the State Commission after hearing all concerned directed APTRANSCO to follow Government of India guidelines and adopt power purchase price of Rs. 2.25 per unit with 5% escalation p.a. with 1994-95 as base year and

this would be effective for a period of 10 years from 1994-95 i.e. till 31st March 2004. It was also decided that a suo motu review of the incentives from 1.4.2004 would be undertaken by the State Commission after discussion with all concerned parties and there would be further review of purchase price with reference to each developer on completion of 10 years from date of commissioning of the project. The Commission also decided that beginning from the billing month of December 2000 the non-conventional energy developers would not be permitted to sell power to third parties and would supply power to APTRANSCO.

2.4 Some developers filed writ petitions against the order dated 6.3.2000 of the State Commission in the High Court of Andhra Pradesh. The High Court set aside the order of the State Commission on the ground that the developers were not put on notice with regard to permitting the third party sales, etc., and gave liberty to the State Commission to put the writ petitioners on notice of the grounds and specific proposals thereof and pass an order.

2.5 In the meantime on 31.3.2000, the distribution functions and undertakings were vested with the distribution licensees. APTRANSCO, however, continued to be bulk purchaser and supplier of power to the distribution licensees.

2.6 The State Commission initiated a suo motu proceeding in OP no. 1075 of 2000 and after hearing all concerned passed an order dated 20.6.2001 directing all the non-conventional energy generators to supply power to APTRANSCO and distribution licensees of Andhra Pradesh only and sale of third party was not permitted. The price applicable for purchase by the licensees was decided as Rs. 2.25 per unit with 5% escalation per annum with 1994-95 as the base year as per MNES guidelines. It was also decided that a suo motu review of the incentives to take effect from 1.4.2004 would be undertaken by the State Commission after discussions with the concerned parties and there would be a review of the purchase price with specific reference to each developer on completion of 10 years from the date of commissioning of the project.

2.7 Several non-conventional energy developers approached the High Court of Andhra Pradesh in Appeal against the State Commission's order dated 20.6.2001. Some developers accepted the State Commission's order and entered into Power Purchase Agreements with APTRANSCO pursuant to the said order of the State Commission. Several biomass power plant which were established subsequently also entered into PPAs with APTRANSCO in view of the State Commission's order dated 20.6.2001.

2.8 The State Commission initiated a suo motu proceeding being R.P. no. 84 of 2003 in O.P. no. 1075 of 2000 to review the incentive effective from 1.4.2004 for the renewable energy power plants and passed an order dated 20.3.2004 fixing the price determined on normative parameters to be paid by APTANSCO for the electricity purchase from different categories of renewable energy power plants with effect from 1.4.2004 for supply to the distribution licensees for a control period of five years. The State Commission by its order reduced the price of energy payable to the renewable energy power plants from that prevailing prior to 1.4.2004 as per its earlier order dated 20.6.2001.

2.9 Aggrieved by the State Commission's order dated 20.3.2004, the appellants filed writ petitions before the High Court of Andhra Pradesh. Subsequently the High Court disposed of the writ petition by order dated 27.4.2004 permitting the appellants to file a Review Petition before the State Commission.

2.10 Consequent to the disposal to the writ petition by the High Court, the appellants filed Review Petition being RP no. 3 of 2004 before the State Commission. By order dated 7.7.2004, the State Commission dismissed the Review Petition with only some clarification and modification by increasing the incentive on generation beyond the normative plant load factor, etc.

2.11 Aggrieved by the orders dated 20.3.2004 and 7.7.2004 of the State Commission, the appellants filed writ petitions before the High Court. The High Court passed some interim order relating to rate payable to the non-conventional energy power plants. Subsequently, the High Court disposed of the writ petitions by order dated 15.6.2005 granting liberty to the appellants to approach the Appellate Tribunal. Thereupon, the appellants filed Appeal nos. 2 of 2005 and batch before the Tribunal.

2.12 By a notification dated 7.6.2005, the bulk supply functions of APTRANSCO were transferred and vested with the distribution licensee. Consequently, all PPAs entered into by the Non-Conventional Energy ("NCE") power plants with the APTANSCO continued to subsist with the distribution licensees. The power plants established subsequently also entered into PPAs with the respective distribution licensees.

2.13 In appeal nos. 2 of 2005 and batch the Tribunal by its judgment dated 2.6.2006 set aside the State Commission's order dated 20.3.2004 directing the distribution licensees to continue the power purchase at the same rate at which power was being supplied to them before passing the order dated 20.3.2004 i.e. as per the MNES guidelines.

2.14 Aggrieved by the judgment of the Tribunal dated 2.6.2006, the APTRANSCO and other parties filed Civil Appeals being CA no.2926 of 2006 and batch before the Hon'ble Supreme Court.

2.15 In the meantime, the State Commission by its order dated 31.3.2009 determined the variable costs for the biomass energy power plants for the period 2009-14.

2.16 The Hon'ble Supreme Court by a common judgment dated 8.7.2010 set aside the order of the Tribunal dated 2.6.2006. The Hon'ble Supreme Court also remanded the matter to the State Commission with the directions that it shall hear the non-conventional energy ("NCE") generators afresh and determine the tariff for purchase of electricity in accordance with law.

2.17 Thereafter, the State Commission heard the concerned parties. By a communication dated 12.9.2011, the Secretary of the State Commission forwarded three different and divergent orders by each of the three members on the tariff applicable to the renewable energy power plants for the period 2004-09.

2.18 Aggrieved by the impugned orders of the State Commission upon remand from the Hon'ble Supreme Court, the Appellants have filed these Appeals.

3. When these matters came up before us, the learned counsel for the distribution licensees argued that the appeals filed by the generators were not maintainable as there was no single or majority order by the State Commission and under these circumstances the Tribunal had no alternative but to remand the matter back to the State Commission. On the other hand, the renewable energy generators wanted the Tribunal to decide the matter and fix the tariff.

4. We felt that remanding the matter to the State Commission would have meant reconsideration of the matter by the State Commission and possible re-hearing. Further the Technical Member of the State Commission who had passed one of the orders had since retired. In the meantime if the new Technical Member has been appointed then the entire case has to be reheard. The tariff pertains to the period 2004-2009. Even after long drawn legal proceedings right upto the Apex Court resulting in order of remand to the State Commission by the Apex Court the matter has not been resolved as the State Commission has given orders with three different tariffs issued by the three members of the State Commission which could not be implemented. We, therefore, decided to hear the parties and pass necessary directions so that the State Commission could determine a single tariff for each type of renewable energy source.

5. On 1.2.2012 we passed an interim order deciding that the tariff including the incentive and terms and conditions as determined by the Chairman of the State Commission in his order dated 19.8.2011 shall be made effective in the interim period till the final disposal of the appeals. The distribution licensees were directed to make payment of arrears to the appellants on the basis of the difference in tariff as determined by Shri A. Raghotam Rao, Chairman and the tariff already paid. We, however, did not pass any order regarding payment of interest on the differential amount which we would consider now.

6. The distribution licensees, preferred appeals against the interim order dated 1.2.2012 of the Tribunal. Hon'ble Supreme Court by order dated 4.4.2012 disposed of the appeals with directions to execute the interim order of the Tribunal with the condition that the distribution licensees will deposit the money out of which 50% shall be withdrawn by the generating companies without furnishing any security and 50% with security to the satisfaction of the Tribunal.

7. Accordingly, the Tribunal directed the generating companies to deposit bank guarantee for the 50% amount due to them as a result of the interim order. As there was some administrative difficulty in opening an account by the Registrar of the Tribunal, on the suggestion of the learned counsel for the parties, the distribution licensees were directed

by us to pay directly to the generating companies 50% of the amount without security and balance 50% on furnishing of bank guarantee for the equivalent amount with the Registry of the Tribunal. Accordingly, the interim order of the Tribunal was implemented keeping in view the directions of the Hon'ble Supreme Court.

8. Before we discuss the submissions made by the generating companies and the distribution licensees let us first examine the findings and directions of the Hon'ble Supreme Court in remand by judgment dated 8.7.2010. The relevant extracts of the judgment of the Hon'ble Supreme Court are reproduced below:

> *"48. ..... We are of the considered view that presence of the State Government before the Tribunal could have certainly been appropriate, inasmuch as the State would have placed before the Appellate Authority and the Regulatory authorities, its views in regard to revision of incentives as well as the purchase price. We are also constrained to observe that the State of Andhra Pradesh was a necessary, in any case, a proper party in these proceedings. This itself would be a ground for this Court to remit the matter to the Competent Authority, in addition to the other reasons recorded in this judgment".*
>
> *"50. We find some substance in this submission and are of the view that it is a matter of some concern, even for the State Government. All these projects, admittedly, were established in furtherance to the scheme and the guidelines provided by the Central Government which, in turn, were adopted with some modification*

by the State Government. The State Electricity Board implemented the said scheme and initially had permitted sale of generated electricity to third parties, however, subsequently and after formation of the Regulatory Commission which, in turn, took over the functions of the State Electricity Board, the incentives were modified and certain restrictions were placed. The reasons for these restrictions have been stated in the affidavit filed on behalf of the appellants which, as already noticed by us, is not a matter to be examined by this Court in exercise of its extra-ordinary jurisdiction. These matters, essentially, must be examined by expert bodies particularly, when such bodies are constituted under the provisions of a special statute.

51. *The basic policy of both the Central as well as the State Government was to encourage private sector participation in generation, transmission and distribution of electricity on the one hand and to further the objective of distancing the regulatory responsibilities of the Regulatory Commission from the Government and of harmonizing and rationalizing the provisions of the existing laws relating to electricity in India, on the other hand. The object and reasons of Electricity Act, 2003 as well as the Reform Act, 1998 are definite indicators of such legislative intent. The basic objects of these enactments were that the said Regulatory Commission may permit open access in distribution of energy as well as the decentralize management of power distribution through different bodies. The Reform Act, 1998 stated in its objects and reasons that the set-up of power sector in force, at that time, was virtually integrated and functional priorities were getting distorted due to resource-crunch. This has resulted in inadequate investment in transmission and distribution which has adversely affected the quality and reliability of supply. The two corporations*

proposed thereunder were to be constituted to perform various functions and to ensure efficiency and social object of ensuring a fair deal to the customer. These objects and reasons clearly postulated the need for introduction of private sector into the field of generation and distribution of energy in the State. Efficiency in performance and economic utilization of resources to ensure satisfactory supply to the public at large is the paramount concern of the State as well as the Regulatory Commission. The policy decisions of these constituents are to be in conformity with the object of the Act. Thus, it is necessary that the Regulatory Commission, in view of this object, take practical decisions which would help in ensuring existence of these units rather than their extinguishment as alleged. (emphasis provided).

52 *(a) The order of the Tribunal dated 02.06.2006 is hereby set aside.*

(b) We hold that the Andhra Pradesh Electricity Regulatory Commission has the jurisdiction to determine tariff which takes within its ambit the purchase price' for procurement of the electricity generated by the Non-conventional energy developers/generators, in the facts and circumstances of these cases.

(c) We hereby remand the matters to the Andhra Pradesh Electricity Regulatory Commission with a direction that it shall hear the Non-conventional energy generators afresh and fix/determine the tariff for purchase of electricity in accordance with law, expeditiously.

(d) It shall also re-examine that in addition to the above or in the alternative, whether it would be in the large interest of the public and the State, to permit

sale of generated electricity to third parties, if otherwise feasible.

(e) The Andhra Pradesh Electricity Regulatory Commission shall consider and pronounce upon all the objection that may be raised by the parties appearing before it, except objections in relation to its jurisdiction, plea of estoppel and legitimate expectancy against the State and / or APTRANSCO and the plea in regard to PPAs being result of duress as these issues stand concluded by this judgment.

(f) We make it clear that the order dated 20.06.2001 passed by the Andhra Pradesh Electricity Regulatory Commission has attained finality and was not challenged in any proceedings so far. This judgment shall not, therefore, be in detriment to that order which will operate independently and in accordance with law.

(g) We also hereby direct that State of Andhra Pradesh shall be added as party respondent in the proceedings and the Andhra Pradesh Electricity Regulatory Commission shall grant hearing to the State during pendency of proceedings before it."

9. The directions of the Hon'ble Supreme Court are summarized as under:-

i) In view of object & reasons of the Electricity Act, 2003 as well as the Reforms Act, 1998, the State Commission has to take practical decisions which would help in ensuring existence of the Non-conventional energy generators rather than their extinguishment as alleged.

ii) The State Commission has the jurisdiction to determine tariff of non-conventional energy generators.

iii) The matter is remanded to the State Commission with directions to determine tariff after hearing the Non-Conventional Energy generators afresh.

iv) The State Commission has to re-examine whether it would be in the large interest of the public and the state to permit the Non-Conventional Energy generators to sell electricity to third parties.

v) The State Commission shall consider all objections raised by the parties except objections relating to its jurisdiction, estoppel and legitimate expectancy against the State/APTRANSCO and the plea in regard to PPAs being result of duress.

vi) Order dated 20.6.2001 of the State Commission has attained finality. The judgment shall not be in detriment to the order dated 20.6.2001. The order dated 20.6.2001 will operate independently and in accordance with law.

vii) The State Government shall be added as a party as a respondent in the proceedings before the State Commission.

10. Let us now examine the three different orders of the Members of the State Commission.

11. Shri R. Radha Kishen, Member (hereinafter referred to as "Member-Technical") in his order dated 13.6.2011 has decided as under:-

i) The orders to be passed now cannot be contradictory to Commission's earlier order dated 6.3.2000

and 20.6.2001 and deviation of policy of Government and the tariff and incentive should be uniform for all the categories of NCE providers as provided in Ministry of Non-Conventional Energy guidelines, State Government orders and the State Commission order dated 20.6.2001.

ii) The order passed by the Commission in O.P. no. 1075 of 2000 dated 20.6.2001 which is the reaffirmation of the contents of the Proceedings No. APERC/Secy/Engg./No.5 dated 6.3.2000 is a "policy framework" for the promotion of Non-Conventional Energy Sources within the state of Andhra Pradesh issued in continuation to the policy framework extended from time to time and lastly declared in State Government's order dated 18.11.1997 read with order dated 22.12.1998 to achieve the objects of the Policy framework.

iii) The price formulae in respect of the projects covered by the Policy 2000/2001 is fixed for a period of ten years from the commissioning of the plants as per Government of India guidelines.

iv) The objectives considered in the Policy framework of 2000-2004 for the promotion of Non-Conventional Energy are not achieved even as of now in Andhra Pradesh.

v) The right fixation of price of energy from the NCE projects will be as per the Govt. of India guidelines which was agreed in the order of State Commission dated 20.6.2001 as fair and reasonable.

vi) As the tariff formula of Government of India is agreed for NCE developers, permitting sale of generated electricity to 3rd parties is not in the interest of public and state and is not allowed.

vii) The following was decided:

"(i) Developers are not permitted for sale to third parties.

(ii) NCE developers shall supply power to APTRANSCO/DISCOMS only.

(iii) Price applicable for all electrical energy delivered by the NCE develops is Rs. 2.25 per unit with 5% escalation per annum with 1994-95 as base year, for a period of 10 years from date of commissioning of the project.

(iv) The amounts payable to NCE developers as per this order have to be paid with interest of 9% per annum.

(v) Discoms shall open revolving letter of credit in favour of suppliers of power.

(vi) The present prices hold good for a period of 10 years from COD later both parties are at liberty to (1) continue to supply by mutual agreement for further period of 10 years at mutually agreed prices/or (2) "by approaching the Commission for fixation of the price or by selling the same to third parties if points 1 & 2 are not satisfied/complied; since the apex court has also observed at para 52(d) directing the Commission to look into "Whether it would be in the larger interest of the public and state to permit sale of generated electricity to third parties, if otherwise feasible".

viii) *"These orders are applicable*

a) for all the NCE developers who have entered into PPAs with DISCOMs as per Commission order dated 28.06.2001.

b) for all NCE developer who will enter into Power Purchase Agreements with DISCOMs as per decision of the Commission in this Order".

Thus, Member-Technical has decided that the price applicable to all categories of NCE sources shall be uniform as per the Govt. of India guidelines i.e. Rs. 2.25 per unit with 5% escalation per annum with 1994-95 as base year for a period of 10 years from the date of commissioning of the project, as decided in the order dated 20.6.2001. He has also held that permitting sale of electricity from NCE Sources to third parties is not in the interest of the public and the state and thus should not be allowed.

12. Shri A. Raghotham Rao, Chairman (hereinafter referred to as "Chairman") has passed the following order dated 19.8.2011:

i) In view of the findings of the Hon'ble Supreme Court regarding the finality of the 2001 order of the State Commission and the effect of the Power Purchase Agreements ("PPAs"), Non-conventional Energy Units, who had entered into

PPAs based on 20.6.2001 order of the State Commission, cannot be permitted to make 3rd party sales during the period covered by the respective PPAs.

ii) Third party sale by NCE units is not in the interest of the public and the State in view of scarcity of power in the State forcing the distribution licensees to purchase power in open market at exhorbitant price.

iii) Permission for third party sales would go against the fulfillment of Renewable Power Purchase Obligation by the distribution licensees.

iv) The period from 1.4.2004 onwards covered by the present order has already elapsed and during the said period the NCE companies supplied the energy generated by them only to the distribution licensees. Thus, it is neither practical nor feasible to retrospectively permit third party sales by such units for the period from 1.4.2004 onwards.

v) Regarding permissibility of the third party sales w.e.f. 1.4.2004 for the NCE generators who entered into PPAs to supply electricity to the distribution licensees after 1.4.2004 as per terms and conditions as determined by the State Commission in its order dated 20.3.2004, as the order dated 20.3.2004 did not specifically covered the issue of third party sales, for such units, the question of such permission would not really arise.

vi) The NCE developers cannot seek that the tariff structure as per Govt. of India guidelines of 1994 has to be

continued in view of findings of the Hon'ble Supreme Court directing the Commission to consider all the objections raised by the parties except objections in relation to jurisdiction, plea of estoppel and legitimate expectancy against the State and / or APTRANSCO and the plea in regard to PPAs being result of duress.

vii) In view of the findings of the Hon'ble Supreme Court, there is no justification in the contention of some of the NCE developers that the rate of Rs. 2.25 per unit with 1994-95 as base year with annual escalation of 5% contained in the 20.6.2001 order, has to be continued w.e.f. 1.4.2004 in the order being issued in the present remand proceedings.

viii) It is necessary to take a fresh look at the revised tariff structure evolved in the 20.3.2004 order, in light of the submissions made during the hearing of the present case and to come with an appropriate tariff structure for NCE units w.e. from 1.4.2004.

ix) In view of the directions of the Hon'ble Supreme Court, the contention of the distribution licensees that the rates of 2004 order should not be increased since any increase in the power purchase tariff over the rates of 2004 order will result in undue loss to the distribution licensees and unjustified gains to NCE developers cannot be upheld.

x) The Chairman in its order reconsidered the norms for various components of tariff for biomass, bagasse and mini hydel plants and the tariff was determined for each of these

types of NCE power plants, which we will be discussing at appropriate places in this judgment.

13. Shri C.R. Sekhar Reddy, Member (hereinafter referred to as "Member-Finance") in his order dated 2.9.2011 has decided as under:

i) The contentions for allowing third party sale cannot be considered and third party sale is rejected.

ii) The remand is only to re-determine the tariff in such a way that the units would not get extinct through the revised tariff order of 2004.

iii) It is not in the best interests of either distribution licensees or the developers to extinguish private participation only on account of not paying cost of tariff that would sustain these units.

iv) Member-Finance in his order has reconsidered the norms for various components of tariff for Biomass, Bagasse and mini hydel power plants and determined the tariff for these Renewable Energy Sources. We shall be discussing the findings of Shri C. Sekhar Reddy, Member on norms of the various components of tariff at appropriate places in this judgment.

14. For the sake of brevity we shall refer to the orders of Shri Raghotham Rao, Shri Radha Kishen and Shri C.R. Sekhar Reddy as orders of Chairman, Member-Technical and Member-Finance respectively. We find that the

Chairman and Member-Finance have adopted similar approach in their orders and have reconsidered all the norms for various components of tariff and re-determined the normative tariff after hearing all concerned. However, there are differences on the norms decided for some of the components of tariff in their orders resulting in difference in final tariff for each type of renewable energy sources. On the other hand, Member-Technical has decided continuation of same tariff as decided in the State Commission's earlier order dated 20.6.2001 based on the MNES guidelines. However, all the three Members have decided against permitting third party sale to the renewable energy generators. The tariffs decided by all the three members are higher than that determined in the State Commission's order dated 20.3.2004.

15. Let us now examine the submissions made by the learned counsel for the parties.

16. Shri M.G. Ramachandran, learned counsel for M/s. SLS Power Ltd. in appeal No. 150 of 2011 has made the following submissions in respect of tariff for bio-mass based project:

i) The appellant signed a Power Purchase Agreement (PPA) dated 13.8.2001 with APTRANSCO to generate and supply power from its Bio-mass based power project of 6MW at tariff terms and conditions as contained in the order dated

20.6.2001 passed by the State Commission i.e. at a tariff as per MNES guidelines.

ii) The State Commission was required to revisit the incentive aspect of the tariff after three years. In all other respects including on the tariff, the order dated 20.6.2001 clearly specified that the terms and conditions shall be valid for a period of 10 years.

iii) The MNES guidelines provides for the appropriate tariff for the renewable energy projects without there being any subjective decision to be made by the State Commission and without the need to go into various aspects which are highly subjective in nature. Therefore, the Member-Technical in his order has correctly decided to adopt tariff as per MNES guidelines.

iv) The judgment of the Hon'ble Supreme Court dated 8.7.2010 did not hold that the MNES guidelines cannot be adopted. In fact the Hon'ble Supreme Court has specifically held that the order dated 20.6.2001 should be given full effect. If MNES guidelines are not applied, the same would amount to nullifying the order dated 20.6.2001.

v) If for any reason the Tribunal comes to the conclusion that MNES guidelines should not be applied, the decision of the Member-Finance and the Chairman be implemented subject to following modifications:

a) Consumption of Biomass should be taken as 1.63 kg/kWh instead of 1.36 kg/kWh taken by the

Finance Member and 1.16 kg/kWh taken by the Chairman.

b) The fuel price escalation should be 9% instead of 6%.

c) The sale and purchase of energy after a period of 10 years should be subject to mutual agreement and in case no agreement is reached, the appellant should be entitled to effect third party sales with REC benefits.

vi) The learned counsel has given justification for adoption of above norms which we shall be considering at the appropriate places in this judgment.

vii) Third party sale should be allowed to the appellant particularly after the period of 10 years consistent with the provisions of the Electricity Act, 2003.

viii) The arrears due to the appellant should be paid with interest at the applicable bank rate relevant to term loan lending.

17. Learned counsel for M/s. Kakatriya Cement Sugar and Industries Ltd., M/s. Agri Gold and Others and M/s. Bollineri Castings and Steels Ltd. in appeal nos. 26 of 2012, 38 of 2012 and 29 of 2012 respectively have also made similar submissions in respect of tariff for biomass projects. Learned counsel for South Indian Sugar Mills Association & Others in appeal no. 168 of 2011 and KCP Sugar Industries Corporation

Ltd. in appeal no. 9 of 2012 also made similar submissions regarding adaptation of tariff as per MNES guidelines and alternate submissions on the various norms to be adopted for determination of tariff for bagasse based projects which we shall be referring to at appropriate place in the Judgment.

18. Shri Gopal Chaudhary, learned counsel for Biomass Energy Developer Associations & Others in appeal no. 166 of 2011 and Sardar Power Pvt. Ltd. in appeal no. 172 of 2011 has made the following submissions in respect of Biomass based power projects and small hydro projects:

i) The approach of the Chairman and Member-Finance in determination of tariff on the parameters based method has been to constantly cut and chip on each and every component of the tariff, leaving several of them under-estimated. Consequently, the overall effect is to bring out a tariff that is un-remunerative, unviable and not being able to meet any contingency.

ii) Comparison of small size biomass based projects with large thermal power stations is inapt and irrational. The choice of norms should be tilted towards the certainty of the power plant surviving rather than the risk of it dying. The parameter based approach may be used as a tool or an aid to test the magnitude and effect of some other basis such as MNES guidelines so as to provide an attractive, simple and flexible tariff regime.

iii) Learned counsel has made detailed submissions on various normative parameters of tariff for Biomass and small hydro projects which we shall be considering at appropriate place in this judgment.

iv) Both Chairman and Member-Finance have not considered any control period for the review of fixed costs. There is a need to review all the elements of tariff whether fixed or variable costs, after a fixed control period preferably three years.

v) Interest on the differential amounts at the SBI PLR or other appropriate reference rate relating to lending for similar loans for working capital may be allowed.

vi) The tariff should be applicable to all biomass plants for supply to the licensee irrespective of the date of commissioning or anything in contrary in the PPA and howsoever the energy is taken and required to be paid for by the distribution licensees whether under a PPA or under any other arrangements or otherwise.

vii) Members of the Commission have not decided anything on allowing electricity duty as pass through in respect of mini hydel plants even though they have concurred in allowing electricity duty as a pass through in respect of biomass projects.

viii) Water royalty paid should be allowed to be reimbursed to the mini hydel power plant by the licensee.

ix) In view of wide variation in the nature of mini hydro power plants and size of the power plant and variety of geological and hydrology factors, there might to be further classification and sub-classification in respect of mini hydel plants for which generic tariffs may be determined separately for each such category. Even then there would be necessity to enable special considerations to be given on merits of the circumstances of a particular mini hydel power plant.

19. Shri M.G. Ramachandran, learned counsel for M/s. K.M. Power Pvt. Ltd., appellant in appeal no. 173 of 2011 has made the following submissions in respect of small hydro power plants:

i) The small hydro power developers had acted in pursuance of the State Commissions' orders dated 6.3.2000 and 20.6.2001 adopting MNES guidelines to set up the projects. The State Commission ought to have continued the MNES formulae, as done by one of the Members.

ii) The PPA entered into by the appellant with APTRANSCO envisaged tariff as per MNES guidelines upto the year 2003-04 beyond which the tariff was to be decided by the State Commission. However, the PPA did not specify the method or criteria based on which the purchase price will be decided beyond the year 2003-04. Therefore, the revised tariff should be in confirmation and according to the State Commission's order dated 20.6.2001.

iii) Thus, it is fair and just to maintain MNES based tariff as determined in the order dated 6.3.2000 and 20.6.2001 for ten year period from the date of commissioning of the project.

iv) Learned counsel has made alternate submissions on various normative parameters of the biomass, bagasse and small hydro power plants which we shall be dealing at appropriate places.

v) The benefit of front loading and arrears is not available to the small hydro projects which were commissioned prior to 31.3.2004. Therefore, the orders of the Chairman and Member-Finance cannot be made applicable to Mini Hydel Projects commissioned prior to 31.3.2004 and at best can be made applicable only for the projects commissioned after 31.3.2004. Thus, for the projects commissioned prior to 31.3.2004, only the order of Member-Technical should be applicable.

vi) Alternatively, the generic levellised generation tariff of Central Commission in Regulation, 2009 may be determined for the entire duration of PPA for all the units generated without any restriction of PLF upto which the prices are applicable.

vii) The arrears due to developers to be paid and water royalty charges be reimbursed alongwith interest @ 1% p.m., at quarterly rests, from the date the same are payable.

20. Learned Senior counsel for the APTRANSCO and the distribution licensees made elaborate submissions on the following:

i) While the Hon'be Supreme Court expressly set aside the order of the Tribunal dated 2.6.2006, it did not set aside the order of the State Commission dated 20.3.2004. In other words, the remand is not an open remand for denovo hearing and fresh determination and decision, but maintaining the order of the State Commission dated 20.3.2004, giving a fresh opportunity of hearing to the developers which was in the context of the findings of the Hon'ble Supreme Court that State of Andhra Pradesh was a necessary party but was not impleaded and that it should be impleaded and should be given an opportunity of hearing. Thus, the opportunity to the developers had been given to deal with pleadings and submissions that may be made by the State Government. As such it is a limited remand.

ii) The only consideration on which the third party sale could be permitted is the larger interest of the public and the state and not on any other ground.

iii) The PPAs entered by the developers are for a period of 20 years and there is an obligation to sell the entire electricity generated to the distribution licensees for the entire period of 20 years.

iv) MNES guidelines are not based on any scientific study and determination of parameters and actual cost

involved in generation of electricity by renewable energy generators. Hon'ble Supreme Court in its judgment has held that the MNES guidelines are not binding directives.

v) Hon'ble Supreme Court has set aside the judgment of the Tribunal dated 2.6.2006 setting aside the order of the State Commission and holding that the MNES guidelines would operate the tariff. Having regard to the same, the developers cannot plead that the State Commission should adopt MNES guidelines as the tariff.

vi) Learned Senior counsel has made detailed submissions on various normative parameters of the tariff pleading that the findings as per the earlier order dated 20.3.2004 should be maintained. We shall be discussing the submissions on the norms at appropriate place in the judgment.

vii) The three generating companies in Appeal no. 9 of 2012 viz. M/s. KCP Sugar Industries Corporation Ltd., M/s. Nizam Deccan Sugars Ltd. and M/s. Empee Power Co. India Ltd. have entered into negotiated PPAs. There was no challenge to the PPAs in the proceedings before the State Commission. Even in the present appeal there is no prayer for holding the PPAs to be invalid. In the absence of a challenge to the PPA which is binding, any relief by way of tariff, different from what has been agreed upon and specified in the PPAs cannot be agitated.

21. We also heard Mr. B. Gopal Reddy who was an objector in the proceedings before the State Commission. He made elaborate submissions in support of promotion of NCE sources and adoption of tariff as per MNES guidelines.

22. After examining the rival contentions of the parties the following questions would arise for our consideration:

i) Whether the tariff for Non-Conventional Energy Sources as per the MNES guidelines and as decided by the State Commission by its order dated 20.6.2001 should be continued during the period 2004-09 or the tariff should be determined on normative parameters as per the methodology adopted by the State Commission in tariff order dated 20.3.2004?

ii) Whether it would be in the large interest of public and the State, to permit third party sale of energy generated by the Non-Conventional Energy generators?

iii) If the tariff is to be determined on normative parameters, what are the norms to be adopted for the various parameters for Biomass, Bagasse and Mini Hydel Power Plants?

iv) Whether the Project developers are entitled to interest on the amount due to them as a consequence of this judgment?

v) Whether the new tariff is applicable to all the projects who have signed PPA prior to or after 1.4.2004?

Whether the new tariff will also be applicable to those developers who have signed PPA on mutually agreed tariff?

23. Let us examine the first issue regarding adoption of tariff as per MNES guidelines for the period 2004-09.

23.1 All the project developers submitted that the Member-Technical has correctly decided to continue tariff as per MNES guidelines during the period 2004-09. On the other hand the licensees submitted that the tariff as per MNES guidelines could not be continued in view of the judgment of the Hon'ble Supreme Court.

23.2 Shri R. Radha Kishen, Ld. Member-Technical in support of continuation of tariff as per MNES guidelines has held that the orders passed now cannot be contradictory to Commission's earlier orders dated 6.3.2000 and 20.6.2001 and deviation of policy of Government of India and State Government orders. The price formulae in respect of the projects covered by the Policy 2000/2001 is fixed for a period of 10 years from the commissioning of the plants as per Government of India guidelines. Learned counsel for the generating companies have also argued that the power developers had acted in pursuance of the State Commission's orders dated 6.3.2000 and 20.6.2001 adopting MNES guidelines.

23.3 These issues have already been considered by the Hon'ble Supreme Court in its judgment dated 8.7.2010. The relevant extracts are reproduced below:

> *"After the passing of this order the Developers entered into PPAs between the period August 2001 to 2002 and confirmed the acceptance and implementation of the order of 20th June, 2001. While providing different clauses relating to various facets of sale and distribution of generated power, PPAs under Articles 2.1 and 2.2, which we have already reproduced, contemplate specifically that the purchase of energy by APTRANSCO will be at the tariff provided under Article 2.2. Article 2.2 determines the rate at Rs. 2.25 per unit with escalation at 5% per annum with 1994-1995 as base year which is to be revised on 1st April of every year upto the year 2003-2004, beyond which the purchase price by APTRANSCO will be decided by the Regulatory Commission. Still a further review of purchase price is contemplated on completion of 10 years from the date of commissioning of the project when it will be reworked. In other words, there are specific stipulations provided under the PPAs, as well as in the order dated 20th June, 2001, for revision/review of purchase price. Clause 2.3 further clearly says that tariff is inclusive of all taxes, duties and levies. In other words, all the documents afore stated provide for a review including the guidelines issued by the Govt. of India".*

> *"25. At this stage, we may notice that these guidelines are general guidelines and every State was required to act as per its own needs, convenience and by taking a general view, as to, which are the most practical and affordable projects and how they should be carried on by the State. To give meaning to the guidelines that they were `absolutely mandatory', will not be in conformity with the law relating to interpretation of documents as well as*

according to the canons of exercise of executive and administrative powers. These guidelines were certainly required to be moulded by the State to meet their requirements depending on various factors prevailing in the State".

"33. In addition to the statutory provisions and the judgments afore referred, we must notice that all the PPAs entered into by the generating companies with the appropriate body, as well as the orders issued by the State in GO Ms. Nos. 93 and 112, in turn, had provided for review of tariff and the conditions. The Tribunal appears to have fallen in error of law in coming to the conclusion that the Regulatory Commission had no powers either in law or otherwise of reviewing the tariff and so called incentives. Every document on record refers to the power of the authority/Commission to take a review on all aspects including that of the tariff. One of the relevant consideration for determining the question in controversy is to examine whether the matter falls within the statutory or contractual domain. From various provisions and the documents on record it is clear that Regulatory Commission is vested with the power to revise tariff and conditions in relation to procurement of power from generating companies. It is also clear from the record that in terms of the contract between the parties, the APTRANSCO had reserved the right to revise tariff etc. with the approval of the Regulatory Commission".

"36. .....In our view, the Tribunal has erred in law in treating these inter-se letters and guidelines between the Government of India, State Government and the Commission/the State Electricity Board as unequivocal commitments to the respondent/purchasers /generators/developers so as to bind the State for all times to come."

"In any case, the matter was completely put at rest by the order of 20th June, 2001 and the PPAs voluntarily signed

by the parties at that time, which had also provided such stipulations. If such stipulations were not acceptable to the parties they ought to have raised objections at that time or at least within a reasonable time thereafter. The agreements have not only been signed by the parties but they have been fully acted upon for a substantial period".

"39. In the present case the order dated 20th June, 2001 was fully accepted by the parties without any reservation. After the lapse of more than reasonable time of their own accord they voluntarily signed the PPA which contained a specific stipulation prohibiting sale of generated power by them to third parties. The agreement also had renewal clause empowering TRANSCO/APTRANSCO/Board to revise the tariff. Thus, the documents executed by these parties and their conduct of acting upon such agreements over a long period, in our view, bind them to the rights and obligations stated in the contract. The parties can hardly deny the facts as they existed at the relevant time, just because it may not be convenient now to adhere to those terms. Conditions of a contract cannot be altered/avoided on presumptions or assumptions or the parties having a second thought that a term of contract may not be beneficial to them at a subsequent stage. They would have to abide by the existing facts, correctness of which, they can hardly deny. Such conduct, would be hit by allegans contraria non est audiendus".

"41. In these circumstances, we are unable to accept the argument that the State or the Regulatory Commission or erstwhile State Electricity Board were bound to allow same tariff and permit third party sales for an indefinite period. To this extent, authorities, in any case, would not be bound by the principle of estoppel".

23.4 The Hon'ble Supreme Court has concluded that all the documents placed before them provide for a review of tariff. The PPA entered into between the NCE generators and

the APTRANSCO/distribution licensees also had a provision of review from 1.4.2004 by the State Commission. The Hon'ble Supreme Court also set aside the judgment of the Tribunal ordering continuation of tariff as per MNES guidelines. The Hon'ble Supreme Court rejected the contention of the NCE generators that they had legitimate expectations that the tariff as per MNES guidelines would continue to operate and held that these are guidelines and cannot bind the State Government for all times to come.

23.5 The guidelines of Ministry of Non-Conventional Energy Sources only recommended indicative tariff uniformly applicable for all NCE Sources and the tariff is not determined based on commercial principles. Letter dated 7/13.9.1993 from Secretary, Ministry of Non-Conventional Energy Sources, Government of India to Chief Secretaries of the States indicates the principle followed in recommending a minimum price of Rs. 2.25/unit for purchase of energy from NCE sources. The relevant extracts are reproduced below:

> *"4. The Ministry has drawn up a set of guidelines (enclosed) for consideration and adoption by all states towards a uniform policy pertaining to non-conventional energy sources. A minimum buy-back price of Rs. 2.25/unit has been proposed. This is considered reasonable as the average cost of generation from new coal thermal projects is already Rs. 1.90/unit (1991 figure), while it is even higher at Rs. 2.20/unit for gas based projects and Rs. 2.50/unit from captive diesel sets".*

Thus the purchase price of Rs. 2.25 per unit for NCE Sources was considered reasonable considering the cost of generation from new coal and gas based projects and captive diesel sets prevailing at that time. Thus, the purchase price recommended by MNES was not determined taking into account the cost of generation including reasonable return on investment for the various NCE projects.

23.6 Section 61 of the Electricity Act, 2003 stipulates as under:

> ***61. Tariff regulations.***—*The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:—*
>
> *(a) the principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;*
>
> *(b) the generation, transmission, distribution and supply of electricity are conducted on commercial principles;*
>
> *(c) the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;*
>
> *(d) safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;*
>
> *(e) the principles rewarding efficiency in performance;*

(f) multi-year tariff principles;

(g) that the tariff progressively, reflects the cost of supply of electricity, and also, reduces and eliminates cross-subsidies within the period to be specified by the Appropriate Commission;

(h) the promotion of co-generation and generation of electricity from renewable sources of energy;

(i) the National Electricity Policy and tariff policy:"

Admittedly, the State Commission has not specified any Tariff Regulations for NCE Sources. However, while determining the tariff, the State Commission has to be guided by the factors stipulated under Section 61 of the Act. The tariff as per the MNES guidelines does not satisfy the above stipulations of Section 61. The State Commission has also to be guided by the principles and methodologies specified by the Central Commission. The Central Commission's Regulation for conventional as well as Non-Conventional Sources of energy are based on normative parameters, and not on the basis of any government/ MNES guidelines. The State Commission in the order dated 2.3.2004 determined the tariff based on the principles laid down in Section 61. The Hon'ble Supreme Court in its judgment has decided not to intervene with the tariff determined by the State Commission but only remanded the matter to the State Commission with directions to hear the NCE generators afresh and determine the tariff for purchase of electricity in accordance with law. The two Members of the State Commission have determined

tariff in their respective orders on the basis of normative parameters for capital cost, ROE, interest on loan, depreciation, fuel cost, etc. Thus, we do not find the determination of tariff by the two Members of State Commission taking into account components of cost in generation of electricity from the various NCE Sources as illegal or ultra virus the Act.

23.7 The Central Commission in its Tariff Regulations for NCE Sources has not followed the MNES guidelines and has adopted normative approach for the various components of cost of generation. The State Commission has to be guided by the principles and methodologies specified by the Central Commission.

23.8 The learned counsel for the Project Developers have argued that as per the Hon'ble Supreme Court's judgment State Commission's order dated 20.6.2001 has attained finality and, therefore, MNES guidelines has to be followed. We do not agree with the interpretation of the learned counsel for the NCE generators. According to the Hon'ble Supreme Court's judgment, the order dated 20.6.2001 also stipulated review of tariff w.e.f. 1.4.2004. The Hon'ble Supreme Court did not hold that the tariff as per MNES guidelines has to be continued as decided by the Tribunal in its judgment dated 2.6.2006. In fact the findings of the Hon'ble Supreme Court are quite contrary as indicated in paragraphs 23.3 & 23.4 above.

23.9 The Hon'ble Supreme Court specifically directed the State Commission to make State Government a party in the remand proceedings. Let us also examine the submissions made by the Government of Andhra Pradesh before the State Commission. The relevant submissions are as under:

> *"(8) The above said provisions make it amply clear that the State Electricity Regulatory Commission alone is the authority to determine the tariff. The procedure of fixation of tariff, which includes public hearing, ensures that the Commission takes into account the views of all relevant interested parties including the Government. Even under Electricity Reform Act the position was the same.*
>
> *(9) After expiry of aforesaid policy guidelines the Government of A.P. had not issued any policy with regard to NCE generators particularly upto 2004.*
>
> *(10) As stated supra, prior to enactment of AP Electricity Reform Act 1998, G.O. Ms. No. 93 was issued in 1997 providing certain incentives for manufacturers of electricity from NCE sources. Therefore, Electricity Regulatory Commission is neither bound by G.O. No. 93, the operational period of which had lapsed by 2000. Further, the Government itself, issued G.O. Ms. No. 112 in 1998, even before Commission was constituted, limiting the period of incentives to 3 years i.e. upto December 2000. All the aforesaid facts were submitted before Supreme Court by way of impleadment application. The copy of the affidavit filed by Government of AP before the Hon'ble Supreme Court in C.A. 2926/2006 is herewith filed which may be read as part and parcel of this reply.*
>
> *(11) Further, as per RPPO which was issued under section 86(1)(e), the Discoms are bound to purchase 5% of their energy purchases from NCE sources.*

(12) The Hon'ble Supreme Court upheld the order dated 20.06.2001 and also the order dated 20.03.2004 and remanded the case to the APERC only on the grounds as stated at para 48 and 50 of its judgment dated 08.07.2010.

(13) Therefore, keeping in view the interest of consumers, obligation of RPPO, the observation of Hon'ble Supreme Court, APERC may decide the request for revision of tariff expediently and pass appropriate orders".

Thus the State Government also did not plead for continuation of tariff based on MNES guidelines or State Government's guidelines and stated that the State Commission alone is the authority to determine the tariff.

23.10 In view of above, we do not accept the contention of the Project Developers that the tariff according to MNES guidelines has to be continued. Thus, the first issue is decided against the Project Developers.

23.11 We also do not accept the contention of the distribution licensees that the tariff as determined by the State Commission in its 2004 order has to be continued as the Hon'ble Supreme Court has not set aside the 2004 order of the State Commission. Hon'ble Supreme Court has given clear directions to the State Commission to hear the developers afresh and determine the tariff to ensure existence of NCE projects rather than their extinguishment, as alleged. Thus, if the State Commission is convinced that the tariff as

determined by the 2004 order needs to be reviewed to ensure existence of the NCE projects, it could do so.

24. The second issue is regarding third party sale from the NCE generators.

24.1 One of the contentions of the Developers is that for the period after 10 years of operation, MNES tariff should continue with the option to the distribution licensees not to purchase power, in which case the generating companies should be allowed to affect third party sale.

24.2 In view of our findings regarding continuation of MNES tariff, the above contention of the Developers would not survive.

24.3 The Electricity Act, 2003 provides for non-discriminatory open access to be provided by the State Transmission Utility, transmission licensees and by the distribution licensee in accordance with the regulations made by the State Commission. However, in the present case, the generating companies have entered into PPA for supply of power for a period of 20 years. The limited issue we have to consider in compliance of the directions of the Hon'ble Supreme Court is whether it would be in the large interest of public and the State to permit third party sale to NCE generators.

24.4 All the three members of the State Commission have the same opinion, at least on this issue, that third party sale is not in the large interest of public and the State.

24.5 According to Shri A. Mariarputham, learned Sr. counsel for the licensees the PPAs entered into by the Developers are for a period of 20 years and there is obligation to sell the entire electricity generated to the distribution licensees for the entire period of 20 years. They had asked for a levellised tariff for the entire period of PPA. The State Commission, however, granted a front loaded tariff by giving a high depreciation for the early years in order to enable them to pay off their debts within the first 10 years of operation. Having availed the front loaded tariff thereby availing greater benefits of higher tariff in the first 10 years, the Developers cannot seek to exit the PPAs and go for third party sale. This would be unfair to consumers and not in the larger interest of the public. Further, the order dated 31.3.2009 of the State Commission also did not permit third party sale. It revised the fuel cost, but provided that other conditions would remain unmodified, meaning thereby prohibition on third party sale as contained in the order dated 20.3.2004 would continue. There is no challenge to the order dated 31.3.2009. The period in question i.e. 1.4.2004 to 31.3.2009 is already over and, therefore, third party sale cannot be agitated or granted in the present proceedings.

24.6 The Chairman of the State Commission has given detailed reasons for disallowing third party sale. The relevant extracts in respect of developers who had by 20.3.2004 entered into PPAs based on the 20.6.2001 order as under:

> *187. In view of above findings of Hon'ble Supreme Court regarding the finality of the 2001 order of the Commission and the effect of the PPAs, NCE units, who had entered into PPAs based on 20-06-2001 order of the Commission, cannot be permitted to make 3rd party sales during the period covered by the respective PPAs.*
>
> *188. The period from 01-04-2004 to 31-03-2009 is the period covered by the present order. During this period from 01-04-2004 to 31-03-2009, the State DISCOMs were never in a power surplus position. The DISCOMs have stated that the public and the State of A.P. had been suffering for want of required quantum of electricity and that many industries besides other categories of consumers were put to load relief by giving 3 days power holidays in a week. There is justification in the above stand that allowing third party sales by such NCE units even before their PPAs expire is nothing but denying the benefit of reduced fixed charges to the consumers of power. The commission is inclined to agree that such a step, especially in a situation of scarcity for power in the state when the DISCOMs are forced to purchase power in the open market at an exorbitant price, will lead to hike in tariffs or fuel surcharge adjustment or subsidy to be borne by the Government and that therefore, allowing third party sales by NCE units is not in the interest of the public and the State.*
>
> *189. Further, during the said period, the DISCOMs were under a statutory obligation of RPPO in terms of section 86 1(e) of the Electricity Act 2003 which imposed a statutory obligation to purchase 5% of their total power procurement from the NCE sources. The government has also stated*

that as per RPPO which was issued under section 86(1) (e), the DISCOMs are bound to purchase 5% of their energy purchases from NCE sources. Obviously, any permission for third party sales would go against the fulfilment of RPPO obligation by the DISCOMs.

190. Coming to the practicality and feasibility aspects which are also covered by the aforesaid direction of the Hon'ble Supreme Court as para 52 (d) of the order, it has to be kept in mind that the period from 01-04-2004 onwards, covered by the present order has already elapsed and during the said period the NCE companies did not make third party sales and instead gave their generated units to the DISCOMs based on the PPAs entered by them. In these circumstances, it is neither practical nor feasible to retrospectively permit third party sales by such units for the period from 01-04-2004 onwards.

191. For all the above reasons including the findings of Hon'ble Supreme Court regarding the finality of the 2001 order of the Commission and the effect of the PPAs on the aspect of 3rd party sales, the Commission considers that it is not legally permissible or practicable or feasible to permit third party sales by the NCE developers who had entered into PPAs by 20-03-2004 based on 20-06-2001 order of the Commission, during the period covered by the respective PPAs".

As regards the developers who entered into PPAs with the distribution licensees after 1.4.2004 on terms and conditions as were determined in the 20.3.2004 order. The order of the Chairman states as under:

"192. The 20-03-2004 order had not specifically covered the issue of third party sales. The prohibition on 3rd party sales flows from the 2000 order and the 2001 order of the

commission. However, for units who, after 01-04-2004, had entered into PPA's to supply electricity to DISCOMS on the terms and conditions as were determined by the Commission in the 20-03-2004 order, the question of such permission does not really arise since they had anyway entered into PPA for selling power to DISCOMs as per the rates fixed by the APERC in the 20-03-2004 order. Secondly the reasoning contained in the discussion in respect of units of category 1, applies to units of this category also. Accordingly the commission hereby holds that it is not legally permissible or practicable or feasible to permit third party sales by the NCE developers who had entered into PPAs after 01-04-2004 based on the 20-03-2004 order of the Commission, during the period covered by the respective PPAs".

24.7 We find force in the arguments of learned Sr. counsel for the licensees and also agree with the findings of the Learned Chairman of the State Commission that grant of third party sale to the developers who have entered into long term PPAs with the distribution licensees will not be in large interest of public and the State. Firstly, the PPAs have been entered into by the developers with the distribution licensees for a period of 20 years. In case the NCE developers are permitted third party sale, the distribution licensees may have to make alternate arrangements for procurement of power at higher tariff. The power purchase cost being uncontrollable cost will have to be allowed as a pass through in the retail supply tariff resulting in higher tariff for consumers even though the distribution licensees had entered into long term agreements for procurement of power. Secondly, the State

distribution licensees have to meet their Renewable Purchase obligations and if the sale to third parties is allowed they may not be able to meet their RPO obligations as specified by the State Commission even though they had made arrangements for procurement of power from NCE sources by entering into long term PPAs with them. Thirdly, the tariff decided by the State Commission is front loaded and if the developers are permitted third party sale, the distribution licensees and in turn the consumer will be deprived of lower fixed cost component of tariff in future after having paid the higher front loaded tariff in the initial operation period of the Project. However, there is no bar on the NCE projects who have not entered into PPA with the distribution licensees or future NCE projects to sell power to third parties and the distribution licensees and transmission licensee shall provide open access as per the provisions of the 2003 Act. The developers who have entered into PPA with distribution licensees will also have option for third party sale after the expiry of the term of the PPA.

24.8 In view of above, we hold that allowing third party sale to the Developers who have voluntarily entered into PPAs with the distribution licensees for a period of 20 years will not be in large public interest and in the interest of the State. Thus, the second issue is also decided against the Developers.

25. Having decided that the MNES tariff will not be applicable for the period 2004-09 we have to now take up the third issue and examine the norms for determination of tariff for the Biomass, Bagasse and mini hydel power plants. We shall discuss the various normative parameters for the various types of NCE Projects in the succeeding paragraphs.

26. Before we examine the normative parameters let us recall the observations made by the Hon'ble Supreme Court in its judgment.

> *"These objects and reasons clearly postulated the need for introduction of private sector into the field of generation and distribution of energy in the State. Efficiency in performance and economic utilization of resources to ensure satisfactory supply to the public at large is the paramount concern of the State as well as the Regulatory Commission. The policy decisions of these constituents are to be in conformity with the object of the Act. Thus, it is necessary that the Regulatory Commission, in view of this object, take practical decisions which would help in ensuring existence of these units rather than their extinguishment as alleged".*

We have to keep in view the above directions of the Hon'ble Supreme Court in giving our findings on the various normative parameters of NCE generators.

27. Further, let us also examine the present state of development of NCE projects which has been described in the order of the Member-Technical.

28. The Member-Technical's order states as under:

i) NCE Sources are environment friendly and help to conserve the fast depleting fossil fuels, reduction of T&D losses and deserve special consideration and encouragement.

ii) NCE Sources should be encouraged towards adding capacities in order to alleviate the acute power shortage and to reduce the short term purchase of electricity at exorbitantly high price in open market, besides ensuring adequate green power.

iii) The State Government's nodel agency for development of NCE projects had submitted before the State Commission that there is huge potential of NCE projects but the projects are not coming up as the negotiated tariffs being offered by the distribution licensees are not economically viable. It is essential that fixed tariff is prescribed by the State Commission like being done by other State Regulatory Commissions to have certainty of financial working and economic viability for the projects proposed by the prospective investors. Unless this is done, entire exercise of Renewable Power Purchase Obligation will become a hypothetical exercise.

iv) Though there is potential to generate power to the extent of 11,270 MW through NCE Sector, so far the state has been able to achieve only 478.06 MW.

v) After the State Commission's order dated 20.3.2004, none of the entrepreneurs have come forward in

Andhra Pradesh for generation of power by NCE Sources and all the entrepreneurs of the State have switched over to other States for implementation of NCE projects.

The above observations made in the order of the Member-Technical indicate that the position and status regarding development of NCE projects is not very encouraging in the State of Andhra Pradesh.

29. Section 86(e) of the Electricity Act provides for the State Commissions to promote generation of electricity from renewable sources of energy and that a percentage of total consumption of electricity in the area of the distribution licensee as specified by the Commission to be purchased from such sources. The National Electricity Policy also emphasizes the need for full exploitation of feasible non-conventional energy resources, mainly small hydro, wind and biomass with a view to increase the overall share of non-conventional energy sources in the electricity mix and, making efforts to encourage private sector participation through suitable promotional measures and ensuring sustained growth of these sources. The National Electricity Policy and Tariff Policy also states that as it will take sometime before the non-conventional technologies compete, in terms of cost of electricity, with conventional sources, the Commission may determine an appropriate differential in prices to promote these technologies. We also notice that the distribution generation

by the non-conventional sources at high voltage network also helps in reducing the technical transmission and distribution losses and improving stability of the system. Besides, climate change mitigation, the non-conventional sources of energy particularly with biomass provides income to rural population, rural employment and economic development of areas where the communities have little or no opportunity to improve their livelihood.

30. In the above background, let us examine the normative parameters for the Biomass, Bagasse and mini hydel power plants.

31. **Biomass Power Plants**:

31.1 **Capital Cost:**

i) The State Commission in the order dated 20.3.2004 had fixed the capital cost of Biomass Projects at Rs. 4 crores per MW and the same was maintained in the Review Order dated 05.7.2004. Both Chairman and Member-Finance in their respective orders have also retained the capital cost at Rs. 4 Cr./MW.

ii) Shri Gopal Chaudhry, learned counsel for Biomass Energy Developers ('BEDA') in appeal no. 166 of 2011 has submitted that Rs. 4 Cr./MW was considered as appropriate for the plants set up prior to 2004. However, for the plants set up subsequently, the capital cost allowed ought to have been

higher as there had been significant increases in the cost and prices of civil works, land, steel, electrical machinery and also on account of general inflation. There ought to be a capital cost escalation factor or an indexing mechanism.

iii) The Biomass based Project Developers in appeal nos. 26, 29 and 38 of 2012 and 150 of 2011 have not raised any issue regarding capital cost.

iv) Learned Sr. counsel for the licensees pointed out that the developers had asked for Rs. 4 crores/MW in the earlier proceedings and also in the remand proceedings which has been granted by the State Commission. In the remand proceedings before the State Commission the Developers had not asked for any cost indexation formula and this issue has not been argued before the State Commission. Out of 35 Biomass Projects 32 of them had been set up prior to 2004. Post 2004, only 3 Projects had been set up viz. Velegapudi (Dec., 2006), Suryatejas (April 2007) and Agrigold (June 2007). M/s. Velegapudi and Agrigold have entered into negotiated PPAs. M/s. Suryatejas have entered into PPA beyond the control period 2004-09 of the State Commission's order dated 20.3.2004. Thus, the issue of capital cost indexation is purely academic, apart from the fact that they have not specifically asked for higher amount as capital cost based on any indexation method.

v) We notice that the Central Commission's Tariff Regulations for Renewable Energy Sources, 2009 provide for

capital cost of Biomass Power Projects as Rs. 4.5 Cr./MW for the FY 2009-10, the first year of the Control Period 2009-14 with Capital Cost Indexation Mechanism to be applicable over the Control Period with changes in Wholesale Price Index for Steel & Electrical Machinery. Similar Capital Cost Indexation Mechanism has been made applicable in the Central Commission's Tariff Regulations, 2012 for the Control Period 2012-17. However, the capital cost has been fixed at Rs. 4.45 Cr./MW during the first year of the control period 2012-17.

vi) In this connection, submission of Biomass Energy Developers Association ('BEDA'), the appellant in appeal No. 166 of 2011, as given in the appeal is as under:

> *"9.3 The Chairman and the Member-F have both adopted the capital cost of the project as Rs. 4 crores per MW. Ostensibly, they were going by the submissions made by the 1st Appellant before the Commission that the capital cost of Rs. 4 crores be retained at the same level as was determined in the order dated 20.3.2004. The Chairman and the Member-F failed to appreciate that the 1st Appellant's submissions were on the premise that the tariff determination was being done for a control period of five years between 2004 and 2009, and that the tariff structure would be applicable only for this period as stated in the Commission's order dated 20.3.2004. It is inconceivable that the capital cost of the project can be the same for any length of time indefinitely. The aforesaid Chairman and Member have both construed and held that the fixed costs determined in the impugned order would operate even beyond 2009 and also for projects*

established thereafter. The consideration of the capital cost at the same level without reference to the time at which the project is actually installed and commissioned, and without providing for any escalation in the project cost and without determining any mechanism by which the normal increase in costs would be given due effect, is irrational and unreasonable"

The submission of BEDA before the State Commission in the remand proceedings was that capital cost of Rs. 4 Cr./MW as decided in the order dated 20.3.2004 be retained for the Control Period 2004-09. However, the grudge of BEDA is that the same capital cost is continued indefinitely even beyond 2009 and also for projects established thereafter. Now BEDA wants cost indexation formula for the period 2004-09 also.

vii) While we accept in principle that the capital cost should be determined for the first year of the Control Period with Cost Indexation Mechanism for determination of capital cost for projects commissioned in the subsequent years of the Control Period as provided for in the Central Commission's Regulations, we do not want to go into the Cost Indexation Mechanism for the Control Period 2004-09 for the following reasons:

a) The developers had prayed for retention of capital cost of Rs. 4 Cr./MW as decided in the earlier order dated 20.3.2004 for the Control Period 2004-09 and did not seek any cost Indexation in the remand proceedings before the State Commission.

b) Capital cost of Rs. 4 Cr./MW has been decided even for the projects commissioned before 1.4.2004.

c) As stated by the distribution licensees, out of 35 Biomass Projects in the State only 3 have been commissioned after 1.4.2004 during the control period 2004-09 after the State Commission's order dated 20.3.2004 determining tariff at a capital cost of Rs. 4 Cr. per MW. One of the projects commissioned in June 2007 viz. M/s. Agri Gold Projects Ltd., in their appeal no. 38 of 2012 have not raised the issue of capital cost while challenging the orders of the Chairman and Member-Finance.

viii) However, we direct the State Commission to re-determine the capital cost for the Biomass projects commissioned after the Control Period 2004-09 i.e. after 31.3.2009, with Cost Indexation Mechanism. The capital cost for first year of the next control period may be determined with cost Indexation formula to be applicable for determining the capital cost for the subsequent years of the Control Period.

31.2 **Threshold Plant Load Factor:**

i) Chairman and Member-Finance in their respective orders have decided threshold PLF of 80% as determined in the earlier order dated 20.3.2004 and Review Order dated 5.7.2004.

ii) Shri Gopal Chaudhry, learned counsel for the BEDA submitted actual data for six Biomass plants from 2004-05 to 2008-09 to show that the actual average PLF for these plants has been 75.8%. The reasons for not able to achieve a higher PLF have been indicated as:

> *"(a) When agricultural residue is used in the boilers the phenomenon of super heater corrosion sets in. This leads to monthly stoppage of the power plant due to choking of super heater coils. This further reduces the plant load factor.*
>
> *(b) Due to the seasonal nature of the biomass fuel and its low bulk density most of the biomass is stored in the open area. This leads to increase in moisture to an extent of 35% in the biomass fuels during the rainy season. Under such a scenario the boiler cannot achieve its full load which will further reduce the turbine load.*
>
> *(c) The calorific value of the fuels used change continuously rendering combustion controllers ineffective.*
>
> *(d) Because of the presence of certain sodium salts in the fuels used, which have low melting point, deposition of ash takes place in the super heater area leading to erosion, corrosion, heat transfer and combustion problems.*
>
> *(e) Because most of our plants run on mixed fuels (with continuously varying calorific value and proportions) maintaining ideal air fuel ratio at all times is impossible".*

He submitted that the threshold PLF may be fixed at 75%.

iii) According to Shri A. Mariarputham, learned Sr. counsel for the licensees, it was conceded by the Developers during the proceedings in 2004 that PLF over 80% is achievable. In the representation by Developers dated 20.3.2010 it was indicated by the Developers that 100% PLF was achievable but asked for Rs. 5 per unit for the power exported above 80%. The data for some plants on the basis of which 75% PLF is being asked for is not a representative sample out of 35 Biomass Plants. Accordingly, PLF may be retained at 80%.

iv) Other Appellants generators have not agitated this issue.

v) We notice that the Central Commission has fixed the PLF at 60-70% during first year and 80% from 2nd year onwards in the Tariff Regulations, 2009 and Regulations, 2012.

vi) Let us examine findings of Chairman in his order which are summarized as under:

a) In 20.3.2004 order the Commission considered a PLF of 80% as threshold for fixed cost coverage based on Commission's review of PLF achieved by the Biomass Power Plants during the past years and acceptance of the developers during the hearing for that level.

b) In the Review order PLF of 80% was retained taking into account the NEDCAP confirmation by an affidavit that PLF at an average of 80% is achievable for the life time period of Biomass Power Projects.

c) In 2010, BEDA requested for fixation of PLF at 75%.

d) The distribution licensees stated that the generation data from 2004-05 to 2009-10 indicate that these plants can be operated at 85% PLF.

vii) Member-Finance in his order has decided threshold PLF of 80% on the basis of statements of CEA, NEDCAP and APTRANSCO.

viii) The period in question i.e. 2004-09, is already over and the actual PLF for all the plants should now be available. However, BEDA has submitted the data for only 6 out of 35 plants which is not a representative data. There are 26 Project developers besides BEDA as appellants in Appeal no. 166 of 2011 out of which only 5 have given their actual PLF data for the period 2004-09. Others have not submitted any data. Other bio based generating companies who are appellants in appeals other than 166 of 2011 have not raised this issue.

ix) The Central Commission in its Regulations of 2009 & 2012 has also fixed PLF at 80% from the 2nd year of operation. We have also examined the Report of Technical Expert Committee constituted by the Central Electricity

Authority following a representation received from BEDA and some Members of Parliament from Andhra Pradesh to look into the normative parameter of the Biomass based project in wake of tariff determined by the State Commission w.e.f. 1.4.2004. The Committee obtained the actual data for the FY 2004-05 from 11 biomass based plants in Andhra Pradesh and 2 plants in Tamil Nadu and one plant each in Chattisgarh, Rajasthan and Karnataka and analysed and also made some site visits. The data analysed in the CEA study of September 2005 indicates PLF of 11 Plants in Andhra Pradesh varying from 77.9% to 96.82% and average of all the plants in Andhra Pradesh, Tamil Nadu, Karnataka, Chattisgarh and Rajasthan at 81.76%. The average PLF of 11 power plants in Andhra Pradesh is 86.72%.

x) The findings in the CEA Report, Sept., 2005 with regard to Plant load factor are as under:

> "*9.7.1 The data furnished by the power plants is tabulated in table-2. From this it can be seen that the plant load factor varies generally between 77.9 to 96.82%. Therefore, it can be concluded that plant load factor above 80% can be achieved by biomass power plants. However, considering the fact that biomass plants make use of mixed fuels, fibrous nature of some of these fuels, presence of sodium and potassium salts in these fuels, increased maintenance on boiler due to these salts, it is recommended that 80% PLF may be considered as reasonable and may be adopted as the bench mark PLF for these plants".*

xi) Thus, we do not find any reason to interfere with the findings of the Chairman and Member- Finance of the Commission fixing threshold PLF at 80%.

31.3 **Auxiliary Consumption:**

i) The State Commission had fixed auxiliary consumption at 9% in earlier orders dated 20.3.2004 and 5.7.2004. Chairman and Member-Finance in their respective orders have retained the auxiliary consumption at 9%.

ii) Shri Gopal Chaudhry, learned counsel for BEDA & Others has submitted that observation of the Chairman that biomass plants have less number of auxiliaries compared to coal fired stations and the inference drawn on that basis is incorrect. Member-Finance was not justified in suggesting that the Appellant Association had conceded to Auxiliary consumption of 9%. On the contrary the Appellant Association had actually submitted in R.P. 3 of 2004 that auxiliary consumption was in the range of 9 to 15% depending upon various factors. In Central Commission's 2009 Regulations adopted a figure of 10% speaking only of energy conservation methods without spelling out what they might be. CEA report also fixes the auxiliary consumption at 10% even though it noticed that the auxiliary consumption varied between 9.76% to 15.38%, the average being 12.61%. The explanatory memorandum to the draft Regulations 2012 of the Central Commission speak of a study carried out by the

National Productivity Council and their recommendation for adopting auxiliary consumption at 12%. Learned counsel also submitted actual auxiliary consumption data for the period 2004-09 for the six biomass based plants whose PLF data for the same period was also submitted for PLF with average PLF of 75.8%. The reasons given by the learned counsel for higher auxiliary consumptions are:

> *"(a) Most of the power plants are connected to the grid at 33kV voltage. There are many trippings at the 33 kV level due to grid operating conditions and inconsistencies. In fact some plants trip every day. Some plants have to run at low load due to the single phasing phenomenon at the 33/11 kV substations. When plants have more trippings it leads to more starts which further increases the auxiliary load. Even when plants are run at part load, the auxiliary load increases.*
>
> *(b) When agricultural residue is used in the boilers shredders and chippers need to be employed. This will lead to an increase in the auxiliary consumption. When agricultural residue is used in the boilers the phenomenon of superheater corrosion sets in. This leads to monthly stoppage of the power plant due the choking of superheater coils. This leads to more starts-ups which in turn leads to increase in auxiliary consumption.*
>
> *(c) Due to the seasonal nature of the biomass fuel and its low bulk density most of the biomass is stored in the open area. This leads to increase in moisture to an extent of 35% in the biomass fuels during the rainy season. Under such a scenario the boiler cannot achieve its full load which will further reduce the turbine load. When the plant is run at low load it further increases the auxiliary load."*

Learned counsel argued for fixing of auxiliary consumption at 12%.

iii) Other appellant developers of biomass based plants raised the issue of auxiliary consumption.

iv) Learned Sr. counsel for the licensees has argued that the Developers during the 2004 proceedings had accepted consideration of auxiliary consumption at 9%. Also, no case has been made out on merits for granting auxiliary consumption at a rate higher than 9%. The 2004 order relied on DPRs of the developers where auxiliary consumption was indicated as 9%. Conventional coal fired projects have been allowed 9% auxiliary consumption. Biomass Projects have much less auxiliaries compared to coal fired projects. There is no milling plant and amount of ash to be handled is less.

v) We feel that the auxiliary power consumption largely depends on the Plant Load Factor maintained at the power plants and number of starts and stops. We notice that the Central Commission in its Regulations 2009 & 2012 has fixed auxiliary consumption at 10%. In explanatory memorandum for Tariff Norms to 2009 Regulations the Central Commission has indicated that the auxiliary consumption factor in respect of various projects under consideration varies from 9 to 12% with most projects indicting auxiliary consumption to the extent of 10%.

vi) The period in question i.e. 2004-09 is already over and actual auxiliary consumption all biomass plants should now be available. However, BEDA has submitted data for only 6 out of 35 projects which is not a representative data. There are 26 developers, besides BEDA in appeal no. 166 of 2011 out of which only 5 have given their actual auxiliary consumption data for the period 2004-09. Biomass Plant Developers in other appeals have also not raised this issue.

vii) The only scientific study available in records in CEA Report of Sept., 2005. The study includes 16 power plants out of which 11 are in Andhra Pradesh. The Report indicates that the auxiliary power consumption based on generation data is found to vary between 9.75% to 15.38% and average auxiliary consumption based on this data is 12.61%. The Report records that the coal fired power plants of about 30 MW capacity is found to have auxiliary consumption of 12% based on the data collected and since the biomass plants have less number of auxiliaries compared to coal fired stations, there is no milling plant and the amount of ash handled is of lesser quantity, hence it recommends auxiliary consumption of 10% for biomass plants.

viii) The explanatory note to 2012 Tariff Regulations for Renewable Energy Sources of the Central Commission mentions the study carried out by National Productivity Council which indicated auxiliary consumption to be varying

between 10 and 18% and their suggestion of fixing auxiliary consumption at 12% which can be achieved if the plant is operated under stable condition. However, the Central Commission has decided to retain auxiliary consumption at 10%.

ix) We feel that there is need to review the auxiliary consumption for biomass plants considering the following factors:

a) Fouling of heat transfer surfaces in boiler with ash deposits is a problem encountered with biomass fuels. If the heat transfer surfaces are not cleaned regularly and effectively, there is a risk of reduction of steam generation capacity apart from reduced boiler efficiency. This is corroborated by CEA Report. This leads to stoppage of plant at regular intervals resulting in more stops and start-ups increasing the auxiliary consumption. Even if power is drawn from the grid during the shut down it would mean consumption of additional electricity for running the auxiliaries, resulting in increase in %age auxiliary consumption.

b) Most of the plants are connected to grid at 33 kV voltage where number of trippings have been reported by the Developers resulting in outage of

biomass plant and more stops and start ups for the plant.

c) Most of the biomass fuel is stored in open space due to seasonal availability and low density of biomass fuels. In monsoon season the moisture in the biomass fuel increases substantially due to which the boiler cannot achieve full load. When the plant is operated at partial load, the auxiliary consumption increases.

We notice that the Chairman and Member-Finance have not considered the above factors while deciding the auxiliary consumption.

x) However, as pointed out in the CEA report the biomass plants have less number of auxiliaries compared to coal based plant and there is no milling plant. In view of this we feel that auxiliary power consumption of 10% as specified in the Central Commission's Regulations and recommended in the CEA Report will be reasonable for the biomass plants. Accordingly, decided.

31.4. **Operation & Maintenance Expenses and annual escalation:**

i) The State Commission in its order dated 20.3.2004 fixed O&M expenses at 4% of capital cost with annual escalation of 4%. Both Chairman and Member-Finance in

their respective orders have fixed the O&M expenses at 5% with annual escalation of 6%.

ii) Shri Gopal Chaudhry, learned counsel for BEDA & others has argued that biomass power plants are of small capacity, usually between 4 to 7.5 MW and, therefore, the fixed expenses towards salaries and establishment would be a higher percentage of the capital cost than large coal based plants. He submitted the data for actual O&M expenses for six biomass plants for the period 2004-09 recording average expenses of 9.39% over five year period. It would be equivalent to 7% during the first year of control period with annual escalation of 5%. He sought for O&M expenses of 7% in 2001-02 with 5% escalation or 9% for all the five years to be further escalated by a suitable cost indexation rate thereafter or alternatively 7% for the first year of operation and thereafter escalation of 6% p.a. for the subsequent years.

iii) Learned Sr. counsel for the licensees has argued that State Commission had correctly decided O&M expenses as 4% with 4% escalation in its order dated 20.3.2004 and the same should have been retained. Central Commission's Regulations, 2004 for conventional projects fixed O&M expenses at 4%. For non-conventional energy projects it should be less. The Developers have produced actual O&M expenses for only six projects which cannot be taken as

representative sample as data is now available for all the projects for the Control Period 2004-09.

iv) The Biomass Plant Developers in other appeals have not challenged the O&M expenses decided by the Chairman and Member-Finance in their respective orders.

v) Let us now examine the order of the Chairman:

"The Commission has examined the above rival contentions. The Commission has duly noted that the CERC, vide its orders dated 16th September 2009, has fixed an O & M of 4.5% of the project cost applicable to the control period FY 2009-10.The commission does not see any reason for accepting the request of M/s. BEDA to fix O&M Expenses at 7% for 2001-02 with 5% escalation per annum. However, Commission considers it reasonable to increase the O & M of 4% fixed in the 20-03-2004 order to 5%. Accordingly, the commission hereby fixes 5% as O&M expenses. Further, recognizing that O & M Escalation has to be commensurate with the current costs rather than historic costs, and taking into account that the CERC vide its orders dated 16th September 2009, has fixed an O & M escalation of 5.72% on normative O & M expenses allowed at the commencement of the Control Period FY 2009-10, the commission hereby fixes the O & M Escalation at 6% as against 4% fixed in 20-03-2004 order".

Thus, the Chairman has decided to enhance O&M expenses and annual escalation considering the Central Commission's Regulations.

vi) Let us now examine the findings of the Member-Finance in his order:

> *"….. In this context, it is to be noticed that CEA in its report entitled "Operational Norms for Biomass based power plants" given in September 2005, though recommended for O&M of 7%, however, felt that O&M expenses of 7% are very high and Biomass power plants should make efforts to reduce the same. On the other hand, the CERC in its order dated 16.09.2009 had fixed an O&M of 4.5% of the project cost. Considering, all the above, submission of tariff towards sustenance of the Biomass power plants in the state and promotion of green energy, I am of the considered opinion that, the O&M has to be increased from the level of 4% fixed in 2004 order atleast by 1% and accordingly the O&M expenditure shall be fixed at 5%. NEDCAP also suggested O&M expenditure of 5% in 2004. O&M cost of biomass power plant is on the higher side compared with the thermal power plants because of small size of the plants as well as fuel handling related issues".*
>
> *"<u>O&M Escalation:</u>*
> *Coming to the issue of O&M Escalation and duly recognizing the need that the escalation has to necessary capture, the current costs and the linear acceleration of increase in costs. I am of the opinion that the O&M escalation can be fixed at 6% per annum. This being in line with what M/s. BEDA had requested in 2004 is also very close to 5.72% fixed by CERC. Accordingly, O&M Escalation stands fixed at 6%".*

Learned Member-Finance after considering the Report of CEA, Central Commission's Regulations, 2009 and the need to give a fillip through the tariff towards sustenance of the Biomass power plants has decided to enhance the O&M expenses to 5% with annual escalation of 6%.

vii) Central Electricity Authority's Report has recommended O&M expenses at 7% considering the data furnished by the Biomass plants as also the fact that the biomass plant is highly labour oriented mainly in fuel collection, fuel transportation, fuel preparation and fuel feeding, etc. However, the Report also states that the O&M expenses is considered high and requires to be reviewed after 2-3 years. The relevant paragraph from the report is reproduced below:

> *9.5.3 From the above, it is noted that the percentages of administrative expenses and consumables appears to be high and it is necessary that the power plants have to exercise control on these expenses. Allowing 1.0% for administrative expenses and 1.5% for consumables the total O&M expense is worked out as 7%. However, 7% O&M expenses is also considered to be very high since APERC/MERC has recommended only 4%. Since the data furnished by the firms indicate O&M costs as mentioned above we may allow 7% O&M expenses presently and the same may be reviewed after 2-3 years. The O&M cost including insurance is therefore, recommended to be 7.0% of the capital cost".*

Thus, the CEA Report on the basis of the data submitted by the Developers has recommended O&M expenses at 7% including the insurance.

viii) Central Commission's Regulations provides for normative O&M expenses of 20.25 lakh per MW for 2009-10 with escalation of 5.72% p.a. At a capital cost of Rs. 4.5 Cr./MW for 2009-10 decided by the Central Commission it

translates into O&M expenses of 4.5%. In the 2012 Tariff Regulations the Central Commission has revised the O&M expenses as Rs. 24 lakhs/MW for the year 2012-13 with annual escalation of 5.72%. This translates into O&M expenses of 5.39% at normative capital cost of 4.45 Cr./MW fixed for the year 2012-13 by the Central Commission.

ix) We agree with the Chairman and Member-Finance that the O&M expenses for the biomass plants need to be raised due to following factors:

a) Biomass plants are smaller in size and highly labour oriented requiring higher employees and administrative expenses per MW compared to a conventional fuel based large size plant.

b) The repair and maintenance expenses of the biomass plants is higher on account of number of operational problems being faced due to quality of biomass fuel as indicated in the preceding paragraphs.

c) Cost of insurance has also to be included in the O&M expenses.

Considering all the above submissions, we feel that the O&M expenses including insurance of 5.5% of the capital cost will be reasonable for the first year of the control period 2004-09.

x) Chairman and Member-Finance have not given any reason for fixing O&M escalation at 6%. Ld. Senior counsel for the licensees has also pointed out that the escalation decided by the Chairman and Member-Finance is not based on any price indices. We feel that the annual escalation should be fixed based on the actual WPI and CPI indices for the period 2004-09. We direct the Commission to fix the O&M escalation for the control period on the basis CAGR for the period 2004-09 of actual WPI and CPI indices giving 60% weightage to WPI and 40% to CPI.

31.5 **Fuel Price & Fuel Price escalation**:

i) In the order dated 20.3.2004 the State Commission fixed the fuel price at Rs. 1000/-per MT with escalation of 5% per annum. The Chairman and Member-Finance in their respective orders have decided to increase the same to Rs. 1300/- per MT with escalation of 6% per annum.

ii) Shri Gopal Chaudhry, learned counsel for BEDA has argued for confirmation of fuel price at Rs. 1300 per MT for the year 2004-05 with escalation of 9% p.a. According to him, the State Commission has determined the price of biomass fuel at Rs. 2000/- per MT for the year 2009-10 in its order dated 31.3.2009. Thus, it clearly shows that the cost of biomass fuel has been increasing at more than 5% escalation allowed by the Commission in the 2004 order.

The escalation of biomass fuel price has been such that several biomass plants were forced to shut down the operations and the State Government had to intervene and provide for an adhoc price of the purchase of electricity from biomass power plants. On the basis of 6% escalation now decided by the Chairman and Member-Finance the fuel price for 2009-10 would be Rs. 1739/- but the Commission has accepted the fuel price of Rs. 2000/- for 2009-10. Thus escalation of 6% is inadequate. The escalation should be allowed at 9% so that the price rise is linear throughout the period and accordingly spread out evenly across the whole period.

iii) Shri Ramachandran, learned counsel for M/s. SLS Power Ltd. also argued for escalation factor of 9% instead of 6% in the context that the increase from Rs. 1300 to Rs. 2000 from 2004-05 to 2009-10 works out to an escalation percentage of 9% on compounded basis. According to him, Chairman and Member-Finance have erred in fixing the escalation at 6% after having fixed the price at Rs. 2000/- for 2009-10 by order dated 31.3.2009.

iv) Learned counsel for the appellants in appeal nos. 26 of 2012, 29 of 2012 and 38 of 2012, have also given similar arguments for fixing fuel price escalation at 9%.

v) According to Shri A. Mariarputham, learned Sr. counsel for the licensees, no material was produced by the

Developers to show that fuel price was Rs. 1300 per MT in the year 2004-05. The Central Commission has fixed the fuel price at Rs. 1301/- for year 2009 and if the price is back calculated with deflation at 5%, it would come to Rs. 1019 for 2004-05. Chairman had given Rs. 1300/- as fuel price to make the total tariff more viable. Member-Finance has not given any reason for fixing the price at Rs. 1300 per MT. Thus fuel price of Rs. 1000 per MT as fixed in the 2004 order is the correct price. Similarly the fuel price escalation has to be determined on the basis of inflation at the relevant time. The price of Rs. 2000 per MT in the 2009 order was not fixed on the basis of any escalation of 9% as sought to be suggested. It was an ad-hoc determination without any specific material and data. 9% escalation cannot be granted only for the reason that in 2009 order fuel price was fixed at Rs. 2000 per MT. In the 31.3.2009 order also fuel cost escalation has been allowed at 5%. Thus escalation of 5% fixed by the State Commission in the 20.3.2004 order should be retained.

vi) The Chairman in his order has decided that price of Rs. 1300/- would be reasonable "keeping in view the values being fixed for the respective parameters in this order" and in view of observation made by the Hon'ble Supreme Court that the tariff for NCE units should be fixed in a manner which will

not lead to their extinguishment. Ld. Chairman has given the following reasons for fixing fuel price escalation at 6%.

> *"However, taking a holistic view of fuel cost scenario in the context of Biomass units who have purchased their fuel requirements in the unregulated market, with prices of rice husk and other Biomass fuel elements which are susceptible to fluctuations, the Commission considers it reasonable to allow annual escalation of 6% as fuel cost escalation over the figure of Rs. 1300/- per tonne fixed for the year 2004-05".*

vii) Member-Finance has given the following reasons for fixing fuel price at Rs. 1300/- and escalation at 6%.

> *".....Since, 2004 order, at various forums, the developers have been consistently maintaining that the fuel costs are on the rise, as they are being sold in the un-regulated market besides having competitive procurers for same fuel. The above contentions of the developers are true and genuine. As such, the base fuel cost has to be increased. Accordingly, I am of the view, that the same is brought to the level of Rs. 1300/ MT, the ends of justice would be met. The developers themselves had requested for such cost in 2004. Thus, the fuel cost stands fixed at Rs. 1300/MT".*

> *"The biomass developers are purchasing fuel from the un-regulated market and there are alternative competitors for purchase of biomass fuels which is also contributing the general increase of cost of fuel from year-to-year. This trend of increasing cost of fuel over the time horizon has to be necessarily captured while determining the fuel cost escalation. In view of the above, I am of the view that, the fuel cost escalation has to be increased from 5% to 6%. Incidentally, this is inline with what M/s. BEDA had sought in 2004. Thus, fuel cost escalation stands fixed at 6% for the purpose of tariff determination".*

viii) The Central Commission in the 2009 Regulations has fixed a fuel price of Rs. 1301/- for the year 2009-10 for Andhra Pradesh with cost escalation of 5% per annum or as per Fuel Price Indexation Mechanism as specified as per the option of the Developer. The basis for determination of fuel price is equivalent heat rate for landed cost of domestic coal for 'E to F' grade for thermal power stations of the respective states.

ix) The Central Commission in the 2012 Regulations has fixed fuel price of Rs. 2315 for FY 2012-13 with escalation at 5% p.a. or as per the Fuel Price Indexation Mechanism as specified at the option of the Developer. The method used for fixing fuel price is media of price fixed by the State Commission, suggestion of the Ministry of New & Renewable Energy and equivalent landed cost of coal.

x) We notice that the biomass fuel market is unregulated and unorganized and its price fluctuates depending on the demand and supply position. Besides power generation, Biomass fuel is used in various industries for heating purposes. Therefore, it would be reasonable to fix the price of biomass fuel on the basis of equivalent heat rate for the landed cost of coal for industrial use in the state. However, coal from the subsidiaries of Coal India Ltd. against

linkage made by Govt. of India is available only to the thermal power stations and some large industries. Most of the industries have to procure power through e-auction from Coal India or through import at prices much higher than the rate at which coal is available to the state owned thermal power stations through linkage from Coal India's subsidiaries. The Biomass fuel is an alternate fuel for some of the industries. Therefore, it would not be correct to compute the price of biomass fuel only on the basis of equivalent heat value of domestic coal taken by the state owned coal based thermal power stations where coal is mainly procured from Coal India's subsidiaries through linkage. Thus, we are not convinced by the argument of learned Sr. counsel for the licensees that price of Rs. 1000/- for 2004-05 is reasonable based on price of Rs. 1301 for 2009-10 fixed by the Central Commission on equivalent heat basis of domestic coal available to thermal power stations after applying 5% deflation factor. We do not find any infirmity in the price of Rs. 1300/- per MT fixed by the Chairman and Member-Finance, which has been revised keeping in view the increasing trend of price of biomass fuel in the market.

xi) We also do not find any infirmity in fixation of price escalation of 6% keeping in view the procurement of biomass fuel in an un-regulated and unorganized market, the fluctuations in price of biomass fuel due to demand of biomass fuel by competing industries and supply or availability of

biomass fuel. We are not convinced by the contention of the licensees that the annual escalation should be fixed based on the actual cost indices, namely WPI and CPI, as the biomass fuel is sold in the unregulated market and depends on the supply from various agricultural sources and demand by the biomass based generators and other industries where biomass fuel is used in furnaces, boilers, etc., for heating and its price is not dependent on WPI/CPI indices. We are not convinced by the argument of Ld. Counsel for the Developers that escalation should be fixed at 9% so as to have linear price rise from Rs. 1300/- for 2004-05 to Rs. 2000/- fixed by the State Commission for 2009-10. In our view determination of biomass fuel at Rs. 2000/- for 2009-10 by order dated 31.3.2009 was an independent exercise and should not be linked to calculate the annual price escalation for the FY 2004-09 especially as the prices of biomass fuel fluctuates with demand and supply position in the market in different seasons. The Developers have also not produced any data of the actual price of biomass procured by them during the period 2004-09 in order to establish their claim for a rate and annual escalation higher than allowed in the orders of the Chairman and Member-Finance.

xii) We, therefore, hold that the price of biomass fuel may be fixed at Rs. 1300 per MT for the year 2004-05 with annual fuel price escalation of 6% as decided by the Chairman and Member-Finance in their respective orders.

31.6 **Specific fuel consumption**:

i) The State Commission in the 2004 order fixed Specific Fuel Consumption (SFC) at 1.16 kg./kWh. Learned Chairman in his order has decided to retain the SFC at 1.16 kg./kWh whereas Learned Member- Finance in his order has fixed the SFC at 1.36 kg./kWh.

ii) According to Shri Gopal Chaudhry, learned counsel for BEDA, the Chairman in his order has completely ignored the result of the study carried out by the staff of the Commission in 2004 upon the directions of the Commission which arrived at a specific fuel consumption of 1.64kg/kWh. CEA study has correctly determined the Station Heat Rate at 4500 kCal/kWh. However, CEA has recorded higher GCV of fuel of 3300 kCal/kg. without considering its own observation regarding high moisture content in biomass fuel. GCV of 2800 kCal/kg. will be reasonable considering a mix of rice husk (36.8%), Juliflora (42.9%) and Agriculture Residue & Others (20.3%). On the basis of SHR of 4500 kCal/kWh and GCV of 2800 kCal/kg., the SFC should be fixed at 1.61 kg./kWh.

iii) Shri Ramachandran, learned counsel for M/s. SLS has also argued for adoption of SFC of 1.63 kg./kWh. He relied on the judgment of Tribunal dated 7.9.2006 in Appeal no. 20 of 2006 against the Tariff Order for biomass projects in Chhattisgarh where the Tribunal accepted

the operational norms as recommended in the CEA's report and directed the State Commission to act upon them. CEA Report has determined the SFC as 1.36 kg./kWh before adjustment for moisture, storage and other things at the ground level as it was based on laboratory analysis without factoring the effect at the ground level such as moisture, storage and transportation. If the ground conditions are taken into account the SFC of 1.63 kg./kWh could be justified. Though the Technical Member has not fixed the SFC and has based the final decision on MNES guidelines, it has made observations regarding SFC of 1.6 kg./kWh based on the actual data collected by a team of technical officers of the Commission.

iv) Learned counsel representing other Developers have also argued on the same lines for higher SFC of 1.63 kg./kWh.

v)Learned Sr. counsel for the licensees has argued that the recommendation of CEA is not binding as decided by the Tribunal in its judgment dated 1.3.2011 in the matter of Star Wire Ltd. vs. HERC. He also relied on Central Commission's Regulations, 2009 fixing SFC at 1.16 kg./kWh. He emphasized for retention of SFC at 1.16 kg./kWh. Further, in the order dated 31.3.2009, the State Commission has fixed the SFC at 1.16 kg./kWh.

vi) The Central Commission Regulations, 2009 provide for Station Heat Rate of 3800 kCal/kWh and Calorific value of 3275 kCal/kg for Andhra Pradesh which translate into SFC of 1.16 kg./kWh. The Central Commission in the Statement of Objects & Reasons has indicated that while the design SHR is of the of the order of 3400-3600 kCal/kWh, the operational efficiency is significantly lower and consequently the operational SHR is higher due to several factors such as deterioration in quality of fuel due to storage, O&M practices, etc., and therefore, the norm for SHR has been suitably modified. The Gross Calorific value has been taken from a study carried out by Indian Institute of Science.

vii) In 2012 Tariff Regulations, the Central Commission has adopted SHR of 4000 kCal/kWh and calorific value of 3300 kCal/kg. which translate into SFC of 1.212 kg./kWh. The Central Commission in deciding the SHR of 4000 kCal/kWh considered the report of National Productivity Council, suggestion of Ministry of New and Renewable Energy and the industry practice of using traveling grate type boilers which can handle variety of type/quality of fuel but have low efficiency.

viii) The CEA Report gives a detailed and systematic analysis for determination of SHR. The Report uses adjusted moisture content based on the fuel used by the power plant for deriving boiler efficiency. The boiler efficiency corrected to

15% moisture content was in the range of 77% which has been used in arriving at the SHR. The turbine cycle heat rate was calculated on the basis of the steam parameters furnished by the power plants in their data sheet/Heat Balance Diagrams. The gross heat rate was arrived at based on turbine cycle heat rate and boiler efficiency for various power plants. The gross heat rate was found to be in the range of 3833 to 4343 leaving the extreme values. Thus, CEA arrived at average gross SHR of 4033 kCal/kWh. The Report notes that biomass such as cotton stalk, chilly stalk, mustard stalk, etc. creates problem in boiler tubes, thus affecting the performance of the boiler which has been corroborated by the boiler manufacturer, M/s. Thermax. The Report arrives at combined effect on efficiency due to these variations at 7.5% from the correction curves. Since such variation was not observed in two of the three power plants studied it was presumed that such variation is station specific and cannot be adopted. However, it was felt necessary to provide some allowance to take care of above uncertainties. Thus an allowance of 5% was recommended for operational uncertainties. Thus the gross Heat rate of 4234.65 kCal/kWh was calculated.

ix) The CEA Report further records as under:

"Maximum variation is noticed in the case of power plants using woody biomass, cotton stalk, chilly stalk, agricultural residues etc. Biomass is stored in open and hence is affected by the climate changes. As the biomass gets dried up a certain weight percentage will get lost due to loss of moisture, degradation due to weather changes,

degradation due to pests and loss during strong winds. This woody biomass and agricultural residues such as cotton stalk, chilly stalk, mustard stalk etc. is generally stored in the power station premises for a longer duration generally varying from 3 to 6 months or even more. In addition the volatile content in the fuel will also get reduced affecting the calorific value. Thus there is quantitative and qualitative degradation of the biomass. Even though the power plant operators are claiming that such losses is as high as 30%, it is presumed that such high losses cannot take place in a period of 4-5 months of storage of biomass. The maximum variation on account of various losses can therefore be safely assumed to be about 5% only. Accordingly, the heat rate is calculated as below:

5% over 4234.65 to take care of fuel losses
1.05x4234.65= 4446.38 kCal/kWh

Say 4500 kCal/kWh
*The specific fuel consumption (based on 4500 kCal/kWh heat rate and 3300 kCal/kg GCV)=4500/3300=**1.36 kg/kWh**".*

x) We find that CEA has made a scientific analysis of the operation of a number of biomass based projects to arrive at a SFC of 1.36 kg/kWh. As pointed out in the study conducted during the year 2005 i.e. during the control period, the biomass plants experience a number of operational problems due to characteristics of biomass fuels resulting in loss of efficiency. It will be prudent to take into account the practical difficulties experienced by the Biomass plants to arrive at SHR. We, therefore, feel it will be reasonable to fix SFC at 1.36 kg/kWh as recommended in the CEA Report.

xi) Learned Sr. counsel for the licensees has referred to Report on District wise Biomass Assessment by Non-Conventional Energy Development Corporation of A.P. Ltd., on the recommendations of the Expert Committee with members from the Electricity Board, Industries Deptt.,, Agriculture Deptt., etc. to press their point for lower SHR. The Report indicates maximum allowable average Power Plant Heat Rate as 3650 kCal/kWh for plants of 6 to 11 MW capacity and 3500 kCal/kWh for plants of 11 MW and above capacity. We notice that the Expert Committee was constituted in the year 1997 basically to assess the district wise availability of Biomass and potential of power generation and not for deciding the operational norms. For assessing the biomass energy potential the Committee has used the parameters based on the design features. These recommendations cannot be relied on to decide the operational norms for the purpose of tariff determination.

xii) Learned counsel for the Developers have argued for a higher SFC of 1.63 kg/kWh on account of factoring of effects at ground level. We find that CEA Report has already accounted for the operational problems. Firstly, the Boiler efficiency and Turbine Heat Rate have been computed based on the actual operational steam parameters and corrections have been applied for operational uncertainties and storage of

biomass fuel for long duration. Thus, we are not inclined to accept the contention of the Developers.

xiii) Thus, the SFC is to be considered at 1.36 kg/kWh as recommended in the CEA Report and as decided by Member- Finance in his order.

31.7 **Computation of Working Capital:**

i) The State Commission in its order dated 20.3.2004 due to absence of details regarding storage of fuel stock decided to consider only one month's stock of fuel as constituting the working capital component and allowed interest of 12% on working capital. In the Review order also the same position was maintained. The Chairman and Member-Finance in their orders have fixed interest on working capital as 12% but have not indicated the formulation for computing working capital.

ii) BEDA & others in Appeal no. 166 of 2011 have prayed for computation of working capital considering one month's fuel and O&M expenses and 1% of the project cost towards maintenance of essential spares and two months' receivables.

iii) According to learned Sr. counsel for the licensees since the Developers have been given 16% Return on Equity they are not entitled to further benefits of interest on working capital on 100% of the working capital and the same should

be restricted to only 75%. In the 2004 order the interest on working capital was allowed only upto 75% and the same may be maintained.

iv) The 2009 Regulations of the Central Commission provide for working capital requirement to be computed considering the following:

a) Fuel costs for four months equivalent to normative PLF.

b) Operation & Maintenance (O&M) expenses for one month.

c) Receivables equivalent to 2 months of fixed and variable charges for sale of electricity calculated on the target PLF.

d) Maintenance spares @ 15% of O&M expenses.

The same formulation has been maintained in 2012 Regulations.

v) We feel that the interest on working capital is a component of tariff to meet the working capital expenses. The same cannot be linked to 16% ROE and restricted to 75% as contended by the licensees.

vi) The Developers have prayed for working Capital to include one month's fuel cost and O&M expenses and 1% of project cost towards maintenance of essential spares and 2 months receivables which in our opinion is reasonable and

need to be allowed. Thus the working capital will be computed considering the following:

a) Fuel cost for one month computed at threshold PLF;

b) O&M expenses for one month;

c) Receivables equivalent to two months of fixed and variable cost at the threshold PLF.

d) Maintenance spares @ 1% of project cost.

The fuel cost and O&M cost increases every year with annual escalation allowed and therefore, the working capital has to be re-determined for each year of the control period taking into escalation in fuel cost and O&M cost. Accordingly, decided.

31.8 **Interest on Working Capital**:

i) According to Shri Gopal Chaudhry, interest on working capital should be considered as a part of variable charges as the working capital expenses vary according to the variation in the variable cost financial year-wise.

ii) We have already decided that the working capital requirements should be changed in each year of the control period with increase in fuel cost and O&M expenses due to annual escalation. Therefore, we do not find any reason to include the interest on working capital in variable charges and the same should remain as a component of fixed charges.

iii) There is no challenge to rate of interest on working capital which was retained at the same level as decided in the 2004 order by the Chairman and Member-Finance in their respective orders.

31.9 **Return on Equity (ROE):**

i) In the 2004 orders the ROE was decided at 16% with the observation that with the additional cushion provided in ROE the Developers should be in a position to cover MAT liabilities also. Both Chairman and Members in their respective orders have decided ROE at 16% exclusive of MAT i.e. MAT has to be paid additionally over and above the ROE.

ii) Sh. Gopal Chaudhry, learned counsel for BEDA argued that the biomass units are subjected to several unforeseen risks such as with respect to PLF, fuel uncertainties, fuel cost escalation in an uncertain and volatile market, evacuation failures and interruptions, etc. and, therefore, in order to mitigate such risks and provide a promotional preferential tariff, the biomass units should be allowed a ROE of 20% with MAT as a pass through at actuals.

iii) The licensees in their counter have contended that the ROE should be retained at 16% as decided in the 2004 order.

iv) Central Commission in the 2009 Tariff Regulations has allowed ROE of 19% including MAT for first 10 years and

24% from the 11th year onwards. In the 2012 Regulations the Central Commission has decided ROE including MAT at 20% for first 10 years and 24% p.a. from 11th year onwards. The pretax ROE in both 2009 and 2012 Regulations has been worked out considering 16% post tax ROE grossed up with prevailing MAT rate for first 10 years and corporate tax from 11th year onwards.

v) We feel that 16% ROE with MAT/income tax to be allowed as pass through as per actuals will provide reasonable return to the Developers. We are not convinced by the argument of the learned counsel for BEDA that higher ROE of 20% with MAT as pass through has to be allowed to cover up the uncertainties in other components of tariff as we are considering all the components of the tariff keeping in view the issues raised by the developers in each of the components. We are also not agreeable to the contention of the licensees that 16% pre-tax ROE should only be allowed as this will result in the renewable energy generators getting lower ROE compared to the conventional plants. Allowing lower ROE to non-conventional sources compared to conventional sources will be in contravention to the mandate of the Electricity Act to promote renewable sources of energy.

vi) Accordingly, we decide to fix ROE of 16% with MAT/income tax to be allowed to the Developers as pass through.

31.10 **Deemed Generation:**

i) This issue has not been dealt with in the 2004 order and is a new issue raised in the remand proceedings by the Developers.

ii) According to Sh. Gopal Chaudhry, learned counsel for BEDA, the Non-Conventional Energy Projects are connected to the 33 kV system of the distribution licensees which is subjected to frequent disturbances and grid operating conditions which cause the power plant to trip and isolate from the grid. In such situations, the fuel is still required to be burnt to maintain the condition of the power plant so that it can resume supply to the grid as soon as the disturbance/operating conditions return to normal. If the duration of disturbance and/or grid operating conditions persists for a longer period, the entire plant has to be shut down and re-started from cold conditions resulting in significant loss of heat, increase in auxiliary consumption and wastage of fuel resulting in additional cost. Apart from cost, the PLF of the plant is also affected and there is dead loss for the power plant as there is no recovery of fixed or variable costs being incurred. Thus, fixed cost and variable cost on the lost output during interruptions due to any grid or system disturbance or for failure of evacuation should be allowed.

iii) Learned Sr. counsel for the licensees argued that the renewable energy generators are must run stations and are not subjected to dispatch instructions. Occasional disruptions in transmission do not justify allowing the plea of deemed generation.

iv) While we appreciate that the interruptions in evacuation system or adverse operating conditions in the grid are beyond the control of the developers, we feel that allowing deemed generation will complicate the tariff and may result in disputes as the power plants are connected at 33 kV where there is no real time monitoring/recording of outage of lines or fluctuations in parameters. It is necessary to keep the tariff simpler to avoid any disputes. Allowing deemed generation for the renewable energy projects would complicate the system and result in avoidable disputes. We, therefore, feel that allowing margin in other operating norms to cover the ground realities such as grid interruptions will be a better alternative and the same approach has been followed by us. Accordingly, we do not allow any provision for deemed generation. However, we give liberty to the individual power projects to approach the State Commission with actual data for grid interruptions in case it has resulted in the power plant achieving a PLF below the threshold PLF and the plant has been unable to recover the full fixed cost and the State Commission in the individual cases shall consider to exclude

the period of interruption in the evacuation system from the total time period for computation of the PLF.

31.11 **Incentive for supply over normative PLF:**

i) In the 20.3.2004 order the incentive was decided at 21.5 paise/unit. In the Review Order the State Commission decided to increase the incentive to 25 paise/unit. Chairman in his order has retained the incentive at the same level i.e. 25 paise/kWh. However, Member-Finance has decided to raise the incentive to 35 paise/kWh.

ii) Learned counsel for BEDA has submitted that the normative PLF of 80% fixed by the Commission is not achievable for various reasons as described in the preceding paragraphs. The maintenance requirement of biomass plants is also very onerous and in the absence of adequate tariff there has been a severe constraint in maintaining the power plant in top condition. It is possible that for some periods of time after the overhaul and perhaps in any period when better fuels are available, the power plant may be able to generate at just above the normative PLF for sometime. The biomass plants should be allowed to recover the under recovery of fixed costs due to generation below the normative PLF during the periods. Reasonable measures for carry forward ought to have been provided. The risk of under recovery of fixed cost for generation below the normative PLF should be accompanied by rewards of recovery of fixed cost at full rate for generation

over the normative PLF. Incentive of 25/35 paise towards fixed cost is inadequate. Either Central Commission's approach for same fixed cost recovery and price for the generation above normative PLF or at least Rs. 1/- per unit as incentive for generation over the normative PLF in addition to variable costs should be allowed.

iii) According to the learned Sr. counsel for the licensees there is no case for granting increase in incentive as tariff is fixed at 35% PLF. All calculation for determination of tariff is on year to year basis and no carry forward should be allowed for biomass plants.

iv) The Central Commission's Regulations 2009 and 2012 provide for recovery of full fixed charges at the threshold Plant Load Factor but beyond that level also the fixed charges are recovered at the normal rate. Thus, the tariff decided by the Central Commission is a single part tariff determined on the normative PLF. On the other hand as per the tariff decided by the Chairman and the Member-Finance, on energy generated beyond the threshold PLF, only incentive is payable besides the variable charges. The Statement of Objects and Reasons for the Central Commission's Regulations, 2009 state that **"any generation beyond threshold PLF shall also receive same tariff since risk cost associated with project sizing, project location, etc. is expected to be borne by project developer".**

v) There is a case for providing adequate incentive to the biomass based projects beyond the generation at threshold PLF to incentivise them to generate additional power which is very much needed and to cover the various risks experienced by them and to cover the additional costs involved in enhancing availability of the plant and PLF. We agree with the order of Member-Finance that incentive of 25 paise/kWh is not adequate and should be increased to 35 paise/kWh to cover the various risks experienced by them and to meet the additional costs for enhancing availability of the plant and PLF. The Control Period of 2004-09 is already over but there is need to provide adequate incentive to the biomass based plants to maximize their generation above the threshold PLF in future. The State Commission is directed to consider increasing the incentive adequately in future to incentivise the biomass generators to maximize generation by procuring adequate quantity of biomass fuels and improving the availability of the plants which would also involve additional expenditure. The additional generation by the biomass plants will help in reducing the shortage and requirement for procurement of power in short term at high cost by the distribution licensees besides achieving other benefits for use of non-conventional source of energy. The State Commission for future may also consider a single part tariff for biomass based projects on the lines of the Central Commission's

Regulations for providing adequate incentive for maximization of generation from the biomass based plants.

vi) We do not agree with the contention of the licensees that the tariff is fixed at 35% PLF. The full fixed cost is recovered at the threshold PLF of 80% and not 35% PLF.

vii) We also do not accept the contention of the learned counsel for BEDA for carry forward provision for under recovery of fixed cost during a period. The availability of plant and fuel cannot be treated as uncontrollable factors. Therefore, we are not inclined to accept the proposal for carry forward for the Biomass plants.

31.12 **Control Period:**

i) According to learned counsel for BEDA, the Chairman and Member-Finance in their respective orders have fixed Control Period of 5 years in the context of fixation of variable costs of biomass units but they have not considered any control period for the review of fixed costs. As per their orders the fixed costs fixed upon consideration of the circumstances that existed in 2004 would operate for all the first 10 years of the operation of the plant irrespective of when the power plant commences operation and irrespective of any changes in economic environment. The presumptions of parameters like interest rates, inflation rates, etc. which are beyond the control of the generator over a long period of time

is unreasonable. Therefore, the Tribunal may lay down the principle that all the elements of tariff be reviewed after every three years.

ii) In the present case we are looking into the issue of tariff for the period 2004-09 for which the above issue of review of parameters after the completion of the control period is not applicable. There is, however, merit in the submissions of the generating companies that the uncontrollable costs like fuel price, inflation factors, interest rates, etc., need to be reviewed after a period of say about 3 years. We, therefore, give liberty to the generators to place their submissions before the State Commission and the State Commission shall consider the same and decide the issue according to law.

31.13 **Depreciation:**

i) In the 2004 order the State Commission decided depreciation of 7.84% till it accumulates to 70% of the project cost and rest depreciation of 20% allowed every year equally for the balance period of PPA. In the Review order dated 5.7.2004 the State Commission retained the depreciation at the same level.

ii) Both Chairman and Member-Finance in their respective orders have decided depreciation of 7.84% for first 8 years and 7.28% for the 9th year and further depreciation of 20% for the balance 11 years.

iii) Thus the Chairman and Member-Finance have only marginally modified the depreciation rate in the 9th year to get whole number of 70% depreciation in first nine years and also quantified the depreciation in the balance 11 years of duration of PPA.

iv) The Sr. counsel for the licensees has argued that the higher depreciation in the first 9 years causes higher burden on the consumer in the earlier years due to front loading of the tariff and that it should be reduced. He referred to the Central Commission's Regulations of 2012 in which the depreciation has been reduced to 5.83% for the first 12 years.

v) In the 2009 Regulations of Central Commission adopted the differential depreciation approach over loan tenure and beyond loan tenure to provide for depreciation of 7% for the first 10 years and the remaining depreciation spread over the remaining useful life of the project from 11th year onwards. In the 2012 Regulation though the Central Commission has adopted the same differential depreciation approach, the loan tenure has been considered larger and the depreciation has been decided as 5.83% for first 12 years of tariff period and remaining depreciation is spread over the remaining useful life of the project from the 13th year onwards. In the explanatory memo of the draft Regulation, 2012, the Central Commission has explained the reason for extending

the loan period to 12 years as under:

> *"The Commission is of the view that since most of the RE technologies have achieved maturity level it should be possible for the developers to get loan from lenders/financial institutions for larger duration of say 12 years. Therefore, the Commission now proposes depreciation rate of 5.83% per annum for first 12 years and balance depreciation to be spread during remaining useful life of the RE projects".*

vi) Since we are dealing with the tariff for the period 2004-09, the above justification given by the Central Commission while assuming longer loan tenure and reducing the depreciation in the 2012 Regulations will not be applicable in the present case. The period in the present case is the period of initial development of the NCE Projects. We are in agreement with the findings of the Chairman and Member-Finance allowing depreciation of 7.84% in the first 8 years, 7.28% in the 9th year and the balance depreciation spread over the remaining 11 years. It is also more or less in line with the State Commission's finding in the 2004 order.

31.14 On the remaining parameters of Biomass plants, there is no dispute. For the sake of clarity we are giving norms for the remaining parameters:

i) Debt equity ratio shall be 70:30 as decided in the 2004 order and in the orders of Chairman and Member-Finance.

ii) Electricity duty shall be allowed as pass through as decided by the Chairman and Member-Finance.

iii) Interest on debt and interest on working capital shall be @ 12% as decided in the 2004 order and confirmed by the Chairman and Member-Finance in their orders.

32. **Bagasse based cogeneration Power Plants:**

32.1 There is no dispute regarding capital cost, threshold PLF, fuel price escalation, debt equity ratio, return on equity, interest on working capital and payment of electricity duty as decided by the Chairman and Member-Finance. The other issues raised by the Bagasse based cogeneration plants in the appeals 168 of 2011 and 9 of 2012 are discussed in the following paragraphs.

32.2 **Auxiliary Consumption**

i) The auxiliary consumption decided by the State Commission in the 2004 order and Review order was 9%. Chairman and Member-Finance in their respective orders have decided to retain the auxiliary consumption at 9%.

ii) The appellant Sugarmill Association in Appeal no. 168 of 2011 and the appellant in appeal no. 9 of 2012 have pleaded for raising the auxiliary consumption to 11%. According to them the Chairman and Member-Finance did not take into account the actual data for auxiliary consumption furnished for bagasse based generators which showed actual average auxiliary consumption for the period 2004-09 in the range of 10.15 to 13.3%.

iii) The licensees have argued for retention of auxiliary consumption at 9%.

iv) The Central Commissions' Regulations of 2009 provide for auxiliary consumption of 8.5% for the bagasse based projects as against 10% for biomass based projects. In the Statement of Objects and Reasons for 2009 Regulations explains the reason for deciding auxiliary consumption at 8.5% for bagasse based projects as against 10% sought by some stakeholders.

> "*The Commission is of the view that in non-fossil fuel based cogeneration plants have some of the auxiliary equipments common between the sugarmill and the power generation unit. Also, the bagasse require less processing compared to the biomass. Keeping above fact into consideration the Commission has specified the norm for auxiliary consumption for cogeneration projects".*

In the 2012 Regulations also, the Central Commission has retained the auxiliary consumption at 8.5% giving the same reasoning.

v) We are in agreement with the explanation given by the Central Commission that the bagasse based plants have some common auxiliaries between the power plant and sugarmill and the bagasse plant requires less processing. Therefore, we feel that auxiliary consumption of 9% decided by the State Commission in its 2004 order and confirmed in the orders of the Chairman and Member-Finance is in order.

vi) We find that the Sugarmill Association (Appeal no. 168 of 2011) and appellants in appeal no. 9 of

2012 have furnished actual data for 5 Sugar Mills. However, all the appellants have not given their actual data. None of the appellants in appeal no. 9 of 2012 have given their own data. The limited actual data furnished by the appellant does not indicate if the auxiliary consumption included the consumption of auxiliaries common to Sugarmill and power plant.

vii) We, therefore, decide the auxiliary consumption at 9% as per the orders of the Chairman and Member-Finance.

32.3 **Carry forward of un-recovered fixed cost:**

i) The appellant Developers companies have not raised any issue regarding threshold PLF but have pleaded that they should be permitted to carry forward the un-recovered fixed cost on account of non- achievement of threshold PLF of 55% in a year to the following year for recovering the previous year's un-recovered fixed cost.

ii) Learned Sr. counsel for the licensees vehemently opposed the prayer of the Developers and stated that there was no justification for carry forward of un-recovered fixed cost to the next year. Moreover, the Developers have not pressed the issue in the written submissions and therefore, should be treated as given up.

iii) The threshold PLF of 55% has not been challenged in the appeals and no case has been made out for allowing carry forward of the un-recovered fixed cost on account of

non-achievement of threshold PLF in a year. We feel that the PLF will depend on the availability of the plant and fuel and these factors cannot be treated as uncontrollable. Thus, we do not accept the contention of the Developers for carry forward of the un-recovered fixed cost.

32.4 **Fuel Price:**

i) The State Commission in its 2004 order and Review order deciding the price of fuel as Rs. 575 per MT. Both Chairman and Member-Finance in their respective order have decided to raise the fuel price to Rs. 745/- per MT with escalation of 5%.

ii) According to the Developers the price of bagasse should be linked to the price of Biomass fuel i.e. the price of bagasse should be equal to price of biomass X GCV of bagasse/GCV of biomass. Alternatively, it should be fixed based on price of Rs. 950/- determined by the State Commission for 2009-10 with adjustment of 5% p.a. deflation.

iii) According to the licensees whereas the biomass fuel has to be purchased from the open market and that too at market determined prices, bagasse fuel is the by product after sugarcane crushing and it is free of cost. By equivalent heat value approach linked to coal price the bagasse fuel price would be Rs. 550/- only. Thus, the price as decided in 2004 order should be retained.

iv) The Central Commission in its 2009 Regulations has decided the bagasse price of Rs. 899/- to be escalated @ 5% per annum. The Central Commission has adopted equivalent heat value approach for landed cost of coal for thermal stations in the respective states. In the 2012 Regulation the price of bagasse fuel in Andhra Pradesh during the year 2012-13 has been decided as Rs. 1307/-. The approach in the 2012 Regulation has been equivalent heat value for landed cost of coal for thermal stations for the respective states with the variation in order to take into account the state specific prevailing prices of bagasse as may be considered by the respective Commission if the same is higher.

v) The Chairman in his order has recorded that in 2010, through written submissions SISMA sought a price of Rs. 719 per MT. In the 2009 order the State Commission has accepted a base price of Rs. 950/- per MT in 2009 which works out to Rs. 745 per MT in 2004 on an application of fuel price escalation rate at 5% adopted by the Commission. The Member-Finance has also given similar reason for fixing the price at Rs. 745 per MT for 2004-05 with fuel price escalation of 5%.

vi) We feel that the price decided by the Chairman and Member-Finance at Rs. 745/- per MT is reasonable. We do not find any substance in the contention of the Developers that fuel price of bagasse should be linked to price of biomass.

No justification has been given by the Developers for linking of prices of the bagasse with biomass fuel. Bagasse is a by product of sugarcane crushing in sugarmill of the bagasse cogeneration plant and its price cannot be linked to price of biomass which is not regulated and has to be procured in open market.

32.5 **Specific fuel consumption:**

i) In the 2004 order the State Commission decided SFC of 1.60kg/kWh while the Chairman in his order has retained the same, Member-Finance has decided SFC of 1.76 kg./kWh in his order .

ii) According to the Sugar mill Association and the Developers, the Specific Fuel Consumption (SFC) should be fixed at 2.07 kg./kWh based on Station Heat Rate of 4761 kCal/kWh and GCV of bagasse of 2300 kCal/kg. In support of their argument, they furnished data for five plants indicating average SFC in the range of 1.75 to 2.25 kg./kWh. According to them for achieving SFC of 1.6 kg./kWh the required steam pressure of boiler is 105 kg/cm^2 which would required an investment in plant to the tune of Rs. 5 cr./MW instead of Rs. 3.25 cr./MW allowed by the Chairman and Member-Finance in their orders.

iii) According to learned Sr. Counsel for the licensees, the specific fuel consumption of 1.60 kg./kWh calculated with SHR of 3600 and GCV of 2250 kCal/kg. as decided by the

State Commission in 2004 order and Central Commission in 2009 Regulations should be maintained.

iv) Central Commission in its 2009 Regulations has considered SHR of 3600 kCal/kWh and GCV of bagasse as 2250 kCal/kg. i.e. SFC of 1.6 kg/kWh. The Central Commission in the Statement of Objects and Reasons has explained that the cogeneration plant operates in cogeneration mode during crushing season and in rankine cycle mode during off-season. The fuel consumption during crushing season in co-generation mode is used for power generation as well as steam generation purpose, whereas fuel consumption during off-season is essentially used for power generation purposes. For the purpose of tariff determination, fuel consumption corresponding to power generation alone should be considered and fuel cost has to be allocated to power and steam. However, the same effect can be achieved if normative SHR for power component alone is specified. Thus if SHR during rankine cycle mode (off-season) and SHR for power component alone during cogeneration mode is specified then formulation of fuel cost allocation to power and steam is not necessary. The Central Commission also analysed the information furnished by the Ministry of New & Renewable Energy and heat mass balance diagram for a few co-generation projects before specifying the normative SHR.

v) In the 2012 Regulations also the Central Commission has maintained the same parameters

i.e. SHR of 3600 kCal/kWh and GCV of 2250 kCal/kg. giving the same reasoning.

vi) Chairman in his order has decided SFC of 1.6 kg./kWh considering the reasoning given by the Central Commission for SHR of 3600 kCal/kWh.

vii) Member-Finance in his order while determining the SHR for bagasse based projects, has considered the SHR for power generation alone and decided to fix the SHR of bagasse plant 10% lower than fixed for Biomass plants i.e. at 4050 kCal/kWh. The GCV of bagasse was considered as 2300 kCal/kg. as determined in 20.3.2004 order as the developers had asked for the same in 2004. Considering SHR 4050 kCal/kWh and GCV of 2300 kCal/kg., the SFC was fixed at 1.76 kg./kWh.

viii) We find that the Central Commission has determined the SHR of bagasse plant after considering the SHR during rankine cycle mode (off-season) and SHR for power component alone during cogeneration mode and deciding the SHR of 3600 kCal/kWh and GCV of 2250 kCal/kg. after giving detailed explanation. We agree with the reasoning given by the Central Commission and reiterated by the Chairman in his order. We find that the Member-Finance has decided the SHR of bagasse plant by arbitrarily reducing the SHR for biomass plant by 10%. Member- Finance also did not consider the days of operation of the bagasse plant in season operated in cogeneration mode and off-season when it

is operated in rankine cycle mode. Therefore, we are not convinced by the findings of the Member-Finance. We confirm the SFC of 1.6 kg/kWh as given in the order of the Chairman.

32.6 **Incentive**

i) Developers in Appeal no. 9 of 2012 have sought incentive of 35 paise per unit.

ii) We have already discussed and decided this issue for Biomass Projects and the same will be applicable to Bagasse based projects. Accordingly, we confirm incentive of 35 paise/kWh on energy generation beyond the threshold PLF as decided by Member-Finance in his order.

32.7 **O&M escalation:**

i) The Developers have sought O&M escalation of 8% instead of 6%. The licensees have contended that the escalation should be retained at 4% as decided by the State Commission in its 2004 order.

ii) We have discussed the same issue in case of Biomass projects in which we decided O&M escalation to be allowed on the basis of actual CAGR of inflation indices during the control period 2004-09 giving 60% weightage to WPI and 40% weightage to CPI. Accordingly, decided.

32.8 **Interest on Debt:**

i) In the 2004 order the interest on debt was decided as 10%. The Chairman and Member-Finance in their respective orders have also decided to retain the interest on debt as 10%.

ii) The Developers have contended that actual interest rate was not considered and sought interest rate of 13%.

iii) The licensees have contended that interest rate of 10% should be retained.

iv) Chairman and Member-Finance in their respective orders have decided to retain interest rate of 10%. Even though the Developers prayed for enhancing the interest rate to 13%, the Chairman and Member-Finance rejected the same stating that in view of falling interest rates which are not being reflected in interest rates of old projects, it is a duty on the part of the developers to mitigate and reduce the interest burden significantly.

v) Central Commission's Regulations provide for normative interest rate as average long term prime lending rate of State Bank of India prevalent during the previous year plus 150 basis points for all renewable energy projects including biomass and bagasse. In the 2012 Regulations the interest rate has been decided as average SBI base rate prevalent during the first six months of the previous year plus 300 basis points for all renewable energy projects. There is no

distinction in interest rate for biomass and bagasse cogeneration projects.

vi) We notice that in case of biomass projects the Chairman and Member-Finance allowed interest rate of 12%. No reason has been given for allowing lower interest rate to bagasse based projects. We also do not find any basis for adopting interest rate of 10% in the orders of the Chairman and Member- Finance.

vii) When interest rate of 12% has been allowed to Biomass plants the same should be allowed to Bagasse plants. The interest rate issue has also not been challenged in the case of Biomass plants. Therefore, we decided the interest rate at 12% for Bagasse plants also.

33. **Mini Hydel Plants:**

33.1 **Capital Cost:**

i) The State Commission decided capital cost of Rs. 3.625 Cr./MW (Rs. 4.5 crores less capital subsidy of Rs. 0.875 Cr.) in its order dated 20.3.2004. In the review order dated 7.7.2004 the Commission revised the capital cost to Rs. 3.75 Cr./MW considering capital subsidy of Rs. 75 lacs. for first MW and Rs. 12.5 lacs/MW for capacity beyond 1 MW. Ld. Chairman and Ld. Member-Finance in their respective orders have decided to retain the capital cost at Rs. 4.5 Cr./MW.

ii) Shri Gopal Chaudhry, learned counsel for M/s. Sardar Power Pvt. Ltd. in appeal no. 172 of 2011 has contended that both Chairman and Member- Finance have failed to deal with the specific averments with regard to the cost of the mini hydel canal based projects of APGENCO set up in proximate times as the appellant evidencing an average capital cost of Rs. 5.1 Cr./MW and which would justify higher capital cost for the appellant's run-of-river project with special hydrology and geological conditions. The appellant had also placed before the State Commission cost of four projects commissioned during the FY 2003-04 indicating average capital cost of Rs. 511.57 lakhs per MW, which had not been considered. Further the Chairman and Member-Finance have ignored that the capital cost of the project will be dependent on size, location and geological condition and the year of commissioning. No escalation has been provided and the capital cost of the project commissioned prior to the control period and end of the control period has been considered the same. The State Commission should have provided the annual cost escalation as decided by the Central Commission. The actual capital cost for the appellant plant commissioned in 2008-09 for the first stage of 1.725 MW capacity was Rs. 5.39 Cr./MW. The State Commission should have provided for special consideration or modification for individual projects in respect of one or more parameters that merit special provisions or special considerations as may be

necessary on the basis of nature of the project. The Chairman and Member-Finance have also erred in considering that the capital subsidy actually recovered by a mini hydel power plant, if any, be subjected to adjustment against the capital cost. This is not correct as the capital subsidy given by the Government is intended as an additional infusion of funds to support the entrepreneur in the working of the project, and would provide a hedge to the entrepreneur for any losses that may be incurred or shortfall of finance or as an incentive for venturing and risk-taking in an enterprise which is sought to be promoted. If the amount of capital subsidy actually recovered is deducted from the capital cost, it would result in anomalous effects on all other parameters which are dependent on capital cost e.g. , operation and maintenance expense, depreciation, interest, etc. Such an effect would be irrational and unreasonable. The amount of capital subsidy, if any, disbursed is directly paid to the lending institutions so as to reduce the outstanding of the borrower from the financial institutions.

iii) According to learned Sr. counsel for the licensees, the capital cost of Rs. 4.5 Cr./MW determined by the State Commission does not require any change. The plea that in the 2009 Regulations of the Central Commission, for less than 5 MW capacity projects the capital cost was determined at Rs. 5.5 Cr./MW and for 5MW and above projects, capital cost was determined at Rs. 5 Cr./MW and therefore, the capital

cost should be increased is not tenable as the above capital cost was fixed by the Central Commission for the projects for the year 2009-10. If the same is worked backwards taking 4% as the inflation during the relevant period, the capital cost for the year 2004 would come to Rs. 4.52 Cr./MW for less than 5 MW capacity projects and for projects of 5 MW and above, it will come to Rs. 4.11 Cr./MW only. If the capital cost is determined backwards at inflation rate of 4% taking the cost of Rs. 6 Cr./MW for projects below 5 MW and Rs. 5.50 Cr./MW for projects of 5 MW and above decided by the Central Commission for the FY 2012-13 under the 2012 Regulations, the capital cost for projects for the year 2004-05 will work out to Rs. 4.52 Cr./MW for less than 5 MW and Rs. 4.11 Cr./MW for 5 MW & above. Further subsidy of Rs. 75 lacs. for first MW and Rs. 12.5 lakhs for each subsequent higher MWs should be accounted for in the capital cost. Capital cost indexation was originally not asked for and therefore, cannot be agitated now. Factually out of 14 mini hydel projects, only two projects came to be set up after 2004 viz. M/s. Balaji (10 MW) on 31.12.2005 and M/s. Sardar Power on 17.7.2008. If capital cost indexation is to be adopted for projects which were set up after 2004-05, the same logic should apply for projects which were set up earlier. Most of the projects were set up in the year 2002 and in their case capital cost should be reduced by adopting similar indexation

formula backwards. If this is done for most of the projects i.e. 12 projects, the capital cost will be reduced from Rs. 4.5 Cr./MW downwards.

iv) The Chairman in his order has decided capital cost of Rs. 4.5 Cr. per MW subject to proportionate reduction of the capital cost and the consequential reduction of tariff, based on the amount of subsidy actually availed under GOI subsidy scheme by respective mini hydel units.

v) Member-Finance in his order has also decided the capital cost of Rs. 4.5 Cr./MW for determining the generic tariff subject to condition that when the projects comes for review after 10th year, the actual subsidy recovered will appropriately reduce the individual project's tariff.

vi) The Central Commission in its 2009 Regulations has decided the capital cost at Rs. 550 lac/MW for projects less than 5 MW capacity and Rs. 500 lac./MW for projects of 5 MW to 25 MW for base year 2009-10 with annual cost indexation mechanism. The Central Commission analysed the capital cost for 25 Small Hydro Projects funded by IREDA and 33 Small Hydro Projects listed with UNFCCC which altogether amounts to 423 MW, representing around 25% small hydro capacity in the country as indicated in the Objects and Reasons of the Regulations. The detailed explanation for analysis of capital cost is given in the explanatory memorandum for tariff norms. The Central Commission found

that the capital cost of the projects in hilly stations of HP and Uttrakhand was high compared to projects in Western and Southern Region due to hilly terrain. Initially in the draft circulated for objections and suggestions of the public, the Central Commission proposed capital cost of Rs. 6.3 Cr./MW for projects in H.P., Uttrakhand and North Eastern States and Rs. 5 Cr./MW for other states for the year 2009-10. However, subsequently after considering the views of the stakeholders higher capital cost was allowed for projects of less than 5 MW capacity.

vii) In the 2012 Regulations, the Central Commission has decided capital cost of Rs. 6 Cr./MW for projects below 5 MW and Rs. 5.5 Cr./MW for projects of 5 MW to 25 MW capacity for States other than H.P., Uttrakhand and North East for the year 2012-13 with cost indexation mechanism. The Central Commission had earlier in the draft circulated for obtaining objections/suggestions of the public proposed capital cost of Rs. 5.5 Cr./MW & Rs. 5 Cr./MW for projects less than 5 MW and 5 MW & above respectively based on the capital cost data submitted by the project developers to IREDA, Power Finance Corporation and United Nations Framework Convention for Climate Change (UNFCCC) for availing CDM benefit and cost computed on the basis of application of cost indexation formula over the cost earlier determined in 2009 Regulations. However, on the submissions of the stakeholders, the cost was increased.

viii) We find that the Central Commission has decided the capital cost after detailed analysis of cost data submitted by the developers to funding agencies and UNFCCC. If the cost of Rs. 5.5 Cr./MW for projects below 5 MW and Rs. 5 Cr./MW for projects of 5 MW and above for FY 2009-10 is taken as base for back calculating the capital cost for FY 2004-09 at a moderate inflation rate of 4%, the capital cost per MW for the period 2004-09 will work out as under:

	2009-10	2008-09	2007-08	2006-07	2005-06	2004-05
For Projects below 5 MW	5.5 Cr.	5.28 Cr.	5.07 Cr.	4.87 Cr.	4.67 Cr.	4.48 Cr.
For Projects 5 MW & above	5 Cr.	4.8 Cr.	4.61 Cr.	4.42 Cr.	4.25 Cr.	4.07 Cr.

Thus, capital cost of Rs. 4.5 Cr./MW determined by the Chairman and Member-Finance appear to be reasonable, considering the cost specified by the Central Commission for FY 2009-10 which is in turn is based on detailed data submitted by a number of projects to Financial Institutions and UNFCCC.

ix) While we accept the principle that the capital cost should be determined for the first year of the control period with cost indexation mechanism for determination of the capital cost for the projects commissioned in the subsequent years of the control period, we do not want to decide the cost

indexation mechanism in this case for the control period 2004-09 for the following reasons:

a) Most of the projects have been commissioned prior to 1.4.2004.

b) Only two projects were commissioned subsequent to 2004-05 viz. M/s. Balaji of 10 MW capacity in FY 2005-06 and M/s. Sardar Power (<5MW) in 2008-09. As the project of M/s. Balaji is of capacity higher than 5 MW, the capital cost per MW is expected to be lower as compared to project of less than 5 MW capacity. Since same capital cost of Rs. 4.5 Cr. is proposed for all projects irrespective of capacity, the capital cost of Rs. 4.5 Cr. for Balaji project of more than 5 MW capacity appears to be reasonable.

c) The capital cost calculations submitted by M/s. Sardar Power with cost indexation formula as given by the Central Commission gives a higher capital cost (6.646 Cr./MW) for the year 2008-09 than the actual cost claimed by M/s. Sardar Power (5.39 Cr./MW). Thus, if indexation as per the formula specified by the Central Commission is adopted it would result in allowing a much higher cost to the appellant than claimed by the appellant.

d) That leaves only Sardar Power commissioned during the fifth year of the control period i.e. 2008-09 for which actual capital cost claimed by the appellant is 5.39 Cr./MW. We give liberty to M/s. Sardar Power to separately approach the State Commission with complete data of capital cost and the State Commission shall consider the same and determine the capital cost and the tariff for M/s. Sardar Power.

x) Regarding subsidy provided by the Government to small hydro, the learned counsel in Appeal no. 172 of 2011 has submitted the following provisions of disbursement of subsidy under MNES subsidy scheme announced vide circular no. 14(5)/2003-SHP dated 29.7.2003.

> "13. *After being satisfied regarding power generation from the project for a minimum of three months, the Ministry would release the subsidy to financial institution in one go, subject to availability of funds.*
>
> *14.The financial institution, after receipt of the subsidy amount would reduce the loan by the equal amount as pre-payment of loan. Pre-payment penalty, if any, will be borne by the developer.*
>
> *15. After utilization of the subsidy amount as pre-payment, the FI would submit a utilization certificate as per format (Proforma P) to the Ministry".*

Thus, the disbursement of subsidy to the financial institution will reduce the outstanding debt and consequently

some reduction in amount of interest but pre-payment penalty, if any, has to be borne by the Developer. According to the Govt. of India circular the subsidy has been given to improve the economic viability of the small hydro projects.

xi) We feel that it would not be desirable to reduce the normative capital cost of mini hydel projects by the subsidy amount for the following reasons:

a) The subsidy is being given later in post commissioning period directly to the lending agency towards repayment of loan. Reduction of capital cost by subsidy amount will reduce the equity component too whereas in fact there is no reduction in equity resulting in lower return to the Developer. The debt component will also reduce upfront if the capital cost is reduced by the subsidy amount whereas for construction of the project debt component corresponding to capital cost will be arranged by the Developer as subsidy is available only later after commissioning of the project.

b) Subsidy is not available to all the Developers.

c) Reduction in capital cost by subsidy amount will also reduce the O&M charges as these are determined as a percentage of capital cost which will not be correct as O&M charges are not

dependent on subsidy and will not reduce if the subsidy is paid by the Central Government.

xii) However, the actual subsidy amount received by the project developer from Government of India after adjusting the pre-payment penalty, if any, may be adjusted against the arrears due to the Developers as a result of determination of tariff as per the directions given in this judgment or against the payments made to the Developers for the energy supplied.

xiii) Accordingly, we decide the capital cost for mini hydel projects at Rs. 4.5 Cr./MW.

33.2 **Plant Load Factor (PLF):**

i) In the 2004 order the State Commission had considered a PLF of 35% as the threshold for fixed cost coverage. Both Chairman and Member-Finance in their respective orders have retained PLF at 35%.

ii) According to learned counsel for the Developers, many of the hydro projects have been able to achieve PLF significantly less than 30% in several years since 2000. In the tariff scheme conceived by the Chairman and Member-Finance puts all the hydrology risks on the Developers and deny them all the hydrology rewards. Inflows are dependent upon the release of water for irrigation and rainfall not only in the catchment area but also in command area and are beyond the control of the power station. Under recovery of fixed cost in a

year due to non-achievement of the threshold PLF of 35% cannot be made up in the subsequent year if the generation is above the threshold PLF as the excess generation only earns incentive which is not adequate to cover the shortfall in the fixed cost. Either all the hydrology risks and rewards are given to the developers or all the hydrology risks and rewards are taken by the purchaser of power. There cannot be a situation where the hydrology risks fall upon the developer and the rewards are taken by the purchaser. Accordingly, the Developers contended for PLF of 30% for determination of tariff and allow the same price for the entire energy generated and supplied irrespective of the actual PLF. Alternatively, there should be provision for carry forward of deficit PLF of any year (s) to be set off against the excess PLF of any subsequent year (s) to be paid for at the rates applicable to such energy in the earlier year (s) in which the deficit being set off respectively arose.

iii) Learned Sr. counsel for the licensees argued that PLF of 35% is justified by data which was made available to the State Commission. 2004 order refers to data for the year 1996 to 2002 and for 7 years the average PLF worked out to 35.57%. Also for five years subsequent to 2004-05 also the average PLF is 34.5%. Further Sardar Power itself submitted in the 2009 proceedings that 35% PLF may be adopted for tariff fixation. There is also no justification for permitting

carry forward, particularly when 35% PLF was calculated and determined on scientific basis, based on actual data. If at all the carry forward is permitted to mini hydel projects, it should be restricted to a maximum period of one year only and the rate at which electricity purchased would be paid for would be the rate which is applicable in the year in which electricity is purchased and not the previous year's rate.

iv) We notice that the Central Commission in its 2009 Regulations has decided Capacity Utilization Factor (or PLF) of 30% for States other than HP, Uttrakhand and North Eastern States. The Regulations do not distinguish between tariff for generation in excess of normative generation. Thus, the risk and benefit of lower/excess generation as compared to normative generation is to the account of the developer. In the 2012 Regulations also the Central Commission has maintained the same approach and norm.

v) The Chairman and Member-Finance in their respective orders after recording the submissions of the parties have decided to fix the threshold PLF at 35%. Chairman has not dealt with the issue of carry forward whereas the Member-Finance has recorded that the carry forward concept would be separately addressed alongwith petition under Section 108 pending with the State Commission. According to the developers no such petition is pending with the State Commission.

vi) Let us first examine the actual PLF of the various projects for the period 2004-09 as furnished by the Developers.

'PLF in %age'

S. No.	Name	Capacity COD	04-05	05-06	06-07	07-08	08-09	AVG PLF
1.	NCL Industries	7.5 MW 28.9.2000	17.54	33.82	26.31	38.62	22.72	27.80%
2.	Manhimasa	3 MW 17.1.2001	22.62	28.05	67.43	75.43	70.31	52.76%
3.	Srinivasa	0.55 MW 15.4.2001	10.64	22.62	30.26	33.69	27.51	24.9%
4.	PMC Power	0.65 MW 17.5.2001	25.08	39.78	46.43	41.83	38.08	38.24%
5.	Janapadu Hydro	1 MW 19.9.2001	34.41	52.92	50.23	48.40	43.57	45.9%
6.	Saraswathi Power	2 MW 21.10.2001	18.38	40.90	18.32	16.04	20.54	22.8%
7.	Gunta Kandela (K.M. Power)	4 MW 14.2.2002	33.25	44.89	40.72	38.73	32.43	38.0%
8.	Velpanur (K.M. Power)	3.3 MW 7.11.2002	27.27	35.46	32.39	31.17	22.68	28.8%
9.	Madhavaram (K.M. Power)	4 MW 21.11.2003	28.66	41.90	31.75	30.26	18.40	22.8%
10.	Bhavani Hydro	0.55MW 17.11.2004	27.36	39.48	38.25	36.06	34.44	35.1%

Out of 10 power stations only 5 have been able to achieve average PLF of 35% or more for the five year period (2004-09). Even the power plants which achieved PLF of 35% or more on

an average, could not achieve 35% PLF in 1 or 2 years in the five year period under consideration.

vii) Developers in Appeal no. 173 of 2011 have furnished data for 8 to 10 years of operation for the above 10 power plants. In the 10 years of operation only 3 hydro power stations could achieve PLF of 35% or more. The average PLF for the above projects for the last 7 to 10 years is indicated as under:-

S. No.	Name	Avg. PLF	Remarks
1.	NCL Industries	18.94%	PLF of 35% & above in 1 year out of 10 years
2.	Mahimasa	43.37%	PLF of 35% & above in 5 out of 10 years
3.	Srinivasa	19.18%	PLF above 35% in none of the 10 years
4.	PMC Power	30.47%	PLF above 35% in 6 out of 10 years
5.	Janapadu Hydro	35.53%	PLF above 35% in 6 out of 10 years
6.	Saraswati Hydro	25.69%	PLF of 35% & above in 3 out of 10 years
7.	Gunta Kandala	32.15%	PLF of 35% & above in 5 out of 10 years
8.	Velpanur	26.47%	PLF of 35% & above in 1 out of 9 years
9.	Madhavaram	27.84%	PLF of 35% & above in 2 out of 8 years
10.	Bhavani	35.48%	PLF of 35% & above in 5 out of 7 years

Sardar Power Ltd. (Appeal 172 of 2011) has furnished the PLF data for the period 2008-09 to 2011-12 indicating average PLF of 27.14%. PLF in only one year out of 4 years was above 35%. In the remaining 3 years it was between 7.83% to 33.12%.

The above long term data would indicate that only 3 power stations have been able to achieve average PLF of 35%, the range being 35.48% to 43.37%. Other power stations have recorded average PLF of 30 ± 3% or below.

viii) The data furnished by the licensees for 14 hydro power stations for the period 2004-05 is slightly in variance from the data given by the Developers but the analysis also reflects the same picture. The average PLF for all the projects for the period 2004-09 has been indicated as 34.51% even though in 1 to 3 years out of 5 years the average annual PLF of most the power stations is lower than 32%. 6 power stations out of 14 could not achieve average PLF of 35% during the period 2004-09. According to the Developer the data given by the licensees include hydro power station located on cooling water channel of thermal station having a very high PLF which is not representative of the hydro projects.

ix) We find substance in the submissions of the developers that the non-recovery of fixed cost in a year due to non-achievement of threshold PLF due to less inflows is not recovered in the subsequent year even if the generation in that

year is above threshold PLF. Thus the hydrology risk has been totally passed on to the Developers even though inflows at hydro power stations is beyond their control. The incentive of 25/35p/kWh provided for by the Chairman/Member-Finance is grossly inadequate to cover up the loss of fixed cost due to less inflows in previous year.

x) The generation at the hydro stations is dependent upon the precipitation in the catchment area and irrigation requirement for canal power stations which determines the releases in the canal. Thus, the inflows and the generation is beyond the control of the Developers. The Developer can only ensure availability of the machines. There is no allegation that the Developers have failed to ensure the availability of the machines. We, therefore, feel that if the hydrology risk is passed on to the developers than the benefit of hydrology should also to be passed on to the Developers.

xi) In view of above, we feel that the capacity utilization factor of 32% will be reasonable for determination of tariff.

xii) We also feel that for small hydro power projects due to uncertainty of hydrology which is beyond the control of Developers, the tariff should be a single part tariff and the generation above the PLF of 32% upto PLF of 45% should also be paid at the same rate which is determined at normative PLF of 32%. This will ensure that less generation in a particular year could be made up by the hydro power station by extra generation between PLF of 32 and 45% in other years. On

energy generation above the PLF of 45% only incentive @ 35 p./kWh shall be payable. This will ensure that the benefit of generation above 45% PLF is shared between the generator and the distribution licensees. Thus the hydrological risk and benefit will be borne by the Developers and the benefit of extra generation above 45% PLF is shared with the distribution licensees. Thus there will not be any need for carry forward of the shortfall in recovery of fixed charges in a particular year to the next year.

33.3 **Auxiliary Consumption:**

i) This issue has been raised in Appeal no. 172 of 2011. The State Commission fixed auxiliary consumption of 1% in the 2004 order. The same was retained in the respective orders of the Chairman and Member-Finance on the lines of Central Commission's Regulations.

ii) According to Shri Gopal Chaudhry, learned counsel for M/s. Sardar Power, the Commission did not appear to have properly considered the size of the small hydro projects in coming to its conclusion and erred in deciding the auxiliary consumption of a small power house at the same level as a large hydro plant. He submitted the rating of the station auxiliary of Sardar Power and after considering the hours of operation of each auxiliary worked out the auxiliary consumption of 1.5% also taking into account the transformation loss and transmission line loss.

iii) According to learned Sr. counsel for the licensees, in the DPR of some of the projects the auxiliary consumption of 1% has been indicated. Further in view of consistent view of 1% in the 2004 order, the impugned order and also the Central Commission's Regulations 2009 and 2012, no change or enhancement is called for.

iv) The Chairman in his order has fixed auxiliary consumption norm of 1% considering Central Commission's Regulations, 2009 and the findings of most of the State Commissions. The same reasoning has been recorded by Member-Finance in his order in fixing auxiliary consumption at 1%.

v) The Central Commission has in the Statement of Objects and Reasons of the 2009 Regulations has given the following explanation for adopting 1% auxiliary consumption.

> "*33.2. The Commission observes that a typical SHP project has very few generator auxiliaries and pumping units and therefore, auxiliary consumption for SHP is less as compared to large size hydro projects. Further, inter-connection point for SHP has been specified as line isolator on outgoing feeder on HV side of generator transformer which means minimal transformation losses and no transmission line losses. To account for transformation losses, additional auxiliary consumption of 0.5% has been provided. Therefore, normative auxiliary consumption including transformation losses shall be 1%".*

vi) We are in agreement with the findings of the Central Commission. The Developers have not furnished any actual data recording the gross energy generation and energy sent out at the various hydel power plants to establish their claim of higher auxiliary consumption of 1.5%. The consumption of

auxiliary consumption on name plate rating of the auxiliaries and assumed hours of operation per day and applying assumed load factor does not satisfy us as there are many assumptions in the computation. None of the Developers including Sardar Power have submitted the actual metered gross and sent out data for the power station for the period 2004-09 to establish their claim of higher auxiliary consumption. Thus, we do not accept the contention of the Developer in Appeal no. 172 of 2011 and confirm auxiliary consumption of 1% as decided by the Chairman and Member-Finance in their orders.

33.4 **Operation & Maintenance expenses and escalation**:

i) In the 2004 order the State Commission decided O&M expenses at 1.5% of the project cost with escalation of 4% p.a. The Chairman and Member-Finance in their respective orders have decided to increase O&M expenses to 3% of the project cost with escalation of 6%.

ii) According to Shri M.G. Ramachandran, learned counsel for M/s. KM Power (appeal no. 173 of 2011), O&M expenditure of 3.5% is justified since the actual O&M expenses are ranging between 3.5% and 11%. The O&M escalation of 6% is justified because of WPI in the same range and also in line with the Central Commission's Regulations i.e. 5.72%.

iii) According to Shri Gopal Chaudhry, learned counsel for Sardar Power (appeal no. 172 of 2011), the O&M expenses

should be fixed at 6.09% of the capital cost of Rs. 7.76 Cr. with escalation of 6% p.a. The Central Commission had considered O&M expenses at Rs. 17 lacs. per MW for 2009-10. If Chairman and Member-Finance were going by the Central Commission's Regulations they should have allowed O&M at full Rs. 17 lacs./MW or at the equivalent on the capital base of Rs. 4.5 Cr./MW which comes to 3.78% of the capital cost. He also submitted statement of salaries and wages of employees of Rs. 24 lacs. per annum which is itself 2.5% of the capital cost of the appellant of Rs. 9.29 Cr. Together with administrative expenses of bare minimum of 0.5%, repairs, spares & consumables at 1.5% and insurance of 1%, the least that might to have been allowed is 5.5% of the capital cost of Rs. 9.29 Cr.

iv) Learned counsel for the Licensees argued that there was no case to increase O&M charges and the same should be retained at 1.5%. Central Commission's 2009 Regulations provide for Rs. 17 lakhs for projects less than 5 MW which amounts to 3.09% of the capital cost and for projects above 5 MW, 12 lakhs i.e. 2.4% of the capital cost. The average of two would be 2.745%. Similarly the average as per 2012 Regulations of the Central Commission the average O&M charges would be 2.935%. There is no case to increase the escalation to 6% without reference to the inflation prevailing at that point of time.

v) Both Chairman and Member-Finance in their respective orders have decided to fix O&M charges at 3% of the capital cost based on the Central Commission's Regulation. They have also decided annual escalation at 6% as according to them the O&M escalation has to commensurate with current costs.

vi) Central Commission in its 2009 Regulations has fixed O&M cost at Rs. 17 lakhs/MW for projects below 5MW and Rs. 12 lakhs/MW allowed for projects of 5 MW to 25MW capacity. At capital cost of Rs. 550 lakhs/MW allowed for projects between 5 MW and Rs. 500 lakhs/MW for projects of 5 MW & above, the O&M would translate into 3.09% and 2.4% of the capital cost respectively. Similarly, according to 2012 Regulations the O&M expenses work out to 3.3% of the capital cost for projects of below 5 MW and 2.53% of the capital cost for projects of 5 MW & above.

vii) We find that most of the projects in the State are of below 5 MW capacity where the O&M cost per MW is expected to be higher compared to a project of higher capacity. Considering the data furnished by the Developers we are of the opinion that there is a case for increasing the O&M expenses to 3.5% of the capital cost. The annual escalation has already been discussed under the biomass projects under paragraph 31.4 (x) and accordingly the same would apply to the hydro projects also.

viii) We are not in agreement with Sh. Gopal Chaudhry that O&M expenses of Rs. 17 lakhs/MW as determined by the Central Commission have not been adopted. The O&M expenses for Rs. 17 lakhs/MW are pertaining to year 2009-10 and therefore, the same cannot be made applicable to FY 2004-05. Rs. 17 lakhs/MW in 2009-10 at annual deflation of 6% would be about Rs. 13.5 lakhs/MW for 2004-05.

33.5 **Computation of Working Capital**

i) The computation of working capital has not been indicated in the 2004 order. The Chairman and Member-Finance have also not indicated how the working capital is to be computed.

ii) Shri Gopal Chaudhry, learned counsel for M/s. Sardar Power has prayed that the working capital requirement should be on the basis of one months' O&M expenses, 1% of project cost towards spares and two month's receivables.

iii) The Central Commission's Regulations 2009 provide for working capital computed with O&M expenses for one month, receivables equivalent to 2 months of energy charges for sale of electricity on normative capacity utilization and maintenance spare @ 15% of O&M expenses.

iv) We feel that the working capital as contended by the Developers on the basis of one month's O&M expenditure, 1%

project cost towards maintenance spares and two months' receivables is reasonable and the same may be adopted by the State Commission.

33.6 **Interest on term loan and working capital:**

i) In the 2004 order the State Commissions decide interest on term loan as well as interest on working capital at 12%. Both Chairman and Member in their respective orders have decided to retain interest rate at 12%.

ii) According to Sh. Gopal Chaudhry the interest rates have to be considered in the realities of situation and the rates are varying from time to time according to the fiscal policy of RBI and macro-economic consideration. The interest rate is also dependent on the credit rating of the borrower which in case of hydro project developer is low, due to perception of banks arising out of credit history of mini hydro projects caused by un-remunerative tariff, uncertainty, etc. The interest rates cannot be fixed as a single invariable normative value more particularly for such long period of 10 years. The interest rates have to be linked to the SBI PLR and must be varied from time to time with the variation in such reference rate. Sh. Gopal Chaudhry submitted the SBI PLR rates for the period 1.4.2004 to 13.8.2011 and requested for fixation interest rate on term loan and working capital loans at 13.5%.

iii) According to learned Sr. counsel for the licensee no case is made out for enhancing interest rate from 12%.

iv) The Central Commission in its 2009 Regulations decided the interest rate on term loan at average long term prime lending rate of SBI prevalent during the previous year plus 150 basis points. For interest on working capital the interest rate is fixed at average SBI short term PLF during the previous year plus 100 basis points.

v) We agree with the contention of Sh. Gopal Chaudhry that interest rates vary with time according to the policy of RBI and other macro-economic consideration. However, for computing the generic tariff a fixed interest rate fixed on the basis of conditions prevailing at the time of fixation tariff for the control period can be considered. In the present case since the control period 2004-09 is already over, the data is available for the entire period. The data submitted by Shri Gopal Chaudhry relating to Base rate/Bank Prime Lending Rate (PLR) of State Bank of India for the period 2004-09 is as under:

Effective Date	**BPLR**
01/01/2004	10.25
01/05/2006	10.75
02/08/2006	11.00
27/12/2006	11.50
20/02/2007	12.25
09/04/2007	12.75
16/02/2008	12.50
27/02/2008	12.25
27/06/2008	12.75
12/08/2008	13.75
10/11/2008	13.00
01/01/2009	12.25
29/06/2009	11.75
17/08/2010	12.25
21/10/2010	12.50
03/01/2011	12.75
14/02/2011	13.00
25/04/2011	13.25
12/05/2011	14.00
11/07/2011	14.25
13/08/2011	14.75

Effective Date	Base Rate
01/07/2010	7.50
21/10/2010	7.60
03/01/2011	8.00
14/02/2011	8.25
25/04/2011	8.50
12/05/2011	9.25
11/07/2011	9.50
13/08/2011	10.00

Considering the above data we feel that the interest rate as decided by the State Commission at 12% for the control period 2004-09 is reasonable. The same rate of interest rate has been decided for biomass and bagasse projects.

vi) Accordingly, we fix the interest rate for term loan and working capital as 12%. However, the interest rate for the subsequent control period will be decided by the State Commission considering the prevailing conditions for that period.

33.7 **Return on Equity:**

The issue here is the same as discussed in the case of Biomass Projects. Accordingly, our findings for biomass projects will also apply to mini hydel projects.

33.8 **Return on Equity on Working Capital Margin:**

i) Sh. Gopal Chaudhry in Appeal no. 172 of 2011 has argued that 25% of working capital requirement is met from equity and 75% from debt. Therefore, 25% of the working capital should be considered as part of equity and ROE should be allowed thereon.

ii) We are not in agreement with the contention of Shri Gopal Chaudhry. The ROE is allowed on 30% of the capital expenditure on the capital assets created. The cash surplus of the generating company used for working capital cannot be treated as equity. The cash surplus used by the company for working capital requirement can be treated as deemed loan and can earn only interest on loan.

33.9 **Deemed generation:**

This issue has been discussed in detail under Biomass Projects and the same applies to mini hydel plants.

33.10 **Electricity Duty:**

Electricity duty may be allowed as pass through as decided by the Chairman and Member-Finance in their respective orders.

33.11 **Royalty on water:**

We agree with the findings of the Chairman and Member-Finance that Royalty on water has to be reimbursed by the licensees in addition to monthly energy bills.

33.12 **Depreciation:**

i) In the 2004 order of the State Commission the depreciation was fixed at 6.7% per annum. The Chairman and Member-Finance in their respective orders have decided

depreciation @ 7% annually for first 10 years and 20% to be spread uniformly over the next 15 years.

ii) Learned Sr. counsel for the licensees has submitted that the depreciation should be retained at 6.7%. In support of his arguments he has referred to the Central Commission's Regulations of 2012 where depreciation has been specified as 5.83% for first 12 years.

iii) This issue has been discussed in details for Biomass Projects in paragraph 31.13 where after discussion we upheld the decisions of the Chairman and Member-Finance for recovery of 70% depreciation in first 9 years and balance in the remaining period of PPA.

iv) The same reasoning as given in point (v) under paragraph 31.13 for Biomass projects will apply to mini hydel projects. Accordingly, the depreciation is decided @ 7% p.a. for first 10 years and the balance to be spread over the remaining 15 years.

33.13 **Debt equity ratio:** Debt equity ratio decided as 70:30 in the 2004 order and also in the present orders of the Chairman and Member-Finance has not been challenged and, therefore, will be considered as the same.

33.14 **Incentive:** We have decided the incentive of 35p./kWh for generation beyond the threshold PLF for Biomass and Bagasse Projects. For mini hydel projects also

incentive of 35p./kWh shall be payable on energy generation above 45% PLF.

34. The State Commission shall determine the tariff for Biomass, Bagasse and Mini hydel projects based on the above findings within 45 days of the communication of this judgment and also decide the time period within which the arrears will be paid by the distribution licensees to the developers. We want to make it clear that no public hearing will be necessary for determination of the tariff as we have given findings on norms and parameters for determination of tariff.

35. The fourth issue is regarding interest on the amount due to the developers as a consequence of this judgment.

35.1 The Chairman in his order has not given any interest on arrears. Member-Finance has provided interest of 9%.

35.2 Shri Gopal Chaudhry, learned counsel for the developers has argued that the power projects have suffered due to deficient revenue and have incurred huge financial cost as interest on additional borrowings and default in interest payments apart from operational costs and hardship. It is only fair and just that they be given the carrying cost, which is also based on the time value of money, by way of interest. He prayed for interest rate on differential tariff amounts at SBI

PLR or other appropriate reference rate relating to lending for similar loans for working capital with monthly or other rests in the same manner as would apply to commercial working capital loans extended by the SBI. On similar plea, Shri M.G. Ramachandran also argued for interest rate @ 1% per month, at quarterly rests from the date the same are payable. Other Ld. counsel have also made similar submissions.

35.3 Learned Sr. counsel for the licensees argued that since the re-determination of tariff has taken place only now there is no default or fault on the part of the distribution licensees and they cannot be penalized with interest liability.

35.4 Member-Finance in his order has stressed that interest payment is time value of money and the developers are entitled for it. The distribution licensees had also recovered the excess payment with interest after they interpreted the Supreme Court order that order of 2004 was applicable. Therefore, on the same concept the developers are entitled for interest.

35.5 The principle of carrying cost has been well established in the various judgments of the Tribunal. The carrying cost is the compensation for time value of money or the monies denied at the appropriate time and paid after a lapse of time. Therefore, the developers are entitled to interest on the differential amount due to them as a consequence of re-

determination of tariff by the State Commission on the principles laid down in this judgment. We do not accept the contention of the licensees that they should not be penalized with interest. The carrying cost is not a penal charge if the interest rate is fixed according to commercial principles. It is only a compensation for the money denied at the appropriate time.

35.6 As the interest rate has been decided as 12% determination of tariff, the same rate may be applied for calculation of interest/carrying cost. The interest will be due from the date the payment is due and shall be compounded on quarterly basis.

35.7 The State Commission shall also set a time period within which the payment of arrears and interest will be paid to the developers by the distribution licensees.

36. The last issue is regarding applicability of the tariff order.

36.1 According to learned counsel for the developers, since the State Commission has been considering the generic tariff for NCE purchases by the distribution licensees, the tariffs should be universally applicable in all case of purchase by the distribution licensees from the NCE projects.

36.2 According to learned Sr. counsel for the licensees, some of the appellants have entered into Power Purchase Agreements which provide that the tariff will be the tariff as determined by the State Commission or negotiated tariff, whichever is less. Parties having agreed upon a negotiated tariff and having been acting on the same, in the absence of a challenge to the PPAs, the Tribunal for the first time cannot entertain a plea that they shall be granted a tariff different from the one specified and agreed in PPA.

36.3 We have decided the issues related to the generic tariff for NCE sources of energy for purchase of power by the distribution licensees for the control period 2004-09 decided by the State Commission on remand from the Hon'ble Supreme Court. In this appeal we cannot go into specific PPAs entered into between the developers and the distribution licensees. We also do not know if the negotiated PPAs have been approved by the State Commission. Therefore, we do not want to give any finding on this issue. We direct the State Commission to issue necessary direction in this regard. If the State Commission feels that the tariff as determined as a consequence of this judgment is not applicable to some of the appellants then such appellants should be given an opportunity of hearing separately before taking a final decision by the State Commission in the matter.

37. Till the passing of the final order by the State Commission based on the directions given in this judgment, the tariff as decided by the Chairman in his order dated 19.8.2011 shall continue to operate in the interim period subject to adjustment later, after the final tariff is determined by the State Commission.

38. We have given our findings on the norms to be adopted based for determination of tariff for NCE projects for the control period 2004-09 on the basis of the submissions and data furnished by the parties, orders of the State Commission, Central Commission's Regulations, Report of the CEA, etc. However, we feel that there is a need for carrying out a scientific study for determining the normative parameters specific to the state for future. The study should also take into consideration the technological improvements that have since taken place in the generation by non-conventional energy sources. We direct the State Commission to arrange to undertake the study on priority and frame its Tariff Regulations for purchase of power by distribution licensees from NCE sources after considering the Study Report, Central Commission's Regulations and any other relevant information.

39. **Summary of findings:**

i) We do not accept the contention of the Developers that the tariff based on the MNES guidelines has to be continued after 1.4.2004.

ii) Allowing third party sale to the project developers who have voluntarily entered into long term PPAs with the distribution licensees will not be in the large public interest. However, there is no bar on the NCE projects who have not entered into PPA for sale of power with the distribution licensees or future NCE projects to sell power to third parties and the distribution licensees and the transmission licensees shall provide open access as per the provisions of the 2003 Act. The developers who have entered into PPA with the distribution licensees will also have option for third party sale after the expiry of the term of the PPA.

iii) The tariff for the various NCE projects has to be determined by the State Commission on the basis of the following norms:

A. **Biomass Power Plants**

(a)	Capital cost	4 Cr. /MW
(b)	Threshold PLF	80%
(c)	Auxiliary consumption	10%
(d)	O&M expenses	5.5% of capital cost
(e)	Annual escalation for O&M	Based on actual CAGR of WPI & CPI for the control period 2004-09 with 40% weightage to CPI and 60% to WPI i.e. CAGR for the period 2004-09.

(f)	Fuel Price	Rs. 1300 per MT
(g)	Fuel Price escalation	6% p.a.
(h)	Specific fuel consumption	1.36 kg./kWh based on station heat rate of 4500 kCal/kWh and GCV of 3300 kCal/kg.
(i)	Computation of working capital	i) Fuel cost for one month computed at threshold PLF of 80%. ii) O&M expenses for one month. iii) Receivables for 2 months of fixed and variable cost at threshold PLF. iv) Maintenance spares @ 1% of project cost . Working capital to change in each year with escalation in fuel cost & O&M expenses
j)	Interest on working capital	12%
k)	ROE	16% with MAT/income tax as pass through.
l)	Debt equity ratio	70:30
(m)	Interest on debt	12%
(n)	Incentive on generation beyond threshold PLF	35 p./kWh
(o)	Depreciation	7.84% for first 8 year, 7.28% for the 9th year and further depreciation of 20% spread over evenly in the balance 11 years.

(p)	Electricity duty	To be allowed as pass through
(B)	**Bagasse based cogeneration**	
a)	Capital cost	3.25 Crore/MW
b)	Threshold PLF	55%
c)	Auxiliary computation	9%
d)	O&M expenses	4%
e)	O&M escalation	As per actual CAGR of WPI & CPI indices for 2004-09 with 40% weightage to CPI and 60% to WPI as given for the biomass projects.
f)	Fuel Price	Rs. 745 per MT
g)	Fuel price escalation	5%
h)	Specific fuel consumption	1.6 kg./kWh
i)	Computation of working capital	Same as for biomass
j)	Interest on working capital	12%
k)	ROE	16% with MAT/income tax as pass through.
l)	Debt equity ratio	70:30
m)	Interest on debt	12%
n)	Incentive on generation beyond threshold PLF	35 p./kWh
o)	Depreciation	Same as for biomass projects

(p)	Electricity duty on energy sold to distribution licensees	To be allowed as pass through

C. **Mini Hydel Power Plants**

a)	Capital cost	4.5 Crore/MW
b)	Capacity utilisation factor (PLF) for determination of tariff	32%
c)	Auxiliary computation	1%
d)	O&M expenses	3.5% of the capital cost
e)	Annual escalation for O&M	As per actual CAGR of CPI & WPI indices for the period 2004-09 with 40% weightage to CPI and 60% to WPI.
f)	Computation of working capital	i) one month's O & M expenses ii) 2 months receivables iii) 1% project cost towards maintenance spares
g)	Interest on working capital	12%
h)	ROE	16% with MAT/income tax as pass through.
i)	Debt equity ratio	70:30
j)	Interest on debt	12%
k)	Incentive	For energy generation above 45% PLF incentive @ 35p./kWh shall be payable.
l)	Depreciation	7% p.a. for first 10 years and 20% spread over uniformly over next 15 years

m)	Electricity duty	To be allowed as pass through
n)	Water royalty	To be reimbursed as pass through

The subsidy amount received by the project developers from Government of India after adjusting the prepayment penalty, if any, may be adjusted against the arrears due to the developers as a result of determination of tariff as per the above normative parameters or against payment of electricity supplied.

iv) Interest on arrears due to the developers as a consequence of determination of tariff on the basis of above norms to be allowed at the rate of 12% to be compounded on quarterly basis.

v) The State Commission to also specify the time within which the payment of arrears and interest is paid to the developers.

vi) Applicability of tariff with specific reference to particular PPAs entered into between the developers and the distribution licensees to be decided by the State Commission after hearing the concerned appellants separately.

vii) Till the passing of the final order by the State Commission, the tariff as per the order of the Chairman dated 19.8.2011 to be continued subject to adjustment, after determination of the tariff by the State Commission.

viii) The State Commission is also directed to initiate a study for normative parameters for NCE sources and frame Tariff Regulation as per directions given in paragraph 38. The Commission may also note the directions given in this judgment which may be considered at the time of framing Tariff Regulations and for determination of tariff for the subsequent control period. The Registrar is also directed to release the bank guarantees furnished by the Developers.

40. The appeals are allowed in part to the extent indicated above. The State Commission shall pass consequential order within 45 days of communication of this judgment. No order as to costs.

41. **Pronounced in the open court on this 20th day of December, 2012.**

(Justice P.S. Datta)
Judicial Member

(Rakesh Nath)
Technical Member

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REPORTABLE/~~NON-REPORTABLE~~

vs