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NO: MSETCL/CO/C.E.-STU/R&C- 007638

DATE: 06 JUN 2015

To,

The Secretary,
Maharashtra Electricity Regulatory Commission
World Trade Centre, 13th floor,
Cuffe Parade, Mumbai – 400 005

MERC	
Inward No. 1079	8/6/15
Chairman	
Secretary	

A
A/b

Sub: Submission of Report of the Committee in compliance to the directives of Hon'ble Commission in Case No. 172 of 2014

Ref: 1. MERC final order in case no. 172 of 2014, Dtd. 19-3-2015,
2. Ltr. No. MSETCL/CO/CE-STU/R&C-5266, Dtd. 18-4-2015.

Sir,

As per the Hon'ble Commission's directives given in para 21 vide ref.(1), a committee was constituted under the Chairmanship of Chairman and Managing Director, MSETCL as STU with representatives of MSLDC, MSEDCL, BEST, Rlnfra-D, TPC- G&D as committee members. The committee was directed to make recommendations for such a protocol, which may include resort to idle capacity and on related issued of apportionment and commercial settlement.

The Committee was supposed to submit its report within 3 weeks which it could not make it on the given time. It was requested by CE –STU on behalf of Chairman of the committee to Hon'ble Commission vide ref.(2) for kind extension of time limit considering the modalities involved in the issue.


In compliance to Hon'ble Commission's order, the Committee has prepared its report based on the interactions, deliberations and outcome of series of meetings with Committee members.

The committee report is submitted herewith for kind perusal and further needful please.

Thanking you,

Encl. Committee Report (Pg.1 to 29)

Yours faithfully


Chief Engineer (STU)

Copy s.w.rs to:

1. The Chairman & Managing Director, MSETCL C.O., Mumbai,

Copy f.w.c to members of committee:

1. Chief Engineer, MSLDC, Thane-Belapur Road, Airoli, Navi Mumbai-400 708
2. Mr. Ashok Chavan, Chief Engineer, Power Purchase, MSEDCL,
'Prakahsgad', Plot No. G-19, Anant Kanekar Marg,
Bandra (East), Mumbai 400 051
3. Mr. Sarkar Bhaskar, Head –Business Strategy and Regulations Tata Power Co. Ltd., Dharavi
Receiving Station, Near Shalimar Industrial Estate,
Matunga, Mumbai 400 019
4. Mr. V.R. Shrikhande, Chief DSS, Tata Power-D
Dharavi Receiving Station, Near Shalimar Industrial Estate,
Matunga, Mumbai 400 019
5. Mr. Avinash Waghambare, Vice President
Reliance Infrastructure Ltd., 1st floor, Reliance Energy Management Institute (REMI),
Jogeshwari – Vikhroli lind Road (JVLR), Opposite SEEPZ Gate No.3,
Andheri (E), Mumbai 400 065
6. Dr. R.D. Pastute, Chief Engineer (Regulatoy), BEST Undertaking,
BEST House, BEST Marg, Mumbai-400 001

Report of the Committee
Constituted as per
Hon'ble MERC order
In case no. 172 of 2014
For
Recommendations of protocol
To
Resort to idle capacity
And
Related issues of apportionment and
Commercial settlement.
June-2015

FOREWORD

As per the directives of the Hon'ble Commission in its Order dated 19th March, 2015 in Case No. 172 of 2014 a Committee has been constituted under the chairmanship of Chairman & Managing Director, MSETCL (STU) to make recommendations for such a protocol, which may include resort to idle capacity and on related issues of apportionment and commercial settlement specifically in respect of TPC-G Unit-6.

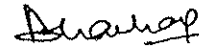
The report is based on the deliberations in the meetings (dated. 17-04-2015) conducted by Committee, presentations & submissions made by the members i.e. MSLDC, MSEDCL, TPC-D, TPC-G, R-Infra-D & BEST. Further, a draft report was deliberated in sub-committee meeting (dated 11-05-2015) of all members.

Based on the above, the Committee has finalized the report. The detailed report and recommendations of the Committee are enclosed herewith.

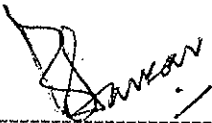
We thank all the members from STU, MSLDC, MSEDCL, TPC-G, TPC-D, R-Infra & BEST for their cooperation, contribution and those who have assisted in the completion of the report.



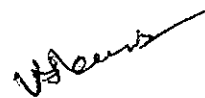
Shri. Sanjay S. Kulkarni
Chief Engineer, MSLDC, Airoli
Member



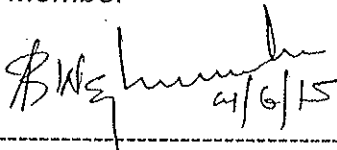
Shri. Ashok Chavan
Chief Engineer (PP) MSEDCL,
Member



Shri. Bhaskar Sarkar
Head Business Strategy and Regulation
Mumbai Operations, Tata Power-G
Member



Shri. V.R. Shrikhande,
Chief DSS, Tata Power-D
Member



Shri. Avinash Waghambare
Vice President, R-Infra-D
Member



Shri. R.D. Patsute
Chief Engineer (Regulatory) BEST
Member



Shri. Rajiv Kumar Mital (IAS)
Chairman & Managing Director, MSETCL
Chairman

ACKNOWLEDGMENT

We are grateful to all the members of the Committee from MSLDC, MSEDCL, TPC-D, TPC-G, R-Infra-D, BEST and representatives who have directly & indirectly participated in the interactions/discussions and helped the committee for preparation of the report in its final form for submission to Hon'ble Commission along with methodology for TPC-G unit-6 in respect of operation issues and commercial settlements as per order issued by the Hon'ble Commission in Case No. 172 dated 19th March, 2015.

We express the profound sense of gratitude to Shri. Omprakash Yempal, Director (Operations) of MSETCL for his valuable inputs while proceedings of the Committee task and preparing the final report. Further, we also express the profound sense of gratitude to Shri. S.G.Kelkar, CE (STU) for his contribution as convener of the committee.

Committee Members

1	Shri. Rajiv Kumar Mital	CMD, MSETCL	Chairman
2	Shri. Sanjay S. Kulkarni	CE (LD), MSLDC	Member
3	Shri. Ashok S. Chavan	CE (PP), MSEDCL	Member
4	Shri. Bhaskar Sarkar	Head BSR, TPC-G	Member
5	Shri. V. R. Shrikhande	Chief DSS, TPC-D	Member
6	Shri. Avinash Waghambare	Vice President, R-Infra	Member
7	Shri. R.D. Patsute	CE (Regulatory), BEST	Member

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LIST OF ABBREVIATIONS AND ACRONYMS

MERC	Maharashtra Electricity Regulatory Commission
STU	State Transmission Utility
MSETCL	Maharashtra State Electricity Transmission Company Limited
MSLDC	Maharashtra State Load Dispatch Centre
MSEDCL	Maharashtra State Distribution Company Limited
TPC-G	Tata Power Company- Generation
TPC-D	Tata Power Company- Distribution
R-Infra-D	Reliance Infra Distribution
BEST	Brihanmumbai Electric Supply & Transport
FBSM	Final Balancing and Settlement Mechanism
MoD	Merit Order Dispatch
TTC	Total Transfer capability
ATC	Available Transfer Capability
TRM	Transmission Reliability Margin
PPA	Power Purchase Agreement
DC	Declared Capacity
PLF	Plant Load Factor
OA	Open Access

PREFACE

The Tata Power Company Ltd. (TPC) has filed a Petition dated 29 September, 2014 under Sections 33 (4) and 86 (1) (f) of the Electricity Act (EA), 2003 for recovery of variable charges of its power generation of Unit 6 from the Distribution Licensee, Reliance Infrastructure Ltd. (R-Infra-D), pursuant to the Maharashtra State Load Despatch Centre's (MSLDC) directions to operate Unit 6 for managing congestion on Mumbai tie lines forming part of the Intra-State Transmission System (InSTS) during summer i.e. from April to July, 2014.

TPC's prayers are as follows:

a) To finalize the methodology of settlement of Unit 6 on commercial basis, in case Unit-6 generation is required against transmission constraints decided by MSLDC..."

TPC has also sought the following interim dispensation:

i. Till final disposal, directions for settlement of Unit-6 generation be followed by all utilities whenever power is required as directed by MSLDC due to transmission constraints.

ii. That pending the hearing and final disposal of the present Petition, this Hon'ble Commission be pleased to grant interim relief and direct RInfra to pay the outstanding amount of Rs. 13.76 Crores (Interest and DPC as applicable is payable over and above this amount) as per advice of Principal Secretary, Energy, GoM [Govt. of Maharashtra] and as directed by MSLDC as per the Section 33 of the Act."

Hon'ble MERC has issued order in above case on 19th March, 2015 and issued directions to STU as below:

The Commission directs that a Committee make recommendations for such a protocol, which may include resort to idle capacity and on related issues of apportionment and commercial settlement. The Committee shall be chaired by the Chairman & Managing Director of the MSETCL as STU, and include empowered representatives of MSLDC, MSEDCL, BEST, RInfra-D, TPC-D and TPC-G. The Committee shall submit its report within 3 weeks, following which the Commission will decide the further course of action.

Chapter -1**Background & Chronological Events.****1.1 About Mumbai Power System**

Mumbai is an island city and there are limited generating capacities installed within electrical island of Mumbai i.e. at TPC Trombay on extreme east coast of Mumbai Island, DTPS Dahanu (R-Infra-G) on extreme north of adjoining Thane District and TPC Hydro units in south of Thane District. The load requirement of Mumbai is concentrated in south Mumbai, eastern and western suburban area. Generation resources within Mumbai are not adequate to cater power demand of Mumbai. Hence, Mumbai system has to import power through MSETCL's network at four interconnecting locations i.e. 220/100 kV Trombay, 220/100 kV Kalwa, 220/100 kV Borivali and 220 kV Boisar sub stations of MSETCL.

1.2 Installed capacity within Mumbai and its utility wise allocation

figures in MW

Sr. No.	Generating Unit	Installed Capacity	TPC-D	BEST	R-Infra-D
1	TPC-G : Unit-5	500	244.15	255.85	0.0
2	TPC-G : Unit-6	500	244.15	255.85	0.0
3	TPC-G : Unit-7	180	87.89	92.11	0.0
4	TPC-G : Unit-8	250	150.00	100.00	0.0
5	TPC-G : Hydro	447	218.27	228.73	0.0
6	DTPS : Unit 1& 2	2 x 250			500
	Total Capacity	2377	944.46	932.54	500

TPC-G: Unit-6 was under economy shut down w. e. f. 19th July 2013 and TPC-G: Unit-8 was under forced shut down w. e. f. 09th January, 2014 due to fire in Turbine hall. This has resulted reduction of total capacity by 750 MW and maximum available capacity within Mumbai was restricted to 1627 MW only.

1.3 Available Transfer Capability (April 2014) of Mumbai and MSETCL interconnection points

Figures in MW

Sr. No.	Interconnection points	Maximum power transfer capability
1	220/100 kV Trombay	220
2	220/100 kV Kalwa	830
3	220/100 kV Borivali	460
4	220/100 kV Boisar	200
TTC without n-1 contingency		1710
Less TRM		280
Available Transfer capability(ATC)		1430

1.4 Anticipated Demand for summer 2014 forecasted in March 2014

Figures in MW

Sr. No.	Name of utility	Demand projected for June 2014
1	TPC-D	1165
2	R-Infra-D	1270
3	BEST	865
4	Total Mumbai demand	3300
5	MSEDCL's load fed through TPC	210
6	Total demand to be met	3510

1.5 Chronological events which led to operation of TPC-G Unit-6 (500 MW).

- a. TPC-D in its ARR petition has proposed not to consider power purchase from TPC-G unit-6 due to high cost for FY 2013-14 & 2014-15 and while issuing order for ARR Hon'ble Commission has not considered power purchase from TPC-G unit-6.
- b. Similarly, in case of BEST Hon'ble Commission has also not considered power purchase from TPC-G unit-6.

- c. In view of disapproval of Unit 6 power and high cost generation of TPC-G unit-6 (500 MW) was taken out under economic shut down w. e. f. 19th July, 2013.
- d. Further, on 09th January, 2014 TPC-G unit-8 (250 MW) went under forced shut down due to fire in turbine hall.
- e. Generation capacity within Mumbai was restricted to maximum 1627 MW & anticipated power demand of 3510 MW in summer 2014 has obviously resulted in power import to Mumbai to the tune of 1883 MW. While available transfer capability between Mumbai was limited to 1430 MW only. This clearly indicated that there was short fall of 403 MW for Mumbai system.
- f. Above scenario clearly indicated alarming power demand scenario for Mumbai in summer 2014. MSLDC has highlighted this alarming scenario during Grid Coordination Committee meeting on 07th March, 2014 and further the issue was apprised to the CMD, MSETCL.
- g. The CMD MSEDCL taking serious note of above situation apprised the issue to The Principal Secretary, GoM by D.O. Letter dated 19th March, 2014.
- h. The Principal Secretary, GoM immediately called meeting of all utilities on 24th March, 2014.
- i. During this meeting Mumbai DISCOMs agreed to operate TPC-G unit-6 to mitigate transmission constraints.
- j. In view of the difference of opinion in the sharing / allocation methodology, It was finally decided to share the allocation of TPC-G unit-6 on the basis of percentage sharing of Mumbai utilities in total transmission charges as per MERC order in case no. 56 of 2013 as TPC-D : 37.8%, R-Infra-D : 34.6% and BEST : 27.6%. Also, it was mentioned that, if any Utility was not satisfied with the methodology, may approach to the Hon'ble MERC.
- k. It is to mention here that no utility approached to Hon'ble MERC on issue of sharing / allocation percentage.
- l. TPC-D, R-Infra-D and BEST agreed for allocation of TPC-G unit-6 on the basis of percentage sharing of total transmission charges as per MERC order

- for transmission pricing in case no. 56 of 2013 as TPC-D : 37.8%, R-Infra-D : 34.6% and BEST : 27.6%.
- m. Further, from 01st September, 2014 these percentages are modified as per MERC order for transmission pricing in case no. 123 of 2014 as TPC-D : 35.73%, R-Infra-D : 37.01% and BEST : 27.26%.
- n. Above arrangements were agreed by all Mumbai DISCOMs and it was the premise of all arrangement that generating capacity within Mumbai shall be operating at their full capacity of 1627 MW.
- o. Based on the decisions taken in the meeting, SLDC issued the directions under Section 33 of EA 2003 and accordingly Unit-6 operation was undertaken. Therefore, TPC-G unit-6 was operated during 07th April, 2014 onwards as per the instructions of MSLDC under section 33 of EA 2003.
- p. Even though it was assumed that generation within Mumbai shall remain to its max capacity of 1627 MW, during operation of TPC-G unit-6 the system has encountered various instances of reduction in generation within Mumbai due to full / partial outages of TPC-G Unit-5 (500MW), Unit-7A & B (180MW), DTPC unit-1(250MW) and TPC Hydro due to depletion of reservoir level. This reduction in generation capacity within Mumbai has obviously resulted in transmission constraints and thereby increase in generation from Unit 6.
- q. Normally, TPC-G Unit-6 was operated at technical minimum and picked up when transmission constraints were encountered when all generation within Mumbai were operating to its full capacity. In all these cases the allocation of Unit-6 was made to Mumbai DISCOMs as per agreed percentages.
- r. In real time operation when other units were under forced shut down / partial outages, MSLDC has instructed to pick up unit-6 generation and allocation was made to the DISCOMs which are having PPA with units under forced shut down / partial outages. The allocation schedules were based on shortfall in declared capacity of respective generating unit.
- s. During its operation of TPC-G unit-6 from 07th April, 2014 to 12th July, 2014, the unit was mostly operated on technical minimum (145 MW). The unit was

picked up above technical minimum during day peak period for 48 days out of total running of 95 Days. (pick up for almost 50 % duration)

- t. MSLDC is never party to the commercial transactions between generating company and respective DISCOMs.
- u. R-Infra-D instated upon scheduling of TPC-G allocation based on actual generation of other units and withheld payment of Rs. 13.76 Crores to TPC-G (as per the petition of TPC)
- v. Tata Power Company filed petition (Case no 172 of 2014) as mentioned in preface.
- w. R-Infra-D has also filed petition for approval of cost of energy purchased from TPC-G unit-6.

1.6 Hon'ble MERC has issued order case no 172 Of 2014 in above case on 19th March, 2015 and issued directives to STU as below:

"The Commission directs that a Committee make recommendations for such a protocol, which may include resort to idle capacity and on related issues of apportionment and commercial settlement. The Committee shall be chaired by the Chairman & Managing Director of the MSETCL as STU, and include empowered representatives of MSLDC, MSEDCL, BEST, R-Infra-D, TPC-D and TPC-G. The Committee shall submit its report within 3 weeks, following which the Commission will decide the further course of action."

The terms and reference of the committee are clearly defined by Hon'ble MERC and proceedings of the committee are strictly limited to above terms and references.

Further, the term "idle capacity" is only limited to TPC-G unit-6.

Chapter -2

Proceedings of the Committee

- 2.1 The Chief Engineer (STU) MSETCL as a convener of the committee called names of representatives from all concerned utilities vide letter no. MSETCL/CO/C.E-STU/R&C/004375 dated 01st April, 2015.
- 2.2 The meeting of all committee members was held at MSETCL C.O. Prakashganga, on 17th April, 2015. The meeting was chaired by the CMD MSETCL. MSLDC made presentation to the committee regarding unit 6 operation. All committee members made their presentation and oral submission to the committee.
- 2.3 On the basis of proceedings of the committee and submission by committee members, a concept paper was prepared and circulated among all members. All members were requested to study the concept paper and submit their response in next meeting.
- 2.4 Further, a sub-committee meeting of all members was conducted under chairmanship of CE (STU) on 11th May, 2015. During this meeting all members made their submission and were also asked to submit their responses in writing.
- 2.5 The gist of presentations and submission on 17th April 2015 and written response on meeting dated 11th May, 2015 are as under:

A. Presentation by MSLDC

MSLDC made presentation regarding unit-6 operation, its background and methodology adopted for scheduling and allocation during running of unit-6.

MSLDC elaborated about allocation of Unit-6 as per methodology explained in 1.5 (q) & (r).

MSLDC has also submitted a methodology for allocation of Unit 6 power based on declared capacity (DC) for three different scenarios as under:

Scenario 1 –

Entire generation within Mumbai is available at full capacity and all interconnecting lines in service and all scenarios other than scenarios described at 2 & 3 below

Scenario 2 –

a) Tripping / outage of any generating unit within Mumbai.

1) When TPC-G Unit-6 is not in operation

2) When TPC-G Unit-6 is in operation

b) Depletion of Hydro capacity during day peak period.

Unit 6 generation is required for the system security which is outcome of less availability within Mumbai and this unit 6 generation is top up on the base generation capacity within Mumbai area. Hence, tripping/ outage of any unit from base generation capacity within Mumbai needs to be compensated by Unit 6 generation.

The day peak period shall be generally considered as 09:00 to 17:00 hrs, however this is subject to actual demand in real time.

Scenario 3 –

a) Reduction in generation below 95 % of unit capacity with revision in DC.

b) Reduction in generation below 95 % of unit capacity without revision in DC

During presentation, MSLDC informed that MSETCL has formed a new line between 220 kV Kharghar-Trombay by reconfiguration of 220 kV Kharghar-Kalwa & 220 kV TIFIL-Trombay. This line is in parallel with 220 kV Kharghar-Nerul-Sonkar-Trombay and contributes about 120 MW. Hence, ATC between MSETCL and Mumbai is enhanced from 1430 MW to 1550 MW.

B. Presentation / submission by TPC-G

TPC-G highlighted following issues regarding operation of unit-6 :

Unit 6 operation is beyond control of Tata Power-G & impacts the performance Parameters & Cost of Generation:

- Operation at Technical minimum load of 150 MW unit-6 results in extremely low PLF.
- Multiple startups and shut downs (total 09 nos. in FY 2014-15)

- Tata Power-G has taken all efforts to control fuel cost & impact on consumers. MERC order would adversely impact Tata Power-G
- Normative Performance parameters may not be made applicable to Unit 6 in current operating scenarios.
- The operational requirements of Unit 6 i.e. 24 hour notice and lead time for fuel procurement to be addressed.
- Impact on heat rate.

Sr. No	Particular	Gas : oil % Mix		Impact of Fuel cost at normative PLF as per MERC order (crores) (b-a)
		50:50 Normative (a)	88:12 Actual (b)	
1	Heat Rate (Kcal/Kwh)	2534	2831	(100)
2	Auxiliary Consumption(%)	3.5	6.65	
3	Fuel Cost (crores)	658	758	

- Further TPC-G made submission that When Unit 6 is to be operated as per direction of MSLDC, Tata Power-G needs to be reimbursed at actual for the generation done which will be calculated considering Actual fuel price, Actual heat rate and Actual auxiliary consumption.

C. Presentation / submission by TPC-D

TPC-D highlighted the following issues regarding sharing of unit-6 generation.

- TPC-D highlighted that their share in embedded generation within Mumbai is 672 MW Ex-Bus.
- TPC-D anticipated demand for summer 2015 is 1000 MW.
- As per sharing percentage of transmission network i.e. 35.73% and applying this percentage to ATC of 1430 MW (i.e. 511 MW) power availability of TPC-D is 1183 MW which is 183 MW excess than its anticipated demand.

- Hence, TPC-D has excess capacity even without considering Unit 6 generation share.
- The fixed & variable cost of Unit 6 for the concerned period should be shared by all the Distribution Utilities in the ratio of allocation.

D. Presentation / submission by R-Infra-D

The submission made by R-Infra-D was focused mainly on sharing of TPC-G generation and allocation methodology. The highlights are as under.

- The Unit-6 Operation is necessitated in view of Transmission constraints. Hence, All the User of the Mumbai area Transmission System including MSEDCL shall share its cost.
- The Unit-6 generation shall be shared by all Mumbai area DISCOMs in proportion of Transmission capacity usage in Mumbai area which includes MSEDCL, R-Infra-D, TPC-D & BEST and the percentage would be 7.47, 34.25, 33.05, 25.23 respectively.
- The Unit-6 generation shall be treated as must absorb.
- Unit-6 generation to the extent of reduction in generation of other generating Units shall be first allocated to the beneficiaries of the particular generating Unit and then balance generation of Unit 6 to be allocated to Mumbai area DISCOMs in predefined ratios.
- Open Access Consumers shall also share the Unit-6 cost in the proportion of the OA capacity booked / approved.

E. Submission by BEST

BEST member made submission as below :

- Operation of TPC-G unit-6 is required on account of transmission constraints, hence transmission utilities shall also contribute in unit-6 generation cost.
- TPC-G unit-6 shall be operated as an ancillary service.
- Fixed cost of TPC-G unit-6 shall be borne by all utilities to which power is scheduled.

- Sharing percentage of transmission network as per transmission tariff.

F. Submission by MSEDCL

MSEDCL member made submission as below :

- MSEDCL consumers are fed through Mumbai EHV network and MSEDCL has made long term procurement for these consumers.
- Further, load shedding protocol approved by Hon'ble MERC is applicable to all such consumers.
- In case of any transmission constraints, the load shedding can be resorted as per approved protocol in the area fed through Mumbai network.
- The transmission constraints are also encountered in other parts of state network. Only MSEDCL consumers are affected due to load shedding and irrespective of these constraints and load shedding to their consumers, the power requirement of Mumbai area is invariably catered.
- In view of above, MSEDCL shall not be made party to allocation from TPC-G unit-6.

2.6 The final meeting of the committee was conducted on 29th May 2015 under the chairmanship of the CMD MSETCL.

Committee's views on concerns raised by the members during the deliberation's in various meetings and submission made by the members are elaborated in chapter 3.

Chapter - 3

Committee's views on submission by Members

3.1 All committee members unanimously concluded that in normal circumstances there shall not be any load shedding within Mumbai on account of transmission constraints. Entire report is based on this submission. During the meetings held on 17th April, 2015 and on 11th May, 2015; all committee members made their submission.

Following are the views of the committee on the submission made by the members.

3.2 Submission by TPC-G

TPC-G submitted that as unit-6 is mostly operated at technical minimum, its heat rate increases to 2831 Kcal/Kwh from normative heat rate approved as 2534 Kcal/Kwh.

3.2.1 The generation level of TPC-G unit-6 is maintained at minimum level as its variable cost is highest (of the order of Rs. 11.00 to 13.00 / Kwh). The generation from this unit is used very judiciously to reduce overall cost and the same is acknowledged by all members.

As regards with the determination of normative PLF on lower side as actual PLF is very low, committee is of the view that determination of normative parameters are under the jurisdiction of Hon'ble MERC.

However, committee places on record that there is impact of the Generator on account of lower PLF, hence same shall be considered in truing up based on the submissions made by TPC-G & the provisions of the Regulations. Determination of normative PLF on actual basis in case of TPC-G Unit-6 may be considered as a special case.

Hon,ble MERC on order in case no 172 of 2014 item no. 20 has mentioned as under:

"As regards Energy Charges of TPC-G Unit 6, the Commission directs that the Energy Charges shall be as approved by the Commission in its Tariff Order dated 5 June, 2013 in Case No. 177 of 2011, with any change on account of

revision in fuel cost recoverable through the Fuel Adjustment Cost mechanism if applicable. Bills may be revised accordingly. Cost implications on account of changes, if any, in performance parameters such as Station Heat Rate, auxiliary consumption, etc. shall be considered by the Commission during the final triung-up process for TPC-G."

3.2.2 The higher cost of generation is due to multiple startups and shut downs. Hence, if it is economical to keep the unit shut down for some duration due to low demand, there is saving in variable cost of energy which would have been generated during the period of outage compared to start up and shut down cost.

3.2.3 Committee accepts that 24 hours notice is required for starting up of the unit. However, in case of extreme emergency MSLDC shall direct to start the unit immediately. TPC-G shall make all efforts to synchronize unit as early as possible. Committee also places on record that the unit was synchronized with the system within the period of 12 hours on 03rd Sep, 2014.

3.2.4 This to be noted that TPC-G unit-6 is declaring its full capacity during economic shut down, hence unit shall be available for system as per the requirement.

3.2.5 TPC-G unit-6 shall maintain fuel stock for minimum 7 days and if unit operation is required beyond this period, MSLDC shall inform tentative period of unit operation for arrangement of fuel.

3.2.6 The decision of reimbursement of Actual fuel price, Actual heat rate and Actual auxiliary consumption is under the jurisdiction of Hon'ble MERC.

3.3 Submission by TPC-D

Submission of TPC-D is mostly focused on sharing of allocation from TPC-G unit-6.

3.3.1 TPC-D submitted that their contracted capacity within Mumbai is 672 MW (Ex-Bus) and if percentage sharing of 35.73% is applied to 1430 MW, the share comes out to be 511 MW. Hence, TPC-D has an excess of 183 MW above anticipated demand and therefore does not require any power from TPC-G Unit-6.

It may be noted that the percentages are fixed as per the overall percentages of average of coincident & non coincident peak demands of DISCOMs for the purpose of transmission sharing in entire InSTS network. Hence it is not appropriate to apply same percentage to the ATC between Mumbai and MSETCL.

The methodology of percentage sharing is finalized in the meeting chaired by The Principal Secretary, Energy, GoM and attended by top officers of the rank of CEO of respective DISCOMs held on 24th March, 2014.

Hence, this committee is not inclined to tamper with the methodology for sharing percentages already decided and agreed by CEOs of all utilities.

3.3.2 Recovery of fixed cost is linked with PPA of respective generating units which are approved by Hon'ble MERC.

As per MYT 2011 regulations clause no. 49.3 Hon'ble MERC has mentioned as below:

"49.3 Payment of Annual Fixed Charges shall be on monthly basis in equal installments in proportion to contracted capacity subject to adjustment at the end of the year with respect to Target Availability."

As such the committee's terms of reference are related to recommend methodology for scheduling, sharing of energy and variable charges of TPC-G Unit-6 only.

The methodology of recovery of fixed cost is under the jurisdiction of Hon'ble MERC, hence the committee cannot take any view on this issue.

However, BEST submitted that the issue of fixed cost allocation shall be deliberated by the committee and shall form the part of recommendations under chapter 4. The dissent note submitted by BEST is attached herewith as **Annexure- A.**

3.4 Submission by R-Infra-D

Submission of R-Infra-D is focused on sharing by all DISCOMs, scheduling on actual basis and sharing by Open Access consumers.

3.4.1 R-Infra-D submitted that unit-6 generation shall be shared by all utilities.

It is reiterated that this committee is not inclined to tamper with the methodology for sharing percentages already decided and agreed by all Mumbai utilities.

3.4.2 As regards with the scheduling on actual basis, it is not in line with the

scheduling process and MSLDC issues schedule to the generator as per declared capacity(DC). Post facto revision in scheduling on actual basis is against the scheduling methodology. The deviation of actual from schedule is addressed in NET UI-II in FBSM bills.

However, generating company shall observe that declared capacity is realistic and the same may be revised time to time depending on parameters and anticipation during actual operation.

Further, MSLDC has no information of status of auxiliary equipments, their consumption and fuel availability in the generating stations and hence generator itself is the best judge for anticipating its capacity. The provision of revision of DC shall invariably be used by the generators and accordingly MSLDC shall revise the schedules.

3.4.3 Committee agrees to the submission of R-Infra-D that unit-6 generation to the extent of reduction in generation of such generating Unit shall be first allocated to the beneficiaries of particular generating Unit and then balance generation of Unit 6 to be allocated to Mumbai DISCOMs in predefined ratios.

The basis for this agreement is that while allowing operation of Unit 6, which was under economic shut down, it is assumed that all other generators within Mumbai shall be available at full capacity.

3.4.4 As regards with the sharing of unit-6 cost of generation by Open Access consumers, the committee is of the view that all OA consumers are partial OA consumers and their deviation settlement is being carried out by respective DISCOMs and these consumers are still having part of their contract demand

with respective DISCOMs. RInfra-D has submitted their dissents attached as Annexure-B. As, it is not in the purview of this committee, DISCOMs may approach Hon'ble MERC separately to address this issue.

3.5 Submission by BEST

3.5.1 BEST submitted that unit-6 operation is outcome of transmission constraint and transmission utilities shall also be the party to unit-6 sharing cost.

The committee is of the view that there is no provision as per any regulation that any transmission utility shall bear cost of generation. Transmission utility has to provide power flow facilities for the long term contracted capacities between DISCOMs & generators and any transmission utility is not the owner or purchaser of the electricity flowing through network.

As such there are no long term contracts of Mumbai utilities outside Mumbai area (except R-Infra-D-VIPL [300 MW] and meager quantum [80MW] of renewable generators situated in MSEDCL area). The transmission facilities available between MSETCL and Mumbai system are mostly utilized for short term transaction.

Hence, the committee disagrees with the submission by BEST that transmission utility to be the party to sharing of Unit-6 cost.

3.5.2 BEST submitted that TPC-G unit-6 shall be used as an ancillary service.

The committee is of the view that there is no provision under existing regulatory framework regarding ancillary services. Presently, ancillary service mechanism is at discussion stage at central level and no regulation has been framed for such facility. Further, this is the policy matter at the level of regulators. Also, Unit 6 capacity is contracted with TPC-D & BEST.

Hence, the committee disagrees with the submission by BEST as there is no regulatory provision for operation of any generating capacity as an ancillary service.

3.5.3 As regards with sharing of fixed cost, the same has been already addressed under section 3.3.2 of this report.

3.6 Submission by MSEDCL

The issue of sharing TPC-G unit-6 by MSEDCL was also discussed in the meeting dated 24th March, 2014 and MSEDCL made similar submission in the meeting. During this meeting MSEDCL submitted that they are having long term power procurement for these consumers and load shedding protocol is in place. This committee is not inclined to tamper with the decisions taken in the meeting chaired by the Principal Secretary, Energy on 24th March, 2014.

Chapter - 4

Committee's recommendations on allocation of TPC-G unit-6

- 4.1 The recommendations made by the committee are broad views on allocation of TPG-G unit 6 and it is not possible to address micro level issues due to dynamics of the system and ever changing demand pattern of Mumbai and variation in generation.

In view of the difficulties faced by all utilities and MSLDC, this committee recommends following methodology taking into consideration all possible scenarios which would be encountered in future. This proposed methodology shall be applicable only for future period and will not be applicable retrospectively.

- 4.2 MSETCL has taken proactive step in view of rising demand of Mumbai area and added on more lines from MSETCL to Mumbai by reconfiguration of existing lines. 220 kV Kharghar-Trombay line is formed out of 220 kV Kharghar-Kalwa and 220 kV TIFIL-Trombay. Due to formation of this line 220 kV Kharghar-Kalwa interconnection is lost and there is no source to TIFIL-Mahape-Siemens from Trombay s/s. These sub-stations are having source only from 220 kV Kalwa s/s. This new line 220 kV Kharghar-Trombay line is parallel with 220 kV Kharghar-Nerul-Sonkar-Trombay line. This line contributes about 120 MW to Trombay and at the same time 220 kV Kharghar-Nerul section of Kharghar-Nerul-Sonkar-Trombay line operates above 250 MW.

With the addition of this line, ATC of 1430 MW between MSETCL and Mumbai is now enhanced to 1550 MW.

PART A : Protocol to resort to idle capacity in respect of TPC-G Unit-6

- 4.3 MSLDC shall review the power demand scenario of Mumbai and based on interconnection power flow shall decide requirement of TPC-G unit-6. In normal

operating scenario MSLDC shall issue synchronization instructions 24 hours in advance. However, in case of emergency TPC-G shall explore the possibility of synchronization of unit at the earliest.

4.3.1 MSLDC shall indicate tentative period of operation of Unit -6 and accordingly TPC-G shall arrange for availability of fuel and as far as possible frequent startups/shutdowns of TPC-G Unit-6 shall be avoided.

4.3.2 Transmission Constraint

From past operational experience it is established that due lower generation level at TPC Trombay bus, the power requirement at TPC Trombay bus results in additional power flow from MSETCL to TPC. This results in overloading of lines connected to MSETCL Trombay. Generally, 220 kV Kharghar-Nerul line loading remains on higher side compared to other lines.

Hence, when all network interconnections are in service, loading of 220 kV Kharghar-Nerul line associated with rising trend of demand in Mumbai shall be the triggering point to determine transmission constraints. 220 kV Kharghar-Nerul line is 0.4 zebra conductor and current exceeding 700 Amps shall be considered as transmission constraints.

In case any other interconnection or back network lines / equipments are under outage resulting in over loading of other parallel circuits that shall also be considered as triggering point of transmission constraints.

PART B : Sharing mechanism of Unit 6 under different scenarios.

4.4. Following are the scenarios for which TPC-G unit-6 allocation is given. This unit shall be normally operated at technical minimum for system security and unit shall be picked up as per instruction of MSLDC.

4.4.1 Scenario -1: Operation under normal condition except that are mentioned in scenario 2 & 3.

Particular	Allocation percentages ** of Unit 6
All generators within Mumbai are available at their full capacity in day peak period and all interconnecting lines are in service.	TPC-D : 35.73%, R-Infra-D : 37.01% BEST: 27.26%.

4.4.2 Scenario -2: Operation during outage of generating capacity within Mumbai

Particular	Allocation percentages of Unit 6
(1) Tripping / outage (planned/ forced) of any generator within Mumbai resulting in transmission constraint.	On assessment of restoration of generator under outage, MSLDC shall direct for synchronization of TPC-G Unit-6. On synchronization, first the capacity equivalent to loss of generation shall be allocated to utility/s having PPA with that generator under outage and balance power above the capacity of the unit under outage shall be allocated as per sharing percentage** as below:
a) Tripping of generator when TPC-G Unit-6 is not under operation.	TPC-D : 35.73%, R-Infra-D : 37.01% BEST: 27.26%.

** This percentage is as per present transmission tariff order by Hon'ble MERC and are subjected to modifications as per subsequent orders from time to time.

b) Tripping of generator when TPC-G Unit-6 is under operation.	In such case the capacity equivalent to technical minimum capacity of TPC-G Unit-6 shall be allocated as per sharing percentages** and capacity required above technical minimum shall be allocated to the utility/s having PPA with generator under outage.
(2) During day peak period and unit-6 operation, all hydro full capacity shall be available. In case hydro capacity is not available to full capacity due to any reason and transmission constraints exists.	Same as above

4.4.3 Scenario -3: Partial outage / reduction in generating capacity with Mumbai.

Particular	Allocation percentages of Unit 6
<p>All generators within Mumbai are available but any particular unit is generating below 95% of its declared capacity (corresponding to full load DC) resulting in transmission constraints.</p> <p>a) When generating company has revised DC</p>	<p>In such cases it is duty of that generating company to revise DC to that effect. On revision of DC by generator MSLDC shall allocate part of unit-6 power equivalent to reduction in capacity of such unit from unit-6 generation over and above technical minimum to the beneficiary as per PPA with generator which capacity is reduced and balance power shall be allocated in sharing percentages.</p>

** This percentage is as per present transmission tariff order by Hon'ble MERC and are subjected to modifications as per subsequent orders from time to time.

<p>b) When generating company has not revised the DC.</p>	<p>It is the duty of the Generating company to revise the DC. However if generator does not revise the DC, MSLDC shall point out to the generator for revision of DC within four(4) time blocks including time block when generation has reduced. Even after four (4) time blocks if DC is not revised by the generator then MSLDC shall allocate unit-6 power as mentioned above from the time block in which it was pointed out. This allocation shall continue for twelve (12) time blocks or till persistence of transmission constraints.</p> <p>The Act of not revising DC by generator even after pointing out by MSLDC shall be treated as violation of MSLDC instructions.</p>
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As regard with the availability of TPC-G Hydro capacity during day peak period, TPC-G has expressed that availability of Hydro capacity is dependent on other external factors and their views are attached as **Annexure-C**

4.6 Scheduling of standby power.

Standby power arrangement from MSEDCL for Mumbai utilities is under existence and same is mentioned in Hon'ble MERC order in case no.9 of 2008 Dated 17th August 2009.

Standby power arrangement between MSEDCL and Mumbai utilities is against generation capacity within Mumbai area. Also, standby power requirement is of contingency / short term nature and requirement is submitted only when any generation capacity within Mumbai is lost / depleted. Any standby requirement will exist only when scenario no 2 or 3 are in existence and shall be treated as per methodology defined in scenario 2 & 3. The standby power scheduling shall not be applicable in case of transmission constraint.

The scheduling of power to Mumbai utilities from outside shall be according to open access regulation i.e. long term power will have priority over short term.

The transmission facilities available between MSETCL and Mumbai system are mostly utilized for short term transaction.

4.7 Early completion of ongoing projects connected to Mumbai system.

In view of critical operation of Mumbai system and increasing demand, this committee recommends that following projects shall be completed on top priority.

1. Early commissioning of Mumbai strengthening scheme.
2. Replacement of conductor for 220kV Salsett-Kalwa circuit 4(Circuit-3 completed) with high ampacity conductor.
3. Early commissioning of 220 Salsett-Kalwa third circuit.
4. Conversion TPC-G unit-6 for coal as primary fuel.
5. Speedy implementation of 400/220 kV Vikroli s/s and 220 kV Trombay-Vikroli-Salsett lines.

All concerned transmission licensees shall submit the Quarterly Progress Report on ongoing schemes to STU upto 15th day of succeeding month. The consolidated progress report will subsequently be submitted by STU to MERC, with effect from subsequent Quarter ending June 2015.

Submission to Hon'ble MERC

The committee submits to the Hon'ble commission that committee has made all efforts to resolve the issue of allocation and scheduling of Unit 6 power to Mumbai utilities amicably. However, the utilities are not in agreement with each other on some issues. The dissent notes submitted by members of respective utilities are also attached as annexures to this report.

The broad mechanism as proposed above may be considered and issue an order as may be deemed fit.

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The Brihan Mumbai Electric Supply & Transport Undertaking

(OF THE BRIHAN MUMBAI MAHANAGARPALIKA)

TELEPHONE : (022) 22856262
FAX : (022) 22851244
TELEX : 1185755 BEST IN
TELEGRAM : BEST, MUMBAI-400 001.

C. E. (STU) / 836
Date: 02/06/2015

BEST BHAVAN,
BEST MARG,
POST BOX NO. 192.
MUMBAI - 400 001.

ADDRESS ALL COMMUNICATION BY TITLE
NOT BY NAME

OUR REF. : CER/ 75 /2015

DATE: 2 JUN 2015

To,

The Chief Engineer (STU),
Prakshganga, 5th Floor,
Plot-C-19, E-Block,
Bandra (East), Mumbai-400 051.

Sir,

Sub: Dissent : On Final Draft Report regarding
operation and sharing of TPC-G Unit-6 charges.

We disagree with the Committee's view expressed in para 3.3.2 of the report which implies that the issue of fixed charges is out of its purview and that the scope of the committee is limited only to decide about the variable charges of Unit-6.

We wish to place on record as follows:

Committee Chairman has acknowledged that there is merit in the issue submitted by BEST about the fixed charges. However, Chairman of the committee, on the basis of terms of reference of the Committee, believes that the issue of fixed charges is out of its purview. Based on this belief, Committee has restricted and refrained from taking any view on the fixed charges. Representative of BEST Undertaking specifically drew attention to the fact that the terms of reference do allow committee to look in to the issue of fixed charges and that there is no such restriction. The Committee Chairman however overruled the objection, sticking to the view that the issue is out of purview of the Committee and is under jurisdiction of Hon'ble MERC and therefore cannot take a view on the same.

(P.T.O.)

BE (STU)
BE (R & C)
PA

BEST therefore submits that, it is devoid of any logic that when the variable charges are being shared for the operation of Unit-6 by the Mumbai Utilities, the fixed charges should be loaded only to TPC-D and BEST, especially when Unit-6 is being used at the command of MSLDC in interest of Mumbai System Stability.

BEST, therefore wishes to record its dissent as stated above and request Hon'ble Commission to look into the matter for appropriate redressal.

Thanking you,

Yours faithfully,



(R.D. Patsute)
Chief Engineer (Regulatory)
BEST Undertaking

RELIANCE

Reliance Infrastructure Limited
System Control Centre (O&M),
Jogeshwari-Vikhroli Link Road,
Opp. SEEPZ North Gate No. 3,
Aarey Colony, Goregaon (East),
Mumbai - 400065, India.

C. E. (STU) / 853
Date: 4/6/2015

Tel.: +91 22 3009 9999
Fax: +91 22 3009 3305
www.rinfra.com

CIN:-L99999MH1929PLC001530

Ref: RInfra-D/Op/2015/40

30th May, 2015

To,

Chief Engineer (STU)
Maharashtra State Electricity Transmission Co. Ltd
Prakashganga, Bandra East
Mumbai -400 051

Subject: RInfra submission for Committee Report Finalization

Ref: Mail from CESTU dated 30th May 2015

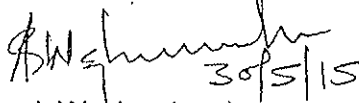
Dear Sir,

With reference to subject above, our view point is as under,

All the users of Mumbai Transmission System (TSUs) including full and partial Open Access consumers should share the cost of TPC U-6 generation undertaken to ensure 24x7 supply during the transmission constraints. This will also ensure that the benefits availed by high end Open Access consumers, pay for their portion of transmission congestion relieving measures thereby avoiding passing on entire burden on low end consumers.

Thanking You,

Yours truly,
For Reliance Infrastructure Limited,


(Avinash Waghambare)
VP - Operations

CC: 1. Chairman & Managing Director, MSETCL, Prakashganga, Bandra(E), Mumbai-51

SE (STU)
SE (R & C)
PA
to
C.E. (STU)

FW: Dissents (if any) w.r.t. recommendations of committee as discussed in Final committee meeting on 29.05.2015 regarding operation & sharing of TPC unit-6

Bhaskaran Thatra K [tkbhaskaran@tatapower.com]

Sent: Wednesday, June 03, 2015 3:51 PM

To: Subash Kelkar

Attachments: Final Committee Rprt @ 2~1.doc (190 KB)

I am forwarding the mail as required.

Regards,
T K Bhaskaran
Head - PSCC

The Tata Power Company Limited, Trombay Thermal Power Station, Chembur-Mahul Road, Mahul, Mumbai 400 074, Maharashtra, India
Tel: 2267175371 extn 5371 Fax: 2267175385 Mobile: 9223550622
Email: tkbhaskaran@tatapower.com Website: www.tatapower.com

-----Original Message-----

From: Shrikhande Vishwas R
Sent: 02 June 2015 18:18
To: 'Subash Kelkar'
Cc: Sarkar Bhaskar; Bhaskaran Thatra K
Subject: RE: Dissents (if any) w.r.t. recommendations of committee as discussed in Final committee meeting on 29.05.2015 regarding operation & sharing of TPC unit-6

Dear Sir,

We have gone through the final draft of the Committee recommendation Note and have made some minor modifications for clarity in the draft in track change mode (as attached) including correction in names.

In addition we would like to mention that Hydro generation is governed by external environmental constraints like rainfall etc & is also frequently utilised like Unit 6 to supplement in scenarios of transmission constraint arising due to loss of generating units of both Tata Power & Rinfra. Hence any shortage in generation of Hydros cannot be supplemented with Unit 6 power in lieu of hydro generation appening on a daily basis during summer months.

May kindly consider our humble submission.

Regards,
Vishwas Shrikhande
Chief - DSS

extn 5371 Mobile: 9223330578
Email: vrshrikhande@tatapower.com Website: www.tatapower.com

-----Original Message-----

From: Subash Kelkar [<mailto:CESTU@mahatransco.in>]
Sent: 02 June 2015 11:20
To: avinash.waghambare@relianceada.com; cercbest@gmail.com;
cerc@bestundertaking.com; abaji.naralkar@relianceada.com; cesldc@gmail.com;