BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION
GANDHINAGAR

Petition No. 1407 of 2014.

In the Matter of:

Withdrawal/denial of Short-Term Open Access from 20.03.2014 due to rise in the Demand leading to grid constraint in the upstream network and denial of STOA from 1st April, 2014 by SLDC, GETCO for collective transaction and other open access related issues.

Petitioner	Sumeet Industries Limited, 504, Tividh Chamber, Ring Road, Opp. Fire Brigade Road, Surat- 395 002.
Represented by	Learned Advocates Shri Pinakin Raval and Shri R. N. Purohit.
	V/s.
Respondent No. 1	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.
Respondent No.2	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No.3	Dakshin Gujarat Vij Company Limited, Urja Sadan, Kapodara Char Rasta, Surat- 395 006.
Represented by	Shri C. N. Raval and Shri B. C. Godhani.

And

Petition No. 1408 of 2014.

In the Matter of:

Withdrawal/denial of Short-Term Open Access from 20.03.2014 due to rise in the Demand leading to grid constraint in the upstream network and denial of STOA from 1st April, 2014 by SLDC, GETCO for collective transaction and other open access related issues.

Petitioner	Filatex India Limtied, 1st, Floor, Bhageria House, Off. J.K. Tower, Ring Road, Surat- 395 002.
Represented by	Learned Advocates Shri Pinakin Raval and Shri R. N. Purohit and Shri Prakash Dave.
	V/s.
Respondent No. 1	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.
Respondent No.2	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No.3	Dakshin Gujarat Vij Company Limited, Urja Sadan, Kapodara Char Rasta, Surat- 395 006.
Represented by	Shri C. N. Raval and Shri B. C. Godhani.

And

Petition No. 1409 of 2014.

In the Matter of:

Withdrawal/denial of Short-Term Open Access from 20.03.2014 due to rise in the Demand leading to grid constraint in the upstream network and denial of STOA from 1st April, 2014 by SLDC, GETCO for collective transaction and other open access related issues.

Petitioner	Videocon Industries Limtied,

Village : Chavaj, Bharuch – 392 002.

Represented by — Learned Advocates Shri Pinakin Raval and Shri R. N. Purohit and Shri A. K. Yadav.

V/s.

Respondent No. 1 — State Load Dispatch Centre,
132 KV Gotri sub-station compound,
Gotri Road, Vadodara- 390 021.

Represented by: — Shri D. N. Shah.

Respondent No.2 — Gujarat Energy Transmission Corporation Limited,
Sardar Patel Vidyut Bhavan, Race Course,
Vadodara- 390 007.

Represented by — Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.

Respondent No.3 — Dakshin Gujarat Vij Company Limited,
Urja Sadan, Kapodara Char Rasta,
Surat- 395 006.

Represented by — Shri C. N. Raval and Shri B. C. Godhani.

And

Petition No. 1410 of 2014.

In the Matter of:

Withdrawal/denial of Short-Term Open Access from 20.03.2014 due to rise in the Demand leading to grid constraint in the upstream network and denial of STOA from 1st April, 2014 by SLDC, GETCO for collective transaction and other open access related issues.

Petitioner — Shubhlakshmi Polyesters Limited,
A418, Jeevendeep Complex, Ring Road,
Surat- 395 002.

Represented by — Learned Advocates Shri Pinakin Raval and Shri R. N. Purohit and Shri Subodhkumar.

V/s.

Respondent No. 1	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.
Respondent No.2	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No.3	Dakshin Gujarat Vij Company Limited, Urja Sadan, Kapodara Char Rasta, Surat- 395 006.
Represented by	Shri C. N. Raval and Shri B. C. Godhani.

And

Petition No. 1416 of 2014.

In the Matter of:

Petition under Section 42 (2), Section 86 (1) (c) and (3) of the Electricity Act, 2003 and Regulation 3 (p) and Regulation 45 of the GERC (Terms and Conditions of Intra-State Open Access) Regulation, 2011.

Petitioner	Mohit Industries Limited. A 601-B, International Trade Center, Majur Gate Ring Road, Surat- 395 002.
Represented by	Advocate Shri Ashish Jha and Shri D. S. Doshi.

V/s

Respondent No.1	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.

Respondent No. 2	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D.N. Shah.

And

Petition No. 1417 of 2014.

In the Matter of:

Petition under Section 42 (2), Section 86 (1) (c) and (3) of the Electricity Act, 2003 and Regulation 3 (p) and Regulation 45 of the GERC (Terms and Conditions of Intra-State Open Access) Regulation, 2011.

Petitioner	Devika Fibers Private Limited. 501 A, ICC Building, Nr. Kadiwala School, Ring Road, Surat- 395 002.
Represented by	Advocate Shri Ashish Jha and Shri D. S. Doshi.
	V/s.
Respondent No.1	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No. 2	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D.N. Shah

And

Petition No. 1419 of 2014.

In the Matter of:

Petition under Section 42 (2), Section 86 (1) (c) and (3) of the Electricity Act, 2003 and Regulation 3 (p) and Regulation 45 of the GERC (Terms and Conditions of Intra-State Open Access) Regulation, 2011.

Petitioner	N. J. Textile Industries Pvt. Ltd. S/42, Belgium Square, Opp. Laxmi vilas Bank, Delhi Gate, Surat- 395 003.
Represented by	Advocate Shri Ashish Jha and Shri D. S. Doshi.
	V/s.
Respondent No.1	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No. 2	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.

And

Petition No. 1425 of 2014.

In the Matter of:

Petition for withdrawal of Short Term Open Access from 20.03.2014 due to rise in constraint in upstream network and denial of STOA from 1.04.2014 by SLDC and GETCO for collective transaction and other open access related issues.

Petitioner	Coulrtex Industries Limited. Plot No. 431/ 1,2,3,4 and 5, GIDC, Pandesara, Choryasi, Surat.
Represented by	Advocate Shri R. N. Purohit.
	V/s
Respondent No. 1	State Load Dispatch Centre, 132 KV Gotri sub-station compound,

	Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.
Respondent No.2	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No.3	Dakshin Gujarat Vij Company Limited, Urja Sadan, Kapodara Char Rasta, Surat- 395 006.
Represented by	Shri C. N. Raval and Shri B. C. Godhani.

And

Petition No. 1426 of 2014.

In the Matter of:

Petition for withdrawal of Short Term Open Access from 20.03.2014 due to rise in constraint in upstream network and denial of STOA from 1.04.2014 by SLDC and GETCO for collective transaction and other open access related issues.

Petitioner	Gokulanand Petrofibers. 1st Floor, Supertex Tower, Ring Road, Surat.
Represented by	Advocate Shri R. N. Purohit.
	V/s
Respondent No. 1	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.
Respondent No.2	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.

Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No.3	Dakshin Gujarat Vij Company Limited, Urja Sadan, Kapodara Char Rasta, Surat- 395 006.
Represented by	Shri C. N. Raval and Shri B. C. Godhani.

And

Petition No. 1427 of 2014.

In the Matter of:

Petition for withdrawal of Short Term Open Access from 20.03.2014 due to rise in constraint in upstream network and denial of STOA from 1.04.2014 by SLDC and GETCO for collective transaction and other open access related issues.

Petitioner	Gokulanand Texturisers Pvt. Ltd. Survey No. 82/2, Block No. D/54, Sachin-Palsana Road, Vanz, Choryasi, Surat.
Represented by	Advocate Shri R. N. Purohit.
	V/s
Respondent No. 1	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.
Respondent No.2	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No.3	Dakshin Gujarat Vij Company Limited, Urja Sadan, Kapodara Char Rasta, Surat- 395 006.

Represented by	Shri C. N. Raval and Shri B. C. Godhani.

And

Petition No. 1428 of 2014.

In the Matter of:

Petition for withdrawal of Short Term Open Access from 20.03.2014 due to rise in constraint in upstream network and denial of STOA from 1.04.2014 by SLDC and GETCO for collective transaction and other open access related issues.

Petitioner	Gokulanand Texturisers Pvt. Ltd., Office : 1st Floor, Supertex Tower, Ring Road, Surat.
Represented by	Advocate Shri R. N. Purohit.
	V/s
Respondent No. 1	State Load Dispatch Centre, 132 KV Gotri sub-station compound, Gotri Road, Vadodara- 390 021.
Represented by:	Shri D. N. Shah.
Respondent No.2	Gujarat Energy Transmission Corporation Limited, Sardar Patel Vidyut Bhavan, Race Course, Vadodara- 390 007.
Represented by	Learned Advocate Shri. M. G. Ramachandran along with Shri S. H. Upadhay, Ms. Venu Birappa and Shri Amit Sachan.
Respondent No.3	Dakshin Gujarat Vij Company Limited, Urja Sadan, Kapodara Char Rasta, Surat- 395 006.
Represented by	Shri C. N. Raval and Shri B. C. Godhani.

And

I.A No. 8 of 2014 in Petition No. 1407 of 2014 and allied matters.

In the Matter of:

Application seeking impleadment of M/s. Cosmo Films Ltd., M/s. Bayers Vapi Pvt. Ltd., M/s. Chandan Steel Ltd., and Central Electricity Authority as parties to the petition No. 1407 of 2014 and allied matters in pursuance of Hon'ble Gujarat High Court Order dated 16.9.2014 regarding withdrawal/denial of Short Term Open Access from 20.03.2014 due to rise in the demand leading to grid constrain in the upstream network.

Petitioner :	State Load Dispatch Centre, Vadodara.
Represented by:	Shri D. N. Shah.
Co-Petitioner:	(1) Gujarat Energy Transmission Corporation Limited, Vadodara.
	(2) Dakshin Gujarat Vij Company Limited, Surat.
	(3) Madhya Gujarat Vij Company Limited, Vadodara.
Represented by:	Ld. Advocate Shri M. G. Ramachandran, Ms. Venu Birppa and Shri Dipak Patel for Sr. No. 1,
	Shri. Raval, Shri K. Sindhi, and Shri G. H. Patel. for Sr. No.2,
	Shri V. K. Gulati, Shri T. C. Choksi and Shri U. V. Parmar for Sr. No.3.
	V/s.
Respondents:	(1) Summet Industries Limited,
	(2) Filatex India Limited,
	(3) Videocon Industries Limited,
	(4) Shublakshmi Polyesters Limited,
	(5) Mohit Industries Limited
	(6) Devika Fibers Private Limited
	(7) N. J. Textile Industries Pvt. Ltd.
	(8) Coulrtex Industries Limited.
	(9) Gokulanand Petrofibers
	(10) Gokulanand Texturisers Pvt. Ltd.
	(11) Gokulanand Texturisers Pvt. Ltd.
	(12) Cosmo Films Limited,

(13) Bayers Vapi Limited,

(14) Chandan Steel Limited,

(15) Central Electricity Authority.

Represented by: Ld. Advocate Shri Sunit Shah along with Advocate Shri R. N. Purohit for Respondents Nos. 1, 2, 3 and 4.

Ld. Advocate Shri Ashish Jha and D. S. Doshi for Respondents No. 5, 6, 7.

Ld. Advocate Shri R. N. Purohit for Respondents Nos. 8, 9, 10, 11.

Ld. Advocate Shri Sunit Shah for Respondents No. 12, 13, 14.

Shri A. K. Yadav for Respondent No. 3.

CORAM:

Shri Pravinbhai Patel, Chairman

Dr. M. K. Iyer, Member (Finance)

Date: 16/1/2015.

1. The present petitions are filed by the petitioners seeking following reliefs:

- Hold and declare that the action of the respondent No. 1 SLDC in summarily cancelling Prior Standing Clearance given for Short Term Open Access is unwarranted, arbitrary and not tenable in terms of regulatory provisions in this regard and hence be set aside.
- Hold and declare that the action of the Respondent No. 1 SLDC in cancelling Prior Standing Clearance given for Short Term Open Access in the event of consumers under drawal of 12% or more in any time block of 15 minutes interval or for the reasons of any drawal beyond 1 MW during any hour is unwarranted, arbitrary and not tenable in the terms of regulatory provisions in this regard and hence be set aside.

- Direct the concerned Utilities to abide by the provisions under the Electricity Act, 2003 and the GERC/CERC regulations/procedures and refrain itself from issuing arbitrary instruction to deter them from going for Open Access power purchase through collective transaction and forcing them to purchase power from state utilities only.
- Direct the utilities to approach the Commission as per Regulatory provisions for removal of Difficulties if any instead of directing the consumers at least in the matter of Open Access withdrawal/denial matters based on their arbitrary/convenient interpretation.
- Direct the utilities to stop forcing any undertaking which are not duly approved by the Commission through legitimate process for the same and any such arbitrary actions henceforth shall be treated as breach/disobedience of the orders of the Commission attracting punishment as per Section 142 of the Act.
- Directing the utilities to compensate for the loss petitioner have incurred during the period consequent to such illegal and arbitrary actions of mass withdrawal of STOA-NOCs particularly in cases of consumers for whom the constraint impact could not be established beyond doubt. The amount and modalities may be decided by the Commission.

2. The petitioners are the High Tension (HT) consumers of DGVCL and MGVCL. They along with other HT consumers located in Madhya Gujarat and Dakshin Gujarat were granted Standing Clearance / No Objection certificate (NOC) for Short Term Open Access (STOA) by State Load Dispatch Centre (SLDC), Gujarat for the month of March, 2014. The STOA, NOC was withdrawn by SLDC, Gujarat from 20.03.2014 onwards stating constraint in the upstream network due to rise in system demand. In the letter withdrawing NOC, SLDC Gujarat has stated that the distribution companies will cater the contract demand of HT consumers from the generation at their disposal.

2.1. Being aggrieved by the actions of SLDC and GETCO, some of the short-term open access customers whose open access were curtailed by SLDC approached the Commission by filing

the Petition No. 1407 to 1410 of 2014, 1416 and 1417 of 2014, 1419 of 2014, 1425 to 1428 of 2014 before the Commission and challenged the action of curtailment of SLDC on various grounds and prayers for various reliefs.

2.2. During the proceeding of the above Petitions, the Commission decided vide its daily order dated 19.5.2014 to appoint Shri V. J. Talwar, Retd. Technical Member of Appellate Tribunal for Electricity as independent technical expert to study the issue regarding curtailment of open access by SLDC and provide its expert opinion on the issue. He submitted the report to the Commission and the Commission provided copies of the report to the parties for their comments.

2.3. The aforesaid petitions were heard by the Commission on 19.04.2014, 10.05.2014, 24.07.2014 and finally on 7.08.2014 and kept the matters reserved for final order.

2.4. During the pendency of the above petitions, some of the open access customers namely M/s. Bayer Vapi Pvt. Ltd, Chandan Steel Ltd. and Cosmo Films Ltd. filed Special Civil Applications No. 7117, 7118 and 7119 of 2014 respectively before the Hon'ble High Court of Gujarat. The above open access customers also prayed before the Hon'ble High Court of Gujarat to direct SLDC, GETCO and Concerned Discoms to allow short-term open access and to issue writ to restraint SLDC and GETCO, DGVCL and MGVCL from denying Short-term open access from above petitioners.

2.5. Prayer of the aforesaid petitioners before the Hon'ble High Court reads as under:

i) To direct the respondents 1 to 3 to lift ban imposed on short term open access (STOA) w.e.f. 20-03-2014 00 hrs. and to issue writ to restrain the respondents no. 1 to 3 from denying open access to petitioners,

ii) To direct the respondent no. 4 to hold an inquiry regarding genuineness of claim of constraint in the upstream network necessitating cancellation of STOA for an indefinite period for STOA consumers of DGVCL & MGVCL.

iii) To direct GETCO to relinquish management control of SLDC, Gujarat.

iv) To direct GERC to take appropriate action against respondents no. 1 to 3 for non-compliance of provisions of open access Regulation 2011.

v) To direct SLDC, Gujarat for uploading necessary data require for ascertaining the availability of spare network capacity as required under section 43 of the Open Access Regulations 2011 and also under chapter 10 relating to information system requirement.

2.6. The Hon'ble High Court of Gujarat passed an Oral Order dated 21.5.2014 and appointed Central Electricity Authority (CEA) to investigate the action taken by SLDC. The relevant para of said order reads as under:

"…3. At present, the petitioner company is complaining about discrimination by the respondents in performing their duties and, therefore, it is prayed in Para 13(c) of the petition, to hold an inquiry by respondent No.4. However, considering provision of section 73(l) of the Electricity Act, 2003, instead of directing respondent No.4- The Gujarat Electricity Regulatory Commission to hold an inquiry, it would be appropriate to direct The Central Electricity Authority constituted u/s.70 of the Act, to carry out an investigation and to hold an inquiry pursuant to facts and details stated in the petition. The Central Electricity Authority shall also consider the reply and counter reply filed by all the parties. The Central Electricity Authority shall, after verifying the rival contentions, investigate the technical issues regarding constraint in upstream network for short term open access, if any. The Central Electricity Authority shall file its report before this Court in sealed cover on or before 13/06/2014. All the parties shall provide their respective stand in form of pleadings before The Central Electricity Authority on or before 27/05/2014…"

2.7. Thereafter, the date for submitting the report of CEA was extended by Hon'ble High Court up to 20.8.2014 in its Oral Order dated 10.7.2014 which reads as under:

8. In view of these rival submissions and having regard to the issues involved including the technical aspects of the matter for which the Court has already passed the order dated 21.05.2014, it is desirable to have such report by the Central Electricity Authority on record, which will be useful in appreciating the rival contentions or the issues. Therefore, a suitable time is required to be granted or extended. Hence, Present Civil Applications deserve to be granted and accordingly stand partly allowed. The time to submit the report as per the order passed by this Court (Coram: Hon'ble Mr. Justice S.G. Shah) dated 21.05.2014 is hereby extended till 11th August, 2014. Rule is made absolute accordingly."

2.8. CEA submitted its Report on 20.8.2014 before Hon'ble High Court in sealed cover. The report of CEA was opened at the direction of Hon'ble High Court and copies of the said report were provided to all the parties of the aforesaid Civil Applications. Thereafter, SLDC and GETCO filed a Civil Application 10386 of 2014 in SCA No. 7117 of 2014. In the said CA No. 10386 of 2014, Hon'ble High Court passed an Oral Order dated 16.9.2014 with following directions:

"*…In view of this, it is desirable and in the interest of justice that let the original petitioners as well as original respondent nos.1 to 3 as stated above and also all concerned parties be heard after placing relevant material, which they may desire to place on record including the report of the Central Electricity Authority dated 20.08.2014. It goes without saying that such an application shall be made by the applicants herein original respondent nos.1 to 3 to the opponent no.3 herein, who is original respondent no.4 Gujarat Electricity Regulatory Commission in main matter being Special Civil Application No.7117/2014 within a week. The application made by the original respondent nos.1 to 3 shall be fixed for hearing of all concerned by the original respondent no.4 and shall be decided thereafter within a period of four weeks after considering the material that may be placed on record for consideration including the report of the Central Electricity Authority dated 20.08.2014. It is clarified that the authority may consider and decide the same in accordance with law on its own merits…."*

As per the above directives SLDC and GETCO filed IA No. 8 of 2014 in Petition No. 1407 of 2014 and allied matters and requested to implead M/s. Bayer Vapi Pvt. Ltd, Chandan Steel Ltd. and Cosmo Films Ltd. and CEA as parties to the main petitions Nos. 1407 to 1410 of 2014, 1416 and 1417 of 2014, 1419 of 2014, 1425 to 1428 of 2014 and take the cognizance of report of CEA on investigation of technical issues regarding constraints in upstream network for Short-Term open

access in Gujarat. The above IA was kept for hearing on 14.10.2014, 15.10.2014 and 15.11.2014. After hearing the parties on the above dates the Commission kept the matters for final Order/judgment.

2.9. The issues involved in the above petitions and IA No. 8 of 2014 are common. The petitioners were aggrieved by the actions of the respondents who denied and curtailed the Short-Term Open Access granted to the petitioners. Whereas GETCO and SLDC state that the curtailment of Short-term Open Access is legal and valid on technical grounds.

Hence, the common issue in the above petitions and IA is that whether the curtailment of STOA by the SLDC is legal and valid or not. Hence, we shall decide the petitions combindly.

3. The facts mentioned in all the aforementioned petitions are similar and is stated as under:

3.1. The petitioners are manufacturing facilities located in the South Gujarat and Central Gujarat area falling under the distribution licensees Dakshin Gujarat Vij Company Limited and Madhya Gujarat Vij Company Limited.

3.2. The petitioners have been availing open access facility since long complying the GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011. However, all of sudden the petitioners received a communication dated 18.03.2014 from respondent SLDC withdrawing the permissions granted for Short Term Open Access from 00:00 Hrs of 20.03.2014 due to rise in the Demand leading to grid constraint in the upstream network. Such drastic actions caused the petitioners insurmountable financial losses and serious threat of survival of the business.

3.3. On receipt of aforementioned letter of SLDC dated 18.03.2014, the petitioners submitted letters requesting to be more transparent and provide the relevant details of transmission capacity available in the network with details of specific element/line/substation causing the restriction and reason thereof. However, the reply of SLDC was too general without any reference to the elements facing bottleneck for specific STOA customers. Also the reply indicated figures of the sustained Demand without indicating the date and time. It was also not made clear as to whether

such peak load data was observed during normal system operation or under specific condition such as occasional planned/unplanned outage of a few major elements of the system or any other abnormal conditions.

3.4. The capacity was available till the date of withdrawal of NOCs. However, suddenly it was declared that the capacity is not available and hence NOCs were withdrawn for purchase of power through collective transactions from sources outside the State. The system capacity available since long cannot be expected to disappear overnight without any specific reason and/or cause of action, particularly when year after year more and more capital expenditure is being incurred for capacity addition and demand catered getting reduced to an extent that the levy of Additional Surcharge becoming inevitable for stranded capacity for not only generation capacity cost but also for transmission capacity cost.

4. Respondents No. 1 and 2 in their joint reply dated 17.05.2014 submitted as under:

4.1. The system demand has been increasing substantially since February, 2014.

4.2. This has resulted in increased injection in South Gujarat region at 220 KV level, loading to increased loading on the 400/220 KV transmission elements.

4.3. It was necessary to curtail injection in the upstream network to maintain the security and reliability of the system.

4.4. The total demand comprises of the demand of the distribution licensee, who are the Long Term Open Access users, and the consumers bringing power from other sources including power exchanges as Short Term Open Access users.

4.5. According to the Open Access Regulations of the Commission, the LTOA users have priority over the STOA users, as the transmission system is designed on the basis of demand of LTOA users and the STOA users are accommodated only to the extent of margin available in the network.

4.6. The respondents have acted in accordance with the provisions of the Electricity Act, 2003 and the Regulations and Grid Codes notified by the Central and State Regulations.

4.7. They further furnished details regarding demand in the South and Central Gujarat, generating stations located in these areas along with their generations, inter-state as well as intra-state transmission networks in the area along with loading on various transmission elements and the STOA transaction in these areas.

4.8. On the basis of above data, they submitted that the SLDC has acted in the interest of grid security and stability in the system.

5. The petitioners vide their rejoinder submitted that the basic premise viz. significant increase in the electricity requirements of the consumers of the State is not substantiated from the data available on the respondent's website. Load data as available on SLDC website clearly shows that there is no considerable increase in the system/consumer load with respect to past three years demands in comparable periods. It may also be noted that the load/demand catered including STOA has not been higher than the anticipated/forecasted demand as well as the demand considered under the official document in this regard was under the 17th Electrical Power Survey report.

5.1. The STOA transactions have been curtailed on the ground of overloading of 440/220 KV ICTs etc. However, the data furnished by the respondents in their reply does not show material change/reduction in loading after the blanket cancellation of STOA as compared to that prior to the cancellation. Cancellation of about 800 MW STOA power would have resulted into substantial reduction in the so called overloading of upstream ICTs and lines which is not there. Further STOA NOC is issued to GUVNL to buy 1000 MW under collective transaction for its use irrespective of whether it needs/uses the same on Round the Clock basis or not. Thus, it is a discrimination against the STOA user consumers.

5.2. The load catered on 17.4.2014 viz. 12468 MW is much lower than the system capacity claimed to be available as on 31.03.2013 under the Utilities petition seeking to award the Stranded Capacity surcharge which is already endorsed by the Commission after detailed investigation on capacity availability and utilization. Such inconsistency/manipulation need be explained very convincingly rather than highlighting scattered and occasional system problems in justification of abrupt/ad-hoc actions.

6. The matters were kept for hearing on 7.05.2014. After, the preliminary hearing of the matter, the Commission observed that the issue involved in the present petitions is required to be examined in detail keeping in view the system conditions prevailing at the time of curtailment and requires detailed technical analysis of the system. As such, the Commission decided to seek assistance from an independent technical expert. The Commission decided to appoint Shri V. J. Talwar, Retd. Member (Technical) of the Hon'ble Appellate Tribunal for Electricity to verify and examine the issues involved. Relevant extracts for the Commission's daily order dated 19.05.2014 are reproduced below:

"5.4. Regarding seeking assistance of an independent technical expert the respondents have stated that the Commission may refer the matter to the Central Electricity Authority which is a statutory body formed under the Electricity Act, 2003 and assigned the functions and duties to advice the appropriate Govt. and Commission on all technical matters related to generation, transmission and distribution of electricity as per Sub-section (n) of Section 73 of the Act, 2003. The respondents have also relied on the decision of CERC in Petitions No. 4/MP/2014 and 188/SM/2012 in which CERC has referred the matter to CEA on similar issues. We note that the reference of Section 73 (n) of the Electricity Act, 2003 referred by the respondents is as under: as provided in the Electricity Act, 2003.

"73. The Authority shall perform such functions and duties as the Central Government may prescribe or direct, and in particular to –

…

(n) advise the Appropriate Government and the Appropriate Commission on all technical matters relating to generation, transmission and distribution of electricity; and

…"

The above provision states about the functions and duties of the Central Electricity Authority. However, it is not mandatory for the Commission to refer the matter to CEA only. As per the Section 128 of the Electricity Act, 2003, and Regulation 3 of GERC (Appointment of Consultant) Regulations, 2005 the Commission can appoint any person or institution having substantial expertise in technical matters if the Commission deems it necessary. We note that Shri V. J. Talwar, who earlier worked with CEA and also held positions of Member (Technical) and Chairman of the Uttarakhand Electricity Regulatory Commission and finally retired as Member (Technical) of the Hon'ble Appellate Tribunal for Electricity, having the technical knowledge and expertise on transmission system as well as regulatory aspects and provisions of the Electricity Act, 2003 is an appropriate person to be assigned the work of verifying and examined as to whether the curtailment of open access done by the SLDC was valid and legal with consideration of data submitted by the respondents. The office of the Commission is directed to issue necessary order on this aspect after following necessary procedures."

6.1. The office of the Commission received the report prepared by Shri V. J. Talwar on the issue regarding curtailment of open access by SLDC, Gujarat and the same were provided to the parties to the present petitions along with the daily order dated 10.06.2014 of the Commission. The Commission also directed the parties to make their submissions on the above report prepared by Shri V. J. Talwar.

7. In this regard, the respondents vide their reply submitted as follows:

7.1. The report prepared by Shri V. J. Talwar be not considered by the Commission as in the similar matters SCA No.7117 to 7119 of 2014, pending before the High Court of Gujarat, the Hon'ble High Court vide its order dated 21.05.2014 has directed Central Electricity Authority to investigate the matter and submit a report to the High Court. Keeping in view the comity of jurisdiction and in the context of the Hon'ble High Court exercising extra ordinary jurisdiction having entertained the matter and taken cognizance of the issue with the Commission being a Respondent in the proceedings, it is submitted that the Commission may defer further proceedings in the above matters for the time being. The Commission may consider the final decision of the Hon'ble High Court of Gujarat and thereafter deal with the petition pending before this Commission.

7.2. The report prepared by Shri V. J. Talwar proceeded on a wrong premise and contrary to the statutory scheme and provisions in the methodology adopted in deciding nature of the constraints in certain areas of Gujarat for curtailment/grant of short term open access as represented by GETCO/ SLDC.

7.3. In Para 16 of the report, the consultant has proceeded on the basis that SLDC has cited backing down of generation from cheaper power stations in the Central and Southern Gujarat as reasons for curtailment of short term open access to Central and South Gujarat which is wrong. The cheaper generating stations are in areas outside the Central and South Gujarat such as power procured from Adani Power Limited, Coastal Gujarat Power Limited, Essar Power (Salaya) Limited which are in Paschim Gujarat and costlier generating stations are in Central and South Gujarat such as Kawas and Gandhar Gas Power Stations operated on spot RNLG and other gas power stations in Central and South Gujarat.

7.4. The reason given by GETCO/ SLDC for curtailment of Short Term Open Access has been (i) There has been a significant increase in demand of the consumers serviced by distribution companies in Central and South Gujarat; (ii) For meeting the higher demand the additional

power need to be sourced from the existing power purchase agreements as per the merit order; (iii) The above would require the sourcing of power from economical generating stations which are outside the Central and South Gujarat; (iv) The above necessitates use of intra state transmission system operated and maintained by GETCO and connected to Central and South Gujarat; (v) The above results in placing additional load for transmission on such system and (vi) The capacity of such system being limited the short term open access need to be curtailed/ rejected to give priority to the distribution licensees as specifically envisaged in the Open Access Regulations, 2011.

7.5. In the above context, the reasons given by SLDC has been that, the curtailment had become necessary to avoid backing down of cheaper generation sources outside the Central and Southern Gujarat, which the State Commission has itself approved and directed for procurement of power in the merit order. These generating sources include 2000 MW power available from Adani Power generating station in Paschim Gujarat Vij Company Limited at Mundra, 1805 MW power available from Costal Gujarat Power Ltd. (CGPL) generating station situated again at Mundra in Paschim Gujarat Vij Company Limited and 1000 MW power available from Essar Power Gujarat Limited generating station at Salaya near Jamnagar in Paschim Gujarat Vij Company Limited. These were in addition to other cheaper sources of power falling within the merit order from various Central and State sector generating units situated outside the Central and Southern Gujarat. As against the above the generating stations situated in Central and Southern Gujarat namely the Kawas gas based power plant of NTPC, Gandhar gas based power plant of NTPC, the gas based power plant of Gujarat Paguthan Energy Ltd. (GPEC), now known as China Light & Power (India) Ltd. (CLPI), gas based power plant of Gujarat Industrial Power Company Limited (GIPCL), gas based power plant of Gujarat State Energy Generation Limited (GSEG) and gas based power plant of Gujarat State Electricity Corporation Limited (GSECL) at Utran & Dhuvaran use gas which is costly fuel and the power availability from

such power plant are placed at low priority in the merit order approved by the State Commission.

7.6. The import of power from the above cheaper generating sources viz. Adani Power Ltd., CGPL, EPGL etc. outside the Central and Southern Gujarat region to serve the demand of consumers of the distribution licensees in the Central and Southern Gujarat region require loading on the transmission elements used for conveyance of such power supplied in the Central and Southern Gujarat. The consumers in the Central and Southern Gujarat have the right to such cheaper sources of power in preference to the costlier source of Gas based generating stations in the Central and Southern-Gujarat. When there is an increase in the consumption of electricity by the consumers at large of the Distribution licensees of Central and Southern Gujarat as in summer months and this year being unprecedented, the transmission elements and lines are required to be first utilised for conveyance of such power requirements of the consumers at large. Since the capacity of the transmission elements and lines are limited, there has to be the substitution of the use of such capacity for the needs of the consumers at large in place of the needs of the short term open access users.

7.7. Though the consumers at large have the right to be serviced from cheaper sources in the merit order namely from sources such as Adani Power Ltd., CGPL, EPGL, etc. if the transmission elements are not available as they have been used by the short term open access users, such generating stations outside the Central and Southern Gujarat will be backed down and costlier generating stations in Southern Gujarat will have to be operated resulting in the consumers at large paying higher cost. For example the power from the generating stations outside the Central and Southern Gujarat are available in the tariff (variable charge) range of Rs 1.40 per unit to Rs 1.66 per unit as compared to the power availability from the Gas based stations in the Central and Southern Gujarat mostly on Spot RLNG at a price range of Rs. 11.18 per unit to Rs. 13.31 per unit. Shri V.J.Talwar Report has not considered the above salient aspects and has

proceeded in the misconceived basis that GETCO/ SLDC is alleging the transmission constraints for not backing down generating stations in Central and South Gujarat.

7.8. Further despite the clear scheme and various provisions of the Open Access Regulations, 2011 dealing with curtailment/ rejection of short term open access for constraints, in Paras 20 & 21 of the report, Shri V. J. Talwar Report selectively referred to Regulation 43 of the Open Access Regulation, 2011 of the State Commission to erroneously conclude that Regulation 43 has no application to the case as it does not provide for curtailment if open access granted. Shri V.J.Talwar report did not refer to Regulation 44 of the Open Access Regulations 2011 which specifically deal with curtailment of short term open access. In regard to the above in Para 21 of the Report, it has been referred to the case of M/s Filatex and the letter dated 10.04.2014 of M/s Filatex. While dealing with the above letter SLDC had referred to both Regulations 43 and 44 of the Open Access regulations, 2011, Shri V.J. Talwar has however taken note of and referred to Regulation 43 only to reach the totally unfounded conclusion that short term open access once granted cannot be curtailed.

7.9. In the report of Shri V. J. Talwar, there has a misconception in regard to scope and application of the Section 42 (4) of Electricity Act, 2003. The report states that the Distribution Licensees in such cases have the remedy under Section 42 (4) of the Electricity Act, 2003 by way of getting additional surcharge for stranded assets. This provision deals with the Stranded expenditure namely the fixed cost of the Distribution licensee arising out of its obligation to supply. This is relevant, essentially to power purchase cost committed but the quantum of power purchase available being not utilised. In such a case the Distribution licensee need to pay the fixed charges to generator/ trading licensee without using the power and the same can be proportionately recovered from the Open Access Consumers. This has nothing to do with transmission assets or distribution assets utilised for open access or the procurement of power by the distribution licensees on merit order for maintaining the supply of electricity. The purpose of Additional Surcharge provided under section 42(4) is totally different, it arises when

there is stranded capacity and not when there are capacity constraints. Hence, the report proceeded on a completely misplaced understanding on the Electricity Act, 2003 and Open Access Regulation, 2011 in deciding on the methodology adopted for enquiring in the matter.

7.10. In addition to the above the report has wrongly proceeded on the basis that there should have been a resultant reduction in the load on the transmission and distribution system by virtue of curtailment of Open Access. The basic aspect is that transmission and distribution capacity are utilised for conveyance of electricity for the consumer at large and therefore there is a substitution of the load of the Distribution Licensee in place of the load of the Short Term Open Access Customer. Accordingly, there cannot be any load reduction on account of curtailment of Short Term Open Access. In fact, if there is a load reduction as suggested by Shri V. J. Talwar Report, there would not have been any necessity to curtail any short term open access. The reasoning given in the report is erroneous.

7.11. In the report Shri V.J.Talwar has selected data of few substations and not the entire overview of the grid which was furnished by SLDC to Commission in CD, as part of the write up submitted on 30.04.2014. The reason for the short term open access curtailment depends upon network topology and generation sources in a given point of time. Shri V.J.Talwar has not considered the SLDC letter dated 20.03.2014 in proper perspective. SLDC had never reported that the curtailment is on the ground of cheaper generation backing down in central and south Gujarat area. In letter dated 20.03.2014, SLDC submitted the followings:

7.11.1. At point No. 4, it was stated that Generating stations at voltage level of 220/132KV remaining off-bar/ idle especially Gandhinagar, Wanakbori etc as majority of industrial consumers sourcing power from outside state. Moreover, the Central Sector Stations like Kawas Jhanor etc are not being scheduled by other WR beneficiaries and therefore this generation is not available at 220 KV level in state which is resulting into drawl of more central allocation to DISCOM through CTU network and accordingly associated network of STU resulting into up-stream congestion in grid.

7.11.2. At point No. 5, it was stated that the demand of the South Gujarat area is to the order of 4000-4500 MW including DGVCL, Torrent and Daman, Dadra Nagar Haveli and export to Maharastra. Out of 6300 MW available capacity in South Gujarat area, only 2000-2500 MW are operating as per merit order protocol. Therefore, 2000 MW needs to be imported through interconnecting network from Other Area to South Gujarat Area. Transmission capacity considering the local generation was sufficiently created but owing to significant back down of local generation due to low demand caused by industrial consumer buying power through open access, 400 KV Chorania-kasor, 400 KV ICTs at Asoj and 220 KV Asoj-Jambuva lines are getting critically overloaded. The maximum power transfer capacity to South Gujarat through all interconnecting lines is around 1500-1700 MW. The shortfall in power requirement (including that of STOA) was mitigated in real time operation by operating costlier generating units of GPEC, Kawas & Gandhar and same time by backing down cheaper generating stations located in other areas of Gujarat.

7.11.3. At point No. 6, it was stated that the demand of Madhya Gujarat area is to the order of 1400-1500 MW. Out of 2200 MW generation available in MGVCL area only 700-800 MW is operating in order of merit. The balance power is to be imported through inter connecting lines having transmission/ transformation capacity for South Gujarat area also. Due to import of power, 400 KV Hadala Chorania, 400 KV Chorania-Kasor, 400 KV Kasor-GPEC, 220 KV Choraniya-Salejada, 400 KV SSP-Asoj line, 400 KV SSP Kasor line, 400/220 KV 500 MVA ICTs of Asoj get critically overloaded and costlier generation of GIPCL and Dhuvaran to be kept on bar. Accordingly there is no margin available for allowing open access under short term.

7.12. Further in SLDC's submission dated 30.04.2014, it was stated that:

- To restrict loading on ICTs at Asoj & Jambuva, many 220 KV & 132-KV lines have been made off looking to real time system condition and operation. Hence, 220 KV & 132 KV systems are operated under depleted conditions which weaken and threaten the system

security. Moreover there is no renewable generation support at lower voltage level in South Gujarat pockets to support the grid.

- Hence, looking to system security and reliability point of view, the generation dispatch at lower voltage level of 220 KV and 132 KV shall have to be kept in operation compulsorily to maintain load generation balance and to relieve overloading of 400/220 KV ICTs.

- Even though the demand has increased considerably after curtailment of STOA, the loading on the above cited elements remains under control because of generation in operation at 220 KV level in South Gujarat pocket.

7.13. Also, SLDC has to adhere to the limit of ± 150 MW or 12 % of schedule whichever is less as per the CERC's (Deviation Settlement Mechanism and related matters) Regulations, 2014. In order to adhere to this limit, SLDC was compelled to back down cheaper generation located in other part of Gujarat which was strongly objected by the GUVNL vide its letter dated 18.03.2014. It is evident from real time data that before curtailment of STOA, the merit order dispatch was over looked, in order to maintain continuous supply, but, after curtailment, it was followed. Loading on 2 x 400/220 KV 500 MVA ICT at Asoj, 220 KV S/C Asoj - Jambuva line and 220 KV S/C Kosamba - Vav line have reduced and integration of network at 220 KV & 132 KV level have been improved after the curtailment of STOA. The same has not been considered in the report prepared by Shri V. J. Talwar.

7.14. Further, in the report, for Inter-Connecting Transformers, rated capacity is considered as Designed Capacity. For 220 KV transmission line with ACSR Zebra, transmission capacity is considered as 180 MW i.e. 190 MVA. SIL capacity is around 130 MW. It is pertinent to note that loading capacity of the transmission line depends on many parameters tike, Ambient Temperature, Conductor Temperature i.e. Tower design to maintain minimum electrical clearance, wind velocity, wind pressure, etc. GETCO's 220 KV transmission lines are designed

with 67°C conductor temperature and hence thermal loading capacity is 500 Amp. (190 MVA) & 390 Amp. (148 MVA) respectively at 40°C a 45°C ambient temperatures. As per CEA Transmission planning criteria thermal loading limit of 220 KV transmission line with ACSR Zebra conductor with 65°C conductor temperature is 473 Amp (180 MVA) & 346 Amp (132 MVA) respectively at 40°C a 45°C ambient temperature. Similarly, thermal loading limit of 220 KV transmission tine with ACSR Zebra conductor with 75°C conductor temperature is 643 Amp (244 MVA) & 560 Amp (213 MVA) respectively at 40°C and 45°C ambient temperature. Therefore, it is incorrect to consider 230 MVA capacity for 220 KV lines of GETCO.

7.15. As per GERC regulations of Open Access, formula for transmission margin calculations has been provided. The data has been displayed on GETCO website as STU for such margin. Technical expert has not taken cognizance on this and relied on selective data of SLDC to misrepresent the position and draw conclusion. Also, it is to clarify that the capacity is restricted by the capability in control area. The definition transfer capability is as under:

`Transfer Capability' of a transmission network means, it is the ability to transfer electric power when operated as part of the interconnected power system and may be limited by the physical and electrical characteristics of the system considering security aspects of the grid.

`Total Transfer Capability (TTC)' means the amount of electric power that can be transferred reliably over the inter-control area transmission system under a given set of operating conditions considering the effect of occurrence of the worst credible contingency.

`Available Transfer Capability (ATC)' means the transfer capability of the -inter-control area transmission system available for scheduling commercial transactions (through long term access, medium term open access and short term open access) in a specific direction, taking into account the network security.

Mathematically ATC is the Total Transfer Capability less Transmission Reliability Margin;

One of the SLDC objective is to operate the grid most of the time under "Normal" operating state in order to have secure grid operation.

Normal operating State means that: System variables are in the normal range, No equipment is being overloaded, System is able to withstand a contingency without violating any of the constraints.

The report has been prepared by Shri V.J.Talwar without evaluating ATC and not considering any contingency.

7.16. On analysis of each transmission network elements facing the constraint in report of the Shri V. J. Talwar, Respondents commented on the same as follows:

1. Loading on 400/220 KV, 2x500 MVA ICTs at Asoj

- The loading on 400/220 KV, 2x500 MVA ICTs at Asoj recorded higher on ICTs 1 and 2 before the curtailment and the same was reduced after curtailment.
- Maximum loading on both ICTs recorded on 31.3.2014 @ 12.00 hrs was 858 MVA which is more than 85 % of the installed capacity.
- After curtailment of STOA, the loading on above ICTs reduced by 30-40 MWs.
- Loading on 15th and 16th March, 2014 was within limit due to action taken by the respondents which consisted of generation of 262 MW from gas based generating station and keeping 220 KV D/C Asoj - Karamsad, 220 KV D/C Godhra - Chandrapura, 220 KV S/C Jamuba - Haldarva and 220 KV S/C Jambuva - Jhagadia, 220 KV Jambuva Achhalia 3 & 4, 132 KV Jambuva – Karjan lines off.

2. Loading 220/132 kV ICTs at Asoj and Jambua.

- The load of Baroda City catered through Asoj and Jambuva S/S. Prior to commissioning of 3rd ICT at Asoj on 10.3.2014, the maximum loading observed on 220/132 KV ICT was 200 MVA and loading on 220/132 KV ICT at Jambuva was 207

MVA which is 70 % of installed capacity. The same was happened with following actions

- Total 140 MW gas based costliest generation (on spot gas) from GIPCL (132 KV level) was kept on service.
- 132 KV Jambuva - karjan line was kept off. 132 KV Karjan S/S (90 MW load) was radialy fed through Haldarva S/S.
- After commissioning of 3rd ICT as Asoj, GIPCL generation was limited to 40 MW i.e. technical minimum and interconnection of 132 KV Jambua-Karjan line was re-established which improved reliability of power at 132 KV Karjan S/S.

3. Loading on 220 kV S/C Asoj-Jambuva line:

- The complexity of the grid behavior in area is not taken into consideration / not understood and has resulted into mis-concept regarding system operation.
- In fact, as per the power flow pattern in the area, power is flowing from Jambuva to Achhalia in following grid conditions:
  - Less generation in Ukai Thermal & Hydro plant.
  - Less generation in other generating stations in South Gujarat area.
  - Increased in Demand in South Gujrat Pocket
- In above conditions, the loading on 220 KV S/C Asoj-jambuva line observed in critical range.
- Maximum loading on Asoj-Jambuva line @ 255 MVA is recorded on 12.03.2014 before curtailment of STOA. To control this loading SLDC have taken following actions:
  - Kawas (226 MW) gas based generation were scheduled out of merit order criteria.

- 220 KV Jambuva - Achhalia line No.1,2,3 and 4 kept out of service,
- 220 KV Jambuva - Jhagadia line kept out of service,
- 220 KV Jambuva Haldarwa tine kept out of service,
- 132 KV Jambuva - Karjan tine kept out of service.

- Against this, Maximum loading on Asoj-Jambuva line @ 214 MVA is recorded on 01.04.2014 (Monday) after curtailment of STOA, with following improved grid performance:
  - Around 40 MW reduction in maximum loading
  - All the generators are operated as per merit order criteria,
  - Overall demand increased by 684 MW and 21.2 MUs energy increase as compared to 04.03.2014 (Monday under analysis)
  - Overall demand increased by 130 MW around 9 MUs energy increase as compared to 12.03.2014 (Asoj-Jambuva line loading comparison)
  - 220 KV Jambuva - Achhalia line No.1, 2 & 4 kept in service,
  - 220 KV Jambuva - Jhagadia line kept in service,
  - 220 KV Jambuva - Haldarwa line kept in service,
  - 132 KV Jambuva - Karjan line kept in service.
- After the STOA curtailment, the adequate generation has been scheduled in South Gujarat. As a result, the interconnection between Jambuva to Achallia, Haldarva, Jhagadia and karjan S/S have been reestablished even after considerable rise in demand without significant change in line loading. It improves integrity and reliability of the grid.

4. Analysis for loading on 220 KV S/C Kosamba - Vav line:

- Analysis done on Avg. Maximum Loading in the Report is incorrect.

- The maximum loading observed on above line was 241 MVA on 15.3.2014 before curtailment of STOA.
- To control the loading, the generation from Kawas (124 MW) and Jhanor (103 MW) gas based generation scheduled out of merit order.
- Due to reduced loading on the above line the grid performance improved with following observations:
    - Around 40 MW reduction in maximum loading
    - All the generators are operated as per merit order criteria,
    - Overall demand increased by 764 MW & 16 MUs energy increase as compared to 13.03.2014 (Thursday under analysis)
    - Overall demand increased by 486 MW & around 11.6 MUs energy increase as compared to 15.03.2014 (Kosamba-Vav line loading comparison)

5. Analysis for loading on 220 KV D/C Ukai - Mota line:

- Maximum loading on above line was recorded @ 447 MVA on 15.3.2014 i.e. before the curtailment of STOA.
- After curtailment, the maximum loading recorded on above line on 7.4.2014 was 459 MVA. The increase is due to :
    - Overall demand increased by 907 MW a 18.5 MUs energy increase as compared to 10.03.2014 (Monday under analysis)
    - Overall demand increased by 437 MW & around 7 MUs energy increase as compared to 15.03.2014 Ukai - Mota line loading comparison)
    - Due to increase in total generation of Ukai complex (in the range of 13 MW - 718 MW for the days in considerations under report)

- Due to outage of one unit of 220 MW capacity at Kakrapar ATPS connected at 220 KV Vav, Vapi & Haldarwa substations.

- Ukai is situated in South Gujarat. Power generating from this power station is being evacuated through 220 KV D/C Ukai Mota Line only. In case of reduction of generation at Ukai TPS, the power is drawn from above line to supply the power from the bus-bar of Ukai S/S through above line to cater the power supplied in upstream network of Kosamba and Asoj-Jambuva-Achhalia system and ultimately power being further transmitted to 220 KV Mota, Vav and Chikhli substations through Ukai - Mota D/C line.
- This operational phenomena is mainly due to considerable reduction in generation from gas based power plants located in South Gujarat area viz. GSEG (156+350 MW), Jhanor (657 MW), Kawas (656 MW), CLPIL (655 MW), SUGEN (1148 MW) and non availability of gas based generators like Utran TPS (135+375 MW), Essar Hazira (300 MW), UNO-SUGEN (382 MW), DGEN (1200 MW) etc. due to costly, fuel.

6. Analysis for loading on 220 KV S/C Chikhli - Vapi line

- The loading on this line is well within the limits and it is kept out of service for most of the time before and after curtailment of STOA.
- It is observed that most of the time power flow on this line is from 220 KV Chikhli to Vapi substation. It is also observed that Vapi (GETCO) is feeding power 400/220 KV Vapi (PG) substation through 220 KV S/C Vapi – Vapi (PG) line, due to inadequate CTU network in the area to feed DD and DNH load and power export to Maharashtra network. This power flow from Chikhli - Vapi is resulting into additional power flow on 220 KV D/C Mota - Chikhli and subsequently on 220 KV D/C Ukai TPS - Mota lines.

- Therefore, to reduce loading of 220 KV D/C Ukai TPS - Mota tine, 220 KV S/C Chikhli - Vapi tine is kept out of service for most of the time even before and after curtailment of STOA.

7. Analysis for loading on 220 KV D/C Hadala - Nyara line:

- The average maximum loading on the line before curtailment is around 376 MW (with maximum of 453 MW) has increased to 421 MW (with maximum of 448 MW) after curtailment of STOA.
- This line is located in Saurashtra area and is feeding power to Urban area of Rajkot city and peripheral industrial area through 220 KV Nyara, Kangasiyali & Gondal and 132 KV Vikram & Vajdi substations. The overloading is mainly due to increase demand of urban and industrial areas during summer conditions.
- It has no direct relation to STOAs in South and Central Gujarat areas.

7.17. In the report, it seems that dynamic behavior of the grid has been totally ignored in the analysis and a simple statistical comparison is carried out for grid data before and after curtailment of STOA in South & Central Gujarat areas. The report is misleading on such important issue of grid operation. The report has merely considered the average of loads and declared that margin is available in the line and transformer capacity without taking into account contingency criteria and open access margin calculations provided in the respective regulations.

7.18. The report cannot be considered because all the interpretations are worked out based on loading of lines and transformer for few substations by ignoring grid overview, whereas decision of SLDC to curtail Open Access is based on the grid condition of lines and transformers when specific load generation capacity at 220 KV will not operate under the STOA availed by consumer in that local area but power coming from the upstream network. Shri V.J.Talwar has considered his own values as a base for analysis rather than real time grid operation. The real

finding will be based on local network system study and not merely interpretation on data as done by technical expert.

7.19. The respondents further submitted that the following points are also not considered in the report:

(i) Before curtailment of STOA, merit order dispatch criteria had to be overlooked to control loading of system elements.

(ii) Before curtailment of STOA, many 220 KV and 132 KV lines were kept out of service to control loading on system elements.

(iii) Operational margin has to be kept for real time load-generation mismatch.

(iv) After curtailment of STOAs in South a Central Gujarat area, SLDC is able to operate the grid with prime responsibilities such as:

- Generators are taken on bar as per merit order criteria for most of the time.
- Most of all 220 KV and 132 KV lines are put into service which has resulted into improved stability and system integrity.
- Loading of major EHV elements is maintained even after increased demand in South a Central Gujarat area. In fact, considerable reduction, to the tune of 40 MW on each line, is observed on the loading of 220 KV S/C Asoj, Jambuva & Kosamba-Vav lines, with majority of EHV elements are kept in service.

(v) Real time operational criteria have been over looked by the consultant.

(vi) While deriving the capacity of lines/ICTs the temperature effect had not been taken into account.

In the facts and circumstances mentioned above it is respectfully submitted that the report given by Shri V.J.Talwar need to be rejected.

7.20. The respondents further vide its submission dated 23.07.2014 submitted that as the report of Shri V. J. Talwar was already submitted to the Hon'ble High Court, it was duty to put the stand of GETCO before CEA. GETCO assigned the task to Shri Ravinder, Ex-Chairman and Member (Power System) of CEA. In its report, it has been concluded that the decision of GETCO/SLDC has been justified after taking into account the pre-curtailment and post curtailment data of the grid operation, Central and State Grid Code and CEA planning criteria.

8. The petitioners vide its submission on report of Shri V. J. Talwar and reply of the respondents submitted as follows:

8.1. The methodology adopted by Shri Talwar is most scientific in as much as he has not relied on any hourly loading as furnished by SLDC to conclude that there was no overloading, but has analyzed the issue considering all the seven days of the week and 24 hrs. of the day and evaluated average loading on the concerned element. On the other hand, GETCO while contesting the report has cited overloading during one hour on a certain day.

8.2. Shri V. J. Talwar report rightly states that the matters of Merit Order, Costlier generation etc. are not covered under the open access regulations which is more relevant than irrelevant data given in justification of wrong actions.

8.3. GETCO had been claiming that Short Term Open Access necessitating import of power from outside Southern and Central Gujarat and has resulted in overloading of the upstream network. If the power has to be imported from outside of Central Gujarat and Southern Gujarat, it is hardly of any consequences that such power is imported from cheaper source outside South and Central Gujarat or from outside of Gujarat itself.

8.4. With regard to the statement that Shri Talwar proceeded on wrong premise that cheaper source of generation in south and central Gujarat, it is to be noted that the data furnished by GETCO to Shri Talwar through the Commission clearly indicated that gas based generation in south Gujarat was increased from 0-304 MW during pre-curtailment to 338 to 764 MW during post

curtailment period. This fact also goes against GETCO for the reason that on one side they have curtailed open access and on the other hand had boosted costly generation to meet the requirement which goes against the interest of consumers.

8.5. The statement made viz. significant increase in demand is also a wrong statement as the increased load is not only well within the projections under the 17th EPS but even far below the capacity contracted.

8.6. GETCO alleged that Shri V. J. Talwar report selectively referred Regulation 43 and purposely ignored Regulation 44. However, GETCO has not understood the import of para 20 of the Report. Reference to Regulation 43 has been made in relation with the respondent's reply to M/s. Filatex stating that there is no margin available as per Regulation 43. Shri Talwar has brought out that Regulation 43 is applicable for granting open access. Determination of margin is to be done at the time of granting of open access. Once the open access has been granted and availed by the consumer, determination of capacity available cannot be done for that consumer or class of consumers as the value of sustained demand in the formula given in Regulation already includes the demand of such consumers. Shri V. J. Talwar report nowhere states that open access can be curtailed only on the basis of transmission constraints as per Regulation 44. The report rightly refers Section 44 of the GERC Regulations with correct interpretation as the para refers to curtailment priorities because of constraint or the necessity which was neither there at the time of granting STOA-NOC nor even occurred during the actual operation of the system but constraint case was made out overnight based on inference/conjecture citing non-existent and dubious reason.

8.7. The priority of consumers/LTOA users has never been questioned and hence the narrations are unwarranted. However, the arbitrary and convenient interpretation by utility is wrong and unacceptable as the Section 44 refers to real time operation constraint and consequent actions but not any constraint anticipated/inferred with motives to benefit the Discoms.

8.8. Section 42 (4) of the Act read with para 8.5.4 of Tariff Policy clearly establishes that for calculation of additional surcharge under Section 42 (4) of the Act, stranded costs in terms of existing power purchase agreement and fixed costs of network assets would be recovered through wheeling charges. The same has been expressed in Shri V. J. Talwar report in the last line of para 20.

8.9. The curtailment of open access was claimed to be resorted to reduce the load on overloaded elements of the system but in fact even after applying the curtailment in open access, the load on so called overloaded element does not show material improvement which clearly goes to show beyond doubt that the diagnosis of the problem and the remedial actions were wrong. The respondent GETCO is trying to mix up the issue of reduction in load and reduction in overloading of the transmission element which were claimed to be overloaded prior to curtailment. If no reduction in loading of transmission elements were expected as a result of curtailment of open access, then the whole case of GETCO would fall.

8.10. GETCO/SLDC has been furnishing only narration and avoiding placement of load data of each such elements on its website and informing each open access consumers on overloading of specific element in its case enroute as required under open access regulations.

8.11. The limit of $\pm$ 150 MW or 12 % is irrelevant for STOA denial as already advised under the recent guidelines by the Commission. Utilities are also directed to approach the Commission in case of any difficulties rather than taking such unwarranted, arbitrary and unlawful actions of on its own.

8.12. It is accepted that previously transmission lines were designed with ACSR conductors with maximum conductor temperature at 67˚ C. However, later on lines are designed for 75 ˚C and 85 ˚C (AAA Conductor). The thermal loading of lines designed at 67 ˚C would be around 190 MVA. It can be seen from the analysis done by Shri Talwar that average loadings on all the lines, claimed to be overloaded, carried less than 190 MVA before the curtailment. However, average maximum loading on Asoj-Jambua line was 210 MVA before curtailment which was

reduced to 193 MVA after curtailment, which was still more than 190 MVA. Similarly, average maximum loading on Ukai-Mota line was 195 MVA before curtailment and was found to be increased to 220 MVA after curtailment. The respondent GETCO is silent on this aspect. Report of Shri Talwar also recorded that opening of a circuit in a messed network generally overloads the other parallel network and GETCO/SLDC may consider to keep all the four circuits between Acchalia and Jambua closed to reduce loading on Jambua-Asoj line.

8.13. The analysis carried out by Shri Talwar is based on sustained loading on each of the transmission elements, whereas the claim of the respondent GETCO is based on instant overloading of certain element on during certain hour of certain day. Hence, it cannot be a case where for overloading during one or two hours on few elements, open access is curtailed for all the short term consumers for all times to come. Curtailment of 800 MW of open access for getting improvement of hardly 30-40 MW does not justify the actions of the respondents.

9. We note that the Hon'ble High Court of Gujarat vide its order date 16.09.2014 in Civil Application No. 10386 of 2014 in the Petition No. SCA No. 7117 of 2014 directed the GETCO/SLDC to make an application before the Commission requesting to consider CEA report. Further, the Commission was also directed to hear all the concerned parties after the parties file the relevant material including the CEA report. The Commission was also directed to issue the order in the aforesaid matters only after considering the material put up by the respondents including CEA report.

9.1. SLDC and GETCO filed an IA application No. 8 of 2014 in compliance to Oral Order dated 16.9.2014 in CA No. 10386 of 2014 in SCA 7117 of 2014 to implead the M/s. Chandan Steel Pvt. Ltd., Bayer Vapi Ltd., and Cosmo Films Ltd. and CEA as parties to the present petitions and to take cognizance of CEA report. In the present petitions a copy of the CEA report was also provided to the petitioners of Petition Nos. 1407 to 1410 of 2014, 1416 and 1417 of 2014, 1419 of 2014, and 1425 to 1428 of 2014.

9.2. On CEA report, the petitioners Mohit Industries Limited, Devika Fibres Pvt. Ltd. and N J Textiles Industries Pvt. Ltd. submitted as follows :

9.3. Respondents M/s. Mohit Industries Limited, Devika Fibers Private Limited and N. J. Textiles Industries Private Limited, submitted that it is a casual report and analysis is for 4 days only for most of the cases. It is also recorded that the lines were critically overloaded before and after STOA curtailment at para 10.9.3 of CEA report. STOA is normally within the contract demand, thus, has no impact on the transmission element loading.

9.4. There is no study or conclusion about the impact of STOA withdrawal. Nowhere it is concluded or indicated that if STOA would have been granted, technical constraints would have been worsened.

9.5. It has also been recorded in CEA report that short-term customers shall be curtailed first, followed by medium-term customers, who shall be followed by the long-term customers and among customers of a particular category, curtailment shall be on pro-rate basis. Hence, it infers that amongst customers of a particular category, curtailment shall be on pro rata basis. So instead of mass ban, curtailment shall be on prorate basis.

9.6. At para 11.4, it is stated that Gujarat has been able to meet the increasing demands in South and Madhya Gujarat during the period 1.3.2014 to 15.4.2014 and on 29.4.2014 by having more dispatches from generations projects located in South and Madhya Gujarat. The data also shows that, there is no increases in generation dispatch on 20.3.2014 and 21.3.2014 i.e. after STOA curtailment.

9.7. At para 12.2, it is also mentioned hat after the curtailment of the STOA, overloading conditions were there in the upstream network of Gujarat, indicating that the network was operating under stress conditions. As such there was no reduction in line overloading prior and after STOA curtailment. It infers that allowing STOA is not increasing loading on transmission element and as such there is no need to deny STOA.

9.8. If loading of aforesaid elements as per the 2nd and 3rd quarter of FY 14-15 as available on GETCO website is compared to data of Shri Talwar report for prior and after the curtailment of STOA , it can be seen that on so many elements loading has been higher than loading before curtailment of STOA. 220 KV lines are loaded up to 260 MW such as 220 KV S/C Vadavi - Chhatral line. It shows that SLDC being the sole authority to decide loading for real time operation should first decide and declare maximum allowable loading and allow LTOA/ MTOA / STOA upto that level and should curtail same also to maintain that level. Thus, CEA report states that before and after STOA curtailment, lines were critically overloaded but nowhere concluding that loading has been increased due to STOA.

9.9. Petitioners Videocon Industries Limited, Gokulanand Petrofibers, Gokulanand Texturisers Pvt. Ltd., Shubhalaxmi Polyesters Ltd., Cosmo Films Ltd, Bayer Vapi PVt. Ltd. and Summet Industries Limited on CEA report submitted that CEA reports records that "As a part of submission, GETCO / SLDC has not submitted any load flow studies carried out by them before the grant of STOA to HT consumers and neither before withdrawing the STOA NOC." Thus, reaching to conclusion that 220 KV networks on South and Madhya Gujarat is overloaded is not justified. Further it is not explained how the overloading had been due to short-term open access or not and also how the overloading continued even after the curtailment of such large open access capacity of the order of 750 MW.

9.10. CEA Report considers irrelevant elements / factor e.g. Design margins for the system which is relevant only while designing the system and not for operation of the system or for curtailment of open access. Curtailment action comes in to picture on account of something happening after grant of STOA-NOC in advance after due verification of available capacity with required margins which was not foreseeable while granting the STOA-NOC.

9.11. CEA has simulated instantaneous system conditions on a particular instance to prove that some of the lines were getting over loaded. Line loading varies from time to time. Conclusions based on instantaneous loadings may be good yard stick for planning studies but in real time when

actual data for 24 hrs of the day and for each day of last few months was available with SLDC, CEA should have used such data, evaluate the average loadings on the lines and then arrive at the conclusions.

9.12. CEA has just simulated Gujarat System on two occasions viz., as on 19 3.2014 at 15:29 hrs and as on 20.3 2014 at 11:25 hrs and based on these two simulations CEA has concluded that some of the elements of the upstream network was getting overloaded without verifying as to whether the overloading was due to short term open access or due to inherent deficiencies of the Gujarat System. CEA should have simulated the system conditions existing after curtailment of open access and only then could have arrived at any conclusion.

9.13. CEA in para 10.7 and 10.8 has clearly observed that the low dispatch from generating stations in South and Madhya Gujarat was mainly due to non-availability of gas and high cost of generation from these plants. Therefore, low generation from these plants had nothing to do with open access. Curtailing open access in these areas and supplying power to effected consumers from generating stations outside these areas would not help the system and loadings on upstream system would not vary. Supply from licensee or on open access has commercial aspects and electricity flow on physics principles.

9.14. In para 10.9.3 of its report, CEA has determined the thermal loading of lines at 190 MVA and converted it to 170 MW considering 0.9 power factor. CEA has erred on this count. Thermal Loadings are expressed in Amperes and converted to MVA by multiplying with the nominal voltage of the line. Thermal loadings of a line cannot be expressed in MW. CEA had both MW and MVAr loadings of the line and could have calculated MVA loadings and then verify as to whether loading of the line was exceeding thermal limit or not. Again, CEA, as apex transmission planning body, has assumed 0.9 power factor allowable for power flow on line which is surprising. EHV lines are not expected to carry any reactive power flow and reactive power has to be compensated at the load centers itself. Reactive power flow at 0.9 power factor would result in excessive voltage drop and line losses. In planning studies load power factor is

taken at 0.9 and adequately compensated to minimize the reactive power flow on EHV lines. The power flow diagrams attached by CEA also show that most of the lines represented in the diagram are carrying power at almost unity power factor.

9.15. Para 27 of Talwar Report observed that Jambua is also connected to Achhalia by four 220 kV circuits and getting power from Achhalia. Two circuits between Achhalia and Jambua were kept open. Closing of these circuits could have helped in reducing the loading of Asoj-Jambua Section. CEA Report, however, indicate reverse flow on Jambua-Achhalia Section and CEA has observed that closing of two circuits on this section would further increase the loading of Asoj-Jambua lines. Achhalia is connected to Ukai complex by five 220 kV circuits, three circuits from Ukai Thermal and two cirduits from Ukain Hydro. CEA Report considered only three circuits from Ukai Thermal and two circuits between Ukai Hydro and Achhalia were kept open Reason for keeping these circuits open on those particular days has not been investigated by CEA. The snap shot data furnished by GETCO to GERC and to the appellants for 14.3.2013 10:00:00 hrs and 15.3.2013 15:00:00 hrs show that four circuits between Ukai complex and Achhalia were closed on these days. These snap shots also revealed that on 14.3.2014 power flow from Ukai to Achhalia was around 149 MW and Achhalia was receiving 91 MW power from Jambua and Asoj - Jambua line was carrying 223 MW However, on 15.3.2014 flow from Ukai to Achhalia increased to 208 MW as a result flow from Jambua was reduced to 35 MW only Power flow on Asoj - Jambua line was also reduced to 194 MW. These facts would clarify that closing of all the circuits between Ukai - Achhalia would have reduced the loading on Asoj-Jambua line considerably. Closing of all the lines between Ukai and Achhalia would have reduced the flow on Ukai - Bardoli (Mota) section also.

9.16. CEA in para 10.9.5 of the Report has observed that outage of one of the 400/220 KV transformer would result in over loading of the other transformer. This inference of CEA is far from the factual conditions. Talwar Report has dealt with this aspect on page 14 of its report

and based on actual data furnished by GETCO and the report has concluded that outage of one transformer would not overload the other transformer.

9.17. The CEA Report only justifies the action taken on 18^{1h} March to ban STOA-NOC from 20th March, 2014 but missed out the major issue of lifting the ban imposed for indefinite period irrespective of the system condition which keep changing continuously with seasons, system Load, Addition of new elements and substations/lines etc.

9.18. CEA report has gone into the depth for the scenario prevailing at the time of Withdrawal of STOA-NOC and the nearby dates but nothing is mentioned about subsequent system condition with low load operation with onset of monsoon. As such the STOA-NOC could have been given from July, 2014 with drastic reduction in loadings.

9.19. As per Regulation 3 (2) of CERC Open Access Regulations, 2008, STOA shall eligible to obtain open access on surplus capacity available on Intra-State Transmission system available after use of LTOA and MTOA. Gujarat forecasted demand for 17th EPS for FY 2011-12 was 14374 MW and accordingly transmission network was planned whereas actual Peak load reached at 16 hrs. on 30.4.2014 was 13740 MW only. Thus, even on the basis of demand project for FY 2011-12, surplus capacity was available in transmission network. Similarly as per approved ARR by the Commission in its order the capacity of GETCO was considered as 20076 MW for FY 2013-14 and 24939 for FY 2014-15 which is much more higher than loading observed during FY 2013-14.

9.20. Report has to be considered in the context of other material viz. data from 2011 to 2014 during which STOA has been always given freely using same grid, same elements and still no difficulty. Last three year record shows no difficulty / problems / disturbances in system operation on this account and as stated under CEA Report para 12.2 even after the curtailment, the system continued to operate under the same so called stressed condition

9.21. Further, the target date for commissioning of 400 kV Chorania-Kosamba line was June 2012 This line was actually commissioned on 5^{1h} July 2014 after a delay of more than 2 years

Chorania is well connected to major power stations in Suarashtra Region and timely commissioning of this line would have avoided any over loading in South and Madhya Gujarat. CEA should have studied the system conditions after commissioning of this line and gave its recommendations about continuation curtailment of open access even after commissioning of this important line.

9.22. Most of the Petitioners are denied open access as if every purchase of power for collective transactions is flowing through Asoj 400 KV Substation only. It is proved wrong from the data of before and after withdrawal of NOC. Against the withdrawal of 750 MW NOC, power flow was only marginally reduced which indicates that the STOA-NOC withdrawal was unjustified, unwarranted and arbitrary The CEA report seems to be deliberately silent on this vital issue.

9.23. CEA report indicates that even after withdrawal of NOC granted to Open Access users, numbers of elements have remained operating beyond so called design margins. At many locations in the report the convenient tune of "CEA Transmission Criteria" is played and GETCO has been still operating the system with many elements operating with substantial overloading.

10. The matters were heard on 19.04.2014, 10.05.2014, 24.07.2014 and finally on 7.08.2014. Whereas IA No. 8 was kept for hearing on 14.10.2014, 15.10.2014 and 15.11.2014. Learned Advocates representing the petitioners reiterated the submissions as mentioned in para 3,5,8 and 9 above whereas learned Advocate representing the respondents reiterated the facts as stated in paras 4 and 7 above.

10.1. Learned Advocate Shri M. G. Ramachandran, on behalf of the respondents, submitted that GETCO and SLDC had from the beginning objected to the matter being referred for consideration by Mr. V.J. Talwar and expressed reservation on the matter being considered by Mr. V.J. Talwar. He further submitted that to put up the views of GETCO before CEA, they had appointed Mr. Ravinder, Ex. Chairman and Member (PS), Central Electricity Authority and

submitted copy of the report of Mr. Ravinder before the Commission. The conclusion purported to be drawn by Mr. V.J. Talwar is contrary to the facts and also to the legal provisions mentioned. Also the report makes certain fundamental assumption which are wrong. The report does not deal with the order of priority specified in Regulation 44 of the Open Access Regulations, 2011 notified by the Commission. The report makes fundamental errors on the flow of electricity from other areas to Central and Dakshin Gujarat and the status of the generating stations situated in Dakshin Gujarat and Central Gujarat areas viz.-a-viz. the generating stations in Paschim Gujarat areas and outside Central Gujarat and South Gujarat. These defects and discrepancies of basic nature contained in the report has been pointed out in the report of Mr. Ravinder as well as in the objections filed by GETCO and SLDC.

10.2. Further, the GETCO and SLDC exercise statutory functions under sections 39 and 32 of the Electricity Act, 2003. GETCO and SLDC are not engaged in purchase and sale of electricity or otherwise even generation of electricity. There is no reason whatsoever for GETCO and SLDC to act in a manner to deliberately not allow the Short Term Open Access. Wherever, there are no constraints, GETCO and SLDC have duly allowed the Short Term Open Access. The Short Term Open Access has been allowed in South and Central Gujarat in area fed from 220 KV Gavasad which were not affected by the upstream constraints in the above mentioned specific transmission lines. Similarly, there has been no restriction on the Short Term Open Access in many parts of Uttar and Paschim Gujarat. The Petitioners are also wrongly relying on the reduction in the load overall in the State of Gujarat. As per the load status of Dakshin Gujarat and Central Gujarat from 1.3.2014 till 12.8.2014, it is clear that the load on the system had continued without any reduction.

10.3. The petitioners are wrongly alleging that the availability of the transmission capacity can be judged by the fact that there has been only a reduction of 40 MW on the transfer of power on the above 9 lines. This is a misleading statement. There has been substitution of power drawn by the distribution licensee from the generating stations of Paschim Gujarat for maintaining the

supply in the South and Central Gujarat areas. Further, about 6 lines, namely 220 KV Jambuva-Haldarva, 220 KV Jambuva-Jagadia, 220 KV Jambuva-Achhalia and 132 KV Jambuva-Karjan line which were not in use because of the upstream constraints has been put to use leading to Grid security. These aspects have not been considered by the petitioners.

10.4. One other aspect raised by the petitioners relate to grant of Medium Term Open Access to some of the industrial consumers, the grant of such Medium Term Open Access has no implication to the availability of the transmission capacity for grant of Short Term Open Access as The Medium Term Open Access has been granted on the line which were earlier used in transmitting power to Dadra, Nagar and Haveli. The long-term arrangements for such conveyance of power to Dadra, Nagar and Haveli got terminated and the same capacity of 150 MW are used to grant the Medium Term Open Access. The line on which Medium Term Open Access has been allowed has nothing to do with the upstream constraints on the 9 lines mentioned herein above. The Medium Term Open Access has been allowed for evacuation of power from Ukai Generating Station in South Gujarat area. Thus, as mentioned herein above, the constraint is for getting power into South Gujarat and Central Gujarat from Paschim Gujarat area. In any event, the Medium Term Open Access has a higher priority as compared to the Short Term Open Access as provided in Regulation 19 of the Open Access Regulations.

11. Learned Advocate Shri Sunit Shah representing the petitioners, submitted that the analysis carried out by Shri Talwar is based on sustained loading on each of the transmission elements, whereas the claim of the respondent GETCO is based on instant overloading of certain element on during certain hour of certain day. It is wrong to say that the methodology adopted by Shri V. J. Talwar is flawed.

11.1. As far as filing of a report on curtailment of STOA by GETCO/SLDC obtained from Shri Ravinder, it is without the knowledge/consent of either the Commission or the petitioners and the same is with the only objective of negating/nullifying the conclusions/finding of the report

of Shri V. J. Talwar who was appointed by the Commission. Therefore, the petitioners do not consider it as an expert report and do not recognize the same as it is nothing but submission by the respondents.

11.2. However, the petitioners made following observations on this report:

(i). The report has considered data selectively furnished by the respondent just to attempt vindicating the stand taken by the respondents without taking cognizance of the facts and data going against the respondents without even bothering to explain as to what is wrong in arguments under submission based on Regulations/Act.

(ii). It does not explain how a capacity claimed viz. 27000+/19000+ MW under the additional surcharge petition/order during March, 2014 disappeared within a week's time of the order and constraint caused even at 11750 MW system load.

(iii). It does not explain how DGVCL having contracted capacity of 4300+ MW, with additional capacity as considered necessary as per transmission planning for security margins/reserves etc. faces constraint even at catering only 2400 MW.

(iv). SLDC report for FY 2013-14 indicates that there is no significant increase in energy/load catered as claimed.

(v). It shows constraint of a few selective segments counting for hardly few tens of MW and generalizes for hundreds of MW capacity curtailed without explaining the need for such a drastic measure at one stroke instead of progressive reductions on as and when needed basis.

(vi). It is still not explained as to whether all the 163 STOA consumers counting for 800 MW were really required to be curtailed to remedy the situation and how the overloading situation as well as merit order distortion continued even after curtailment of the huge capacity.

(vii). It also does not explain the vital commercial aspect that it is wise and financially beneficial to allow STOA in preference to adding a generation costing Rs. 11 + per unit.

(viii). It does not appreciate the law of land i.e. a provision under the Act, 03 for non-discriminative approach in capacity allocation particularly for consumers who having LTOA capacity by virtue of their STOA NOC permission being restricted to contract demand only.

(ix). It relies on arbitrary contention that due to STOA NOC costlier generation is getting scheduled overlooking the fact that even after curtailment, the same generation is necessitated and used. The Regulation does not refer to any reasoning for denial based on merit order criteria.

(x). It does not indicate that the investigator has considered the submissions made by the petitioners and no reasoning is given for not considering the issues raised under the petitioner's submissions.

(xi). It is also taken for granted without furnishing any reference/reasoning that the norms/standard/codes are to be referred to only for denying the STOA and not for regular system operation for consumers. This is a breach of provisions under law for discriminatory approach and hence not tenable and cannot be relied on contentions based on such approach.

(xii). It also shows that the focus is on justifying the denial of STOA based on overloading of a few scattered segments but no attempts are made to explore possibilities of granting STOA NOC to applicants in case of those who receive power through segments, S/S, Lines not facing such problems.

12. During the hearings of IA No. 8 of 2014, post the Order of Hon'ble High Court, representatives of petitioners, on CEA report, reiterated their submissions as recorded in para 9 above. Whereas Learned Advocate Shri M. G. Ramachandran, on behalf of the respondents GETCO and SLDC, submitted that the Central Electricity Authority is constituted under Section 70 of the Electricity Act, 2003. The said Authority was established under Section 3 of Electricity Supply Act, 1948 and thereafter it is continued and also appointed under the Electricity Act, 2003. It is a statutory body constituted by the Act to advice Central Govt., State Govt. and Commissions on technical aspects as and when required. Moreover, the said Authority specifies the various technical standards related to Electricity Sector consisting Grid Standards for Operation and Maintenance of Transmission lines etc. Section 73 (n) provides that the CEA shall advice the appropriate Govt. and appropriate Commission on all technical matters relating to generation, transmission and distribution of electricity. Accordingly, CEA is statutory Authority who is the technical expert body constituted under the Act. Therefore, when the Hon'ble High Court of Gujarat appointed CEA as an Independent Technical expert to investigate technical issue regarding constraint in upstream network for STOA in Gujarat and after investigating and analyzing the data report submitted by CEA is required to be considered by the Commission and to give effect to it without raising the doubts/queries on the reports of CEA.

12.1. He referred para 10 of the CEA report and submitted that the power flow on various lines as per load flow analysis carried out by CEA indicates that 220 KV lines such as Asoj- Jambua 220 KV S/C line, Kosamba-Vav 220 KV S/C line, Kosamba-Kim 220 KV S/C line and Ukai-Bardoli (Mota) 220 kV D/C line were critically loaded before and after the curtailment of STOA. He further submitted that CEA has recorded that closing of Jambua-Haldarwa, Jambua-Zagadia, Asoj-Karamsad 220 KV lines increases the power flow on 400/220 KV ICTs and Asoj-Jambua 220 KV line, while the closing of Jambua-Achhalia and Chikli-Vapi 220 KV lines increases the loading on Ukai-Barda 220 KV D/C line. Therefore, it may be inferred that these lines were kept open to limit the loadings of transmission elements.

12.2. He also submitted that outage of one 400/220 KV transformer at Asoj causes overloading of other transformer. Outage of one unit of 150 MVA 220/132 KV transformers at Asoj causes overloading of Asoj-Jambua 220 KV S/C line. Outage of Kosamba-Vav 220 KV S/C line leads to overloading of Kosamba-Kim 220 KV S/C and Ukai-Bardoli 220 KV D/C lines. Similarly outage of Kosamba-Kim 220 KV S/C line causes overloading of Kosamba-Vav 220 KV S/C and Ukai-Bardoli 220 KV D/C lines. Outage of one circuit of Ukai-Bardoli (Mota) 220 KV S/C line causes overloading on other circuit of Ukai-Bardoli (Mota) line, Kosamba-Kim and Kosamba-Vav 220 KV lines. Outage of Ukai-Bardoli 220 KV D/C is also critical for Kosamba-Vav and Kosamba-Kim 220 KV lines. Thus from the load flow results corresponding to 19th and 20th March 2014 condition, it is seen that Gujarat 220 KV network in South and Madhya Gujarat gets overloaded and is unable to meet the contingency outages as specified in the Gujarat Electricity Regulatory Commission's Gujarat Electricity Grid Code security criteria. Thus, STU / SLDC Gujarat, which is nodal agency for grant of open access is advised to carry out load flow studies to check the adequacy of the transmission system before grant of any type of access.

12.3. He also referred para 10.9.6 of the said report and submitted that as per Open Access Regulations notified by the Commission SLDC is nodal agency to grant STOA and as per Regulation 15 (a) (ix) of the said Regulation the nodal agency shall require to check transaction for congestion of any element (line and transformer) of transmission and distribution system involved in transaction.

12.4. He further referred para 11.2 of the said report and submitted that as per the CEA analysis the maximum demand catered by Gujarat, maximum demand catered in South and Madhya Gujarat has been gradually increasing. More dispatches have been taken from the gas based generation projects like Kawas, GIPCL, Jhanor located in South Gujarat. Maximum power flow on 400/220 KV ICTs at Asoj has been gradually decreasing.

12.5. He also referred para 11.4 and conclusion and recommendation of CEA report and submitted that the CEA has recognized the constraint in 220 KV network of Madhya and South Gujarat before the curtailment of open access. It was also recorded that after curtailment of STOA overloading condition in upstream network of Gujarat continued which indicate the network was operating under stressed conditions. The load flow study of 19.3.2014 and 20.3.2014 indicates that south and Madhya Gujarat 220 KV network was overloaded and unable to meet contingency outage specified in Grid Code. It is also recorded that SLDC should carry out load flow study to ascertain the margin available in the existing transmission network before grant of STOA and check the adequacy of transmission network as pre security criteria specified in Grid Code notified by the Commission. Moreover, it was also advised to GETCO to plan and strengthen transmission system in South and Madhya Gujarat to serve the consumers reliably to meet the security criteria specified in Grid Code.

13. Based on the submissions made by the parties, the following issues emerge for the decision of the Commission:

(i) Is the action of the respondent SLDC to curtail the open access by letter dated 18.03.2014 to the petitioners legal and valid?

(ii) Is respondent SLDC justified in curtailment of open access for indefinite time on a ground of upstream congestion in the transmission system?

(iii) Whether the SLDC has exercised the power provided in the Electricity Act, 2003 and Open Access Regulations judicial or not?

(iv) What actions need to be taken by the respondents to give intent of the Act to provide open access to all the open access customers as per the Regulations?

14. We have carefully considered the submission made by the parties. The issue No. (i), (ii) and (iii) framed above are interlinked with each other, therefore, we decide to deal with them

combinedly and decide the same. The issue No. (iv) is dependent on the decision of the Commission on issue No. (i), (ii) and (iii).

14.1. In the present case, we note that the respondent SLDC had curtailed the open access granted to the petitioners from 20.03.2014 by issuing letter dated 18.03.2014 which read as under:

"…

To,

All Open Access Consumers

Sub: Constraint in upstream network due to rise in system demand. Sir,

Due to rise in the system load demand, leading to grid constraint in the upstream network, it shall not be feasible to permit short term open access. to consumers as per enclosed list with effect from 00.00 Hrs of 20.03.2014. However distribution Company will cater your contract demand from the generation at their disposal.

….."

On verification of the said letter, it appears that the SLDC had curtailed the open access granted to the STOA customers without assigning any reason to the curtailment of the open access. The only reason mentioned in the above letter was that there was upstream constraint in the transmission system of GETCO. We note that as a consequence of above letter, open access granted to 126 consumers was curtailed by the SLDC without specific reason for the curtailment.

14.2. Thereafter, the present petitions have been filed by the some of the open access customers before the Commission. As the subject matter of the present petition is highly technical and desired some expert views on the subject matter the Commission decided to take the services of

Shri V. J. Talwar who was earlier working with Central Electricity Authority and thereafter worked as Member (Technical), Chairman of Uttarakhand Electricity Regulatory Commission and thereafter had worked as Member of Hon'ble APTEL.

14.3. Shri V. J. Talwar, who was engaged as a consultant by the Commission submitted his report in June, 2014. The copy of the said report was provided to all the parties to the petitions. The main observations of Shri V. J. Talwar are as under:

"Summary of Analysis

Average Maximum Loading (Sustained Loading) on each of the transmission element analysed above is given in Table 11 below:

Sl No.	*Transmission Element Name*	*Permissible Loading Limit**	*Sustained Loading during peak period before curtailment*	*Sustained Loading during peak period after curtailment*
1	*400 kV Asoj Transformers*	*1000 MVA*	*819 MVA*	*778 MVA*
2	*220 kV Asoj Transformers*	*250 MVA*	*174 MVA*	*169 MVA*
3	*220 kV Asoj Jambua S/c line*	*230 MVA*	*210 MVA*	*193 MVA*
4	*220 kV Jambua ICTs*	*300 MVA*	*201 MVA*	*213 MVA*
5	*220 kV Vav – Kosambha S/c Line*	*230 MVA*	*207 MVA*	*191 MVA*
6	*220 kV Ukai – Mota D/C line*	*460 MVA*	*393 MVA*	*440 MVA*
7	*220 kV Chikhali – Vapi S/c Line*	*230 MVA*	*Line kept open*	*Line kept open*
8	*220 kV Kakrapar – Vapi D/C Line*	*460 MVA*	*262 MVA*	*292 MVA*
9	*220 kV Halsa – Nyara D/C line*	*460 MVA*	*303 MVA*	*348 MVA*

**For lines as per Thermal Loading Limit. For Transformers its installed capacity.*

Inference

34. From the above discussions it is established that average loading on all the elements indicated by the SLDC to be over loaded because of open access were well within limits. The elements which were critically loaded remained to be so even after curtailment of open access. Loading on some of the elements was found to be increased after curtailment.

35. The curtailment of open access to 126 consumers in Central and Southern Gujarat on the pretext of transmission constraints and over loading of upstream network was misconceived, unwarranted, arbitrary and not tenable in terms of Regulatory Provisions and therefore is liable to be set aside immediately

36. In view of above findings, any proposal for improving Real Time Operation of the grid with consideration of the congestion if any occurred in the Transmission network, and its impact passed on to Open Access does not arise."

Against the above report the petitioners and respondents have made their submissions which are stated in earlier paras.

14.4. We note that the respondent GETCO and SLDC have also submitted a report of Shri Ravinder. The said report of the respondents was based on the consultancy services hired by them. Prior to taking services of Shri Ravinder, the respondents have neither informed to the Commission nor taken any approval for it. The report of the Shri Ravinder, was without the approval of the Commission. The original petitioners of Petitions No. 1407 of 2014 and other allied matters have also objected to take the cognizance of the report of Shri Ravinder. We, therefore, decide that the report of Shri Ravinder submitted by the respondents GETCO and SLDC is the services obtained by them for their own work and not as a part of the present proceedings and it is also without the approval of the Commission. Hence, we decide not to take the cognizance of the said report.

14.5. We also note that some of the open access customers have challenged the action of respondents SLDC and GETCO against the curtailment of STOA granted to them by the present respondent before the Hon'ble High Court of Gujarat. They have filed three applications before the Hon'ble High Court of Gujarat viz. (i) SCA No. 7117 of 2014, (ii) 7118 of 2014 and (iii) 7119 of 2014. As per the directives of Hon'ble High Court, GETCO filed an IA No. 8 of 2014 in the present petition for impleading original petitioners of aforementioned SCAs and CEA in the present

petitions and also submitted the report of CEA as part of record in the present proceedings. It was made clear by the Hon'ble High Court that the Commission shall adjudicate the disputes between the petitioner and respondents as per the statutory power assigned to the Commission as per the provisions of the Electricity Act, 2003.

14.6. We have considered the submissions of the parties, the report submitted by Shri V.J.Talwar who was appointed an independent consultant by the Commission in the present case and also the report of CEA submitted in the IA No. 8 of 2014 by GETCO and SLDC and also considered the comments of the petitioner as well as respondents on these reports and with consideration of above the decision of the Commission on the various issues which arose in the present petition is given below:

14.7. We note that the Commission had appointed Shri V. J. Talwar, as consultant during the proceeding of the aforesaid petition on 19.05.2014, after hearing the parties. During the above proceedings, respondents had proposed to assign the consultancy work to CEA which was rejected by the Commission in its Daily Order dated 19.5.2014. The respondents had on that day not stated that they intend to take the services of Shri Ravinder as consultant on the issue of denial of open access by the SLDC on a technical ground being valid or not. The respondents, in hearing on 10.06.2104 also did not mention anything about their intention to engage clarified that they had engaged Shri Ravinder as consultant on the issue of these petitions. We further note that Shri V. J. Talwar submitted its report on June 2014. Thereafter, the report of Shri Ravinder was submitted by the respondents with their affidavit on reply on 22.07.2014. On verification of Shri Ravinder's report, it seems that it mainly gives the comment/disregard on the report of Shri V. J. Talwar.

14.8. We note that the SLDC had denied the open access to the 126 Nos. of consumers vide letter dated 18.03.2014. The content of the said letter is stated in para 11 above. In the aforesaid letter to the open access consumers, there is no mention regarding constraint in upstream network and what are the technical parameters i.e. voltage, current, loading of lines, loading of sub-stations

and its equipments such as Transformers, bays, CT/PT etc. with comparison to installed equipments or lines and its capacity to bear loading of the said lines.

14.9. Section 32 of the Electricity Act, 2003 provides that the SLDC shall require to monitor the grid operation on real time basis. While monitoring the grid operation on real time basis, the SLDC shall require to verify the relevant technical parameters of the grid and see that the same may be maintained in such a manner that the grid operation shall not be affected. In the present case, we note that the SLDC while denying the open access to the petitioners and other open access customers who were granted the open access did not mentioned the reasons and technical parameters of the grid in various parts of DGVCL and MGVCL licensee area and which of the transmission line, transformers etc. were overloaded. The Commission called upon the information about the upstream constraints in the network stated by the SLDC vide letter dated 21.05.2014. The Commission also called upon the various details pertaining to loading of the following elements in which the constraint was claimed by the respondents :

I. 400/220 KV ICTs at Asoj,	II. 220/132 KV ICTs at Asoj
III. 220/132 KV ICTs at Jambua,	IV. 220 KV S/C Asoj-Jambua line
V. 220 KV S/C Kosamba-Vav line	VI. 220 KV D/C Ukai-Mota line,
VII. 220 KV S/C Chikhli-Vapi line,	VIII. 220 KV D/C Kakrapar-Vapi
IX. 220 KV D/C Hadala-Nyara line	

14.10. The details for the above elements of the transmission system were submitted by the respondent SLDC. The respondent SLDC has also submitted that the decision of curtailment of STOA was done by it on following grounds:

1. The CERC has introduced Deviation Settlement Mechanism at Intra-State Transmission level to maintain grid frequency and based on it the penalty is imposed to the State if they deviate from the limit of 12% or 150 MW whichever is lower from their schedule given by the concerned beneficiaries.

2. GUVNL's concern about backing down of cheaper generation available to it in other parts of the State and schedule for costlier gas based generation in Madhya and Dakshin Gujarat of the State.

3. Curtailment of supply to agricultural consumers. It is the duty of the licensee to supply the electricity to consumers as per their contract demand. The licensees are LTOA on the transmission system, hence, whenever there is congestion the curtailment will start from the STOA and lastly to LTOA. As in the present case, there is congestion in the upstream transmission network, the curtailment requires on STOA.

4. SLDC has also stated that loading of upstream network from Asoj S/S and available capacity as per Regulation 43 of Open Access Regulations is nil in following transmission element,

Name of Element	Designed Capacity	Sustained Demand
400/220 kV 2x500 MVA ICTs at Asoj	1000 MVA	874 MVA
220 kV Asoj – Jambua S/C line	190 MVA	246 MVA
220/132 kV 1x150 + 2x100 MVA ICT at Asoj	350 MVA	283 MVA
220/132 kV 2x100 MVA ICT at Jambua	200 MVA	202 MVA

14.11. As the issues involved in the present petitions pertains to curtailment of STOA which was granted to the petitioners by the respondent SLDC with consideration of provisions of the Electricity Act, 2003 read with GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011, it is necessary to refer the relevant provisions of the Act and Regulations framed by the Commission in this regard.

Section 32 of the Electricity Act, 2003 relates to functioning of the SLDC which reads as under:

32. (1) The State Load Despatch Centre shall be the apex body to ensure integrated operation of the power system in a State.

(2) The State Load Despatch Centre shall -

(a) be responsible for optimum scheduling and despatch of electricity within a State, in accordance with the contracts entered into with the licensees or the generating companies operating in that State;

(b) monitor grid operations;

(c) keep accounts of the quantity of electricity transmitted through the State grid;

(d) exercise supervision and control over the intra-state transmission system; and

(e) be responsible for carrying out real time operations for grid control and despatch of electricity within the State through secure and economic operation of the State grid in accordance with the Grid Standards and the State Grid Code.

(3) The State Load Despatch Centre may levy and collect such fee and charges from the generating companies and licensees engaged in intra-State transmission of electricity as may be specified by the State Commission.

According to above provisions, it is the duty of SLDC to carry out economic and efficient grid operation in real time basis as well as control and monitor the gird operation with consideration of grid standards and State Grid Code. The SLDC is also responsible for optimum scheduling and dispatch of the electricity.

14.12. It is also necessary to refer Section 33 of the Electricity Act, 2003 which provides powers to SLDC and directions given by the SLDC required to be followed by generating companies and licensees. The same reads as under:

33. (1) The State Load Despatch Centre in a State may give such directions and exercise such supervision and control as may be required for ensuring the integrated grid operations and for achieving the maximum economy and efficiency in the operation of power system in that State.

(2) Every licensee, generating company, generating station, substation and any other person connected with the operation of the power system shall comply with the direction issued by the State Load Despatch Centre under subsection(1).

(3) The State Load Despatch Centre shall comply with the directions of the Regional Load Despatch Centre.

(4) If any dispute arises with reference to the quality of electricity or safe, secure and integrated operation of the State grid or in relation to any direction given under sub-section(1), it shall be referred to the State Commission for decision:

Provided that pending the decision of the State Commission, the direction of the State Load Despatch Centre shall be complied with by the licensee or generating company.

(5) If any licensee, generating company or any other person fails to comply with the directions issued under sub-section(1), he shall be liable to penalty not exceeding rupees five lacs.

Section 33 of the Electricity Act, 2003 provides power to the SLDC to pass direction to ensure integrated grid operation to achieve maximum economy and efficiency in operation of the power system to the entities connected with grid operation. However, it is clarified that the power utilized by SLDC should be judicious with independent decision.

14.13. The issue involved in the present petition pertains to upstream constraint in the transmission network based on which the SLDC had curtailed the open access granted to the petitioner during interim period of the STOA granted by SLDC. It is therefore necessary to refer Section 34 of the Electricity Act, 2003 which pertains to duty assigned to the transmission licensee with regard to operation and maintenance of the transmission system operated by it.

34. Every transmission licensee shall comply with such technical standards, of operation and maintenance of transmission lines, in accordance with the Grid Standards, as may be specified by the Authority.

As per the above provision it is the duty of transmission licensee to comply with technical standards, of operation and maintenance of transmission lines, in accordance with the Grid Standards specified by the Commission in Grid Code.

14.14. As the dispute in the present petition is pertaining to transmission constraint in the upstream network claimed by the SLDC, it is necessary to refer the functions of State Transmission Utility and Transmission Licensee specified in Section 39 of the Electricity Act, 2003 which reads as under:

39. (1) The State Government may notify the Board or a Government company as the State Transmission Utility:

Provided that the State Transmission Utility shall not engage in the business of trading in electricity:

Provided further that the State Government may transfer, and vest any property, interest in property, rights and liabilities connected with, and personnel involved in transmission of electricity, of such State Transmission Utility, to a company or companies to be incorporated under the Companies Act, 1956 to function as transmission licensee through a transfer scheme to be effected in the function as transmission licensee through a transfer scheme to be effected in the manner specified under Part XIII and such company or companies shall be deemed to be transmission licensees under this Act.

(2) The functions of the State Transmission Utility shall be -

(a) to undertake transmission of electricity through intra-State transmission system;

(b) to discharge all functions of planning and co-ordination relating to intra-state transmission system with -

(i) Central Transmission Utility;

(ii) State Governments;

(iii) generating companies;

(iv) Regional Power Committees;

(v) Authority;

(vi) licensees;

(vii) any other person notified by the State Government in this behalf;

(c) to ensure development of an efficient, co-ordinated and economical system of intra-State transmission lines for smooth flow of electricity from a generating station to the load centres;

(d) to provide non-discriminatory open access to its transmission system for use by-

(i) any licensee or generating company on payment of the transmission charges ; or

(ii) any consumer as and when such open access is provided by the State Commission under sub-section (2) of section 42, on payment of the transmission charges and a surcharge thereon, as may be specified by the State Commission:

Provided that such surcharge shall be utilised for the purpose of meeting the requirement of current level cross-subsidy:

Provided further that such surcharge and cross subsidies shall be progressively reduced and eliminated in the manner as may be specified by the State Commission:

Provided also that such surcharge may be levied till such time the cross subsidies are not eliminated:

Provided also that the manner of payment and utilisation of the surcharge shall be specified by the State Commission.

Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use.

14.15. As per the above provision, the STU is entrusted with the function pertaining to co-ordination with the various authorities and to ensure development of an efficient, co-ordinated and economical system of intra-State transmission lines for smooth flow of electricity from a generating station to the load centres, and to provide non-discriminatory open access to its

transmission system. Section 40 of the Electricity Act, 2003 says the function of transmission licensees which are similar to the function of the STU as specified above.

14.16. The plea of the SLDC and GETCO was that there was upstream congestion in the transmission system and therefore the SLDC had to curtail the short term open access granted to the petitioner and the other consumers as per the Regulations 43 of the GERC Open Access Regulations, 2011. Hence, it is necessary to refer the above Regulation which reads as under:

43. Computation of capacity availability for open access

(1) The capacity available for the open access shall be computed for each transmission segment and for every sub-station by the STU following the methodology given below:

Available open access capacity of a transmission system segment: = (DC-SD-AC) + NC - ND where, DC=Designed capacity of the transmission segment in MW, SD = Sustained demand (peak load experienced) in MW recorded in the segment, AC = Already allotted capacity, but not availed in MW, NC = New capacity in MW expected to be added and ND = New Demand expected to be added.

(a) Available open access capacity of a sub-station: = (TC-SP-AC)+NC – ND where, TC= Transformer capacity of the sub-station in MVA, SP= Sub-station peak in MVA, AC= Already allotted capacity but not availed in MVA , New transformer capacity in MVA expected to be added and ND = New Demand expected to be added.

(b) The STU shall update these values on a quarterly basis on the first calendar day of the first month of the quarter and publish it on their website.

(2) The appropriate distribution licensee shall determine the available capacity for allotment for the portion of the distribution system over which open access has been requested for.

From the above regulation, it is clear that the said regulation is for determination of the transmission capacity availability for open access. It specifies the methodology to be adopted by the entities granting the open access while evaluating transmission capacity for open access. The said Regulation also provides that it is the duty cast upon the STU to make the details of transmission capacity availability on its website on quarterly basis.

14.17. Since the present case involves the issue of curtailment of the open access granted to short term open access consumers, it is necessary to refer regulation 44 of the GERC (Terms and Conditions of Intra-state Open Access) Regulations, 2011, which reads as under:

"44. Curtailment Priority

When, because of constraints or otherwise, it becomes necessary to curtail the open access service of the customers, subject to the requirements of State Grid Code, the open access to a distribution licensee shall be the last to be curtailed. Among others, short-term open access customers shall be curtailed first, followed by the medium-term open access customers followed by long-term access customers. SLDC shall frame guidelines for curtailment of open access customers."

As per above regulations, when it become necessary to curtail the open access services of the customer due to constraints in the network subject to verification as per state Grid Code the short term open access customer shall be curtailed first followed by medium term open access and finally the long term open access including the distribution companies. The above regulations state about the curtailment of open access of the existing open access customer in case of congestion in the network.

14.18. The SLDC has in its reply dated 10.04.2014 submitted that the available capacity on the network from Asoj 400 KV S/S is nil as per Regulation 43 of the Open Access Regulations. The above contention of the respondent SLDC is not valid and legal as per Regulation 43 of the Open Access Regulation notified by the Commission because the Regulation 43 states about the determination of transmission capacity available to grant the open access. In the present case it is undisputed between the parties that the Short Term Open Access was granted to the petitioner by the SLDC. Hence, the question of computation does not arise. The SLDC has stopped/curtailed the permission granted on the ground of non availability of capacity. The SLDC had in its letter stated that the transmission element had sustained loading limit against the designed capacity which is stated in para 14.10 above.

From the same it is transpires that the demand stated in the above para consists of demand of open access consumers whose open access has been curtailed by the SLDC from 20.03.2014, therefore, the contention of the SLDC that there is no transmission capacity available due to open access is unfounded and misplaced and the same deserves to be rejected.

14.19. According to the above regulations, it is necessary to verify as to whether the requirement of State Grid Code is fulfilled or not prior to curtailing the open access granted to the consumers.

The relevant provisions of State Grid Code which are applicable in the present case are stated below:

Chapter 4 of the State Grid Code states about the Planning Criteria to be followed by the STU/transmission licensee, which, inter-alia, provides as under:

"4.15 The security philosophy may be as per the Transmission Planning Criteria and other guidelines as given by CEA as amended from time to time. The general policy shall be as detailed below:

1. As a general rule, the Intra State Transmission System shall be capable of withstanding and be secured against the following contingency outages

(a) Without necessitating load shedding or rescheduling of generation during Steady State Operation

- *Outage of a 132 kV D/C line*
- *Outage of a 220 kV D/C line*
- *Outage of a 400 kV S/C line*
- *Outage of a 400 kV single circuit line with fixed series capacitor (FCS)*
- *Outage of single Interconnecting Transformer*
- *Outage of one pole of HVDC bipole line, or one pole of HVDC back-to-back station or*
- *Outage of 765 kV S/C line*

….

4.20 The maximum permissible thermal line loadings for different types of line configurations, employing various types of conductors shall be considered according to the Table II, Annexure V of CEA Manual on Transmission Planning Criteria 2013.

…"

Further, the duties and functions of the SLDC have been described in Chapter 6 (System Operation Code) and Chapter 11 (Schedule and Despatch Code) of the State Grid Code. Relevant portions of the Code are reproduced below:

"6.21. Operating Margin comprises of contingency reserve and operating reserves required for satisfactory operation of the power system to cover uncertainties in variations in demand forecasts, loss of external connections, loss of generation, constraints in the Transmission System and all other factors.

6.22. The required contingency reserve shall be decided by the SLDC on the basis of historical trends in the reduction of availability of the generating companies, imports through inter-state tie lines and increases in demand forecast during real time operation.

6.23. Whenever the contingency reserve is to be held by a thermal power station, the SLDC shall include the same in the Indicative running notification and/or subsequent despatch instructions by which the generating company is notified of and/or instructed, that the generating unit shall be operated in the contingency reserve mode.

…

11.42. When for the reason of transmission constraints, such as congestion, or in the interest of grid security, it becomes necessary to curtail power flow on a transmission corridor; the transactions already scheduled may be curtailed by the State Load Despatch Centre.

…

11.43 The short-term customer shall be curtailed first, followed by medium- term customers, who shall be followed by the long-term customers and amongst customers of a particular category, curtailment shall be on prorate basis."

From the above provisions of the State Grid Code, it is clear that the Commission has clearly distinguished the responsibilities of the State Transmission Utility from those of the SLDC. Chapter 4 of the State Grid Code describes the planning philosophy to be followed by the STU at time of transmission system planning. The margin and permissible loading mentioned therein are for the purpose of planning adequate network for meeting the project demand from the identified sources of generation. Chapter 6 of the Code, inter-alia, describes the duties of the SLDC regarding contingency reserves. Para 11.42 and 11.43 provide for curtailment of power flow on any transmission element and curtailment of open access.

The above provisions clearly establish that any decision of SLDC regarding curtailment of open access has to be based on established facts of transmission constraints and/or grid security. However, before curtailment of short-term open access to 126 consumers, the SLDC did not establish any such facts.

14.20. Now we deal with the issues pertaining to whether there was constraint in upstream transmission networks as stated by SLDC/GETCO or not on various elements of the transmission system which include

I. 400/220 KV ICTs at Asoj, II. 220/132 KV ICTs at Asoj

III. 220/132 KV ICTs at Jambua, IV. 220 KV S/C Asoj-Jambua line,

V. 220 KV S/C Kosamba-Vav line VI. 220 KV D/C Ukai-Mota line,

VII. 220 KV S/C Chikhli-Vapi line, VIII. 220 KV D/C Kakrapar-Vapi

IX. 220 KV D/C Hadala-Nyara line

14.21. The SLDC was directed by the Commission to provide the details of log-sheets for the period 1.03.2014 to 30.04.2014 which consist the period of 1.03.2014 to 19.03.2014 i.e. prior to curtailment of STOA by the SLDC and period from 20.03.2014 to 30.04.2014 i.e. period after curtailment of Short Term Open Access by the SLDC. As the SLDC had pleaded that the curtailment was carried out due to overloading of transmission network due to about 800 MW of OA transactions, it is necessary to verify the impact of the open access loading on existing transmission network and based on it to arrive on decision that whether the decision of SLDC for curtailment of existing STOA granted by it is valid or not. It was also scope of work of the independent consultant engaged by the Commission.

14.22. We note that the SLDC had in its letter dated 20.03.2014 submitted that some of its cheaper generation including Wanakbori in Central Gujarat had to be backed down due to open access availed by consumers of Central and South Gujarat. It has also been submitted that the costly gas based generation in this part was required to be scheduled. This ground for curtailing the

open access is completely misplaced and is not permitted under any of Regulatory provisions. The Act provides for non-discriminatory open access in Transmission from the day one (Section 38 to 40 of the Act) and in distribution upon framing of Open Access Regulations by the Commission. The Commission has framed appropriate Regulations for the same. Once open access has been permitted as per the Regulations, it can be curtailed only as per provisions of the Regulations. The Regulations does not permit curtailment on account of backing down of some generation in some part of the State. It permits curtailment only on the ground of transmission constraints. To clarify, it is to state that if backing down of some generation is required because of open access and power is transmitted from other parts resulting into transmission constraints in some parts of the State, in such situations, open access can be curtailed to avoid transmission constraints and not because of cheaper power was getting backdown. Thus, the SLDC has to demonstrate persistent over loading in the system necessitating the impugned curtailment. It is further clarified here that the Act provides for the remedy for such a situation of backing down of generation in the form of section 42(4) which provide for additional surcharge in case of stranded assets. It is a fact that the Commission has approved additional surcharge to compensate the distribution licensee to meet its liability towards stranded capacity.

14.23. We also note that SLDC has claimed that some of its upstream network was getting overloaded due to open access by short term open access consumers. In this regard it is necessary to quantify the permissible loading on the transmission elements. Transformers can be loaded up to its installed capacity. For transmission lines three types of loading limits are considered. These are (i) Surge Impedance Loading (SIL) (ii) Stability Limit (iii) Thermal Loading Limits. Least of these three limits is considered to be the permissible limit over a transmission line. SIL is the loading at which both the sending end voltage and receiving voltage are same and there is no voltage drop along the line. This limit is applied from voltage regulation point of view. In the present case system voltages were found to be well within limits and accordingly SIL has no

application in this case. Stability Limit is the limit where angular difference between terminals of the line exceeds 30 degrees. It is generally applied on long transmission lines. The lines in question are all short lines of less than 100 km. and stability limit, which would be much higher than the thermal limit, would not be the criteria for fixing permissible limit. Thermal Loading Limits is the limit up to which a transmission line can be loaded without disturbing the physical properties of the aluminum conductor. It is function of ambient temperature. Average Thermal Loading of a 220 KV single circuit line is around 230-250 MVA. Thus, we have considered 230 MVA as the permissible limit of the 220 KV line.

14.24. In order to examine the loading on various transmission elements and how the loading were affected by the STOA, the Commission has obtained hourly data for period 1.03.2014 to 30.04.2014 from SLDC. These were analyzed by the Consultant Shri V. J. Talwar and its details are given in the report. He has considered the data of 4.03.2014 (Tuesday), 7.03.2014 (Friday), 10.03.2014 (Monday), 12.03.2014 (Wednesday), 13.03.2014 (Thursday), 15.03.2014 (Saturday), 16.03.2014 (Sunday) and 1.04.2014 (Tuesday), 4.04.2014 (Friday), 7.04.2014 (Monday), 9.04.2014 (Wednesday), 10.04.2014 (Thursday), 12.04.2014 (Saturday), 13.04.2014 (Sunday). The data considered by him is for 24 hours of a day on different days of week for the period prior to curtailment and after the curtailment of STOA by SLDC.

14.25. The selection of above period is to verify the loading pattern on the transmission system consisting of S/S and various lines on various days of a week and hours of the day which gives overall idea about the loading on transformers and lines on different days and time and to arrive on a conclusion and whether the curtailment of STOA done by SLDC is legal and valid as per the provisions of the open access regulations read with grid code and provisions of the Act.

14.26. The following tables state about the loading of 400/220 KV, 500 MVA ICT No.1 at the Asoj Substation for above dates :

	Table 1 - Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	

Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	395.106	372.869	363.898	364.873	370.309	338.036	375.895	
1:00	402.055	378.596	345.058	381.007	371.116	325.426	369.193	
2:00	379.822	378.531	339.742	374.473	384.549	312.695	370.553	
3:00	383.044	365.866	336.087	375.607	373.713	321.026	366.673	
4:00	387.811	365.124	335.742	362.276	366.571	321.629	356.233	
5:00	379.146	367.906	323.033	366.629	363.640	324.004	362.811	
6:00	364.189	394.247	332.506	375.196	369.087	353.444	379.575	
7:00	354.149	395.636	386.236	389.346	390.320	376.796	371.360	
8:00	365.338	392.044	391.593	411.818	404.164	372.935	385.833	
9:00	374.066	405.469	387.444	422.640	411.164	383.644	397.618	
10:00	385.422	405.284	387.436	394.073	412.804	359.833	423.822	
11:00	403.815	415.691	381.066	404.538	424.062	386.953	428.746	
12:00	388.371	394.364	352.047	389.011	429.276	386.022	417.236	
13:00	369.404	383.142	330.247	375.753	413.360	356.051	405.520	
14:00	379.669	377.124	329.844	375.676	415.524	371.520	412.222	
15:00	335.826	385.313	359.349	382.404	423.047	368.687	408.895	
16:00	333.593	407.622	389.135	407.600	421.306	378.840	379.851	
17:00	322.902	399.749	422.902	405.466	417.324	375.851	333.189	
18:00	315.982	391.298	396.411	399.182	406.702	376.920	301.887	
19:00	301.498	373.371	429.553	387.131	405.258	380.833	295.066	
20:00	324.356	359.687	364.862	388.680	404.291	371.247	448.044	
21:00	301.371	377.564	338.146	341.138	398.687	355.469	403.687	
22:00	312.760	372.120	342.716	374.327	387.480	354.880	392.491	
23:00	331.593	389.029	352.338	382.320	401.189	360.989	408.967	
0:00	324.698	380.916	347.706	370.309	389.844	352.640	395.106	
Average Loadings								375.5585
Maximum	403.815	415.691	429.553	422.640	429.276	386.953	448.044	
Average Maximum Loadings								419.4244
Minimum	301.3709	359.687	323.033	341.138	363.640	312.695	295.066	
Average Minimum Loadings								328.089

From the above table, it transpires that the maximum/minimum loading on the transformer prior to curtailment varied during various days and hours. It shows that the loading on the transformer is dynamic and varying from time to time. The maximum loading observed on ICT No.1 varied from 386.953 MVA to 448.044 MVA. The average maximum loading for aforementioned dates worked out to 419.42 MVA. Similarly minimum loading varied between

295.066 MVA to 363.640 MVA. Average of minimum loading of above dates works out to 328.089 and average loading for all seven days taken into consideration was 375.55 MVA.

14.27. The loading on above ICT for the period after curtailment of STOA by the respondents on various dates are given in the table below:

	Table 2- Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	359.74	325.07	357.71	337.21	340.25	328.47	338.48	
1:00	340.60	302.05	350.03	317.53	321.93	317.29	323.67	
2:00	326.26	312.41	340.36	311.36	317.04	318.56	323.37	
3:00	318.06	311.60	329.11	308.37	325.18	311.34	324.55	
4:00	317.62	310.76	313.94	318.46	315.92	303.11	316.24	
5:00	321.81	305.25	307.45	327.47	315.52	305.97	310.31	
6:00	334.93	312.62	316.38	336.97	327.42	299.54	329.22	
7:00	310.01	304.86	318.25	327.18	310.79	293.46	317.83	
8:00	327.36	327.07	322.50	336.84	327.15	315.43	329.63	
9:00	322.85	344.09	340.76	360.36	360.64	339.49	352.33	
10:00	319.61	375.94	351.80	372.43	388.60	347.42	365.34	
11:00	337.53	366.21	369.51	384.13	395.62	359.41	387.71	
12:00	332.95	369.19	367.86	374.65	394.95	350.37	372.73	
13:00	331.35	346.69	370.25	366.39	379.35	339.60	346.09	
14:00	344.49	346.88	368.55	365.00	402.33	340.10	345.30	
15:00	341.45	344.59	378.96	364.40	400.16	346.92	364.68	
16:00	332.73	341.11	363.35	370.73	376.97	333.89	371.14	
17:00	338.38	341.86	358.03	370.68	377.29	332.39	364.97	
18:00	320.93	328.17	342.95	344.27	364.80	322.84	327.81	
19:00	315.65	306.13	313.45	340.25	345.40	315.03	334.85	
20:00	337.92	303.39	333.68	349.74	353.18	331.47	342.64	
21:00	330.95	315.12	331.49	331.52	345.13	328.09	337.17	
22:00	327.68	300.37	324.51	335.71	336.06	322.75	349.74	
23:00	332.83	318.67	344.24	348.45	354.51	336.01	358.37	
0:00	322.62	309.26	325.42	340.25	331.04	334.09	359.74	
Average Loading								338.1186
Maximum	359.74	375.94	378.96	384.13	402.33	359.41	387.71	
Average Maximum Loading								378.3164
Minimum	310.01	300.37	307.45	308.37	310.79	293.46	310.31	
Average Minimum Loading								305.8254

The maximum loading observed on ICT No.1 varied from 359.41 MVA to 402.33 MVA. The average maximum loading for aforementioned dates worked out to 378.3164 MVA. Similarly minimum loading varied between 293.46 MVA to 310.31 MVA. Average of minimum loading of above dates works out to 305.8254 and average loading for all seven days taken into consideration was 338.1186 MVA.

14.28. On verification of above loading on ICT 1 before the curtailment of open access and after the curtailment, it transpires that the loading on the transformer reduced to 402.33 MVA after curtailment as against to maximum loading of 448.044 MVA prior to curtailment. Thus, the maximum reduction in the loading was found to be about 45.7 MVA. It is further observed that the average maximum loading was found to be 419.42 MVA prior to curtailment of STOA and the same was reduced to 378.3164 MVA i.e. approx 41 MVA. Here, we note that the transformer capacity is 500 MVA and maximum average loading was observed 419 MVA which seems safer to operate transformer with such loading. The instantaneous loading of 448 MVA which was observed only few minutes/hours on the transformer could have been controlled in real time by the SLDC at relevant time when such situation might have occurred. However, it cannot be ground to curtail the STOA granted for indefinite period.

14.29. The details of loading on 400/220 KV, 500 MVA ICT 2 at 400 KV Asoj S/S for the dates stated above is given in table below:

	Table 3- Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	0.029	372.869	363.778	364.495	370.098	337.927	375.869	
1:00	0.029	378.640	344.695	380.807	369.316	324.673	369.029	
2:00	0.076	377.876	340.076	373.367	384.098	312.360	370.222	
3:00	0.033	365.364	335.971	374.771	374.029	320.393	366.062	
4:00	0.018	365.451	335.171	363.255	365.255	321.611	355.036	
5:00	0.015	365.476	322.007	365.436	361.691	323.698	362.833	
6:00	0.029	394.029	331.869	375.142	369.051	351.695	378.938	

7:00	0.042	393.887	385.320	390.284	389.186	375.298	370.884	
8:00	0.046	390.284	390.273	410.764	403.749	371.513	384.996	
9:00	0.046	404.302	388.011	423.051	409.571	383.607	396.975	
10:00	0.051	405.331	388.095	393.302	411.367	358.796	420.953	
11:00	0.033	415.411	380.258	403.076	422.560	384.160	427.455	
12:00	0.582	393.702	352.211	389.524	429.084	385.793	415.564	
13:00	0.558	383.211	330.149	375.455	412.938	356.967	403.153	
14:00	0.556	377.047	330.869	376.084	414.218	370.793	410.735	
15:00	332.393	386.236	319.044	381.913	421.931	369.855	408.033	
16:00	332.913	407.655	321.058	407.062	420.240	378.811	379.029	
17:00	321.044	398.142	315.596	405.284	415.796	375.964	331.916	
18:00	315.822	391.640	299.146	399.295	404.916	376.989	301.095	
19:00	302.007	372.782	302.895	386.938	404.280	380.749	294.011	
20:00	324.080	360.156	283.040	389.098	402.691	371.156	0.049	
21:00	301.916	376.953	338.258	340.891	400.076	354.727	0.093	
22:00	312.309	370.556	343.146	373.018	386.746	354.756	0.029	
23:00	331.826	390.066	352.393	381.567	400.116	360.775	0.033	
0:00	324.342	380.847	346.967	370.098	388.567	351.604	0.029	
Average Loading								363.0521*
Maximum	332.913	415.411	390.273	423.051	429.084	385.793	427.455	
Average Maximum Loading								400.5683
Minimum	0.015	360.156	283.040	340.891	361.691	312.360	0.029	
Average Minimum Loading								276.3612

[* Transformer was not in service from 20:00 hrs. of 15.3.2014 to 14:00 hrs. of 16.3.2014. Hence, the loading for 18 hrs. has not been considered while computing average loading on transformer]

From the above table, it transpires that the maximum loading observed on ICT No.2 varied from 332.913 MVA to 429.084 MVA. The average maximum loading for aforementioned dates worked out to 400.568 MVA. Similarly minimum loading varied between 0.015 MVA to 361.691 MVA. Average of minimum loading of above dates works out to 276.3612 MVA and average loading for all seven days taken into consideration was 363.052 MVA.

14.30. The loading on above ICT for the period after curtailment of STOA by the respondents for various dates considered by the consultant is given in the table below

	Table 4 - Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	

Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	359.16	324.02	357.17	337.10	339.61	328.17	338.42	
1:00	340.04	298.57	348.84	317.41	320.71	317.40	323.83	
2:00	326.17	311.40	340.46	310.52	315.57	317.06	322.65	
3:00	317.43	311.16	328.63	307.13	324.16	310.45	324.40	
4:00	317.74	310.21	313.41	318.19	315.45	302.55	315.58	
5:00	321.44	303.60	307.35	326.12	315.18	304.61	310.69	
6:00	334.17	311.39	316.07	337.38	326.88	299.30	328.95	
7:00	309.48	304.21	317.59	326.65	310.23	292.97	317.13	
8:00	326.18	326.66	321.48	335.15	326.30	315.18	330.34	
9:00	321.91	341.91	339.33	359.48	359.34	339.49	351.59	
10:00	318.76	377.20	350.68	373.11	388.46	346.49	364.40	
11:00	336.84	365.98	368.50	383.75	394.45	358.82	386.30	
12:00	332.53	369.26	367.29	374.67	394.38	349.75	372.68	
13:00	330.25	346.43	368.75	365.94	378.67	339.20	345.05	
14:00	343.68	347.40	367.64	364.30	401.41	339.53	344.37	
15:00	340.40	344.27	378.16	363.72	399.92	346.75	364.07	
16:00	331.98	340.75	362.92	369.17	375.88	333.25	370.80	
17:00	338.12	339.89	356.67	371.02	376.49	330.54	363.92	
18:00	321.30	327.85	341.06	343.35	364.75	322.08	327.21	
19:00	314.74	304.93	313.45	339.99	344.80	313.31	334.67	
20:00	337.20	304.50	333.22	348.81	353.83	330.38	340.99	
21:00	330.37	313.92	332.15	331.17	344.74	328.16	337.38	
22:00	326.84	300.53	324.32	336.16	336.19	322.16	349.08	
23:00	332.40	318.75	343.48	348.37	354.90	335.29	358.50	
0:00	322.63	309.37	325.08	339.61	331.24	333.92	359.16	
Average Loading								337.5452
Maximum	359.16	377.20	378.16	383.75	401.41	358.82	386.30	
Average Maximum Loading								377.8296
Minimum	309.48	298.57	307.35	307.13	310.23	292.97	310.69	
Average Minimum Loading								305.2036

The maximum loading observed on ICT No.2 varied from 358.82 MVA to 401.41 MVA. The average maximum loading for aforementioned dates worked out to 377.8296 MVA. Similarly minimum loading varied between 292.97 MVA to 310.69 MVA. Average of minimum loading of above dates works out to 305.2036 MVA and average loading for all seven days taken into consideration was 337.5452 MVA.

14.31. On verification of above loading on ICT 2 before the curtailment of open access and after the curtailment it transpires that the loading on the transformer prior to curtailment was 429.084 MVA which reduced to 401.41 MVA after curtailment. Thus, the maximum reduction in the loading was about 27.6 MVA. The average maximum loading was found 400.56 MVA prior to curtailment of STOA and the same got reduced to 377.8296 MVA i.e. reduction of approx 22.7 MVA. Here, we note that the transformer capacity is 500 MVA and maximum average loading was observed 400.56 MVA which seems safer to operate transformer with such loading. As observed by us in para 14.28 above, instantaneous loading of 429.084 MVA on a 500 MVA transformer cannot be a genuine ground for curtailment of STOA for indefinite period.

14.32. It is observed that the avg. loading of ICT 2 was around 363 MVA and peak average loading was around 400 MVA which is approx. 80 % of 500 MVA Transformer. It is also noted that ICT 2 was out of service for 18 Hrs between 20.00 Hrs of 15.03.2014 to 14.00 Hrs of 16.03.2014. The maximum loading on ICT No.1 was observed 448.044 MVA on 15.3.2014 at 20.00 Hrs. on isolation of ICT No.2 which might be an instantaneous effect in loading of ICT No.1 because thereafter on loading of ICT No.1 from 21.00 Hrs to 14 Hrs. of 16.03.2014 was varied between 408 MVA to 354 MVA. Thus, the loading on ICT 1 and 2 during above period was within safer operating limit. During the said period we note that the STOA to the consumers were continued without any curtailment. The above facts proves beyond doubt that GETCO had managed to meet the outage of transformer by re-distribution of load during the outages of ICT 2 on 15.03.2014 to 16.03.2014 without curtailment and re-distribution of loading.

14.33. We note that the upstream network of 400 KV Asoj S/S i.e. 400 KV Indore-Asoj D/C line which is a part of CTU network was having loading within permissible limit and there was no congestion in above network. The independent consultant Shri V. J. Talwar has observed in his report that loading on CTU network upstream of 400 KV Asoj S/S i.e. 400 KV Indore- Asoj D/C line was well within the permissible limit and was not overloaded before the curtailment of

open access. Based on the above observations, we decide that the claim of the respondent SLDC that ICTs at Asoj were getting overloaded due to import of power by open access power from CTU grid was incorrect and not valid. Hence, the same is rejected.

14.34. Now, we deal with the loading on 220/132 KV ICTs at Asoj S/S to verify that the curtailment of open access claimed by the respondent due to overloading of the above ICTs.

14.35. The respondent SLDC had informed that at 400 KV Asoj S/S , there are three 220/132 kV ICTs viz. 2 ICTs of 100 MVA and 1 ICT of 150 MVA. Though there are two ICTs of 100 MVA at Asoj S/S, data for only one 100 MVA ICT was provided by the respondent SLDC. The loading on ICT of 150 and 100 MVA are indicated differently by the SLDC. However, for purpose of analysis the loading on 1×150 MVA transformer and 1×100 MVA transformer is considered combinedly by the Commission.

14.36. The loading on above ICTs prior to denial of open access are stated in the table below along with the Commission's observation of data.

	Table 5 – Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	92.498	186.700	171.080	158.384	161.890	174.991	155.804	
1:00	91.077	174.067	163.805	160.014	153.695	177.993	150.560	
2:00	87.241	176.457	164.053	158.992	158.385	176.449	148.043	
3:00	103.224	169.793	158.533	158.330	151.210	173.743	146.582	
4:00	102.802	165.836	154.755	152.356	149.408	168.664	142.091	
5:00	97.031	170.436	157.342	154.319	145.369	169.465	142.784	
6:00	98.557	182.355	154.601	158.770	153.876	183.500	149.837	
7:00	89.060	186.670	166.832	156.106	155.407	187.819	149.129	
8:00	90.293	162.027	176.834	160.391	143.936	164.592	150.961	
9:00	91.546	180.317	166.303	162.481	149.033	178.628	162.586	
10:00	84.974	197.107	176.045	167.656	149.587	187.475	166.088	
11:00	86.327	196.754	186.070	172.665	162.785	200.741	161.640	
12:00	87.943	200.380	178.153	168.805	171.971	200.713	166.831	
13:00	90.345	194.284	182.923	188.846	171.122	172.311	160.978	
14:00	92.903	191.689	186.079	184.915	166.138	181.082	154.494	
15:00	132.046	191.740	183.982	179.408	172.465	176.200	150.110	

16:00	132.186	189.666	179.985	187.679	170.081	183.756	149.921	
17:00	123.695	186.911	164.302	159.770	161.167	181.609	143.464	
18:00	117.281	180.412	163.096	155.206	158.549	169.580	116.543	
19:00	121.643	183.112	169.388	162.485	149.790	176.070	100.161	
20:00	126.818	180.780	191.206	150.992	157.463	174.070	92.159	
21:00	125.694	185.401	180.187	148.374	165.447	171.980	87.941	
22:00	125.579	175.724	176.905	161.567	165.341	175.565	92.457	
23:00	133.976	183.757	162.979	162.391	157.123	174.295	94.801	
0:00	131.533	180.027	175.299	161.890	159.427	171.727	92.498	
Average Loading								156.882
Maximum	133.976	200.380	191.206	188.846	172.465	200.741	166.831	
Average Maximum Loading								179.206
Minimum	84.974	162.027	154.601	148.374	143.936	164.592	87.941	
Average Minimum Loading								135.206

From the above table, it transpires that the maximum loading observed on ICTs varied from 133.976 MVA to 200.741 MVA. The average maximum loading for aforementioned dates worked out to 179.206 MVA. Similarly minimum loading varied between 84.974 MVA to 164.592 MVA. Average of minimum loading of above dates works out to 135.206 MVA and average loading for all seven days taken into consideration was 156.882 MVA.

14.37. The loading on above ICTs for the period after curtailment of STOA for various dates considered by the consultant is given in the table below:

	Table 6 – Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	160.713	155.851	150.578	161.929	162.570	151.346	157.793	
1:00	153.745	150.496	147.884	155.725	149.602	145.411	147.806	
2:00	142.835	141.867	136.503	149.903	147.537	142.091	142.575	
3:00	140.930	142.439	133.891	147.722	147.856	134.549	140.017	
4:00	137.221	137.152	128.094	142.681	139.555	130.500	135.313	
5:00	136.109	142.824	122.228	143.941	139.326	129.851	130.433	
6:00	138.716	141.834	129.043	148.109	144.280	133.606	140.333	
7:00	124.965	140.656	125.594	142.079	138.228	131.399	134.528	
8:00	126.517	144.418	124.576	146.448	139.111	134.510	134.129	
9:00	127.300	159.121	136.990	158.647	146.304	147.805	142.208	
10:00	129.800	174.161	153.016	169.108	169.506	162.419	160.725	

11:00	138.680	167.254	159.987	170.620	172.463	167.782	169.037	
12:00	136.336	174.149	165.340	173.650	173.476	165.998	163.708	
13:00	136.172	167.798	160.038	166.385	171.768	159.404	164.993	
14:00	138.472	168.390	160.748	165.445	177.449	163.554	165.614	
15:00	138.857	166.576	162.304	160.670	177.358	161.627	163.672	
16:00	136.439	160.208	159.002	162.074	162.950	154.418	160.013	
17:00	133.075	154.750	152.826	162.170	166.580	147.455	157.889	
18:00	125.516	145.675	138.728	149.002	153.636	137.458	148.229	
19:00	130.255	143.074	139.209	147.891	153.190	137.537	144.500	
20:00	140.207	143.381	148.236	151.537	156.551	148.755	151.144	
21:00	142.496	145.795	148.675	154.343	155.231	155.560	155.365	
22:00	141.515	148.476	145.783	158.659	148.463	155.120	152.855	
23:00	145.444	154.826	154.031	164.713	156.567	161.741	157.528	
0:00	151.171	158.967	152.416	162.570	149.199	160.000	160.713	
Average Loading								149.915
Maximum	160.713	174.497	165.340	173.650	177.449	167.782	169.037	
Average Maximum Loading								169.781
Minimum	124.965	137.152	122.228	142.079	138.228	129.851	130.433	
Average Minimum Loading								132.134

The maximum loading observed on ICTs varied from 160.713 MVA to 177.449 MVA. The average maximum loading for aforementioned dates worked out to 169.781 MVA. Similarly minimum loading varied between 122.228 MVA to 142.079 MVA. Average of minimum loading of above dates works out to 132.134 MVA and average loading for all seven days taken into consideration was 149.915 MVA.

14.38. On verification of above loading on above ICTs before the curtailment of open access and after the curtailment it transpires that the loading on the transformers prior to curtailment was 200.741 MVA which got reduced to 177.449 MVA. Thus, the reduction in the maximum loading was found to be about 23.3 MVA. The average maximum loading which was found 179.206 MVA prior to curtailment was reduced to 169.781 MVA. Thus, reduction in loading on these transformers were marginally of about 9.4 MVA only. Moreover, the loading as stated in above table indicates that the maximum loading on the transformers were within the limit and there is not much difference after curtailment of STOA by the SLDC. Thus, the submissions of

the respondent SLDC that overloading of 220/132 KV ICTs necessitated the curtailment of Open Access is unfounded and deserves to be rejected.

14.39. Now, we deal with loading on Asoj-Jambua 220 KV S/C line regarding which the respondents have stated that it was overloaded due to open access granted to the petitioners. The loading on above line prior to and after curtailment on various dates as stated in para above are considered from the data submitted by SLDC which is stated below:

	Table 7 – Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	145.691	184.615	162.026	167.182	203.124	173.906	189.110	
1:00	142.828	168.497	153.706	211.066	209.477	166.474	193.354	
2:00	134.256	168.566	145.730	239.213	207.214	159.312	191.510	
3:00	133.998	159.866	146.680	254.933	193.973	164.683	186.739	
4:00	133.085	156.468	145.766	237.886	185.282	158.741	182.174	
5:00	126.928	149.176	147.377	237.089	182.544	160.210	196.654	
6:00	122.695	164.933	159.636	224.971	188.131	177.715	211.651	
7:00	89.054	162.250	166.193	208.800	174.283	182.287	188.362	
8:00	103.286	171.367	177.636	224.621	202.997	179.465	193.234	
9:00	110.220	192.468	202.406	241.795	203.412	192.893	216.190	
10:00	127.996	191.650	219.907	185.122	214.375	212.242	231.427	
11:00	131.546	192.509	210.552	189.343	210.886	236.400	218.431	
12:00	128.826	191.434	197.899	189.211	233.182	236.594	218.448	
13:00	120.536	185.681	181.646	190.526	219.336	184.805	205.414	
14:00	129.848	183.516	184.958	185.664	218.640	191.470	202.003	
15:00	147.756	183.288	179.208	171.134	220.171	190.022	204.890	
16:00	140.998	183.914	160.219	178.438	204.281	182.198	191.887	
17:00	137.171	180.252	159.173	172.152	189.408	168.646	204.713	
18:00	129.812	170.213	166.690	163.637	181.778	157.240	196.582	
19:00	138.767	175.572	198.242	171.466	190.824	161.971	203.518	
20:00	158.981	174.238	213.358	185.722	205.375	170.827	145.502	
21:00	143.870	203.585	185.926	167.338	199.032	156.676	126.870	
22:00	146.135	180.842	159.319	188.978	188.016	153.400	126.017	
23:00	158.976	196.090	174.389	205.841	206.182	165.650	139.800	
0:00	160.423	188.030	173.748	203.124	212.371	165.470	145.691	
Average Loading								179.2806
Maximum	160.423	203.585	219.907	254.933	233.182	236.594	231.427	

Average Maximum Loading								220.007
Minimum	89.054	149.176	145.730	163.637	174.283	153.400	126.017	
Average Minimum Loading								143.042

	Table 8 – Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	176.77	145.78	191.06	174.37	180.81	163.22	171.05	
1:00	158.61	149.52	172.79	162.91	155.14	147.61	158.18	
2:00	145.62	143.20	161.29	152.28	154.49	134.38	146.86	
3:00	138.82	143.51	157.09	155.79	157.26	132.59	150.76	
4:00	138.01	137.34	149.88	159.95	155.21	125.91	133.26	
5:00	142.27	138.72	144.67	163.24	147.28	124.83	133.70	
6:00	142.98	142.75	150.22	171.54	151.60	128.86	143.90	
7:00	111.69	136.58	149.24	150.67	125.81	124.50	127.09	
8:00	131.86	154.19	163.68	178.21	157.14	160.39	149.25	
9:00	121.79	175.96	180.66	187.62	182.41	179.53	161.44	
10:00	122.34	195.07	189.70	190.50	201.87	166.46	165.18	
11:00	150.47	156.61	186.72	189.67	203.20	175.29	167.60	
12:00	158.12	181.03	196.92	197.81	211.76	170.44	169.32	
13:00	154.33	175.07	200.67	187.58	199.67	163.74	155.59	
14:00	155.28	163.78	204.15	173.38	212.98	160.35	146.70	
15:00	162.52	171.06	214.10	171.15	212.95	167.28	150.35	
16:00	142.83	146.91	193.04	162.88	179.71	140.15	152.10	
17:00	132.83	145.32	179.02	170.83	161.25	141.29	144.73	
18:00	126.91	144.42	169.95	149.78	148.72	132.87	140.44	
19:00	145.95	159.58	189.61	160.60	172.34	142.31	162.51	
20:00	156.83	144.65	205.13	168.89	170.18	154.59	149.37	
21:00	156.98	159.47	202.46	158.46	162.03	167.82	160.22	
22:00	152.31	146.26	178.01	155.02	139.74	151.03	159.34	
23:00	142.26	165.72	197.70	179.46	167.83	167.83	166.01	
0:00	154.74	168.72	195.72	180.81	160.14	172.35	176.77	
Average Loading								161.1433
Maximum	176.7744	195.0744	214.104	197.808	212.9784	179.5296	176.7744	
Average Maximum Loading								193.2919
Minimum	111.6852	136.5828	144.6696	149.7768	125.8128	124.5012	127.0872	
Average Minimum Loading								131.4451

From the above, it is observed that the maximum loading observed on above line prior to curtailment varied between 160.423 MVA to 254.933 MVA, whereas the same after the curtailment varied from 176.7744 MVA to 214.104 MVA. The average loading on this line before curtailment was 179.2086 MVA, whereas the same after curtailment was 161.1433 MVA, thus recording a reduction of about 18 MVA only.

14.40. Regarding the permissible loading on above line, GETCO has in its reply dated 1.07.2014 submitted that ACSR Zebra Conductors are utilized in the aforesaid lines. As per the submissions of SLDC, the length of line is only 32 kms, therefore, it can be safely loaded to its thermal limits. We note that there is no specific data available specifying thermal limit considered by GETCO while constructing the aforesaid line. GETCO failed to provide the relevant documents pertaining to the specification of the aforesaid line as given in the bid documents and test report for it. GETCO has stated that GETCO's 220 KV transmission lines are designed with 67°C conductor temperature and hence thermal loading capacity is 500 Amp. (190 MVA) and 390 Amp. (148 MVA) respectively at 40°C and 45°C ambient temperatures. As per CEA Transmission planning criteria thermal loading limit of 220 KV transmission line with ACSR Zebra conductor with 65°C conductor temperature is 473 Amp (180 MVA) and 346 Amp (132 MVA) respectively at 40°C and 45°C ambient temperature. Similarly, thermal loading limit of 220 KV transmission line with ACSR Zebra conductor with 75°C conductor temperature is 643 Amp (244 MVA) & 560 Amp (213 MVA) respectively at 40°C and 45°C ambient temperature. There is admission by GETCO that loading capacity of the transmission line depends upon ambient temperature as well as thermal loading of the conductor utilized in transmission network. The CEA planning criteria also indicates the thermal loading of the different type of conductors in its manual for Transmission Planning Criteria, which is stated below

Thermal Loading Limits for ACSR Zebra equivalent Conductors

Conductor Type (metallic area) and Dimension	***Ambient Temperature (deg C)***	***AMPACITY FOR Maximum Conductor Temperature (deg C)***					
		65	***75***	***85***	***95***	***120***	***150***
ACSR Zebra (484 Sq.mm) Dia:28.62mm	*40*	*473*	*643*	*769*	***NA***	***NA***	***NA***
	45	*346*	*560*	*703*	***NA***	***NA***	***NA***
	48	*240*	*503*	*661*	***NA***	***NA***	***NA***
	50	*128*	*462*	*631*	***NA***	***NA***	***NA***
Conductor Type (metallic area) and Dimension	***Ambient Temperature (deg C)***	***AMPACITY FOR Maximum Conductor Temperature (deg C)***					
		65	***75***	***85***	***90***	***95***	***120***
AAAC (479.00 sq mm) Dia:28.42 mm	*40*	*471*	*639*	*765*	*818*	*866*	*NA*
	45	*345*	*557*	*700*	*758*	*811*	*NA*
	48	*240*	*501*	*657*	*720*	*776*	*NA*
	50	*130*	*460*	*627*	*693*	*751*	*NA*

From the above, it transpires that there is no mention about 67˚ thermal loading in the CEA transmission planning criteria. It indicates the thermal loading limit at 65˚, 75˚, 85˚, 95˚, 120˚ and 150˚centigrade. The thermal loading limit considered at 67˚ C by the respondent GETCO has not been substantiated by it with documentary evidence. Moreover, there is no justification why the lowest thermal loading limits of the conductor is considered by the GETCO. The loading observed prior and after curtailment of open access by SLDC indicates that there is no substance to accept the thermal loading limit of the aforesaid line is 67˚ C with 40˚C temperature which work out to 190 MVA, while the same is determined at ambient temperature of 45˚ C and 67˚C thermal loading, it reduces to 148 MVA. The loading on above line seems quite higher in comparison to the loading specified limit shown in CEA planning Criteria for long time with and without curtailment of STOA. Therefore, the contention of GETCO that the conductor utilized for the above line is designed for thermal loading of 67˚C and ambient temperature of 40˚ and 45˚C temperature is unfounded and misplaced. We note that the loading on aforesaid line was more than 200 MVA on a number of occasions and the reduction due to curtailment in average loading is only about 18 MVA and in average maximum loading is about

27 MVA. The total curtailment of 126 consumers' open access by the respondent led to curtailment of 800 MW while reduction on loading of line was 18 MVA only.

14.41. We note that the action of SLDC to enmass curtailment of open access is not the right solution to reduce loading on this line. Jambua is connected to 220 kV Acchalia substation by four 220 kV lines. Acchhalia is further connected to Ukai Generation complex by means of four 220 kV lines. The data for Jambua substation indicate that it receives power from 220 kV Achhalia Substation. It also revealed that one or two circuits of Acchalia-Jambua section remained opened for load control. Opening of a circuit in a messed network generally overloads the other parallel network. GETCO and SLDC may consider to keep all the four circuits between Acchalia and Jambua closed to reduce loading on Jambua -Asoj line. It is informed that PGCIL is constructing a 400 kV Substation near Jambua, perhaps at Wagodia. This 400 kV substation was expected to be commissioned in December 2014. Once this substation is commissioned and 200 kV Jambua substation is connected to this new 400 kV substation, loading on this line is likely to get reduced substantially. Never the less, the data furnished by the SLDC clearly establishes that curtailment of open access has no direct relationship with overloading of this line.

14.42. Now, we deal with the loading of 220/132 kV ICTs at Jambua on the aforesaid dates to verify whether the constraint claimed by the respondents is present or not necessitating the curtailment of open access.

Here, the loading of all three ICTs 3×100 MVAs have been considered together. The loading data on the aforementioned dates of before curtailment is as follows:

	Table 9 – Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	19.3.2014	13.3.2014	7.3.2014	22.3.2014	
0:00	119.50	197.65	179.55	178.00	182.43	186.14	166.46	
1:00	120.18	184.82	172.23	167.94	170.65	188.75	158.81	
2:00	123.04	184.40	172.43	162.21	175.97	182.31	156.70	
3:00	140.54	179.46	165.25	161.93	174.00	179.90	151.81	

4:00	128.47	182.31	160.85	160.52	170.12	180.22	151.98	
5:00	129.45	179.18	157.18	152.83	166.86	171.44	142.87	
6:00	130.49	190.79	173.73	156.90	178.30	181.72	148.02	
7:00	134.42	197.23	188.85	171.68	183.27	189.27	158.00	
8:00	132.89	169.16	172.82	159.22	163.46	180.94	151.05	
9:00	122.73	182.75	187.85	162.01	177.38	197.18	162.00	
10:00	114.52	202.21	203.09	187.40	196.60	195.85	174.63	
11:00	122.79	203.75	181.54	209.28	204.17	191.88	193.31	
12:00	131.93	206.89	184.76	209.00	199.61	220.23	198.97	
13:00	135.31	199.86	192.50	207.74	200.68	184.57	194.87	
14:00	134.27	199.87	190.46	211.47	201.35	183.34	187.55	
15:00	172.73	196.74	184.53	203.71	193.22	183.92	179.78	
16:00	172.87	193.70	177.58	204.23	192.33	185.59	192.67	
17:00	165.40	196.42	183.16	199.78	195.26	187.82	190.58	
18:00	155.82	191.81	189.59	188.25	181.13	181.50	187.84	
19:00	158.56	191.47	198.15	183.85	186.87	194.65	168.26	
20:00	156.43	199.89	170.95	196.83	197.04	190.99	174.03	
21:00	166.22	191.66	192.64	191.17	190.29	197.99	178.19	
22:00	165.74	189.38	184.20	187.64	189.09	197.52	171.11	
23:00	167.79	191.65	184.10	188.19	189.33	186.11	177.05	
0:00	167.15	178.35	183.97	168.57	176.69	188.38	162.71	
Average Loading								177.58
Maximum	172.87	208.89	203.09	211.47	204.17	220.23	198.97	
Average Maximum Loading								202.52
Minimum	114.52	169.16	157.18	152.83	166.86	171.44	148.02	
Average Minimum Loading								153.06

From the above table, it transpires that the maximum loading observed on ICTs varied from 172.87 MVA to 220.23 MVA. The average maximum loading for aforementioned dates worked out to 202.52 MVA. Similarly minimum loading varied between 114.52 MVA to 171.44 MVA. Average of minimum loading of above dates works out to 153.06 MVA and average loading for all seven days taken into consideration was 177.58 MVA.

14.43. The loading on above ICTs for the period after curtailment of STOA for various dates considered above is given in the table below:

	Table 10 – Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	202.26	208.59	186.25	198.75	192.59	196.93	196.14	
1:00	195.74	192.89	183.79	192.20	189.05	187.96	189.53	
2:00	193.13	186.40	179.39	189.67	184.93	191.91	189.81	
3:00	186.80	187.29	171.70	181.45	184.30	184.09	179.14	
4:00	181.11	178.65	166.62	174.97	178.45	180.27	181.25	
5:00	176.77	173.76	162.31	166.93	172.96	170.99	169.93	
6:00	172.49	179.69	163.55	169.46	174.93	178.59	171.77	
7:00	181.20	180.62	164.17	176.24	178.36	180.73	182.29	
8:00	161.32	173.84	155.71	165.13	170.38	160.19	161.72	
9:00	171.18	183.70	163.96	181.39	181.03	175.64	175.48	
10:00	180.95	204.09	179.73	202.93	194.94	203.61	197.31	
11:00	183.70	210.04	203.25	216.86	211.99	221.62	214.64	
12:00	178.53	212.33	200.06	217.01	207.50	220.33	215.04	
13:00	183.06	209.83	195.15	215.81	213.16	215.30	213.20	
14:00	182.44	213.88	185.88	211.74	213.86	216.09	215.99	
15:00	172.09	200.50	180.04	214.36	204.99	206.12	207.16	
16:00	178.53	199.83	190.11	219.67	198.78	213.23	203.77	
17:00	182.02	195.92	187.47	210.09	212.12	200.87	201.58	
18:00	174.03	181.75	176.83	195.72	195.65	191.82	186.95	
19:00	168.19	178.63	158.84	184.56	183.20	187.06	184.44	
20:00	181.00	186.72	168.22	190.17	195.16	194.98	195.06	
21:00	181.85	185.09	176.33	193.24	195.98	198.83	197.84	
22:00	183.21	193.93	181.07	195.12	194.47	205.22	196.33	
23:00	197.49	199.24	180.95	196.21	194.23	208.91	202.50	
0:00	197.58	197.27	180.68	192.59	194.34	203.38	202.26	
Average Loading								189.71
Maximum	202.26	212.33	203.25	219.67	213.86	221.62	215.99	
Average Maximum Loading								212.93
Minimum	161.32	173.76	155.71	165.13	170.38	160.19	161.72	
Average Minimum Loading								164.03

The maximum loading observed on ICTs varied from 202.26 MVA to 221.62 MVA. The average maximum loading for aforementioned dates worked out to 212.93 MVA. Similarly minimum loading varied between 155.71 MVA to 173.76 MVA. Average of minimum loading of above dates works out to 164.03 and average loading for all seven days taken into consideration was 189.71 MVA.

14.44. On verification of above loading on ICTs before the curtailment of open access and after the curtailment, it transpires that the loading on the transformers after curtailment increased from 220.23 MVA to 221.62 MVA.

14.45. We note that the above data submitted clearly establishes that the average maximum loading on these three transformers having an installed capacity of 300 MVA had been only 202.52 MVA before the curtailment. Hence, the claim of the respondent SLDC that the above ICTs were overloaded and one of the reason of upstream congestion in the grid and lead to curtailment of STOA is invalid and incorrect. It is also observed that the loading on these transformer increased instead of decreasing after curtailment of open access and maximum loading increased to 221.6 MVA. Similarly the sustained loading also increased from 202.52 MVA to 212.93 MVA. Thus, the data provided by SLDC for the above transformers at Jambuva S/S clearly establishes that the contention of the respondents for curtailment of STOA on a ground of upstream network congestion which consists of above sub-station ICT is unacceptable and the same is rejected.

14.46. Now, we consider the loading of Vav – Kosamba 220 kV S/C line to verify the constraint on the same. The loadings on this line before curtailment of open access for aforementioned dates are given below,

Table 11 – Loadings during March 2014 before denial of Open Access

	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	174.13	177.02	154.73	201.79	141.79	161.32	164.68	
1:00	161.27	179.24	151.10	201.73	146.10	154.23	149.10	
2:00	153.38	166.56	134.19	203.21	152.12	149.85	152.09	
3:00	165.39	159.13	128.93	206.70	150.16	158.06	147.23	
4:00	170.61	166.06	103.26	199.55	148.23	155.01	147.89	
5:00	176.63	172.35	119.07	0.03	148.12	155.15	151.13	
6:00	181.94	185.43	161.01	0.05	147.29	165.55	160.60	
7:00	164.19	204.16	165.08	0.02	135.98	181.17	140.02	
8:00	164.90	206.24	144.13	0.02	151.25	179.42	148.48	
9:00	157.50	195.01	155.26	0.02	149.21	176.22	156.17	

10:00	175.95	203.51	158.56	0.04	174.30	195.39	192.55	
11:00	168.66	183.21	168.35	6.62	168.80	206.99	225.47	
12:00	162.49	176.39	162.74	0.03	179.36	211.53	228.64	
13:00	145.60	184.09	156.73	0.02	167.02	172.90	241.29	
14:00	163.19	179.99	186.97	0.04	180.38	171.66	240.04	
15:00	157.09	180.54	211.52	6.62	189.18	169.81	201.84	
16:00	136.29	151.34	196.51	0.04	179.06	164.96	176.52	
17:00	147.18	139.90	173.80	0.02	163.44	147.81	174.94	
18:00	97.39	136.58	155.97	178.29	160.81	139.58	172.31	
19:00	159.00	188.78	178.43	193.04	177.32	170.86	209.09	
20:00	145.18	201.70	194.06	148.51	182.82	181.38	201.83	
21:00	154.71	202.18	183.27	134.51	183.29	165.28	183.05	
22:00	154.81	170.68	162.25	127.48	170.23	166.49	170.86	
23:00	164.31	176.28	165.50	131.91	168.90	171.34	173.38	
0:00	148.25	165.13	152.81	141.79	173.48	161.94	174.13	
Average Loading								156.078
Maximum	181.94	206.24	211.52	206.70	189.18	211.53	241.29	
Average Maximum Loading								206.91
Minimum	97.39	136.58	103.26	0.02	135.98	139.58	140.02	
Average Minimum Loading								125.47

From the above table, it is observed that the maximum loading observed on the above line varied between 181.94 MVA to 241.29 MVA. The average maximum loading for aforementioned dates worked out to 206.91 MVA. Similarly minimum loading varied between 0.02 MVA to 140.02 MVA. Average of minimum loading of above dates works out to 125.47 MVA and average loading for all seven days taken into consideration was 156.078 MVA.

14.47. The loading on above line for the period after curtailment of STOA by the respondents is given in the table below

	Table 12 - Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	184.54	164.47	190.31	184.66	193.22	172.56	180.02	
1:00	173.73	156.37	173.74	175.41	176.69	161.22	181.02	
2:00	168.87	161.57	161.88	177.28	170.78	146.06	169.30	
3:00	160.11	158.25	163.32	171.11	176.92	145.17	167.89	

4:00	159.24	161.92	159.00	172.85	182.08	150.30	165.82	
5:00	167.48	162.49	166.56	178.90	176.57	150.85	162.67	
6:00	164.73	159.06	162.36	176.34	170.35	155.43	167.32	
7:00	150.65	169.32	168.21	160.86	156.99	157.43	159.45	
8:00	167.99	178.61	177.97	188.10	179.21	168.89	173.92	
9:00	167.38	175.44	181.35	183.39	195.99	178.08		
10:00	171.20	185.40	184.92	186.73	202.49	174.51		
11:00	181.67	164.40	180.42	185.21	200.94	178.87		
12:00	176.38	177.69	193.20	176.25	202.47	173.22		
13:00	174.85	189.09	188.69	175.33	194.74	164.15		
14:00	173.01	185.37	192.74	165.31	200.42	161.07	161.90	
15:00	185.28	165.97	182.22	175.51	200.78	162.92	168.29	
16:00	171.33	180.28	171.71	162.42	183.90	149.63	157.04	
17:00	159.38	166.30	162.78	168.79	167.02	139.92	155.34	
18:00	167.54	162.09	157.93	158.49	159.11	130.57	160.82	
19:00	192.43	166.22	180.17	175.97	179.15	146.52	174.79	
20:00	190.98	184.41	195.46	187.12	184.74	158.15	183.66	
21:00	183.30	177.13	191.79	185.84	175.04	151.26	180.50	
22:00	186.30	180.09	189.34	183.05	167.70	152.35	186.12	
23:00	183.51	184.29	184.48	189.91	180.38	162.22	180.73	
0:00	186.56	188.27	181.91	193.22	171.42	169.05	184.54	
Average Loading								173.32
Maximum	192.43	193.30	195.46	193.22	202.49	178.87	186.12	
Average Maximum Loading								191.70
Minimum	150.65	156.37	157.93	158.49	156.99	130.57	155.34	
Average Minimum Loading								152.33

The maximum loading observed on above line varied from 178.87 MVA to 202.49 MVA. The average maximum loading for aforementioned dates worked out to 191.7 MVA. Similarly minimum loading varied between 130.57 MVA to 158.49 MVA. Average of minimum loading of above dates works out to 152.33 and average loading for all seven days taken into consideration was 173.32 MVA.

14.48. On verification of loading on above line before the curtailment of open access and after the curtailment it transpires that the maximum loading on the line prior to curtailment was 241.29 MVA which reduced to 202.49 MVA. Thus, the reduction in the maximum loading found was

about 38.8 MVA. The average maximum loading which was found 206.91 MVA prior to curtailment was reduced to 191.70 MVA. Thus, reduction in loading on this line was marginally of about 15.2 MVA only.

14.49. The above details submitted by the respondent indicates that 220 kV Vav - Kosamba S/C line was critically loaded with sustained loading of 207 MVA before curtailment. The sustained loading on this line was reduced to 192 MVA after curtailment but the line remained critically loaded. Sustained loading on this line was reduced by 15 MVA only. Here we note that if the contention of the respondents with respect to the design of the transmission line system of 220 KV with consideration of ACSR Zebra conductor and thermal loading of the lines is based on 67˚ temperature the line was operating on a critically overloaded conditions because the permissible loading capacity as per the submissions of the respondents is 190 MVA. Thus, the curtailment of the 800 MW of open access on a ground of upstream network condition is not a valid ground for denial/curtailment of open access granted by the respondents to STOA. We therefore, decide that the contention of the respondent that the curtailment of open access of the order of 800 MW was not correct solution to reduce the loading.

14.50. Now, we deal with the loadings on 220 kV Ukai – Mota D/C line to verify the whether the constraints were prevailing on the same or not.

The Loading pattern of both the have been combined for the sake of convenience. The loadings on both circuits for the period of pre curtailment of open access is given below,

	Table 13 – Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	314.10	306.43	255.15	251.87	276.02	248.99	311.84	
1:00	312.34	284.04	252.01	0.03	248.07	240.55	266.53	
2:00	297.41	261.40	228.60	0.05	261.23	232.45	267.17	
3:00	289.75	239.45	227.18	90.88	267.83	243.92	260.19	
4:00	280.95	254.20	219.48	224.86	254.24	239.61	258.30	
5:00	293.07	305.48	230.43	305.09	260.36	252.43	270.00	
6:00	333.94	331.51	260.83	322.42	260.41	266.76	278.41	

7:00	318.99	388.07	279.49	321.94	290.59	306.76	315.26	
8:00	313.28	395.88	264.49	307.33	280.18	296.97	342.62	
9:00	325.96	386.70	321.09	280.22	315.34	335.47	366.23	
10:00	355.22	365.16	329.53	237.55	372.64	424.45	400.55	
11:00	338.37	345.76	341.63	224.56	375.83	414.67	403.96	
12:00	329.43	307.86	334.02	188.22	355.30	404.66	391.04	
13:00	340.07	257.82	307.85	180.96	329.90	361.35	375.44	
14:00	330.80	257.71	316.27	190.98	379.21	375.80	384.33	
15:00	281.96	293.12	325.47	200.04	400.52	376.74	369.08	
16:00	256.77	319.64	326.12	226.43	398.86	391.04	390.92	
17:00	267.93	318.72	318.99	229.47	377.85	372.32	396.08	
18:00	244.27	331.12	318.46	276.67	417.03	393.11	394.27	
19:00	316.99	362.08	369.89	324.78	434.03	424.48	446.44	
20:00	307.23	312.80	370.91	279.96	407.88	385.72	413.13	
21:00	330.81	315.88	343.10	293.20	363.18	354.35	385.86	
22:00	302.33	327.10	311.56	296.99	340.46	334.08	378.67	
23:00	308.66	294.88	273.66	266.15	303.32	313.60	336.74	
0:00	263.52	261.69	266.41	276.02	295.49	253.83	314.10	
Average Loading								307.97
Maximum	355.22	395.88	370.91	324.78	434.03	424.59	446.44	
Average Maximum Loading								393.12
Minimum	244.27	239.45	219.48	0.02	248.07	232.45	258.30	
Average Minimum Loading								240.34

From the above table, it is observed that the maximum loading observed on the above line varied between 324.78 MVA to 446.44 MVA. The average maximum loading for aforementioned dates worked out to 393.12 MVA. Similarly minimum loading varied between 0.02 MVA to 258.30 MVA. Average of minimum loading of above dates works out to 240.34 and average loading for all seven days taken into consideration was 307.97 MVA.

14.51. The loading on above line for the period after curtailment of STOA by the respondents is given in the table below:

	Table 14 – Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	397.75	424.17	324.75	456.43	414.33	409.97	395.65	
1:00	391.72	367.37	297.18	437.82	387.76	396.06	396.27	
2:00	385.21	367.06	291.48	432.35	388.41	379.04	380.12	
3:00	368.71	358.55	288.67	375.10	390.94	371.76	383.00	
4:00	368.93	361.13	286.39	390.30	390.19	381.39	373.83	
5:00	380.80	366.88	286.05	404.33	383.65	379.22	368.76	
6:00	379.66	368.38	283.10	399.35	386.00	386.46	373.58	
7:00	365.61	387.63	316.22	390.65	382.76	401.43	380.69	
8:00	391.54	398.65	313.28	419.21	398.68	370.13	399.10	
9:00	429.30	409.50	329.23	422.32	424.90	388.04	399.12	
10:00	441.33	410.28	325.23	431.50	450.76	436.75	406.57	
11:00	407.15	453.80	345.95	433.67	441.57	441.93	420.52	
12:00	391.62	418.84	354.43	413.74	441.94	433.03	409.35	
13:00	381.97	401.70	318.10	403.71	419.87	401.26	375.64	
14:00	379.01	384.53	335.63	398.58	429.01	398.92	379.89	
15:00	393.76	409.03	338.26	434.77	442.45	397.61	441.30	
16:00	384.75	391.36	321.91	396.71	426.67	391.45	394.32	
17:00	363.43	394.33	311.04	404.61	404.92	373.76	389.46	
18:00	373.21	404.64	304.14	389.48	400.78	378.32	443.97	
19:00	412.57	421.12	336.68	416.12	423.17	395.34	413.54	
20:00	405.78	400.46	341.94	417.56	421.94	410.87	457.21	
21:00	407.64	407.56	344.30	413.68	408.46	348.84	408.34	
22:00	408.29	449.73	372.19	409.24	392.77	347.05	394.27	
23:00	425.08	451.42	320.83	416.98	404.80	354.81	391.40	
0:00	420.40	458.92	312.75	414.33	390.91	363.09	397.75	
Average Loading								389.73
Maximum	441.33	458.92	372.19	456.43	450.76	441.93	457.21	
Average Maximum Loading								439.82
Minimum	363.43	358.55	283.10	375.10	382.76	347.05	368.76	
Average Minimum Loading								354.11

The maximum loading observed on above line varied from 372.19 MVA to 458.92 MVA. The average maximum loading for aforementioned dates worked out to 439.82 MVA. Similarly minimum loading varied between 283.10 MVA to 382.76 MVA. Average of minimum loading

of above dates works out to 354.11 and average loading for all seven days taken into consideration was 389.73 MVA.

14.52. On verification of above loading on above line before the curtailment of open access and after the curtailment it transpires that the maximum loading on the lines prior to curtailment was 446.44 MVA was increased to 458.92 MVA. Thus, there was increase in the maximum loading found of about 12.48 MVA. The average maximum loading which was found 393.12 MVA prior to curtailment was increased to 439.82 MVA. Thus, in loading on this line increased after curtailment by 46.7 MVA.

14.53. The above tables indicates that the loading on this D/C line was of the order of 393 MVA (197 MVA/ckt) before curtailment. The loading increased to 440 MVA (220 MVA/ckt) after curtailment of open access. The above analysis clearly proves that importing power by the open access consumers was not the reason for critical loading of this line. Based on the above observations we decides that the loading of above line is not a valid reason for curtailment of 800 MW of Open Access.

14.54. Now, we consider the Loadings on 220 kV Chikhli–Vapi S/C line to verify the constraint on the same.

The loadings on this line before and after the curtailment of open access for above specified dates has been shown in Tables below,

	Table 15 – Loadings during March 2014 before denial of Open Access						
	Sun	Mon	Tues	Wed	Thus	Fri	Sat
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014
0:00	-	-	-	86.40	-	-	-
1:00	-	-	-	45.60	-	-	-
2:00	-	-	-	52.80	-	-	-
3:00	-	-	-	84.00	-	-	-
4:00	-	-	-	81.60	-	-	-
5:00	-	-	-	91.20	-	-	-
6:00	-	-	-	67.20	-	-	-
7:00	-	-	-	64.80	-	-	-
8:00	-	-	-	69.60	-	-	-

9:00	-	-	-	-	-	-	-
10:00	-	-	-	-	-	-	-
11:00	-	-	-	-	-	-	-
12:00	-	-	-	-	-	-	-
13:00	-	-	-	-	-	-	-
14:00	-	-	-	-	-	-	-
15:00	-	-	-	-	127.20	-	-
16:00	-	-	-	-	129.60	-	-
17:00	-	-	-	-	117.60	-	-
18:00	-	-	-	-	127.20	-	-
19:00	-	-	-	-	146.40	-	-
20:00	96.00	-	-	-	136.80	-	-
21:00	98.40	-	-	-	129.60	-	-
22:00	100.80	-	-	-	122.40	-	-
23:00	108.00	-	-	-	91.20	-	-
0:00	91.20	-	-	-	84.00	-	-

	Table 16 – Loadings during April 2014 after denial of open access						
	Sun	Mon	Tues	Wed	Thus	Fri	Sat
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014
0:00	-	-	124.80	-	-	-	-
1:00	-	-	100.80	-	-	-	-
2:00	-	-	98.40	-	-	-	-
3:00	-	-	98.40	-	-	-	-
4:00	-	-	108.00	-	-	-	-
5:00	-	-	112.80	-	-	-	-
6:00	-	-	103.20	-	-	-	-
7:00	-	-	110.40	-	-	-	-
8:00	-	-	96.00	-	-	-	-
9:00	-	-	93.60	-	-	-	-
10:00	-	-	98.40	-	-	-	-
11:00	-	-	93.60	-	-	-	-
12:00	-	-	105.60	-	-	-	-
13:00	-	-	100.80	-	-	-	-
14:00	-	-	105.60	-	-	-	-
15:00	-	-	91.20	-	-	-	-
16:00	-	-	96.00	-	-	-	-
17:00	-	-	100.80	-	-	-	-
18:00	-	-	100.80	-	-	-	-

19:00	-	-	112.80	-	-	-	-
20:00	-	-	117.60	-	-	-	-
21:00	-	-	122.40	-	-	-	-
22:00	-	-	129.60	-	-	-	-
23:00	-	-	108.00	-	-	-	-
0:00	-	-	108.00	-	-	-	-

14.55. The data submitted by the SLDC indicates that the seven days prior to curtailment of open access considered by the Commission indicates that out of seven days the above line was in operation only three days for few hours, i.e. on 12.03.2014 it was in operation only for eight hours. On 13.03.2014 it was in operation only for 15 hours to 24 hours and on 16.03.2014 the same line was in operation from 20 hours to 24 hours. Similarly, the data considered by the Commission after the curtailment of the open access by the respondent for seven days indicates that the aforesaid line was kept in service only in one day, i.e. 1.04.2014. The loading on the above transmission line indicates that prior to curtailment of STOA the maximum loading observed on the line was 146.40 MVA and the same was found 129.60 MVA after the curtailment of open access. The loading on above line was within the limit. Moreover, we note that the 220 kV Chikhali – Vapi S/C line was kept open most of the time. Loading on days when it was brought into service was well within limits. It proves beyond the doubt that, there was no question of getting the above line over loaded due to open access. The claim of the respondent SLDC is misplaced and not acceptable.

14.56. Now, we consider the Loadings on 220 kV Kakrapar - Vapi D/C line for verifying the constraints as claimed by the respondents.

The Loading pattern of both the circuits has been clubbed together for sake of convenience. The loading data for the specified dates before the curtailment is as under:

	Table 17 – Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	264.00	148.80	206.40	172.80	168.00	196.80	225.60	

1:00	268.80	148.80	194.40	144.00	163.20	196.80	204.00	
2:00	259.20	122.40	168.00	148.80	158.40	192.00	208.80	
3:00	264.00	129.60	165.60	182.40	158.40	192.00	213.60	
4:00	276.00	139.20	158.40	194.40	158.40	189.60	220.80	
5:00	283.20	163.20	184.80	216.00	172.80	192.00	230.40	
6:00	285.60	168.00	225.60	184.80	163.20	199.20	232.80	
7:00	259.20	218.40	216.00	177.60	158.40	232.80	242.40	
8:00	240.00	206.40	192.00	172.80	153.60	216.00	235.20	
9:00	237.60	187.20	218.40	172.80	148.80	206.40	240.00	
10:00	273.60	230.40	220.80	182.40	204.00	244.80	273.60	
11:00	256.80	206.40	235.20	168.00	206.40	230.40	273.60	
12:00	247.20	220.80	242.40	168.00	216.00	232.80	280.80	
13:00	249.60	206.40	235.20	168.00	187.20	211.20	292.80	
14:00	264.00	182.40	225.60	175.20	216.00	216.00	292.80	
15:00	249.60	206.40	240.00	187.20	196.80	201.60	290.40	
16:00	220.80	175.20	230.40	172.80	196.80	225.60	278.40	
17:00	261.60	153.60	213.60	158.40	175.20	213.60	256.80	
18:00	228.00	153.60	218.40	158.40	177.60	216.00	268.80	
19:00	276.00	206.40	240.00	230.40	206.40	268.80	326.40	
20:00	216.00	192.00	244.80	170.40	199.20	264.00	331.20	
21:00	216.00	192.00	235.20	196.80	187.20	237.60	316.80	
22:00	218.40	175.20	220.80	170.40	180.00	230.40	307.20	
23:00	225.60	172.80	211.20	153.60	160.80	218.40	285.60	
0:00	206.40	146.40	201.60	168.00	153.60	201.60	264.00	
Average Loading								210.99
Maximum	285.60	230.40	244.80	230.40	216.00	268.80	331.20	
Average Maximum Loading								258.17
Minimum	206.40	122.40	158.40	144.00	148.80	189.60	204.00	
Average Minimum Loading								167.657

From the above table, it is observed that the maximum loading observed on the above lines varied between 216 MVA to 331.20 MVA. The average maximum loading for aforementioned dates worked out to 258.17 MVA. Similarly minimum loading varied between 122.40 MVA to 206.40 MVA. Average of minimum loading of above dates works out to 167.657 and average loading for all seven days taken into consideration was 210.99 MVA.

14.57. The loading on above lines for the period after curtailment of STOA by the respondents is given in the table below:

	Table 18 – Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	254.40	297.60	254.40	273.60	268.80	292.80	264.00	
1:00	237.60	273.60	220.80	271.20	249.60	266.40	242.40	
2:00	230.40	240.00	220.80	266.40	254.40	244.80	220.80	
3:00	223.20	213.60	220.80	244.80	249.60	249.60	211.20	
4:00	230.40	223.20	230.40	261.60	266.40	259.20	213.60	
5:00	247.20	240.00	235.20	273.60	261.60	273.60	223.20	
6:00	225.60	218.40	228.00	259.20	242.40	285.60	228.00	
7:00	206.40	261.60	235.20	256.80	259.20	300.00	228.00	
8:00	206.40	247.20	225.60	261.60	259.20	276.00	223.20	
9:00	206.40	266.40	223.20	264.00	283.20	290.40	223.20	
10:00	211.20	254.40	232.80	261.60	300.00	288.00	225.60	
11:00	218.40	288.00	225.60	283.20	295.20	280.80	247.20	
12:00	206.40	290.40	240.00	285.60	297.60	307.20	240.00	
13:00	206.40	273.60	230.40	273.60	278.40	300.00	247.20	
14:00	196.80	256.80	240.00	254.40	290.40	285.60	244.80	
15:00	196.80	283.20	223.20	254.40	280.80	292.80	252.00	
16:00	196.80	280.80	223.20	256.80	278.40	283.20	230.40	
17:00	182.40	278.40	220.80	271.20	244.80	290.40	240.00	
18:00	206.40	285.60	220.80	256.80	264.00	288.00	252.00	
19:00	266.40	316.80	242.40	278.40	295.20	302.40	268.80	
20:00	249.60	300.00	254.40	304.80	290.40	333.60	266.40	
21:00	244.80	292.80	254.40	307.20	280.80	309.60	264.00	
22:00	256.80	297.60	256.80	304.80	278.40	302.40	259.20	
23:00	237.60	283.20	237.60	292.80	280.80	307.20	244.80	
0:00	247.20	297.60	240.00	268.80	266.40	309.60	254.40	
Average Loading								257.29
Maximum	266.40	316.80	256.80	307.20	300.00	333.60	268.80	
Average Maximum Loading								292.80
Minimum	182.40	213.60	220.80	244.80	242.40	244.80	211.20	
Average Minimum Loading								222.86

The maximum loading observed on above lines varied from 256.80 MVA to 333.60 MVA. The average maximum loading for aforementioned dates worked out to 292.80 MVA. Similarly

minimum loading varied between 182.40 MVA to 244.80 MVA. Average of minimum loading of above dates works out to 222.86 and average loading for all seven days taken into consideration was 257.29 MVA.

14.58. On verification of above loading on above line before the curtailment of open access and after the curtailment it transpires that the maximum loading on the lines prior to curtailment was 331.20 MVA which increased to 333.60 MVA. Thus, the increase in the maximum loading found was about 2.4 MVA. The average maximum loading which was found 258.17 MVA prior to curtailment was increased to 292.80 MVA. Thus, increase in loading on this line was of about 34.63 MVA.

14.59. The analysis of data submitted by respondent, SLDC reveals that the loading on this D/C line was well within limits before curtailment of open access and also so after curtailment of STOA granted by the SLDC. In fact the sustained loading got increased from 258 MVA to 293 MVA on both the circuits. It proves that the claim of the SLDC that curtailment of open access was necessitated to avoid over loading in upstream transmission network is incorrect.

14.60. Now, we consider the loadings on 220 kV Hadala – Nyara S/C line to verify the same for constraints claimed by the respondents. The data for 220 KV Hadala – Nyara S/C were provided by SLDC in MW capacity basis. Therefore, while considering the analysis, the same are considered in MW only. While the details of other elements are in MVA basis , the same are considered in MVA and analysis carried out on MVA basis only.

The loading details of the above line for pre curtailment period is as below,

	Table 19 – Loadings during March 2014 before denial of Open Access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	
Time	16.3.2014	10.3.2014	4.3.2014	12.3.2014	13.3.2014	7.3.2014	15.3.2014	
0:00	386.67	255.22	242.12	304.25	203.46	226.24	285.72	
1:00	328.77	236.92	192.35	260.14	170.61	256.12	298.28	
2:00	300.31	270.44	206.24	270.39	165.04	237.20	293.63	
3:00	292.75	271.78	231.72	241.38	159.11	225.94	270.24	
4:00	270.35	260.69	231.57	202.00	141.38	179.14	246.11	
5:00	271.01	240.62	242.71	193.10	180.03	187.61	295.38	

6:00	257.39	271.18	251.64	102.12	231.40	203.78	366.20	
7:00	293.12	324.77	213.12	108.08	288.06	191.68	391.48	
8:00	341.46	336.13	227.76	115.24	303.42	154.48	399.26	
9:00	399.18	351.38	266.06	135.30	358.34	221.36	414.59	
10:00	409.79	346.92	280.60	140.33	415.55	213.82	448.92	
11:00	416.59	365.43	317.48	168.62	452.94	261.54	425.64	
12:00	396.21	352.21	255.34	178.85	411.30	233.55	385.15	
13:00	367.26	343.36	266.02	174.08	381.73	257.01	357.98	
14:00	375.28	370.97	280.87	211.28	419.36	274.64	389.75	
15:00	332.77	377.64	274.64	254.36	425.76	295.34	415.22	
16:00	314.63	369.90	277.99	220.95	415.11	288.75	424.14	
17:00	304.17	356.23	287.80	188.90	380.92	255.54	420.50	
18:00	203.65	324.61	275.83	149.59	334.72	251.60	394.98	
19:00	218.03	319.79	303.05	194.06	349.07	288.88	375.08	
20:00	250.20	279.94	314.07	319.85	289.90	251.14	347.74	
21:00	226.82	252.80	256.18	240.34	222.36	263.93	327.64	
22:00	221.33	227.56	275.46	217.39	223.89	250.39	381.59	
23:00	251.50	280.00	227.96	232.14	203.20	256.91	419.91	
0:00	188.63	251.82	169.48	203.46	136.68	266.18	386.67	
Average Loading								280.39
Maximum	416.59	377.64	317.48	319.85	452.94	295.34	448.92	
Average Maximum Loading								375.54
Minimum	188.63	227.56	169.48	102.12	136.68	154.48	246.11	
	Average Minimum Loading							175.00

From the above table, it is observed that the maximum loading observed on the above line varied between 295.34 MW to 452.94 MW. The average maximum loading for aforementioned dates worked out to 375.54 MW. Similarly minimum loading varied between 102.12 MW to 246.11 MW. Average of minimum loading of above dates works out to 175 MW and average loading for all seven days taken into consideration was 280.39 MW.

14.61. The loading on above line for the period after curtailment of STOA by the respondents is given in the table below:

	Table 20 – Loadings during April 2014 after denial of open access							
	Sun	Mon	Tues	Wed	Thus	Fri	Sat	

Time	13.4.2014	7.4.2014	1.4.2014	9.4.2014	10.4.2014	4.4.2014	12.4.2014	
0:00	298.78	347.62	327.78	344.32	370.05	361.49	325.80	
1:00	294.39	317.26	233.32	356.68	356.97	345.92	279.21	
2:00	254.16	256.13	237.85	332.26	309.22	331.08	264.36	
3:00	221.31	212.88	256.13	317.72	293.44	352.96	235.18	
4:00	221.64	191.03	231.98	279.46	284.57	357.04	221.70	
5:00	250.12	164.04	213.06	279.71	278.24	371.20	222.70	
6:00	298.61	201.45	256.51	336.96	346.80	391.04	283.58	
7:00	316.25	254.27	299.30	356.99	357.22	403.35	292.45	
8:00	344.93	289.20	323.18	366.62	345.97	389.23	322.56	
9:00	389.57	261.62	343.03	342.00	379.66	429.83	362.85	
10:00	399.36	254.21	348.66	365.81	414.56	426.15	362.12	
11:00	423.15	393.72	339.26	384.61	447.22	440.35	398.88	
12:00	414.02	409.74	339.93	399.75	415.16	444.86	384.31	
13:00	374.80	400.57	304.40	385.52	375.12	414.01	370.62	
14:00	370.20	423.59	324.01	379.62	390.48	410.06	392.86	
15:00	375.99	448.28	302.10	381.26	391.59	385.27	384.45	
16:00	361.41	430.30	281.11	366.86	396.28	361.96	345.30	
17:00	309.26	438.52	298.60	332.92	330.38	341.55	319.49	
18:00	292.50	394.38	280.68	287.70	302.78	322.50	265.41	
19:00	278.48	385.74	307.27	273.87	314.25	348.54	233.71	
20:00	336.27	386.41	385.63	336.22	333.67	381.15	309.40	
21:00	309.72	366.15	362.34	351.24	351.70	333.21	297.39	
22:00	361.65	404.87	366.54	367.29	374.15	314.51	308.07	
23:00	385.92	414.72	386.31	390.58	407.54	369.42	325.94	
0:00	360.91	363.12	356.71	370.05	347.49	345.46	298.78	
Average Loading								337.935
Maximum	423.15	448.28	386.31	399.75	447.22	444.86	398.88	
Average Maximum Loading								421.21
Minimum	221.31	164.04	213.06	273.87	278.24	314.51	221.7	
Average Minimum Loading								240.96

The maximum loading observed on above line varied from 386.31 MW to 448.28 MW. The average maximum loading for aforementioned dates worked out to 421.21 MW. Similarly minimum loading varied between 164.04 MW to 314.51 MW. Average of minimum loading of

above dates works out to 240.96 MW and average loading for all seven days taken into consideration was 337.935 MW.

14.62. On verification of loading on above line before the curtailment of open access and after the curtailment it transpires that the maximum loading on the lines prior to curtailment was 452.94 MW which reduced to 448.28 MW Thus, the reduction in the maximum loading was about 4.66 MW only. The average maximum loading which was found 375.54 MW prior to curtailment has increased to 421.21 MW. Thus, the loading on this line increased by 45.67 MW after curtailment.

14.63. The above data provided by the SLDC indicates that the loading on this D/C line was 376 MW before curtailment and was within limits before curtailment of open access. The loading increased to 421 MW after the curtailment of the open access which indicates that after curtailment, loading on each circuit was increased by about 23 MW. It transpires that the curtailment of open access by the respondent SLDC was of no consequence on allowing curtailment. Thus, it is clear that curtailment was not carried out to avoid loading of network.

14.64. The Commission has considered the Average Maximum Loading (Sustained Loading) on each element of the transmission network to decide that whether the overloading or upstream constraint on particular element of the transmission system was occurred or not instead of considering the maximum loading on each transmission element which are analyzed in above paras because the maximum loading on transmission elements may be occurred for few seconds minutes or hours during the period of analysis and it will not give the correct picture of the loading persist on the element of the transmission network. Based on the above consideration the details about the summary of the design loading of the element, Sustained Loading during peak period before curtailment and Sustained Loading during peak period after curtailment is given in Table below:

Sl No	Transmission Element Name	Permissible loading Limit.	Sustained Loading during peak period before curtailment	Sustained Loading during peak period after curtailment
1	400 kV Asoj Transformers	1000 MVA	819 MVA	756 MVA
2	220 kV Asoj Transformers	250 MVA	179 MVA	169 MVA
3	220 kV Asoj Jambua S/C line	230 MVA	220 MVA	193 MVA
4	220 kV Jambua ICTs	300 MVA	202.5 MVA	213 MVA
5	220 kV Vav – Kosambha S/C Line	230 MVA	207 MVA	191 MVA
6	220 kV Ukai – Mota D/C line	460 MVA	393 MVA	440 MVA
7	220 kV Chikhali – Vapi S/C Line	230 MVA	Line kept open	Line kept open
8	220 kV Kakrapar – Vapi D/C Line	460 MVA	258 MVA	292 MVA
9	220 kV Hadala – Nyara D/C line	460 MVA	375 MW	421 MW

14.65. Considering the above, we observe the contention of SLDC that the upstream network was overloaded because of open access is not valid. Sustained maximum loading (average maximum loading) on some of the elements were found to be critical. The elements which were critically loaded remained to be so even after curtailment of open access. Loading on some of the elements was found to be increased after curtailment.

14.66. The respondent, GETCO and SLDC had in their submission against the report of Shri V.J.Talwar an independent consultant appointed by the Commission stated that the independent consultant has not considered the various aspects in his analysis and arrive the conclusion that there was no upstream congestion in the transmission network the main ground pleaded by the respondents summaries and stated below:

1) The gas based generating station situated in southern and central Gujarat was scheduled out of merit order criteria to reduce the upstream constraints in the transmission network.

2) Some of the transmission lines of 220/132 KV kept out of service.

3) The loading of 220 KV line permissible is 190 MVA with consideration of conductor design to operate at 67 ˚C thermal loading capacity, which was increased substantially prior to curtailment.

4) The loading transformers were increased beyond the design limits to operate the same.

5) The reliance of the consultant on only regulation 44 of the GERC (Terms and Conditions of Intra-state Open Access) Regulations, 2011 and ignoring the provisions of the regulations 43 of the said regulations.

6) Reliance of Section 42 (4) of the Electricity Act, 2003 which has no relevance in this case.

14.67. The grounds advanced by the respondent stating that the report of consultant is not valid on above grounds is concerned, we observe that the contention of the respondents are misplaced and not acceptable on following reasons:

1) The contention of the respondents that the gas based generating station situated in southern and central Gujarat was scheduled out of merit order criteria to reduce the upstream constraints in the transmission network is concerned, we note that the power generation scheduling has to be carried out by the distribution licensee to meet the demand of the consumers of its license area. In the present case the respondents have stated that the gas based generating stations were operated to reduce the upstream transmission congestion of the southern and central Gujarat area. The respondents failed to prove and substantiate their claim that the merit order of the particular generating station was disallowed by the SLDC on a ground of transmission congestion though the generators have scheduled the energy on particular dates and time . The respondents have not submitted any data or details to prove that the merit order of the generating station was violated for number of days due to transmission constraints in upstream network. It is well established fact that the merit order is linked with the power procurement by the distribution licensee to keep the cost of power purchase lowest as far as possible. The SLDC is a grid operator and during the real time operation if it feels necessary to deviate from the merit order to protect the safety of the grid operation, the SLDC is eligible to carry out such operation. The congestion in the transmission network is due to the limitation of transfer of energy from injection point to drawal point occur in the

transmission network and the same can be overcome by either diversion of power or limitation of transaction of power.

2) Regarding, the contention of the respondents that some of the transmission lines of 220/132 KV were kept out of service, the respondents have not given any details about what are the reasons for keeping the above lines out of service, what is its impact on the particular transmission elements, and how it will be helpful to avoid the upstream congestion. We note that as per the submission of the respondent the loading on Asjo-Jaumbua line on 12.03.2014 was recorded 255 MVA, i.e. before curtailment and some of the 220 KV and 132 KV out going lines were kept out of service due to the loading on above line. The respondents themselves have admitted that the loading of 220 KV ACSR conductor lines designed by them for transfer of power having capacity to transmit maximum 190 MVA. Therefore, the curtailment of 800 MW power of the STOA lead to reduce only 40 MVA on the above lines which is significantly lower in comparison to reduction in transmission loading of 800 MW in the transmission system. We also note that the loading on some of the transmission lines increased after the curtailment of STOA by the respondent SLDC while in case of some of the transmission lines it is observe that there is no significance change in loading of the aforesaid lines. The respondents have not clarified that when the above transmission lines were kept out from services which are outgoing lines of the 220 KV sub-station, how the demand of the feeding sub-stations of 66 or 132 KV S/S which supplies power to the consumers from that sub-station demand was meted by the licensees. Therefore, the contention of the respondents that the keeping of transmission line open is beneficial to avoid the overloading of transmission network or the curtailment of open access is an option to keep such line in service and provide the power to the consumers.

3) The respondents contended that the loading of 220 KV line permissible is 190 MVA with consideration of conductor design to operate at 67˚C thermal loading capacity, which was increased substantially prior to curtailment is concerned. In this connection, it is observed that the average loading on some of the 220 KV transmission lines was more than the design value of 190 MVA at 40 degree temperature with 67˚ C thermal loading. The respondents GETCO has not substantiated its claim with the technical details of the above lines when constructed and the respondents SLDC has not given any explanation about why they allowed the operation of the transmission lines beyond their design values in real time operation of the grid as it is statutory duty of the SLDC to monitor the real time operation of the grid with consideration of the design values of the elements connected and operated with the grid. It leads to indicate that the contention of the respondents that the 220 KV transmission lines were overloaded prior to curtailment of the STOA by the SLDC is without any basis and incorrect.

4) Regarding contention of the respondents that the loading of transformers increased beyond the design limits, we have analyzed the loading of various transformers in previous paras and have came to the conclusion that transformer loadings do not justify their action to curtail 800 MWs of open access.

5) The respondents contended that the consultant has relied only on regulation 44 of the GERC (Terms and Conditions of Intra-state Open Access) Regulations, 2011 ignoring the provisions of the regulations 43. In this connection, we clarify that regulation 43 of the open access regulations pertains to determination of availability of capacity in the transmission network to allow the open access. The question of determination of the capacity available in transmission network arises prior to grant of open access and not during the operationalisation of open access. Once, the openrationalisaiton of open access was permitted the same may be restricted on a ground of curtailment, which is provided

under regulation 44 of the open access regulations notified by the Commission. The said regulation provides that while curtailment of the open access required to be imposed the first curtailment is on STOA followed by MTOA followed by LOTA and lastly it will be imposed on the distribution licensees. It is also necessary to note that whenever there is transmission congestion or overloading of the transmission network or element of the transmission system it is duty of the respondent SLDC to carry out real time operation with consideration of various options available to him to avoid the grid failures. Curtailment of 800 MW of Open Access for controlling overloading by 50 or 100 MW appears to be a knee-jerk reaction. We observe that in the present case the SLDC has unilaterally decided and acted upon to curtail the open access of the STOA granted to the consumers for indefinite period without assigning any specific reasons to each STOA specifying the reason for curtailment of open access and period for it.

6) The respondents contended that reliance on Section 42 (4) of the Electricity Act, 2003 has no relevance in this case. We note that Section 42(2) of the Electricity Act, 2003, provides non-discriminatory open access to the consumers. Section 42(4) of the Electricity Act, 2003 provides that the distribution licensee are eligible to recover the additional surcharge from the open access consumers when they procure power from other than the distribution license where they are situated. The additional surcharge has been decided by the Commission and upheld that the distribution licensee are eligible to recover the additional surcharge whenever they required to be stranded capacity cost to the procurer. When the consumer procurer the power under open access and paying the additional surcharge, the denial of open access on a ground of congestion in upstream network though the same is not established by the respondent, SLDC, it is illegal and arbitrary action of the respondents.

14.68. The ground for curtailment of open access of the petitioners and other similar situated consumers by the respondents, SLDC on a ground that there is transmission constraint in upstream network is incorrect, unfounded and arbitrary action of the respondent without any supporting reasons. We, therefore, declare that the curtailment of the open access of the petitioner and similar situated consumers vide its letter dated 18.03.2014 is illegal, invalid and same deserves to be quashed and set aside.

Observations on the findings of the CEA Report:

15. Now, we deal with the report submitted by GETCO/SLDC of CEA who was appointed as Independent Authority by Hon'ble High Court of Gujarat in SCA No. 7117 to 7119 to 2014 to verify the action of curtailment of STOA by the SLDC and GETCO. The Hon'ble High Court has directed the Commission to consider the report of CEA also while deciding the petitioens before the Commission. We, therefore, scrutinized the report of Central Electricity Authority, and the observation on the same is as follows:

15.1. CEA, as an expert technical body was expected to verify the facts submitted by the Respondent GETCO and should have analyzed the claim of the Respondent that transmission constraints were due to short term open access and also such constraints, if any, have been removed by curtailing open access. However, CEA has just simulated Gujarat System on two occasions viz., as on 19.3.2014 at 15:29 hrs and as on 20.3.2014 at 11:25 hrs and based on these two simulations CEA has concluded that some of the elements of the upstream network was getting overloaded without verifying as to whether the overloading was due to short term open access or due to inherent deficiencies of the Gujarat System. CEA was required to simulate the system conditions that existed before and after curtailment of open access and then could have arrived at any conclusion.

15.2. CEA has simulated instantaneous system conditions on particular instance and decided that some of the lines were getting over loaded. It is a well established fact that the line loadings

vary from time to time. Conclusions based on instantaneous loadings may be good yard stick for planning studies but in real time when actual data for 24 hrs. of the day and for each day of last few months was available with SLDC, CEA should have used such data, evaluate the average loadings on the lines and then arrive at the conclusions.

15.3. Shri. V. J. Talwar had report adopted more scientific and rational methodology. The report also studied the system conditions before curtailment and after curtailment of open access and concluded that elements which were getting over loaded before the curtailment remained over loaded even after curtailment and, therefore, curtailment of open access was not justified on the ground of over loading of upstream network. CEA in its Report has not carried out any study to simulate the conditions after the curtailment and could not have concluded that the overloading of the system elements was due to open access.

15.4. CEA in its report made the observation with regard to upstream network as under:

"10.9.1 To analyse the constraint in the upstream network, system conditions prevailing at the instant corresponding to the snap shots (provided by SLDC Gujarat) for 1903-2014 and 20-03-2014, were simulated on Power system analysis program. The power flows on various lines as per load flow analysis carried out in CEA were more or less matching with the power flows as indicated in the snap shots. The simulation gives a broad picture of the operating conditions of Gujarat grid on 19-03-14 and 20-03-2014.

….

10.9.3 The maximum temperature around Vadodara and Surat was 39°C on 16-032014. If maximum ambient temperature of about 40°C is considered in South and Madhya Gujarat, then the thermal loading of 220 kV lines comes in the vicinity of 190 MVA and considering a power factor of 0.9, this loading comes out to about 170 MW. Thus, from above, it is seen that 220 kV lines such as Asoj- Jambua 220 kV S/C line, Kosamba — Vav 220 kV S/C line, Kosamba — Kim

220 kV S/C line and Ukai-Bardoli (Mota) 220 kV D/C line were critically loaded before and after the curtailment of STOA.

…

10.9.5.…

It is seen that outage of one 400/220 kV transformer at Asoj causes overloading of other transformer. Outage of one unit of 150 MVA 220/132 kV transformers at Asoj causes overloading of ,Asoj-Jambua 220 kV S/C line. Outage of Kosamba-Vav 220 kV SIC line leads to overloading of Kosamba-Kim 220 kV S/C and Ukai-Bardoli 220 kV D/C lines. Similarly outage of Kosamba-Kim 220 kV S/C line causes overloading of Kosamba-Vav 220 kV S/C and Ukai-Bardoli 220 kV D/C lines. Outage of one circuit of Ukai-Bardoli (Mota) 220 kV S/C line causes overloading on other circult,of Ukai-Bardoli (Mota) line, Kosamba-Kim and Kosamba-Vav 220 kV lines. Outage of Ukai-Bardoli 220 kV D/C is also critical for Kosamba-Vav and Kosamba-Kim 220 kV lines. Thus from the load flow results corresponding to 19th and 20th March 2014 condition, it is seen that Gujarat 220 kV network in South and Madhya Gujarat gets overloaded and is unable to meet the contingency outages as specified in the Gujarat Electricity Regulatory Commission's Gujarat Electricity Grid Code security criteria. Thus STU / SLDC Gujarat, which is nodal agency for grant of open access is advised to carry out load flow studies to check the adequacy of the transmission system before grant of any type of access.

10.9.6 As per GERC "Terms and Conditions of Intra-State Open Access Regulations, 2011" SLDC is the nodal agency for the grant of STOA and clause 15 (a) (ix) of the Regulation provides that Nodal agency shall check transaction for congestion of any element (line and transformer) of transmission and distribution system involved in transaction. As a part of submission, GETCO / SLDC Gujarat has not submitted any load flow studies carried out by them before the grant of STOA to HT consumers and neither before withdrawing the STOA NOC.

…

11.2. Analysis of the above trend for the period 01.03.2014 to 15.04.2014 indicates that

- *The maximum demand catered by Gujarat, maximum demand catered in South 'And Madhya Gujarat has been gradually increasing.*
- *More dispatches have been taken from the gas based generation projects like Kawas, GIPCL, Jhanor located in South Gujarat.*
- *Maximum power flow on 400/220 kV ICTs at Asoj has been gradually decreasing.*
- *The instances of loading on Asoj-Jambua 220 kV S/C line above 200 MW have reduced.*

11.3. The maximum demand catered in Gujarat during the month of April 2014 on 29.04.2014 at 15:03 hrs was 13479 MW. The corresponding demand met in South Gujarat and Madhya Gujarat was 2670 MW and 1577 MW respectively. Gujarat was able to meet this increased demand by increasing the dispatches from generation located in South and Madhya Gujarat.

11.4. The above trends indicates that Gujarat has been able to meet the increasing demands in South and Madhya Gujarat during the period 01.03.2014 to 15.04.2014 and on 29.04.2014 by having more dispatches from generations projects located in South and Madhya Gujarat. However, the power flow on Asoj -Jambua 220 kV S/C line, Kosamba- Vav 220 kV S/C line, Kosamba- Kim 220' kV-S/C line and Ukai- Bardoli 220 kV D/C line are more than their designed capacity at 40°C.

12.0 Conclusions and Recommendations

12.1 There was constraint in the 220 kV network of Madhya and South Gujarat before the curtailment of short term open access as the power flow on Asoj- Jambua 220 kV S/C line, Ukai- Bardoli (Mota) 220 kV DIC line, Kosamba- Vav 220 kV S/C line and Kosamba-Kim 220 kV S/C lines was above their designed capacity at 40°C ambient temperature.

12.2 It was also observed that after the curtailment of the STOA, overloading condition were there in the upstream network of Gujarat, indicating that the network was operating under stress condition.

12.3 Load flow study results corresponding to 19th and 20th March 2014 condition indicates that Gujarat 220 kV network in South and Madhya Gujarat gets overloaded and is unable to meet the contingency outage as specified in the Gujarat Electricity Regulatory Commission's Gujarat Electricity Grid Code security philosophy.

12.4 SLDC Gujarat, which is nodal agency for grant of short term open access, is advised to carry out load flow studies to ascertain the margins available in the existing transmission system before grant of short term open access and check the adequacy of the transmission system as per the security criteria specified in Gujarat Electricity Grid Code.

12.5 GETCO (STU) is advised to plan and strengthen their transmission system in South and Madhya Gujarat so that they able to serve their consumers reliably meeting the security criteria specified in Gujarat Electricity Grid Code."

From the above observation, it appears that the Snapshot analysis was carried out by CEA for only two days i.e. 19.3.2014 at 15.29 Hrs. and on 20.3.2014 at 11.25 Hrs as stated in table 10.9.1 of the report. We note that the curtailment on STOA was imposed by SLDC on 20.3.2014 from 00.00 Hrs. The said report does not examine the impact of curtailment w.e.f. 20.3.2014. Moreover, it is also observed even after curtailment on 20.3.2014 at 0.00 Hrs. there is no change in loading patterns on various elements. Moreover, the detailed analysis carried out by CEA in report in table 10.7 and 10.8 pertains to generation dispatch in South Gujarat and Madhya Gujarat for 18.3.2014 to 21.3.2014. There is no substantial analysis after 21.3.2014 though the report was submitted in August, 2014. Till date the curtailment in STOA continued in MGVCL and DGVCL licensee areas. From the tables 10.7 and 10.8 of the Report, it appears that the gas based generation is quite low during the above period in the Madhya and South

Gujarat which was claimed by the respondent SLDC and GETCO. Moreover, the generation from coal based, atomic and hydro power based generation remained nearly constant or reduced slightly. Therefore, it is incorrect to say that gas based generation has been added to support the grid parameters. The increase/decrease of generation is linked with demand of consumers. It is dynamic and vary from time to time.

15.5. The said report is silent about impact of reduction in loading if any occurs and whether the STOA be permissible or not during the interim period.

15.6. The report also advises the SLDC to carry out load flow study before granting open access. It proves that SLDC miserably failed to perform the statutory duty cast upon it. The report also states that the STU shall plan for strengthening the transmission system so that they may able to serve the consumer reliably and meet the security criteria as specified in Grid Code. It proves that GETCO as an STU failed to carry out necessary transmission planning in South and Madhya Gujarat to serve the consumers reliably and meet the security criteria of grid.

15.7. The loading of the upstream network stated in table provided in para 10.9.1 and 10.9.4 indicates that there is not much difference in loading pattern in aforesaid elements before and after curtailment of open access. The CEA has stated that there is increase in demand catered during 1.3.2014 to 15.4.2014 in the South and Madhya Gujarat. However, the said report is silent about 15.4.2014 to August, 2014 and does not analyse the demand and load pattern during this period which is the monsoon period and generally low load period. The said report is silent on continuous curtailment of STOA after 20.3.2014 by GETCO and SLDC upto till date.

15.8. The CEA in its conclusion 12.2 observed as under :

"…

12.2 It was also observed that after the curtailment of the STOA, overloading condition were there in the upstream network of Gujarat, indicating that the network was operating under stress condition. …"

The above observation of CEA states that the overloading continued even after the curtailment of STOA, which supports our observation that the STOA was not responsible for overloading of the system and decision of the SLDC to curtail the STOA in bulk was not technically justified

15.9. The CEA has also recognized that SLDC should carry out load flow study to ascertain margin available to existing network before grant of open access and check the adequacy of transmission system as per security criteria specified in the Grid Code. There is no record which specifies the load flow study was carried out by SLDC prior to grant of STOA and even after curtailment of STOA from 20.3.2014 and identify the reasons for overloading and denial of STOA to the consumers.

15.10. The CEA has recommended and advised GETCO to plan and strengthen its transmission system in South and Madhya Gujarat so they be able to serve the consumers reliably meeting the security criteria specified in Grid Code. The above observation specifies that the GETCO failed to perform its duty to carry out transmission planning to provide reliable power supply to the consumers and meet the security criteria specified in the Grid Code because the above observation of CEA is based on the data submitted by GETCO which consist of prior to open access curtailment i.e. 19.3.2014 and 20.3.2014. The CEA recognizes that after curtailment of STOA, the overloading of transmission elements, if any, it is against the transmissions criteria as well as the provisions of the Grid Code.

15.11. Further, in Para 10.9.3 of its Report CEA has observed that some of the lines in South Gujarat and Madhya Gujarat were getting over loaded before curtailment and after curtailment of open access. Thus, CEA Report has also established that the overloading of the transmission elements was independent of open access and curtailment of open access did not help the system in physical terms. Therefore, the action of GETCO to restrict the open access was only base on commercial aspects and is illegal and unwarranted.

15.12. From the above observations and analysis, we find that the curtailment of the short-term open access granted and curtailed from 20.03.2014 by its letter dated 18.3.2014 in the area of

DGVCL and MGVCL is illegal, invalid and in contravention to the provisions of the Electricity Act, 2003 read with provisions of GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 notified by the Commission. SLDC had curtailed the open access without verifying the availability in transmission network involved in case of individual consumers whose STOA was curtailed by the SLDC. Moreover, while curtailing the open access SLDC advanced only one reason that there is transmission constraints in upstream network without specifying the elements of upstream network where the transmission constraints observed as per the study carried out by SLDC as provided in Open Access Regulations notified by the Commission. Therefore, the curtailment of open access by SLDC is illegal and contrary to the provisions of Regulations. We also observe that there is no reasons given by SLDC/GETCO for continuous curtailment of Open Access after 20.3.2014. During the hearing on 14.10.2014 some of the petitioners submitted that GETCO has allowed the open access in DGVCL area to M/s. Reliance Industries Limited, GFCL and Others, on bilateral basis to procure the electricity from the Gujarat State Energy Generation Company Limited (GSECL). Thus, the respondents SLDC and GETCO have allowed the above consumers to procure the power from GSECL and allowed the open access. Thus, the plea taken by SLDC and GETCO that there is congestion in DGVCL and MGVCL licensee area is incorrect and invalid on face of record. The aforesaid contention of the petitioners were neither disputed nor replied during the hearing. Therefore, the contention of the respondents SLDC and GETCO that there is transmission constraint in upstream network is not correct.

15.13. The CEA has also in its report conclusion part recorded that SLDC should carry out load flow study to ascertain the margin available in transmission network before grant of Open Access and to check adequacy of transmission network as per Grid Code notified by the Commission. Similarly, GETCO was advised to strengthen the transmission system in South and Madhya Gujarat. The above observation states that the SLDC should prior to curtailing the open access

required to carry out the load flow study and assign the reason for curtailment. Moreover, GETCO shall have to strengthen the transmission network in MGVCL and DGVCL areas.

15.14. The report of CEA recognizes that the overloading of the transmission elements is independent of open access and curtailment of open access did not help the system in physical term.

16. Now, we deal with issue No. (iv) which pertains to what actions taken by the SLDC and GETCO to provide open access to the consumers as per the provisions of the Regulations notified by the Commission.

16.1. We have already in earlier paras noted that the open access was curtailed by SLDC without any load flow study to ascertain the adequacy of transmission system as per the security criteria specified in Grid Code. We, therefore, decide and direct the respondent SLDC that they should carry out load flow study and ascertain the margin available in the existing transmission system before the grant of open access with verification of transmission system as per the technical criteria specified in the Regulations notified by the Commission as well as the other Regulations specified under the provisions of the Act.

16.2. The GETCO is directed to carry out the transmission planning with consideration of existing transmission system in the State and required necessary addition in capacity with consideration of load forecasted in different parts of the licensees of the State, so that the reliable power supply be available to the consumer either from licensee concerned or the other sources under Open Access Regulations notified by the Commission. While processing the applications for open access or curtailment of open access by the concerned nodal agency, they should ensure no discrimination amongst the consumers.

17. Before parting with the Order, we note that as stated in above paras, the SLDC which is statutory authority under Section 32 of the Electricity Act, 2003 to monitor the real time operation of the grid and also nodal agency as specified in the GERC Open Access Regulations

has failed to perform duty cast upon it as per the provision of the Act as well as the regulations framed by the Commission. It is the duty of SLDC as a nodal agency to grant Short Term Open Access after verifying the real time operation of grid and also approve STOA with consideration of availability of margin in the transmission network. In the present case we observe that the Chief Engineer, SLDC vide its letter No/GETCO/SLDC/3156 dated 18.03.2014 informed to 126 Nos. of Open Access consumers and various authorities stating that there are grid constraints in the upstream network and therefore, the open access granted to the Consumers by SLDC shall not be feasible from 00.00 Hrs of 20.03.2014 i.e. after 1 day of the said letter. The aforesaid letter reflects that it was written by Chief Engineer SLDC without verifying the facts regarding availability of transmission capacity to 126 Nos. of consumers to whom the letter was written. Moreover, he had not mentioned in which part of the system, it was not feasible to transmit the power as per the GERC Open Access Regulations read with provision of Electricity Act, 2003. Moreover, there is no time span specified by SLDC that upto which period the open access be curtailed on the ground of upstream constraints. Chief Engineer, SLDC had during the proceeding of the present petition mentioned that there was overloading on some of the transmission system due to which the gas based costlier generation was required to be schedule by SLDC contrary to the merit order decided by the Commission. The above submissions of the SLDC is also devoid of merits and are against the decision of the Commission because in above para the Commission found that the contention of SLDC that there was upstream transmission congestion is incorrect and invalid. We note that the SLDC, which is constituted under the Electricity Act, 2003 to carry out the functions specified in the Act independently has failed to act in unbiased and independent manner.

18. In view of above observations we decide that the present petition succeeds. The action of the respondent SLDC for curtailment of open access is unwarranted, illegal, arbitrary and in contravention of provisions of the Act and regulations framed under it. We direct the

respondent SLDC to grant the STOA to the consumers, i.e. petitioners and other consumers strictly as per the provisions of the open access regulations notified by the Commission.

19. Some of the petitioners have prayed for compensation due to denial of open access by the respondents. In this regard it is to state that there is no provision in the regulations for such compensation in case of denial of open access. Therefore, the claim for compensation is not accepted and the same is rejected.

20. We order accordingly.

21. With this order, the present petitions and IA stands disposed of.

Sd/-	**Sd/-**
[DR. M.K.IYER]	[SHRI PRAVINBHAI PATEL]
MEMBER (FINANCE)	CHAIRMAN

Date: 16/1/2015.

Place:Gandhinagar.