

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 183/TT/2016

Coram:

**Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member
Dr. M.K. Iyer, Member**

Date of Order: 14.11.2017

In the matter of:

Approval of transmission tariff of **Asset-I:** 220 kV D/C Rangpo-New Melli Line and associated bays at Rangpo and New Melli alongwith one no. 220 kV Bus Coupler Bay each at Rangpo and New Melli, **Asset-II:** 1 no. 31.5 MVAR Bus Reactor (1st) at New Melli and associated bay and **Asset-III:**1 no. 31.5 MVAR Bus Reactor (2nd) at New Melli and associated bay, under Sikkim Generation Projects-Part-B in Eastern Region for 2014-19 tariff block under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

And in the matter of:

Power Grid Corporation of India Limited
"Saudamini", Plot No.2,
Sector-29, Gurgaon -122 001

.....Petitioner

Vs

1. Gati Infrastructure Chuzachen Limited,
1-7-293, MG Road, 268, Udyog Vihar, Phase-IV,
Secunderabad, Andhra Pradesh-500 003
2. Gati Infrastructure Bhasmay Power Limited,
1-7-293, MG Road, 268, Udyog Vihar, Phase-IV,
Secunderabad, Andhra Pradesh-500 003
3. PTC India Limited,
2nd Floor, NBCC Tower,
15, Bhikaji Cama Place,
New Delhi
4. Lanco Energy Private Limited,
Plot No. 397, 2nd Floor,
Udyog Vihar, Phase-III, Gurgaon,
Haryana-120 016



5. Dans Energy Private Limited,
5th Floor, DLF Building No. 8, Tower C,
DLF Cyber City Phase-II,
Gurgaon, Haryana-122 002
6. Jal Power Corporation Limited,
405-406, Raja House, 30-31,
Nehru Place, New Delhi-110 019
7. Madhya Bharat Power Corporation Limited,
NH-31-A, Golitar, Singtam,
Gangtok-737 134, Sikkim
8. Bihar State Power (Holding) Company Limited,
(Formerly Bihar State Electricity Board-BSEB),
Vidyut Bhawan, Bailey Road,
Patna-800 001
9. West Bengal State Electricity Distribution Company Limited,
Bidyut Bhawan, Bidhan Nagar,
Block DJ, Sector-II, Salt Lake City,
Kolkata-700 091
10. Grid Corporation of Orissa Limited,
Shahid Nagar,
Bhubaneswar-751 007
11. Damodar Valley Corporation,
DVC Tower, Maniktala
Civil Centre, VIP Road,
Kolkata-700 054
12. Power Department,
Govt. of Sikkim, Gangtok-737 101
13. Jharkhand State Electricity board,
In Front of Main Secretariat,
Doranda, Ranchi-834 002

.....Respondents

For Petitioner: Shri S.K. Venkateshan, PGCIL
Shri S.S. Raju, PGCIL
Shri Rakesh Prasad, PGCIL
Shri Ramchandra, PGCIL

For Respondents: Shri Aniket Prason, Advocate for LANCO
Shri Abhishek Kumar, Advocate for LANCO



ORDER

The present petition has been filed by Power Grid Corporation of India Limited (“the petitioner”) seeking approval of transmission charges of **Asset-I:** 220 kV D/C Rangpo-New Melli Line and associated bays at Rangpo and New Melli alongwith one no. 220 kV Bus Coupler Bay each at Rangpo and New Melli, **Asset-II:** 1 no. 31.5 MVAR Bus Reactor (1st) at New Melli and associated bay and **Asset-III:** 1 no. 31.5 MVAR Bus Reactor (2nd) at New Melli and associated bay (hereinafter referred to as “transmission assets”) under Sikkim Generation Projects-Part-B in Eastern Region, from the date of commercial operation to 31.3.2019 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. This order has been issued after considering the petitioner’s affidavits dated 20.1.2017, 25.4.2017, 30.5.2017 and 14.7.2017.

3. The petitioner was entrusted with the implementation of transmission system for transfer of power from generation projects in Sikkim to NR/WR Part-B. The system requirements alongwith Part-A and Part-C were discussed and agreed in the 27th SCM of NR held on 30.5.2009 and 29th SCM of WR held on 10.9.2009. Further, the scope of the system was also discussed in the 16th ERPC and TCC meeting held on 17.12.2010 and 18.12.2010. The Investment Approval (IA) and expenditure sanction for the transmission project was accorded by the Board of Directors of the petitioner vide Memorandum No C/CP/Sikkim Generation Projects-Part-B dated 17.3.2011 at an estimated cost of ₹158512 lakh including an IDC of ₹10183 lakh (based on 3rd Qtr 2010 price level). The



scope of work covered under the project was broadly as under:-

Transmission Lines:

a. LILO of Teesta III-Kishanganj 400 kV D/C line (quad) (line being constructed under JV route) at Rangpo :22.5km (21 km D/C+1.5 km multi circuit portion)

b. Rangpo-New Melli 220 kV D/c line (with twin Moose conductor) {20.5 km D/C+1.5 km multi circuit portion (2 Ckts. of 220 kV Line with twin Moose and 2 Ckts. of 132 kV line i.e. portion of LILO of Gangtok-Rangit 132 kV S/C line at Rangpo)} : 22 km

c. LILO of Gangtok-Rangit 132 kV S/C line at Rangpo and Termination of Gangtok-Rangpo/Chuzachen and Melli-Rangpo/ Chuzachen 132 kV line at Rangpo (with Zebra conductor)-1 km, Termination of Gangtok-Rangpo/Chuzachen and Melli-Rangpo/Chuzachen 132 kV line at Rangpo (with Panther conductor)-0.5 km and Termination of Gangtok-Rangpo/Chuzachen and Melli-Rangpo/Chuzachen 132 kV line at Rangpo multi circuit portion (2 Ckts. of 132 kV line with ACSR Zebra and 2 Ckts. of 132 kV line with ACSR Panther)-1 km (Gangtok-Rangpo/Chuzachen and Melli-Rangpo/Chuzachen 132 kV lines to be constructed under part-A through LILO of Gangtok-Melli 132 kV S/C line upto Rangpo : 3 km

d. LILO of Teesta IV-Siliguri 400 kV D/C line at Rangpo : 2.5 km (1km D/C+1.5 km Multi circuit portion)

e. Kishanganj-Patna 400 kV D/C (quad) line :351 km

Sub-stations:

a. Establishment of 400/220/132 kV GIS Sub-station at Rangpo with 16x105 MVA, 400/220 kV 1-Ø transformers and 3x100 MVA, 220/132 kV 1-Ø transformers

b. Establishment of 220 kV Gas Insulated switching station at New Melli

c. Extension of bays at Kishanganj 400/220 kV sub-station

d. Extension of bays at Patna 400/220 kV sub-station.

4. The petitioner, vide affidavit dated 25.4.2017, has submitted the Revised Cost Estimate (RCE) of the project at ₹191360 lakh including IDC of ₹18916 lakh (based on April 2016 price level), as approved in the 338th meeting of Board of Directors of the petitioner held on 10.3.2017. The scope of work covered under the project as per RCE is as under:-



Transmission Lines:

- a. LILO of one circuit of Teesta III-Kishanganj 400 kV D/C line (HTLS twin) (line being constructed under JV route) at Rangpo (including multi circuit portion);
- b. Rangpo-New Melli 220 kV D/c line (with single HTLS conductor) (including multi circuit portion (2 Ckts. of 220 kV Line with twin Moose and 2 Ckts. of 132 kV line i.e. portion of LILO of Gangtok-Rangit 132 kV S/C line at Rangpo));
- c. LILO of Gangtok-Rangit 132 kV S/c line at Rangpo and
- d. Termination of:
 - a) Gangtok-Rangpo/Chuzachen and Melli-Rangpo/Chuzachen 132 kV line at Rangpo (with Zebra conductor);
 - b) Gangtok-Rangpo/Chuzachen and Melli-Rangpo/Chuzachen 132 kV line at Rangpo (with Panther conductor) and
 - c) Gangtok-Rangpo/Chuzachen and Melli-Rangpo/Chuzachen 132 kV line at Rangpo multi circuit portion (2 Ckts. of 132 kV line with ACSR Zebra and 2 Ckts. of 132 kV line with ACSR Panther).
- e. LILO of Teesta IV-Siliguri 400 kV D/C line at Rangpo (including Multi circuit portion);
- f. Kishanganj-Patna 400 kV D/C (quad) line.

Sub-stations:

- a. Establishment of 400/220/132 kV GIS Sub-station at Rangpo with 16x105 MVA, 400/220 kV 1-Ø transformers and 3x100 MVA, 220/132 kV 1-Ø transformers;
- b. Establishment of 220 kV GIS station at New Melli;
- c. Extension of bays at GIS Kishanganj 400/220 kV sub-station;
- d. Extension of bays at Patna 400/220 kV sub-station.

Reactive Compensation Line Reactors (400 kV)

Transmission Line	From end	To end
Kishanganj-Patna 400 kV D/C (Quad)	1x80 MVAR (on each Ckt.) Switchable line reactors	1x63 MVAR (on each Ckt.) Switchable line reactors

Bus Reactors:

- a. Rangpo 400 kV-2x80 MVAR
- b. New Melli 220 kV-2x31.5 MVAR
- c. Patna 400 kV-1x125 MVAR



5. The petitioner had initially claimed approval of the transmission charges from the anticipated dates of commercial operation (COD) for instant assets in Petition No. 530/TT/2014. However, as 180 days had expired on 5.6.2015 after filing of Petition No. 530/TT/2014 and the assets were not commissioned, the tariff was not allowed for instant assets in Petition No. 530/TT/2014. The petitioner was directed, vide order dated 29.2.2016 in Petition No. 530/TT/2014, to file a fresh petition after the commissioning of Assets-I, and III as per Regulation 7(ii) of the 2014 Tariff Regulations.

6. The details of the assets of the project covered in other petitions are as under:-

Srl. No	Name of Asset	COD	Remarks
1	Asset-1: Termination of Gangtok-Rangpo/Chuzachen and Melli-Rangpo/Chuzachen Line at Rangpo and associated bays at Rangpo Sub-station, LILO of 400 kV D/C Teesta V- Siliguri Line (Ckt-I) at Rangpo and associated bays alongwith 1 No, 400 kV Bus Coupler bay at Rangpo Sub-station, 01 no. 3X105 MVA Single Phase 400/220 kV Transformer (1st) and associated bays alongwith 1 No. 1X105 MVA Single Phase, 400/220 kV Spare Transformer at Rangpo Sub-station, and One no. 100 MVA 220/132 kV Transformer (1st) and associated bays alongwith 01 number 132 kV Bus Coupler Bay and 01 number 132 kV Bus Sectionalizer bay at Rangpo Sub-station	24.4.2014	Covered under Petition No. 68/TT/2016 (Order dated 29.7.2016)
2	Asset-2: LILO of 132 kV S/C Gangtok-Rangit Line at Rangpo and associated bays at Rangpo Sub-station	31.10.2014	
3	Asset-3: 01 no. 3X105 MVA Single Phase 400/220 kV Transformer (2nd) and associated bays at Rangpo Sub-station	22.5.2014	
4	Asset-4: 01 no. 80 MVAR Bus Reactor (1st) & associated bays at Rangpo Sub-station	22.5.2014	



5	Asset: 125 MVAR, Bus Reactor along with associated bays at Patna Sub-station	1.6.2013	Covered under Petition No. 292/TT/2013 (Order dated 8.2.2016)	
6	Asset-I: 1 no. 3x105 Single Phase, 400/220 kV Transformer (3 rd) with associated bays under Rangpo Sub-station	22.5.2014	Covered under Petition No. 118/TT/2014 (Order dated 29.12.2016)	
7	Asset-II: 1 no. 100 MVA, 220/132 kV transformer (2 nd), 1 no. 132 kV Bus Coupler bay and 1 no. 132 kV Bus Sectionalizer with associated bays at Rangpo Sub-station	22.5.2014		
8	Asset-III: 1 no. 80 MVAR Bus Reactor (2 nd) and associated bays at Rangpo Sub-station	9.6.2014		
9	Asset-IV: 1 no. 3x105 Single Phase, 400/220 kV Transformer (4 th) with associated bays under Rangpo Sub-station	30.6.2014		
10	Asset-V: 1 no. 3x105 Single Phase, 400/220 kV Transformer (5 th) with associated bays under Rangpo Sub-station	3.7.2014		
11	Asset-VI: 1 no. 100 MVA, 220/132 kV transformer (3 rd) with associated bays under Rangpo Sub-station	13.6.2014		
12	Asset-VII: LILO of 400 kV D/C Teesta V Siliguri line (Ckt.-II) at Rangpo and associated bays at Rangpo Sub-station	31.10.2015		
13	Asset-IV: 63 MVAR Line Reactor of Ckt.-I of 400 kV D/C Patna-Kishanganj line at Patna Sub-station as Bus Reactor	2.10.2014		Covered under Petition No. 530/TT/2014 (Order dated 29.2.2016)
14	Asset-V: 63 MVAR Line Reactor of Ckt.-II of 400 kV D/C Patna-Kishanganj line at Patna Sub-station as Bus Reactor	29.11.2014		
15	Asset: 400 kV D/C (Quad) Kishanganj-Patna transmission line alongwith associated bays at Kishanganj Sub-station including 2 Nos. of 63 MVAR switchable Line Reactors at Kishanganj Sub-station	28.3.2016		Covered under Petition No. 230/TT/2015
16	Asset: LILO of one Ckt. Of 400 kV D/C Teesta-III-Kishanganj line (LILO-I) at Rangpo and associated bays at Rangpo Sub-station	Not yet commissioned	Covered under Petition No. 268/TT/2015	
17	Asset-I: 220 kV D/C Rangpo-New Melli Line and associated bays at Rangpo and New Melli alongwith one no. 220 kV Bus Coupler Bay each at Rangpo and New Melli	21.5.2015	Covered under instant petition (earlier covered in Petition No. 530/TT/2014)	
18	Asset-II: 1 no. 31.5 MVAR Bus Reactor	31.1.2016		



	(1st) at New Melli and associated bay		
19	Asset-III: 1 no. 31.5 MVAR Bus Reactor (2nd) at New Melli and associated bay	21.3.2016	

7. Annual Fixed Charges (AFC) were allowed for the instant transmission assets vide order dated 1.12.2016 under the first proviso to Regulation 7(7) of the 2014 Tariff Regulations, subject to adjustment as per the said Regulation.

Date of commercial operation (COD)

8. The petitioner has submitted that the 220 kV D/C Rango-New Melli transmission line, Asset-I, was not utilized on its commissioning on 21.5.2015 as the generating stations have not completed the generation/dedicated network under their scope. The petitioner has submitted that the non-utilization was beyond its control and hence sought the approval of COD under the second proviso to Regulation 4(3) of the 2014 Tariff Regulations. As per the said regulation, in case of non-readiness of downstream system, the transmission licensee shall approach the Commission for approval of the COD of such transmission system. Regulation 4(3) of the 2014 Tariff Regulations, provides as under:-

"(3) date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end:

Provided that:

i) Where the transmission line or substation is dedicated for evacuation of power from a particular generating station, the generating company and transmission licensee shall endeavour to commission the generating station and the transmission system simultaneously as far as practicable and shall ensure the same through appropriate Implementation Agreement in accordance with Regulation 12(2) of these Regulations:

ii) in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the



concerned generating station or in commissioning of the upstream or downstream transmission system, the transmission licensee shall approach the Commission through an appropriate application for approval of the date of commercial operation of such transmission system or an element thereof.”

9. The petitioner was directed to submit the status of commissioning of upstream and downstream transmission system of New Melli and Rangpo Sub-station. The petitioner vide affidavit dated 25.4.2017 has submitted that the Rangpo GIS is connected/ planned to be connected with the following upstream network:-

Voltage level	Generator	Connecting Transmission Line	Commissioning status
400 kV	Teesta-V	LILO of 400 kV D/C Teesta V-Siliguri Line at Rangpo	Commissioned on 24.4.2014
400 kV	Teesta-III	LILO of 400 kV Ckt.-I Teesta-III-Kishanganj line at Rangpo	Teesta-III-Kishanganj line is yet to be commissioned. It is understood that only Teesta-III Rangpo section has been commissioned alongwith LILO Portion in November, 2016. Generator units 1-6 commissioned in February, 2017
220 kV	Rongnichu	220 kV D/C Rongnichu-Rangpo line	Generation unit 1 and 2 expected to be commissioned in November, 2018 and December, 2018 respectively The transmission line is expected to be completed in July 2018.
220 kV	Teesta-VI	220 kV D/C Teesta-VI-Rangpo line	Generation Unit 1 scheduled to be commissioned in February, 2020 and Units 2 to 4 scheduled to be commissioned in March, 2020 The transmission line is expected to be completed in December, 2019.
220 kV	Jorethang and Rangit-IV	via New Melli Substation through 220 kV D/C Rangpo-New Melli Transmission line	The interconnection with New Melli commissioned on 21.5.2015
132 kV	Chuzachen	LILO of 132kV S/C Rangpo-Gangtok line at Chuzachen	Commissioned in May 2013
132 kV	Bhasmay	132kV D/C Bhasmay-	Generation Unit 1 and 2



		Rangpo line	expected to be commissioned in April 2018 and May 2018 respectively The transmission line is expected to be completed matching with generation.
--	--	-------------	--

10. As regards the upstream network, the petitioner has submitted as follows:-

“Teesta-III-Kishanganj line is yet to be commissioned. It is understood that only Teesta-III Rangpo section has been commissioned alongwith LILO Portion (commissioned since 26.11.2016)

Siliguri S/S via LILO of 400 kV D/C Teesta-V-Siliguri Line at Rangpo (commissioned since 20.4.2014)”

11. The petitioner has submitted that with regard to downstream network at Rangpo GIS, the power is also being supplied to Sikkim State via downstream connectivity of Rangpo GIS as under:-

“Gangtok S/S via 132 kV Rangpo-Gangtok-II (commissioned since 29.11.2014)

Melli (Sikkim State) Sub-station via 132 kV Rangpo-Melli (earlier Rangpo-Gangtok-I) (commissioned since 30.03.2014/27.02.2016)”

12. The petitioner has further submitted that the power from the generator(s) mentioned above is being pooled at Rangpo GIS (and other generators associated with New Melli Sub-station) and from there on the power is being wheeled to Siliguri and main pooling station at Kishanganj and further onto the regional upstream/downstream networks. As regards New Melli Station, the petitioner has submitted that as discussed and approved in the Standing Committee Meeting on Power System Planning in Eastern Region held on 20.9.2010 the New Melli Sub-station has been planned and implemented as a 220 kV GIS switching station with inter-connection with following generators:-

“Jorethang through 220 kV D/C Jorethang-New Melli line



Rangit-IV, expected to be commissioned in September, 2019 (Unit-1) and October, 2019 (Unit 2 & 3), through 220 kV D/C Rangit-IV-New Melli line, which is expected to be completed by December, 2017.”

Thereafter, the power from the following generators is being/shall be pooled at 132/220/400 kV Rangpo Station through New Melli GIS switching station through 220 kV D/C Rangpo-New Melli Transmission line, which has been commissioned on 21.5.2015.

13. The petitioner has submitted that Asset-I, i.e. 220 kV D/C Rangpo-New Melli transmission line and associated bays at both ends was planned to wheel power from generators (Jorethang and Rangit-IV associated with New Melli) towards Rangpo GIS. The said generators were to be connected by dedicated 220 kV D/C lines from respective generating stations to New Melli GIS switching station. The dedicated line works were under the scope of respective generators. However, among the two generators associated with New Melli GIS switching station, Jorethang (Dans Energy Ltd. 96 MW) has been commissioned in September, 2015 while the Rangit-IV (Jal Power Ltd. 120 MW) is yet to be commissioned. The petitioner has further submitted that at present the power from Jorethang is being sent to Rangpo GIS via New Melli GIS Switching station using subject Asset-I (i.e. 220 kV D/C Rangpo-New Melli transmission line and associated bays at both ends). However, there was mismatch as Asset-I was commissioned prior (COD of Asset-I: 21.5.2015) to COD of Jorethang generation (COD: September, 2015).

14. The petitioner has submitted that the commissioning of these generators (along with the completion of dedicated transmission lines) was getting delayed



inordinately due to various reasons. The petitioner has submitted that as planned with Dans Energy Limited (Jorethang), it completed the works under its scope (i.e. 220 kV D/C Rangpo-New Melli transmission line) in May, 2015 (i.e. COD: 21.5.2015) so as to match it with the commissioning of Jorethang generation and its associated dedicated transmission line (220 kV D/C Jorethang-New Melli line), the corresponding dedicated transmission line could not be completed by Dans Energy Limited. The petitioner has further submitted that it had continuously followed with the associated generators for timely and matching commissioning of their generation units and dedicated transmission lines with its network. The same was facilitated from CTU by holding regular Joint Co-ordination Committee meetings with generators so as to facilitate information exchange and timely updating and coordination and it had attuned itself with desired pace so as to complete the related works under its scope so as to timely facilitate the power evacuation as assured by the generators. The petitioner has also submitted that the generators kept on deferring the commissioning of their generating units time and again against the prior assured likely commissioning dates resulting in progressive revision in the status of generators. The status of generator as informed by generation developers in the 11th JCC meeting held on 27.12.2016 (minutes issued on 2.2.2017) is as given under:-

Generation Project	Commissioning schedule as per 11th JCC meeting
Jorethang	Unit-1 & 2: September, 2015 (commissioned)
Rangit-IV	Unit-1 September, 2019, Unit-2 & 3: October, 2019

15. The petitioner has submitted that it is desirable that consequent to finalization of the planning of the generation and corresponding downstream network, the dedicated/connecting networks by generators are to be



commissioned matching with their respective generation. However, at the time of implementation of the project, even after realizing that the connecting network is getting delayed, it was not possible to delay the completion/commissioning of the ISTS network beyond a certain period due to obvious financial/contractual reasons and obligations. The petitioner has further submitted that therefore, it completed its scope of works and charged the Asset-I in the month of May, 2015 and the power flow was initiated after the Unit-1 and Unit-2 of Jorethang were commissioned by Dans Energy Limited in month of September, 2015.

16. We have considered the submissions of the petitioner. The petitioner has prayed for approval of COD of Asset-I as on 21.5.2015 under the second proviso of Regulation 4(3) of the 2014 Tariff Regulations. The petitioner, vide RLDC certificate dated 10.11.2015, has submitted certificate of completion of trial operation of transmission element on 20.5.2015. The Jorethang generating station was commissioned in the month of September, 2015 and the associated dedicated line was commissioned in November, 2016. Jorethang (Dans Energy Limited) has requested the petitioner that the completed part section of dedicated line (from tower location 14) may be connected to the petitioners' line (Tower location No 87) as an interim arrangement to evacuate its power from September, 2015. The interim arrangement has been approved in 17th SCM of ER held on 25.5.2015 at NRPC, New Delhi. This interim arrangement was commissioned in September, 2015 (SLD is given in Annexure-I and I (A)]. Hence, the 220 kV D/C Rangpo-New Melli line was put to use in September, 2015 on COD of Jorethang generating station and commissioning of interim arrangement as against the claimed COD on 21.5.2015. The other generating station Rangit-



IV and its dedicated line are yet to be commissioned. It is noticed that although RLDC certificate of trial operation is available but the line cannot be considered as put to regular service as specified under the 2014 Tariff Regulations. Hence, we are not inclined to grant COD of Asset-I under the second proviso of Regulation 4(3) of the 2014 Tariff Regulations. There are instances of early commissioning of lines for startup power on request but the petitioner has not made any such plea in the instant case and there is no record to prove that the line was in operation prior to 22.9.2015. Therefore, we are not inclined to allow COD of Asset-I as 21.5.2015. The COD of the 220 kV D/C Rangpo-New Melli Line and associated bays at Rangpo and New Melli alongwith one no. 220 kV Bus Coupler Bay each at Rangpo and New Melli shall be reckoned as 22.9.2015 matching with COD of Jorethang generating station. However, the IDC and IEDC in respect of Asset-I from 21.5.2015 to 21.9.2015 shall be borne by the developers of both the generating companies in the ratio of their LTAs and the IDC and IEDC for the said period shall be excluded from capital cost.

17. The petitioner has claimed the COD of Asset-II and Asset-III as 31.1.2016 and 21.3.2016 respectively and has submitted ERLDC Certificate dated 25.4.2016 pursuant to successful trial operation and COD notification dated 3.2.2016 and 23.3.2016 issued by the petitioner. The petitioner vide affidavit dated 20.1.2017 has also submitted the CEA certificate for both assets. Taking into consideration the ERLDC certificate and the CEA certificates, the COD of the Assets-II and III has been considered as 31.1.2016 and 21.3.2016 respectively.



18. The details of the transmission charges claimed by the petitioner for the instant assets are as under:-

(₹ in lakh)

Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	605.30	876.92	1005.57	1005.57
Interest on Loan	425.23	620.58	690.90	644.73
Return on Equity	743.43	1068.39	1219.33	1219.33
Interest on Working Capital	49.64	69.60	78.00	77.31
O & M Expenses	159.35	190.82	197.11	203.69
Total	1982.95	2826.30	3190.92	3150.63
Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	9.13	61.93	67.29	67.29
Interest on Loan	8.36	54.72	55.38	50.85
Return on Equity	10.17	69.00	74.97	74.97
Interest on Working Capital	1.04	6.76	7.12	7.10
O & M Expenses	7.39	45.06	46.55	48.10
Total	36.09	237.47	251.31	248.31
Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	1.58	61.21	67.63	67.63
Interest on Loan	1.46	54.55	56.23	51.67
Return on Equity	1.76	68.19	75.36	75.36
Interest on Working Capital	0.18	6.72	7.16	7.14
O & M Expenses	1.29	45.06	46.55	48.10
Total	6.27	235.73	252.93	249.90

19. The details submitted by the petitioner in support of its claim for interest on working capital are as under:-

(₹ in lakh)

Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	27.70	28.62	29.57	30.55
O & M expenses	15.39	15.90	16.43	16.97
Receivables	383.00	471.05	531.82	525.10
Total	426.09	515.58	577.81	572.63
Interest Rate	13.50%	13.50%	13.50%	13.50%
Interest	49.64	69.60	78.00	77.31
Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	6.55	6.76	6.98	7.22



O & M expenses	3.64	3.76	3.88	4.01
Receivables	35.51	39.58	41.88	41.38
Total	45.70	50.09	52.75	52.61
Interest Rate	13.50%	13.50%	13.50%	13.50%
Interest	1.04	6.76	7.12	7.10
Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	6.54	6.76	6.98	7.22
O & M expenses	3.64	3.76	3.88	4.01
Receivables	35.32	39.29	42.16	41.65
Total	45.50	49.80	53.02	52.87
Interest Rate	13.50%	13.50%	13.50%	13.50%
Interest	0.18	6.72	7.16	7.14

20. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act, 2003 (“the Act”). The petitioner has served the petition on the respondents. None of the respondents has filed any reply.

21. Having heard the representatives of the petitioner, respondents and perused the material on record, we proceed to dispose of the petition.

Capital cost

22. Clause (1) and (2) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

“(1) The Capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects.”

(2) The Capital Cost of a new project shall include the following:

(a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;

(b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;



- (c) Increase in cost in contract packages as approved by the Commission;
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- (e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- (f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- (g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- (h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.

23. The petitioner in the original petition has submitted Auditors' certificate dated 8.6.2016 for expenditure incurred and expected to be incurred for instant assets. The details of the apportioned approved capital cost, capital cost as on the date of commercial operation and estimated additional capital expenditure incurred or projected to be incurred for the instant transmission assets are as under:-

Particulars	Approved apportioned cost	Revised approved apportioned cost as per RCE	Cost as on COD	Additional capital expenditure incurred/projected		Total estimated completion cost upto 31.3.2019
				2015-16	2016-17	
Asset-I	11690.68	23940.90	13825.69	1769.33	5131.39	20726.41
Asset-II	1061.86	1472.05	974.50	97.00	202.90	1274.40
Asset-III	1061.86	1479.61	981.91	55.52	243.52	1280.95

The expenditure figures have been certified by the Auditors to be in accordance with the petitioners' books of account upto 31.3.2016.

24. However, in case of Asset-I, on the basis of available information, we have considered pro-rata add cap claimed during 2015-16 as a part of capital cost as on tariff COD (22.9.2015) and considered the balance of additional capitalization incurred/projected to be incurred during the year as add-cap for the period from tariff COD to 31.3.2019. Therefore, the following capital cost has been considered for the purpose of tariff, before the scrutiny of IDC and IEDC, Initial



Spares and other issues:-

Particulars	Approved apportioned cost	Apportioned cost as per RCE	Expenditure up to Tariff COD / COD	Additional capital expenditure incurred/projected		Total estimated completion cost up to 31.3.2019
				2015-16	2016-17	
Asset-I	11690.68	23940.90	14525.58	1069.44	5131.39	20726.41
Asset-II	1061.86	1472.05	974.50	97.00	202.90	1274.40
Asset-III	1061.86	1479.61	981.91	55.52	243.52	1280.95

25. The petitioner is directed to furnish revised Auditor's Certificate for Asset-I considering the expenses as on 22.9.2015 and add-cap thereafter, at the time of truing-up.

Cost over-run

26. The estimated completion cost of the instant assets is within the revised approved apportioned cost. Thus, there is no cost over-run in case of the instant transmission assets.

Time over-run

27. The project was scheduled to be commissioned within 32 months from the date of investment approval dated 17.3.2011. Accordingly, the scheduled COD works out to 16.11.2013. The COD of Asset-I is 22.9.2015, whereas Assets-II and III were commissioned on 31.1.2016 and 21.3.2016 respectively. Thus, there is time over-run of 675 days, 806 days and 856 days in the commissioning of Assets-I, II and III respectively.

28. The petitioner has submitted that the time over-run in case of construction of transmission line in Sikkim area was due to forest clearance, RoW issues and compensation for transmission line. The time over-run in case of construction of Rangpo Sub-station was on account of delay due to transportation problem, infringement of materials of other party, land compensation and law & order



problems at Rangpo Sub-station and untimely rains causing landslide, road blockage etc., and time over-run in construction for New Melli Sub-station was on account of delay in getting land, settling law & order, compensation issues and transportation problems.

Time over-run in case of transmission line in Sikkim Area

29. As regards the time over-run in construction of transmission line, the petitioner has submitted that on 12.7.2011 it approached the PCCF-cum-Secretary, Forest, E&WMD, Government of Sikkim for granting the permission to conduct the survey work of the proposed transmission routes falling within the forest area. It applied for the forest clearance, after conducting the detailed survey work, on 3.3.2012. After compliance of Stage-I clearance, Stage-II clearance (final approval) was issued on 17.4.2013. The trees cutting orders was issued on 13.11.2013 after a period of seven months.

30. The petitioner has submitted that the proposal for conducting the preliminary and detailed survey in forest stretches was initiated in the month of March, 2011 i.e. prior to the date of investment approval. Thereafter, the NIT was invited for the award of preliminary and detailed survey of line which includes forest stretches on 20.5.2011. The request for forest survey was made to PCCF on 12.7.2011 and after assessment and detailed technical prudence of the bidders the LOA was awarded for the said works on 29.7.2011. The petitioner has further submitted that the date of application of survey works few months after the date of investment approval may give a false sense of delay even though the preparatory works and related management approval for the same were initiated and were being sought in advance and before the date of



investment approval from 9.3.2011. Thereafter, it took usual time for start of survey works owing to corresponding procedural activities like tendering, assessment, award of contract, etc. The petitioner has submitted that the delay in submission of forest proposal was mainly on account of RoW problems encountered at the preliminary survey stage. The entire process of forest clearance took around 1 year 8 months. In this regard, the petitioner has also submitted chronology of events starting from 9.3.2011 to 13.11.2013 as under:-

Date	Remarks
9.3.2011	Management approval initiated for preliminary & detail survey of lines including forest stretches in Sikkim
20.5.2011	Notice Inviting Tender (NIT) issued
12.7.2011	Letter from PGCIL to Department of Forest (DOF), Govt. of Sikkim regarding permission for transmission line route survey.
29.7.2011	Letter of Award (LOA) issued for survey of transmission line works comprising of survey works.
29.7.2011	Letter from PCE cum secretary, Sikkim Power Department to Department of Forest, Environment & Wildlife Management, Govt. of Sikkim regarding granting of permission for transmission line route survey to PGCIL
2.2.2012	Preliminary Survey completed
2.2.2012	Letter to Director, Land Revenue Department. Govt. of Sikkim, requesting for deputing revenue surveyors along transmission corridor for ease of demarcation of forest stretch as well as mitigation of local ROW.
12.2.2012	(ROW during final survey) Letter to DM, South Sikkim, requesting his intervention to resolve ROW issue created by local villagers.
3.3.2012	Submission of Forest Proposal
3.5.2012	Letter to DC, Sikkim regarding issuance of instructions to District land & Revenue Department regarding compliance of FRA 2006 for timely forest clearance.
25.7.2012	Letter to Principal Secretary, Govt. of Sikkim, regarding delay by District administration in compliance of FRA 2006.
28.1.2013	NOC from DC, Sikkim certifying compliance of FRA 2006
15.2.2013	Stage I clearance (in principle approval)
2.4.2013	Letter to Divisional Forest Officer, South Sikkim requesting to start of preliminary work in the forest stretch.
17.4.2013	Stage-II approval
13.11.2013	Tree felling permission granted

31. As regards the delay due to ROW issues and delay in assessment of compensation amount, the petitioner has submitted that the compensation of



land/crop had to be disbursed in Sikkim via State's Land & Revenue Department. In view of the RoW issues, the concerned Land & revenue Department of Sikkim was requested to deploy the revenue surveyors to carry out the parallel assessment of the crop/ affect area compensation as well as to mitigate the RoW issue along the line corridor. Various instances of RoW issues were encountered while carrying out the foundation works of the subject transmission line even after deployment of various land surveyors. The Joint Director, Land & Revenue Department, Sikkim vide their letter dated 27.9.2012 asked to review its compensation policy for transmission line corridor, wherein it was desired to provide the land compensation in addition to the crop compensation to the affected land owners since the land is very scarce and costly in Sikkim. However, in its reply to the Land & Revenue Department, Sikkim, it was mentioned that compensation can be provided as per the relevant Telegraph Act 1885, only for crop/area affected during construction. Thereafter, few meetings were called between state administration, local land owners and the petitioner but no consensus could be reached regarding compensation. After various deliberations, the demand for land compensation in transmission line corridor was called off. Thereafter, the issue of disproportionate claims in lieu of crop/fruit compensation cropped up. The land owners were demanding exorbitant amounts of compensation. The Land & Revenue Department of Sikkim made the crop damage assessment based on 40 years yield while as per the direction of the Apex Court, only 8 years yield is to be considered while assessing the crop compensation. This led to high escalation in amounts claimed against crop compensation. A request was made to the Sikkim Authorities/State Government to review their compensation assessment mechanism. The issue was taken-up



persistently for justified and timely resolution with concerned Land & Revenue Authorities, State Government Chief Secretary, Secretary, Energy and Power Department, Sikkim, etc. The petitioner has submitted that the entire process took considerable time while in the background no substantial progress could be made in the transmission line construction in view of corresponding RoW issues.

32. In this regard, the petitioner has submitted detailed chronology of the above mentioned events related to land compensation and the corresponding RoW issues as under:-

Date	Remark
2.2.2012	PGCIL requested Joint Director Land & revenue Deptt. Sikkim, to deploy revenue/ land surveyors for assessment of compensation regarding construction of transmission line.
12.2.2012	Letter to Joint Director, Land Revenue Deptt., South Sikkim, requesting deputation of revenue surveyors for assessment of crop compensation at tower locations of the transmission line during initiation of foundation works.
12.2.2012	(ROW)- PGCIL requested District Collector, South Sikkim, to intervene in the matter of ROW problem created by villagers thereby not allowing to carry out any survey work.
8.5.2012	Letter to District Magistrate (DM), South Sikkim requesting deputation of revenue surveyors for assessment of crop compensation at tower locations of the transmission line.
28.5.2012	Dy. Director, Land & Revenue Deptt., Sikkim, writes to Panchayat members to allow for construction of transmission line through the boundary of Forest and Village as per Meeting held in presence of POWERGRID, Villagers and State Admin on 18.5.2012 at Bermiok Village. It may be seen that the request for solving the issue was made on 12.02.2012. However, latter on the villagers denied passing the line even though the border of forest and village and thereafter no work taken up.
3.7.2012	PGCIL requested DC, Namchi for compensation assessment at various places in line route.
16.7.2012	(ROW)-Letter highlight ROW problem created by villagers at Loc. 20/0, 30A/0, 57/0, 63/0 & 64/0.
30.7.2012	Joint Director, L & R Deptt., Sikkim, writes for a meeting at village on 02.08.12
25.8.2012	PGCIL officials met DC, South Sikkim & requested for compensation assessment at various places in line route.
28.8.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at Loc. 65/0.
17.9.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at Loc. 49 to 61.
27.9.2012	Letter from Joint Director, Land & revenue Deptt, Sikkim to PGCIL for payment of compensation for land cost also stating that land is very scarce in Sikkim and it will not be possible to convince the landowners to allow putting towers on their land without giving land cost/long term yield of land.



29.9.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at some Loc. Of the subject transmission line.
1.10.2012	Letter to District Collector (DC), Sikkim, asking for advice for compensation policy with regards to other projects completed or going on in same area.
4.10.2012	(ROW)-FIR lodged in Police Station against threats of villagers.
1.11.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at Loc. 36.
22.11.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at Loc. AP 36 & AP 34.
23.11.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at Loc. 41/0, 33/0, 44/0 & 43/0.
1.12.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at Loc. 40/1.
6.12.2012	(ROW)-Letter from contractor highlight ROW problem created by villagers at Loc. AP 30/a.
January, 2013	(ROW)-Letter from Minister of Sikkim, Govt. asking POWERGRID to consider the prayer & demands of the villagers related to land issue.
30.11.2012 to 7.3.2013	Follow up for expediting the compensation assessment for various locations under transmission line by PGCIL officials.
4.3.2013	(ROW)-Police Wireless memo highlighting the action to be taken in wake of ROW issue created by villagers.
23.3.2013	District Collector, South Sikkim calls a meeting of all tower line construction agencies to arrive at uniform rate of compensation, meeting fixed on 03.04.12.
26.3.2013	Letter from L&R Department, Sikkim to PGCIL to release crop compensation money based on assessment of 48 locations. In spite of this the first lot of compensation took about 13.5 months. During this period the progress of work was very slow due to frequent stoppage of work by the landowners. This is evident from the various correspondences dated 16.7.2012, 28.8.2012, 29.9.2012, 03.10.2012, 01.11.2012, 22.11.2012, 23.11.2012 and 6.12.2012 made by Shyama Power (I) Limited, the executing agency. Letter enclosed under ROW delay enclosures as mentioned above in the table.
8.4.2013	(ROW)-Letter from Joint Director, Human Resource Department. South Sikkim, refusing NOC for permission for erecting tower in school land in view of pressure and non-compliance from locals.
12.4.2013	Letter to L&R Department, Sikkim, requesting to review amount of compensation that had assessed amount based on 40 years crop value which is not as per Indian Telegraph Act which is followed at the entire country for assessment of compensation for construction of transmission line. This has escalated the compensation value to an unreasonable extent. Also for fruit bearing trees there is Supreme Court Ruling of payment of maximum 8 years yield. Hence Govt. of Sikkim was requested to review the compensation assessment procedure.
14.5.2013	Letter from Asst. Director, L & R Department, Sikkim, requesting PGCIL to arrange relocation of ROW affected person to a nearby location.
12.6.2013	(ROW)-Letter from SDM, South Sikkim, directing to stop transmission line works as per Govt.'s order during monsoon considering safety during construction.
17.6.2013	Minute of Meeting that was conducted by the District Collector in order to review the compensation assessment. But the villagers did not agree to review of compensation amount.
26.6.2013	(ROW)-Letter to Executive Engineer, Energy Department, Sikkim, to shift poles obstructing the transmission line work.



9.7.2013 & 17.7.2013	Order from DM, South Sikkim, to stop the transmission line construction work in view of dispute of compensation amount.
16.7.2013	Letter from P PGCIL to DC, South Sikkim, requesting to continue the transmission line construction till the time compensation issue is resolved which is being discussed at higher levels.
23.7.2013	Letter to SDM, South Sikkim, requesting kind co-operation and deputation of revenue surveyors for assessment of surface damage compensation so that payment can be done at the earliest.
1.8.2013	Letter from PGCIL to Secretary, Land & revenue Department, Govt. of Sikkim, to review its compensation mechanism in view of exorbitant claims which violets the order of Supreme Court regarding compensation of crop damage.
30.8.2013	Letter from Secretary, Land & revenue Department, Govt. of Sikkim, reverting that compensation amount can't be compromised in view of scarcity & unprecedented industrial, tourism and residential growth which has increased the land value manifold.
19.9.2013	Letter from PGCIL to Chief Secretary, Govt. Of Sikkim, intimating him that compensation as decided by State Govt. is being paid, however, assessment of the same at various locations and thereafter approval and disbursement of compensation is taking considerable time. He was requested to expedite and simplify the process since ROW issues at the affected sites has stalled the progress of transmission line construction.
The localized assessment of sites required land surveyors which had to deputed by L&R Department Sikkim on repeated requests of PGCIL. Thereafter, demand of compensation was made. After payment of claim by PGCIL, the permission of disbursed allowed by DC, South Sikkim only after approval from Secretary, Revenue Department Sikkim. The whole process consumed lot of time considering it was done in batches and separately for individual sites.	
30.10.2013	Letter to DM, South Sikkim, requesting to deploy land surveyors and arrange a meeting with concerned officials and villagers to reach a consensus on receipt of compensation payment by villagers who were regularly created ROW issue.
22.11.2013	(ROW)-Letter to DC, South Sikkim, to intervene to resolve ROW issue at various transmission line locations
23.12.2013	(ROW)-Letter to DM, South Sikkim, to intervene to resolve ROW issue at various transmission line locations
28.4.2014	(ROW)-Letter to DM, South Sikkim, to intervene to resolve ROW issue at various transmission line locations

33. The petitioner vide affidavit dated 14.7.2017 with regard to RoW issues has further submitted supplementary documents and relevant correspondences as under:-

Date	Remark
3.1.2014	(ROW)-Letter to PGCIL to District Collector, South Sikkim, requesting him to provide the necessary administrative support and assistance for obtaining the necessary Right Of Way at location Nos. 9,10, 34A, 43 & 63 for construction of transmission line.
10.3.2014	(ROW)-Letter from PGCIL to Principal Chief Engineer-cum-Secretary, Sikkim Govt., requesting him to continue the help and cooperation



	extended to resolve the other ROW & compensation issues.
28.4.2014	(ROW)-Letter from PGCIL to District Magistrate, South Sikkim, requesting him to continue the help and cooperation extended to resolve the other ROW at location Nos. 9, 10, 34A, 43 & 63 & also direct District land Revenue Section to resolve compensation related issues.
26.5.2014	(ROW)-Letter from PGCIL to District Collector, South District, Namchi, requesting him to resolve ROW issue for all locations (AP – 9/0, 10/0, etc) falling in Village Burul.
18.6.2014	(ROW)-Letter from PGCIL to Land Owner, Village Burul, requesting them to allow smooth completion of transmission line construction at locations falling in their village and provide NOC regarding same.
30.6.2014	(ROW)-Letter from PGCIL to Chief Minister, Govt. of Sikkim, requesting him to intervene in the RoW issue plaguing the Sikkim Transmission project (especially in Village Burul area) and also seeking appointment of PGCIL's CMD for appraising the situation.
The vehement opposition against transmission line construction in Village Burul could be resolved only after intervening from the highest of State machinery and collaborated administrative deliberations from the various concerned authorities brought about by incessant efforts of the petitioner. The ROW issue later could finally be resolved in the month of August, 2014 when the NOC was provided the land owners of Village Burul on 30.8.2014 and the works could be resumed September, 2014 onwards in these affected locations.	

34. The petitioner has submitted that in view of all above, the entire process took approximately 26 months (February, 2012 to April, 2014) on account of RoW issue and approximately 21 months (February, 2012 to November, 2013) on account of compensation issue and in certain areas the time extended upto September, 2014.

Time over-run in case of Rangpo Sub-station

35. The petitioner has further submitted that the time over-run in construction of Rangpo Sub-station was due to transportation problem, infringement of materials of other party, delay to land compensation, law & order problems, untimely rains, etc. The petitioner has submitted that the sub-station equipment for Rangpo GIS was stopped before the bridge on Rangpo River, by the State Government Agencies due to a failure of the bridge in December, 2011. On this Rangchang Bridge, a trailer (carrying equipment for Teesta Urja Ltd.) met with accident and



collapsed. So transportation of heavy consignment over Rangpo Bridge was stopped by Border Roads Organization and Government of Sikkim. The Bridge over Rangpo river through which the Sub-station equipment were to be transported situated at the border of West Bengal and Sikkim on NH-31A was not strong enough to carry overweight consignments like transformer and other heavy equipment. Subsequently meetings were held with state Government agencies and Border Roads Organization for further transportation of the consignment. However, as no permission for transportation of heavy equipment on Rangpo Bridge was given, the ABC Ltd. (Transporter) constructed a diversion road to cross the river Rangpo for transportation. The diversion road was washed away due to sudden break of artificial reservoir at the upstream and resultant inrush of water in the river. After the flash flood incident, monsoon in Sikkim started and there was no option but to postpone the transportation till the monsoon was over. In the meantime the concerned transport authorities carried out strengthening of the Rangpo Bridge and permission was given by BRO for transportation of transformer over the Rangpo Bridge on 30.8.2013.

36. The petitioner has submitted that there was a delay of around one month in commencing work in some portions of sub-station area due to non-removal of stone wall, stone chips, sheds, transformers of LANCO from our property line. The petitioner has also submitted a copy of letter written to LANCO on 18.2.2013 and its compliance dated 20.11.2013. The petitioner has submitted that from the beginning of the construction of Rangpo Sub-station, it faced various hurdles like threat to stop construction work due to non-payment of balance 20% compensation amount to land owners although the petitioner had deposited full compensation amount to the authorities. As a result, work of boundary wall could



not be started. The acquisition of land for Rangpo GIS was done by Sikkim Power Development Co. Ltd on behalf of the petitioner. Full payment of land was made to SPDC, which later had to transfer the same to Land & Revenue Department, Sikkim for disbursement through DC Office, Sikkim. The whole process of complete disbursement of land compensation to owners took considerable time. Delay in receipt of compensation by landowners led to various ROW and law & order issues. It halted the progress of construction of the sub-station leading to valuable loss of time as well as morale of executing agency and work gangs who had to be mobilised/re-mobilised on several occasion. The period of delay due to this cannot be explicitly quantifiable. The petitioner has submitted that there was delay of approx. 2.5 years, from 26.3.2011 to August/September, 2013 on account of disbursement of land compensation by Sikkim Authorities. The petitioner also submitted that the delay of 14 months (from July 2012 to October 2013) was on account of delay in completion of boundary wall construction. The petitioner has further submitted that landslide during the monsoon seasons are the common phenomenon in the hilly terrain causing obstruction in the construction activities. The harsh and difficult hilly terrain, through which the approach road to sub-station had to be constructed added to the delay. The chronology of events submitted by the petitioner regarding payment of compensation and law & order problem are as follows:-

Date	Remark
14.3.2011	Publication of declaration of Land Acquisition as per Sec. 6
26.3.2011	Transfer of 100% land value to SPDC by POWERGRID
October, 2011	Disbursement of 80% land compensation to land owners
	Persuasions with SPDC and L&R Department, Sikkim for disbursement of balance 20% land compensation
9.10.2012	Letter to Secretary, L&R Department, Sikkim, requesting him to process the balance land payment at the earliest.



October, 2012	Letter from Deputy Secretary, L&R Department, Sikkim, to DC, South Sikkim intimating the transfer of balance 20% land compensation to DC office and requesting him to disburse compensation at the earliest.
<p>Meanwhile in absence of 20% balance land compensation , Law & Order issues crop up Rangpo S/S site, leading to halt of construction at S/S site / boundary wall construction, etc</p> <p>The contract for boundary wall construction was awarded on 18.01.2012, however the same could not be completed till Oct'2013 (even though the completion schedule for the same was kept as July'2012 as per LOA). The delay due to this issue was around 14 months.</p>	
22.3.2013	Letter To BDO, South Sikkim, to intervene since land owners are not allowing construction of S/S boundary wall, as payment (20% balance) has not yet been disbursed to them
12.5.2013	Letter from Revenue Office, L&R Department, Sikkim to Secretary, Energy & Power Department requesting him to release full amount corresponding to 20% balance land compensation as only a part of same has been transferred by SPDC.
9.7.2013/ 16.7.2013/ 30.7.2013	Letter dated 30.7.2013 to MD, SPDC, requesting him to release full amount corresponding to 20% balance land compensation. The letter makes references to letters by PGCIL dated 9.7.2013 & 16.7.2013 to Chief Secretary, Govt. of Sikkim, requesting the authorities to kindly take note of the threat of agitation by land owners in plead of balance payment and to take necessary action as discussed in meeting with various PGCIL & State officials.
Finally, the payment to land owners was initiated in a phased manner taking another couple of months.	

Time over-run in case of New Melli Sub-station

37. As regards the time over-run in case of New Melli Sub-station, the petitioner has submitted that there was delay in getting land, problems of law & order alongwith compensation issues. The petitioner has submitted that New Melli Sub-station is located roughly 20 km from the Rangpo Sub-station and the problems faced regarding land compensation and law & order were more or less similar to Rangpo Sub-station. Further, in addition to that there was issue of handing over of balance land (0.67 Ha) to it by the state authorities which further delayed the start of New Melli Sub-station construction activity. As a result, work of boundary wall could not be started. Landowners were reluctant to handover the land to it. The petitioner has also submitted that the New Melli Sub-station had land acquisition and payment of compensation leading to delay of approximately 2.5



years. The petitioner has further submitted that there was transportation problem on account of the weak bridges in Sikkim due to which transportation of GIS materials was delayed by 6 months. The petitioner has submitted that landslides and road strengthening and widening between Melli and Jorethang delayed the transportation of material.

38. The petitioner has further submitted vide affidavit dated 14.7.2017 that weak bridges and poor road network during monsoon led to the delay and submitted supplementary documents and relevant correspondence. The petitioner has submitted that the time over-run was out of its control and it qualifies as an unforeseen events as provided under Regulation 12(2)(i) “uncontrollable factors” of the 2014 Tariff Regulations. The petitioner has requested to condone the time over-run.

39. We have considered the submissions of the petitioner. There is a time over-run of 17 months 20 days in commissioning of the Asset-I, which is due to forest clearance, RoW problems and compensation issues. It is observed that the petitioner approached the Department of Forest (DOF), Government of Sikkim for starting the preliminary survey on 12.7.2011 after 117 days from the date of investment approval i.e. 17.3.2011. The petitioner has not explained the reasons for delay in approaching the Department of Forest (DOF), Government of Sikkim. Hence, delay on this account is attributable to the petitioner and it is disallowed. As regards forest clearance, it is observed that the petitioner submitted the proposal for forest clearance on 3.3.2012. The Stage-I clearance was received on 15.2.2013, Stage-II clearance was received on 17.4.2013 and the tree felling order was received on 13.11.2013. Therefore, it took 620 days for obtaining the



forest clearance and the tree felling orders. Normally, it would take 300 days for obtaining the forest clearance and the petitioner would have considered these 300 days while working out the timeline for COD of Asset-I. We are of the view that the time taken beyond 300 days in obtaining forest clearance requires to be condoned. Accordingly, we 620 days taken for obtaining the forest approval is not attributable to the petitioner. It is further noted that the petitioner has made the request for damage compensation assessment in February, 2012. However, the demand was raised by the State government authorities on 7.9.2013 and the payment was made by the petitioner immediately on 12.9.2013. The demand for payment of land compensation was received after a period of 19 months. It is also noted that the permission to transport the transformer/reactor over the Rangpo River was received on 30.8.2013. However, both these delays in obtaining the demand for payment of land compensation and permission to transport the transformer/reactor over the Rangpo River are subsumed in the delay in getting forest clearance. As regards the delay of one month due to infringement of material of LANCO, we are of the view that the petitioner should have taken appropriate steps in coordination with LANCO and settled the matter. We are not inclined to condone the time over-run of one month claimed by the petitioner in this regard. The petitioner has also attributed time over-run of 21 months due to RoW issues and due to delay in payment of 20% of land compensation by the Government of Sikkim. The petitioner had deposited 20% of the land compensation as demanded by the State government on time. Accordingly, the time over-run of 17 months and 20 days (536 days) i.e. from 12.2.2012 to 22.11.2013 in COD of Asset-I is condoned.



40. As regards time over-run in case of Asset-II and Asset-III, the petitioner has submitted that the time over-run was due to getting land, law & order, delay in payment of compensation and transportation problems. The reasons for time over-run in case of New Melli Sub-station are similar to the reasons in case of Asset-I at Rangpo. However, Asset-1 i.e. New Melli-Rangpo D/C transmission line and associated bays were ready on 21.5.2015 which include sub-station at New Melli. The petitioner could not put both the bus reactors at New Melli Sub-station into commercial operation and has not submitted detailed justification for the time over-run of bus reactors beyond 21.5.2015. We fail to understand how sub-station designed with reactive compensation was working without reactors till their commissioning. The petitioner should have planned and executed bus reactors along with the sub-station. Therefore, we are not inclined to condone the time over-run of 8 months and 10 days (i.e. from 21.5.2015 to 31.1.2016) and 10 months (i.e. from 21.5.2015 to 21.3.2016) in case of Assets-II and III respectively. However, the initial time over-run of 17 months 20 days is condoned in case of Assets-II and III.

41. In view of above, the details of time over-run condoned in respect of instant assets is as under:-

Assets	Total delay	Delay not condoned	Delay condoned
Asset-I	17 months and 20 days	-	17 months and 20 days
Asset-II	25 months and 30 days	8 months and 10 days	17 months and 20 days
Asset-III	27 months and 20 days	10 months	17 months and 20 days

Interest During Construction (IDC)

42. The petitioner has claimed Interest during Construction (IDC) of ₹742.64 lakh, ₹63.96 lakh and ₹69.76 lakh in respect for Assets-I, II, and III respectively.

The allowable IDC has been worked out based on the loans deployed for the _____



assets as per Form-9C of the petition. In respect of Asset-I, IDC claimed by the petitioner is slightly lower than the IDC worked out and in case of Asset-II and Asset-III, the IDC claimed by the petitioner is higher than the IDC worked out. Therefore, the IDC being considered for tariff computation is minimum of worked out IDC and IDC claimed by the petitioner. Accordingly, IDC of ₹742.64 lakh, ₹49.41 lakh and ₹42.42 lakh has been considered in respect for Assets-I, II and III respectively in the tariff computations.

43. The petitioner has submitted in the petition the IDC discharged up to COD. The petitioner has submitted that the undischarged IDC as on COD was discharged during 2015-16. The petitioner has explicitly submitted that the undischarged IDC claimed to be discharged during 2015-16 has not been included in the additional capital expenditure claimed as per Auditor's Certificates. It has been further submitted that there is no default in the interest payment of any loan. Accordingly, IDC amount of ₹611.20 lakh, ₹49.41 lakh and ₹42.42 lakh discharged upto COD in respect for Assets-I, II and III respectively is allowed. The IDC of ₹131.44 lakh in respect of Asset-I, claimed to be discharged during 2015-16 is being added to the additional capitalization claimed during 2015-16 for the purpose of tariff. The detail of IDC claimed, allowed, disallowed and discharged as on tariff COD / COD and during 2015-16, is as follows:-

(₹ in lakh)

Assets	IDC (on accrual basis) claimed in Auditor's Certificate (A)	IDC disallowed due to time over-run (B)	IDC allowed [C=(A-B)]	IDC discharged as on tariff COD /COD (D)	IDC discharged during 2015-16 [E=(C-D)]
Asset-I	742.64	0.00	742.64	611.20	131.44



Asset-II	63.96	14.55	49.41	49.41	0.00
Asset-III	69.76	27.34	42.42	42.42	0.00

Incidental Expenses During Construcion (IEDC)

44. The petitioner has claimed IEDC of ₹396.62 lakh, ₹25.88 lakh and ₹26.63 lakh in respect of Assets-I, II and III respectively paid during Construction as on COD, which is within the percentage of Hard Cost (i.e, 5%) indicated in the Abstract Cost Estimate and accordingly it is allowed. Hence, no adjustment of IEDC is required in the case of instant assets. Further, the petitioner has submitted that the IEDC claimed are discharged as on COD. The details of IEDC claimed, disallowed and allowed are given in the following table:-

(₹ in lakh)			
Assets	IEDC claimed	IEDC up to allowable period	IEDC disallowed for delay period
Asset-I	396.62	396.62	0.00
Asset-II	25.88	22.17	3.71
Asset-III	26.63	22.19	4.44

45. The IDC and IEDC pertaining for the period from claimed COD (21.5.2015) to tariff COD (22.9.2015), in case of Asset-I, will be payable by the generating stations in the ratio of their LTA and shall not be passed through in the tariff. In this regard, it is observed that the petitioner has claimed IDC and IEDC up to claimed COD and hence, no further quantification is required to be done for IDC and IEDC at this stage.

Initial Spares

46. Regulation 13 of the 2014 Tariff Regulations specifies ceiling norms for capitalization of initial spares in respect of transmission system as under:-

“13. Initial Spares



Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:

(d) Transmission system

(i) Transmission line - 1.00%

(ii) Transmission Sub-station (Green Field) - 4.00%

(iii) Transmission Sub-station (Brown Field) - 6.00%

(iv) Series Compensation devices and HVDC Station - 4.00%

(v) Gas Insulated Sub-station (GIS)-5.00%

(vi) Communication system-3.5%

Provided that:

(i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:

(ii) -----

(iii) Once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the transmission project at the time of truing up:

(iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the breakup of head wise IDC & IEDC in its tariff application.”

47. The petitioner has claimed initial spares of ₹97.00 lakh for Asset-I corresponding to transmission line and ₹268.50 lakh, ₹39.89 lakh and ₹39.89 lakh in respect for Assets-I, II and III respectively, corresponding to Sub-Station. Initial spares, claimed by the petitioner in respect of the instant assets are within the ceiling specified in the 2014 Tariff Regulations. Hence, no adjustment of initial spares is required. Further, the petitioner, vide affidavit dated 20.1.2017, has submitted the details of discharged initial spares liabilities. The details are as follows:-

(₹ in lakh)

Particulars	Total initial spares	Initial spares	Initial spares
-------------	----------------------	----------------	----------------



	claimed		discharged as on COD		estimated to be discharged during 2016-17	
	T/L	S/S	T/L	S/S	T/L	S/S
Asset-I	97.00	268.50	87.30	241.65	9.70	26.85
Asset-II	-	39.89	-	35.90	-	3.99
Asset-III	-	39.89	-	35.90	-	3.99

48. Accordingly, the capital cost considered, as provided Regulation 13(d) of the 2014 Tariff Regulations, for the purpose of tariff calculation after scrutiny of IDC and IEDC and initial spares is as follows:-

(₹ in lakh)					
Assets	Capital cost considered for the purpose of tariff before adjustment of IEDC, IDC and Initial Spares, if any, as on COD (A)	IDC disallowed as on COD (Due to time over-run not condoned/ liability un-discharged) (B)	IEDC disallowed as on COD (Due to time over-run not condoned) (C)	Initial spares disallowed as on COD (Due to liability un-discharged) (D)	Capital cost considered for the purpose of tariff after scrutiny of IEDC, IDC and initial spares as on COD (E)=(A)-(B+C+D)
Asset-I	14525.58	131.44	0.00	36.55	14357.59
Asset-II	974.50	14.55	3.71	3.99	952.25
Asset-III	981.91	27.34	4.44	3.99	946.14

Additional Capital Expenditure

49. Clause (1) of Regulation 14 of the 2014 Tariff Regulations provides as under:-

“ (1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (i) Undischarged liabilities recognised to be payable at a future date;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law or compliance of any existing law.”

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.



50. Clause (13) of Regulation 3 of the 2014 Tariff Regulations defines “cut-off” date as under:

“cut-off date” means 31st March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation”.

51. The “cut-off” date in the case of Asset-I is 31.3.2017 and it is 31.3.2018 in case of Assets-II and III.

52. The petitioner is deemed to have claimed/claimed the following Additional Capital Expenditure for the period from tariff COD/COD to 31.3.2019, as per Regulation 14(1) of the 2014 Tariff Regulations:-

(₹ in lakh)		
Assets	2015-16	2016-17
Asset-I	1069.44	5131.39
Asset-II	97.00	202.90
Asset-III	55.52	243.52

53. The petitioner has claimed the additional Capitalization incurred/projected to be incurred on account of Balance/Retention Payments under Regulation 14(1)(i) of the 2014 Tariff Regulations. We have considered the submissions of the petitioner. The Add Cap incurred/projected to be incurred is on account of Balance/Retention Payments and are within the “cut-off” date and is covered under Regulation 14(1) (i) of the 2014 Tariff Regulations. Accordingly, the Add Cap claimed by the petitioner is allowed.

54. The IDC of ₹131.44 lakh in respect of Asset-I, discharged during 2015-16 is added to the additional capitalization during 2015-16. Similarly, the Initial Spare of ₹36.55 lakh, ₹3.99 lakh and ₹3.99 lakh in respect of Assets-I, II and III



respectively, discharged during 2016-17 are being added to the additional capitalization during 2016-17. Accordingly, the following Add Cap is considered:-

(₹ in lakh)		
Assets	2015-16	2016-17
Asset-I	1200.88	5167.94
Asset-II	97.00	206.89
Asset-III	55.52	247.51

55. Accordingly, the following capital cost has been considered for the purpose of Tariff:-

(₹ in lakh)				
Asset	Expenditure up to tariff COD / COD	2015-16	2016-17	Total estimated completion cost up to 31.3.2019
Asset-I	14357.59	1200.88	5167.94	20726.41
Asset-II	952.25	97.00	206.89	1256.14
Asset-III	946.14	55.52	247.51	1249.17

Debt- Equity ratio

56. Clause 1 and 5 of Regulation 19 of the 2014 Tariff Regulations specifies as follows:-

“(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.

Explanation.-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.”



“(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

57. The petitioner has claimed debt: equity ratio of 70:30 as on the date of commercial operation. Debt:equity ratio of 70:30 is considered as provided in Regulation 19 of the 2014 Tariff Regulations. The capital cost on the dates of commercial operation arrived at as above and additional capitalization allowed have been considered in the normative debt-equity ratio of 70:30. The details of debt:equity ratio in respect of the instant assets as on the date of commercial operation and as on 31.3.2019 are as under:-

(₹ in lakh)

Asset-I	As on COD		As on 31.3.2019	
Particulars	Amount	% age	Amount	% age
Debt	10050.32	70.00	14508.49	70.00
Equity	4307.27	30.00	6217.92	30.00
Total	14357.59	100.00	20726.41	100.00
Asset-II	As on COD		As on 31.3.2019	
Particulars	Amount	% age	Amount	% age
Debt	666.58	70.00	879.30	70.00
Equity	285.67	30.00	376.84	30.00
Total	952.25	100.00	1256.14	100.00
Asset-III	As on COD		As on 31.3.2019	
Particulars	Amount	% age	Amount	% age
Debt	662.30	70.00	874.42	70.00
Equity	283.84	30.00	374.75	30.00
Total	946.14	100.00	1249.17	100.00

Return on Equity (RoE)

58. Clause (1) and (2) of Regulation 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations specify as under:-

“**24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.



(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:

(i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in **Appendix-I**:

(ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

(iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

(iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

(v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

(vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

“25. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the



relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess."

59. The petitioner has submitted that it is liable to pay income tax at MAT rate, the RoE has been calculated @ 19.610% after grossing up the RoE with MAT rate of 20.961% during 2013-14, as provided under Regulation 25(2)(i) of the 2014 Tariff Regulations. As per Regulation 25(3) of the 2014 Tariff Regulations, the grossed up rate of RoE at the end of the financial year shall be trued up based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax including interest received from the IT authorities pertaining to the 2014-19 period on actual gross income of any financial year. The petitioner has further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including interest received from IT authorities shall be recoverable/adjustable after completion of income tax assessment of the financial year.

60. We have considered the submissions made by the petitioner. The RoE has been worked out in accordance with Regulation 24 and Regulation 25 of the 2014 Regulations. The rate of pre-tax return on equity for 2014-19 period has been determined by grossing up the base rate of 15.00% with effective tax rate of 20.961% (i.e. MAT rate applicable for the financial year 2013-14). This rate of pre-tax return on equity is subject to true up based on the effective tax rate of respective financial year applicable to the petitioner company.

61. Accordingly, the following ROE is allowed for the instant assets for the 2014-19 tariff period:-



(₹ in lakh)

Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	4307.27	4667.54	6217.92	6217.92
Additional Capitalization	360.26	1550.38	0.00	0.00
Closing Equity	4667.54	6217.92	6217.92	6217.92
Average Equity	4487.40	5442.73	6217.92	6217.92
Return on Equity (Base Rate) (%)	15.50%	15.50%	15.50%	15.50%
MAT rate for the financial year 2013-14 (%)	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax) (%)	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre-tax)	461.63	1067.32	1219.33	1219.33
Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	285.67	314.77	376.84	376.84
Additional Capitalization	29.10	62.07	0.00	0.00
Closing Equity	314.77	376.84	376.84	376.84
Average Equity	300.22	345.80	376.84	376.84
Return on Equity (Base Rate) (%)	15.50%	15.50%	15.50%	15.50%
MAT rate for the financial year 2013-14 (%)	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax) (%)	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre-tax)	9.81	67.81	73.90	73.90
Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Equity	283.84	300.50	374.75	374.75
Additional Capitalization	16.66	74.25	0.00	0.00
Closing Equity	300.50	374.75	374.75	374.75
Average Equity	292.17	337.62	374.75	374.75
Return on Equity (Base Rate) (%)	15.50%	15.50%	15.50%	15.50%
MAT rate for the financial year 2013-14 (%)	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax) (%)	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre-tax)	1.72	66.21	73.49	73.49

Interest on Loan (IoL)

62. Regulation 26 of the 2014 Tariff Regulations are provides as under:-

“(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan



(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting 65 the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the 66 generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.”

63. The petitioner’s entitlement to IoL has been calculated as per the provisions of Regulation 26 of the 2014 Tariff Regulations as detailed below:-

(a) Gross amount of loan, repayment of instalments and rate of interest on actual loans have been considered as per the petition;

(b) The yearly repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that year;

(c) Weighted average rate of interest on actual average loan worked out as per (a) above is applied on the notional average loan during the year to arrive at the interest on loan.



(d) For Asset-I, the expenditure as on revised COD of 22.9.2015 as also the add-cap for 2015-16 has been adjusted pro-rata. The corresponding actual loan has accordingly adjusted pro-rata. The petitioner is directed to furnish revised loan portfolio at the time of truing up of tariff.

64. The petitioner has submitted that the interest on loan has been considered on the basis of rate prevailing as on respective CODs and the change in interest due to floating rate of interest applicable, if any, for the project needs to be claimed/ adjusted over the tariff block 2014-19. The interest on loan has been calculated on the basis of rate prevailing as on the date of commercial operation. Any change in rate of interest subsequent to the date of commercial operation will be considered at the time of truing-up.

65. Detailed calculations in support of interest on loan have been calculated as given at **Annexure II to Annexure IV** of this order.

66. The details of Interest on Loan calculated are as under:-

Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	10050.32	10890.93	14508.49	14508.49
Cumulative Repayment upto previous year	0.00	375.97	1251.93	2257.50
Net Loan-Opening	10050.32	10514.96	13256.56	12250.99
Additions during the year	840.61	3617.56	0.00	0.00
Repayment during the year	375.97	875.96	1005.57	1005.57
Net Loan-Closing	10514.96	13256.56	12250.99	11245.43
Average Loan	10282.64	11885.76	12753.78	11748.21
Rate of Interest (%)	4.9824%	5.3008%	5.4658%	5.5104%
Interest	268.76	630.04	697.10	647.37
Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	666.58	734.48	879.30	879.30



Cumulative Repayment upto previous year	0.00	8.81	69.67	135.99
Net Loan-Opening	666.58	725.67	809.63	743.31
Additions during the year	67.90	144.82	0.00	0.00
Repayment during the year	8.81	60.86	66.32	66.32
Net Loan-Closing	725.67	809.63	743.31	676.99
Average Loan	696.13	767.65	776.47	710.15
Rate of Interest (%)	6.9524%	7.0065%	7.0338%	7.0573%
Interest	8.07	53.79	54.62	50.12
Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Gross loan opening	662.30	701.17	874.42	874.42
Cumulative Repayment upto previous year	0.00	1.55	60.97	126.92
Net Loan-Opening	662.30	699.62	813.46	747.50
Additions during the year	38.86	173.26	0.00	0.00
Repayment during the year	1.55	59.42	65.96	65.96
Net Loan-Closing	699.62	813.46	747.50	681.54
Average Loan	680.96	756.54	780.48	714.52
Rate of Interest (%)	6.9726%	7.0012%	7.0286%	7.0511%
Interest	1.43	52.97	54.86	50.38

Depreciation

67. Regulation 27 of the 2014 Tariff Regulations with regard to depreciation specifies as follows:-

"27. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.



(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-II** to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.”

68. The petitioner has claimed actual depreciation as a component of annual fixed charges. In our calculations, depreciation has been calculated in accordance with Regulation 27 of the 2014 Tariff Regulations extracted above.

69. The instant transmission assets were put under commercial operation between 22.9.2015 to 21.3.2016. Accordingly, they will complete 12 years after 2018-19. As such, depreciation has been calculated annually based on Straight Line Method at the rates specified in Appendix-II to the 2014 Tariff Regulations. Further, depreciation has been worked out on the basis of the capital expenditure as on COD and additional capital expenditure incurred/projected to be incurred



thereafter, wherein depreciation for the first year has been calculated on pro-rata basis for the year/part of the year.

70. The details of the depreciation worked out are as under:-

Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	14357.59	15558.47	20726.41	20726.41
Addition during 2014-19 due to Projected Additional Capitalisation	1200.88	5167.94	0.00	0.00
Closing Gross Block	15558.47	20726.41	20726.41	20726.41
Average Gross Block	14958.03	18142.44	20726.41	20726.41
Rate of Depreciation	4.7914%	4.8282%	4.8516%	4.8516%
Depreciable Value	12296.63	15162.60	17488.17	17488.17
Remaining Depreciable Value	12296.63	14786.62	16236.24	15230.67
Depreciation	375.97	875.96	1005.57	1005.57
Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	952.25	1049.25	1256.14	1256.14
Addition during 2014-19 due to Projected Additional Capitalisation	97.00	206.89	0.00	0.00
Closing Gross Block	1049.25	1256.14	1256.14	1256.14
Average Gross Block	1000.75	1152.70	1256.14	1256.14
Rate of Depreciation	5.2800%	5.2800%	5.2800%	5.2800%
Depreciable Value	900.68	1037.43	1130.53	1130.53
Remaining Depreciable Value	900.68	1028.62	1060.86	994.53
Depreciation	8.81	60.86	66.32	66.32
Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Opening Gross Block	946.14	1001.66	1249.17	1249.17
Addition during 2014-19 due to Projected Additional Capitalisation	55.52	247.51	0.00	0.00
Closing Gross Block	1001.66	1249.17	1249.17	1249.17
Average Gross Block	973.90	1125.42	1249.17	1249.17
Rate of Depreciation	5.2800%	5.2800%	5.2800%	5.2800%
Depreciable Value	876.51	1012.88	1124.26	1124.26
Remaining Depreciable Value	876.51	1011.33	1063.29	997.33
Depreciation	1.55	59.42	65.96	65.96



Operation & Maintenance Expenses (O&M Expenses)

71. The petitioner vide affidavit dated 1.9.2016 has claimed the following O&M Expenses:-

(₹ in lakh)				
Element	2015-16	2016-17	2017-18	2018-19
Asset-I	159.35	190.82	197.11	203.69
Asset-II	7.39	45.06	46.55	48.10
Asset-III	1.29	45.06	46.55	48.10

72. We have considered the submissions of the petitioner. The O&M expenses have been calculated as given below:-

(₹ in lakh)					
Element	2014-15	2015-16	2016-17	2017-18	2018-19
Asset-I					
220 KV Rangpo – New Melli D/C line (23.57 km)	0	3.87	7.64	7.87	8.15
220 KV Rangpo – New Melli M/C line (2.22 km)	0	1.49	2.94	3.04	3.14
2 nos 220 kV bays at New Melli and 2 nos. 220 kV bays at Rangpo	0	91.51	180.24	186.20	192.40
Total	0	96.87	190.82	197.11	203.69
Asset-II					
220 KV GIS Bus reactor Bay at New Melli	0	7.27	45.06	46.55	48.10
Total	0	7.27	45.06	46.55	48.10
Asset-III					
220 KV GIS Bus reactor Bay at New Melli	0	1.31	45.06	46.55	48.10
Total	0	1.31	45.06	46.55	48.10

73. The O&M Expenses allowed for the instant assets as per the 2014 Tariff Regulations is as under:-

(₹ in lakh)				
Assets	O&M Expenses allowed			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Asset-I	96.87	190.82	197.11	203.69
Asset-II	7.27	45.06	46.55	48.10
Asset-III	1.31	45.06	46.55	48.10



74. The petitioner has submitted that norms for O&M Expenses for the tariff period 2014-19 have been arrived on the basis of normalized actual O&M Expenses during the period 2008-09 to 2012-13. The petitioner has further submitted that the wage revision of the employees of the petitioner Company is due during the 2014-19 tariff period and actual impact of wage hike, which will be effective at a future date, has not been factored in fixation of the normative O&M rate specified for the tariff period 2014-19. The petitioner has prayed to be allowed to approach the Commission for suitable revision in the norms of O&M Expenses for claiming the impact of such increase.

75. BRPL has submitted that any increase in the employee cost due to wage revision must be taken care by increasing the productivity levels of the petitioner company and the beneficiaries should not be burdened over and above the provisions in 2014 Tariff Regulations. The petitioner in its rejoinder has submitted that the wage revision of the employees of the petitioner company is due with effect from 1.1.2017 and actual impact of wage hike which will be effective from a future date has also not been factored in fixation of the normative O&M rates prescribed for the tariff block 2014-19. The scheme of wage revision applicable to CPSUs is binding on the petitioner and hence the petitioner would approach the Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike from 1.1.2017 onwards.

76. We have considered the submissions of the petitioner. The O&M Expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. As regards impact of wage revision, any application filed by the



petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

Interest on Working Capital (IWC)

77. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specify as follows:-

“28. Interest on Working Capital

(1) The working capital shall cover:

(c) Hydro generating station including pumped storage hydro electric generating station and transmission system including communication system:

(i) Receivables equivalent to two months of fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and

(iii) Operation and maintenance expenses for one month”

(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the 72 transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.

“(5) ‘Bank Rate’ means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;”

78. The petitioner is entitled to claim interest on working capital as per the 2014 Tariff Regulations. The components of the working capital and the petitioner’s entitlement to interest thereon are discussed hereunder:-

(i) Maintenance spares



Regulation 28 of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M expenses. The value of maintenance spares has accordingly been worked out.

(ii) O & M Expenses

Operation and maintenance expenses have been considered for one month as a component of working capital. The O&M expenses for Assets-I, II & III covered for the FY-2015-16 in the instant petition are not in accordance with the norms specified in CERC Tariff Regulations, 2014-19 and same may be restricted as per norms specified in Tariff Regulations, 2014.

(iii) Receivables

Receivables as a component of working capital will be equivalent to two months fixed cost. The petitioner has claimed the receivables on the basis of 2 months' annual transmission charges. In the tariff being allowed, receivables have been worked out on the basis of 2 months' transmission charges.

(iv) Rate of interest on working capital

As provided in Regulation 28(3) of the 2014 Tariff Regulations, SBI Base Rate plus 350 bps as on 1.4.2015 (i.e.13.50%) has been considered as the rate of interest on working capital for all the assets.

79. The IWC allowed for the instant assets is shown in the table below:-

(₹ in lakh)	
Particulars	Asset-I



	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	27.70	28.62	29.57	30.55
O & M expenses	15.39	15.90	16.43	16.97
Receivables	392.07	472.32	532.88	525.55
Total	435.15	516.84	578.87	573.08
Interest Rate	13.50%	13.50%	13.50%	13.50%
Interest	30.82	69.77	78.15	77.37
Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	6.54	6.76	6.98	7.22
O & M expenses	3.64	3.76	3.88	4.01
Receivables	34.97	39.03	41.41	40.91
Total	45.15	49.55	52.27	52.14
Interest Rate	13.50%	13.50%	13.50%	13.50%
Interest	1.02	6.69	7.06	7.04
Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Maintenance Spares	6.54	6.76	6.98	7.22
O & M expenses	3.63	3.76	3.88	4.01
Receivables	34.30	38.38	41.32	40.83
Total	44.47	48.89	52.18	52.05
Interest Rate	13.50%	13.50%	13.50%	13.50%
Interest	0.18	6.60	7.04	7.03

Transmission charges

80. The transmission charges allowed for the instant transmission assets are summarized as under:-

Particulars	Asset-I			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	375.97	875.96	1005.57	1005.57
Interest on Loan	268.76	630.04	697.10	647.37
Return on Equity	461.63	1067.32	1219.33	1219.33
Interest on Working Capital	30.82	69.77	78.15	77.37
O & M Expenses	96.87	190.82	197.11	203.69
Total	1234.05	2833.91	3197.26	3153.33
Particulars	Asset-II			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	8.81	60.86	66.32	66.32
Interest on Loan	8.07	53.79	54.62	50.12
Return on Equity	9.81	67.81	73.90	73.90
Interest on Working Capital	1.02	6.69	7.06	7.04
O & M Expenses	7.27	45.06	46.55	48.10

(₹ in lakh)



Total	34.97	234.21	248.44	245.48
Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	1.55	59.42	65.96	65.96
Interest on Loan	1.43	52.97	54.86	50.38
Return on Equity	1.72	66.21	73.49	73.49
Interest on Working Capital	0.18	6.60	7.04	7.03
O & M Expenses	1.31	45.06	46.55	48.10
Total	6.18	230.26	247.90	244.95

Filing Fee and the Publication Expenses

81. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 52 of the 2014 Tariff Regulations. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with clause (1) of Regulation 52 of the 2014 Tariff Regulations.

Licence Fee and RLDC fees and Charges

82. The petitioner has requested to allow the petitioner to bill and recover License fee and RLDC fees and charges, separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2)(b) and (2)(a), respectively, of Regulation 52 of the 2014 Tariff Regulations.

Sharing of Transmission Charges

83. The petitioner has submitted that the annual transmission tariff for the instant assets for the period 2014-19 shall be shared as per Regulation 43 of the 2014 Tariff Regulations and that the charges shall be recovered on monthly basis and the billing collection and disbursement of Transmission Charges will be governed by provision of Central Electricity Regulatory Commission (Sharing of



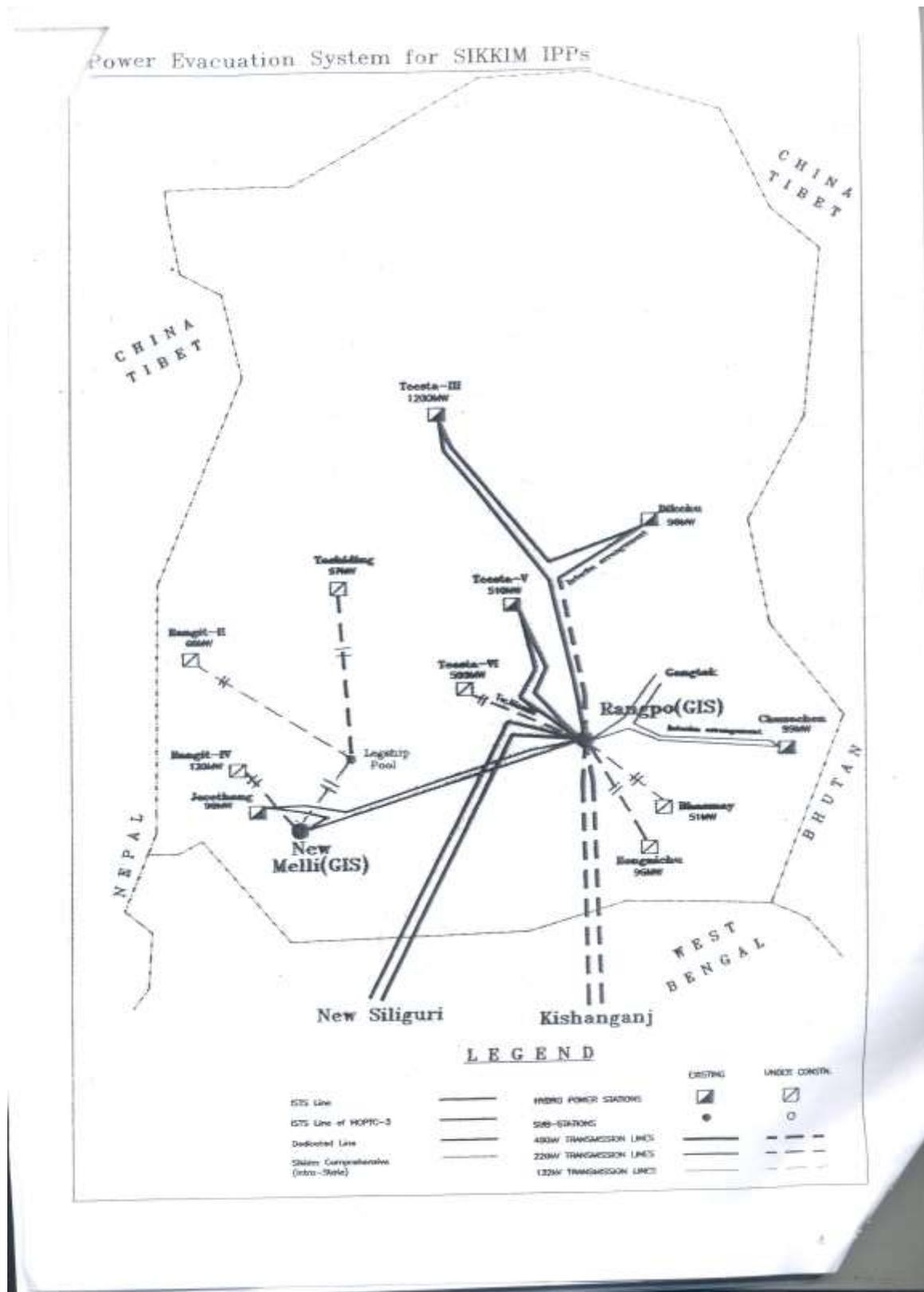
inter-State Transmission Charges and Losses) Regulations, 2010 (2010 Sharing Regulations).

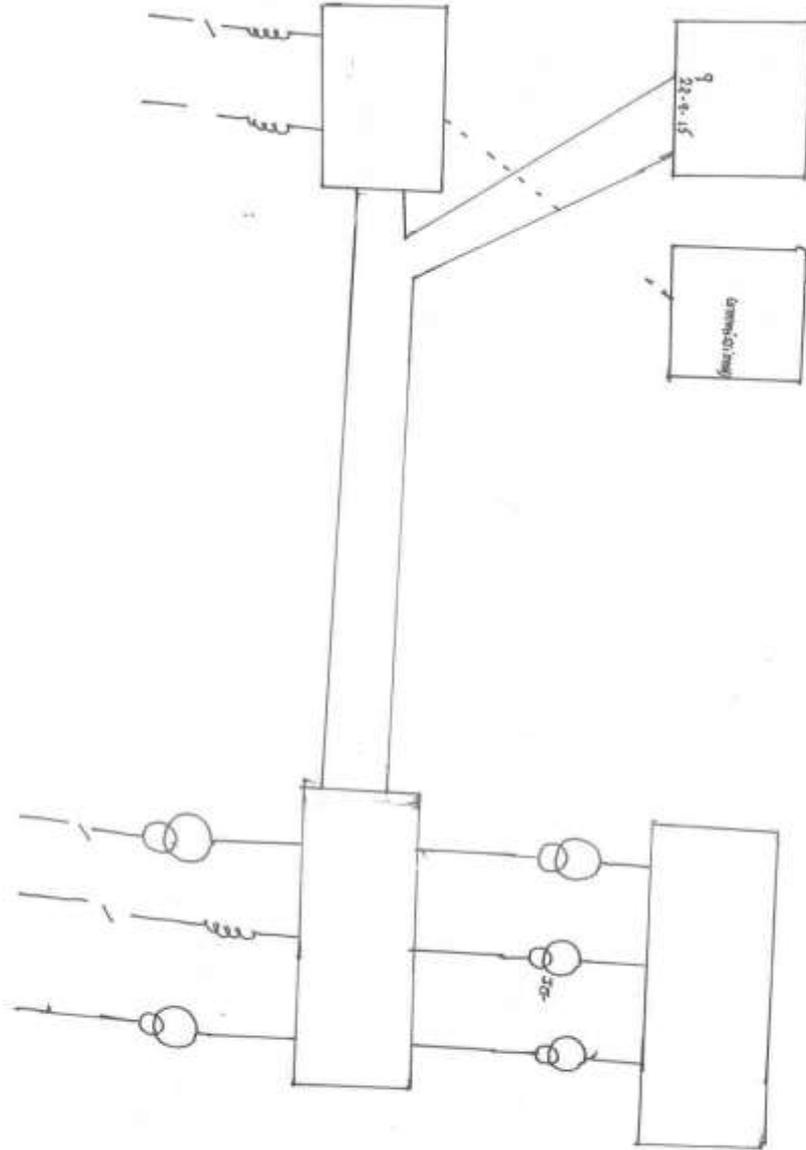
84. We have considered the submissions of the petitioner. As per the BPTA, the assets covered in the instant petition are constructed for evacuation of power from the two generating companies i.e. Jorethang and Rangit-IV. It is observed that LTA in case of the generators has not been operationalised. As such, the transmission charges shall be shared by the generating companies (i.e. Jorethang and Rangit-IV) in the ratio of the LTA granted. After operationalisation of the LTA granted to these generators, the transmission charges allowed in this order shall be included in PoC charges as shall be shared as provided under Regulation 43 of the 2014 Tariff Regulations and recovered as provided in the 2010 Sharing Regulations. Further, in case of part operationalisation of LTA, the corresponding charges shall be included in PoC.

85. This order disposes of Petition No. 183/TT/2016.

sd/-	sd/-	sd/-	sd/-
(M.K. Iyer) Member	(A.S. Bakshi) Member	(A.K. Singhal) Member	(Gireesh B Pradhan) Chairperson







Annexure-II**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN****(₹ in lakh)**

	Details of Loan	2015-16	2016-17	2017-18	2018-19
1	Bond-XXXIV				
	Gross loan opening	100.00	100.00	100.00	100.00
	Cumulative Repayment upto COD/previous year	8.33	16.67	25.00	33.33
	Net Loan-Opening	91.67	83.33	75.00	66.67
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	8.33	8.33	8.33	8.33
	Net Loan-Closing	83.33	75.00	66.67	58.33
	Average Loan	87.50	79.17	70.83	62.50
	Rate of Interest	8.84%	8.84%	8.84%	8.84%
	Interest	7.74	7.00	6.26	5.53
	Rep Schedule	12 annual installments from 21.10.2014			
2	Bond-XLIX				
	Gross loan opening	1071.52	1153.77	1153.77	1153.77
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1071.52	1153.77	1153.77	1153.77
	Additions during the year	82.25	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	1153.77	1153.77	1153.77	1153.77
	Average Loan	1112.64	1153.77	1153.77	1153.77
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	90.68	94.03	94.03	94.03
	Rep Schedule	Redeemable in 3 equal installments on 9.3.2020, 9.3.2025 and 9.3.2030			
3	Bond-L				
	Gross loan opening	472.49	1194.45	1194.45	1194.45
	Cumulative Repayment upto COD/previous year	0.00	0.00	99.54	199.08
	Net Loan-Opening	472.49	1194.45	1094.91	995.38
	Additions during the year	721.96	0.00	0.00	0.00
	Repayment during the year	0.00	99.54	99.54	99.54
	Net Loan-Closing	1194.45	1094.91	995.38	895.84
	Average Loan	833.47	1144.68	1045.14	945.61
	Rate of Interest	8.40%	8.40%	8.40%	8.40%
	Interest	70.01	96.15	87.79	79.43
	Rep Schedule	12 annual installments from 28.6.2016			
4	Bond-XLVII				
	Gross loan opening	1076.09	1076.09	1076.09	1076.09
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1076.09	1076.09	1076.09	1076.09



	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	89.67
	Net Loan-Closing	1076.09	1076.09	1076.09	986.42
	Average Loan	1076.09	1076.09	1076.09	1031.25
	Rate of Interest	8.93%	8.93%	8.93%	8.93%
	Interest	96.09	96.09	96.09	92.09
	Rep Schedule	Redeemable in 12 equal annual installments from 20.10.2018			
5	FC Bond				
	Gross loan opening	1607.00	1607.00	1607.00	1607.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1607.00	1607.00	1607.00	1607.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	1607.00	1607.00	1607.00	1607.00
	Average Loan	1607.00	1607.00	1607.00	1607.00
	Rate of Interest	4.10%	4.10%	4.10%	4.10%
	Interest	65.89	65.89	65.89	65.89
	Rep Schedule	Final payment on 17.1.2023			
6	IFC (IFC-A Loan)				
	Gross loan opening	2571.20	2571.20	2571.20	2571.20
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	257.12
	Net Loan-Opening	2571.20	2571.20	2571.20	2314.08
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	257.12	257.12
	Net Loan-Closing	2571.20	2571.20	2314.08	2056.96
	Average Loan	2571.20	2571.20	2442.64	2185.52
	Rate of Interest	3.30%	3.30%	3.30%	3.30%
	Interest	84.85	84.85	80.61	72.12
	Rep Schedule	20 Half yearly equal installments from 15.9.2017			
7	IFC (IFC-B Loan)				
	Gross loan opening	1928.40	1928.40	1928.40	1928.40
	Cumulative Repayment upto COD/previous year	482.10	964.20	1928.40	1928.40
	Net Loan-Opening	1446.30	964.20	0.00	0.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	482.10	964.20	0.00	0.00
	Net Loan-Closing	964.20	0.00	0.00	0.00
	Average Loan	1205.25	482.10	0.00	0.00
	Rate of Interest	2.45%	2.45%	2.45%	2.45%
	Interest	29.53	11.81	0.00	0.00
	Rep Schedule	4 Half yearly equal installments from 15.9.2015			
8	IFC (ICFF- Loan)				



Gross loan opening	1285.60	1285.60	1285.60	1285.60
Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	128.56
Net Loan-Opening	1285.60	1285.60	1285.60	1157.04
Additions during the year	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	128.56	128.56
Net Loan-Closing	1285.60	1285.60	1157.04	1028.48
Average Loan	1285.60	1285.60	1221.32	1092.76
Rate of Interest	3.30%	3.30%	3.30%	3.30%
Interest	42.42	42.42	40.30	36.06
Rep Schedule	20 Half yearly equal installments from 15.9.2017			
Total Loan				
Gross loan opening	10112.30	10916.51	10916.51	10916.51
Cumulative Repayment upto COD/previous year	490.43	980.87	2052.94	2546.49
Net Loan-Opening	9621.86	9935.64	8863.57	8370.02
Additions during the year	804.21	0.00	0.00	0.00
Repayment during the year	490.43	1072.07	493.55	583.23
Net Loan-Closing	9935.64	8863.57	8370.02	7786.80
Average Loan	9778.75	9399.61	8616.80	8078.41
Rate of Interest	4.9824%	5.3008%	5.4658%	5.5104%
Interest	487.21	498.25	470.98	445.15



Annexure-III**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN****(₹ in lakh)**

	Details of Loan	2015-16	2016-17	2017-18	2018-19
1	Bond-XLIX				
	Gross loan opening	173.71	173.71	173.71	173.71
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	173.71	173.71	173.71	173.71
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	173.71	173.71	173.71	173.71
	Average Loan	173.71	173.71	173.71	173.71
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	14.16	14.16	14.16	14.16
	Rep Schedule	Redeemable in 3 equal installments on 9.3.2020, 9.3.2025 and 9.3.2030			
2	Bond-XLIX				
	Gross loan opening	0.00	71.27	71.27	71.27
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	71.27	71.27	71.27
	Additions during the year	71.27	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	71.27	71.27	71.27	71.27
	Average Loan	35.64	71.27	71.27	71.27
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	2.90	5.81	5.81	5.81
	Rep Schedule	Redeemable in 3 equal installments on 9.3.2020, 9.3.2025 and 9.3.2030			
3	Bond-XL				
	Gross loan opening	10.00	10.00	10.00	10.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.83	1.67
	Net Loan-Opening	10.00	10.00	9.17	8.33
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.83	0.83	0.83
	Net Loan-Closing	10.00	9.17	8.33	7.50
	Average Loan	10.00	9.58	8.75	7.92
	Rate of Interest	9.30%	9.30%	9.30%	9.30%
	Interest	0.93	0.89	0.81	0.74
	Rep Schedule	12 annual installments from 28.6.2016			
4	SBI (21.03.2012)				
	Gross loan opening	10.00	10.00	10.00	10.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.91	1.82
	Net Loan-Opening	10.00	10.00	9.09	8.18



	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.91	0.91	0.91
	Net Loan-Closing	10.00	9.09	8.18	7.27
	Average Loan	10.00	9.55	8.64	7.73
	Rate of Interest	9.55%	9.55%	9.55%	9.55%
	Interest	0.96	0.91	0.82	0.74
	Rep Schedule	22 half yearly installment from 31.8.2016			
5	FC Bond				
	Gross loan opening	102.89	102.89	102.89	102.89
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	102.89	102.89	102.89	102.89
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	102.89	102.89	102.89	102.89
	Average Loan	102.89	102.89	102.89	102.89
	Rate of Interest	4.10%	4.10%	4.10%	4.10%
	Interest	4.22	4.22	4.22	4.22
	Rep Schedule	Final payment on 17.1.2023			
6	IFC (IFC-A Loan)				
	Gross loan opening	137.18	137.18	137.18	137.18
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	13.72
	Net Loan-Opening	137.18	137.18	137.18	123.46
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	13.72	13.72
	Net Loan-Closing	137.18	137.18	123.46	109.74
	Average Loan	137.18	137.18	130.32	116.60
	Rate of Interest	3.44%	3.44%	3.44%	3.44%
	Interest	4.72	4.72	4.48	4.01
	Rep Schedule	20 Half yearly equal installments from 15.9.2017			
7	Bond XLII				
	Gross loan opening	10.00	10.00	10.00	10.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	10.00	10.00	10.00	10.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	3.33
	Net Loan-Closing	10.00	10.00	10.00	6.67
	Average Loan	10.00	10.00	10.00	8.33
	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	0.88	0.88	0.88	0.73
	Rep Schedule	Redeemable at par on 13.3.2023			
8	Bond XLIV				
	Gross loan opening	35.00	35.00	35.00	35.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00



	Net Loan-Opening	35.00	35.00	35.00	35.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	11.67
	Net Loan-Closing	35.00	35.00	35.00	23.33
	Average Loan	35.00	35.00	35.00	29.17
	Rate of Interest	8.70%	8.70%	8.70%	8.70%
	Interest	3.05	3.05	3.05	2.54
	Rep Schedule	Redeemable at par in 3 equal installments on 15.7.2018, 15.7.2023 and 15.7.2028			
9	Bond XLVII				
	Gross loan opening	200.00	200.00	200.00	200.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	200.00	200.00	200.00	200.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	16.67
	Net Loan-Closing	200.00	200.00	200.00	183.33
	Average Loan	200.00	200.00	200.00	191.67
	Rate of Interest	8.93%	8.93%	8.93%	8.93%
	Interest	17.86	17.86	17.86	17.12
	Rep Schedule	Redeemable in 12 equal annual installments from 20.10.2018			
	Total Loan				
	Gross loan opening	678.78	750.05	750.05	750.05
	Cumulative Repayment upto COD/previous year	0.00	0.00	1.74	17.20
	Net Loan-Opening	678.78	750.05	748.30	732.84
	Additions during the year	71.27	0.00	0.00	0.00
	Repayment during the year	0.00	1.74	15.46	47.13
	Net Loan-Closing	750.05	748.30	732.84	685.72
	Average Loan	714.41	749.17	740.57	709.28
	Rate of Interest	6.9524%	7.0065%	7.0338%	7.0573%
	Interest	49.67	52.49	52.09	50.06



Annexure-IV**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN****(₹ in lakh)**

	Details of Loan	2015-16	2016-17	2017-18	2018-19
1	Bond-XLIX				
	Gross loan opening	187.56	187.56	187.56	187.56
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	187.56	187.56	187.56	187.56
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	187.56	187.56	187.56	187.56
	Average Loan	187.56	187.56	187.56	187.56
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	15.29	15.29	15.29	15.29
	Rep Schedule	Redeemable in 3 equal installments on 9.3.2020, 9.3.2025 and 9.3.2030			
2	Bond-XLIX				
	Gross loan opening	0.00	38.86	38.86	38.86
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	38.86	38.86	38.86
	Additions during the year	38.86	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	38.86	38.86	38.86	38.86
	Average Loan	19.43	38.86	38.86	38.86
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	1.58	3.17	3.17	3.17
	Rep Schedule	Redeemable in 3 equal installments on 9.3.2020, 9.3.2025 and 9.3.2030			
3	Bond-XL				
	Gross loan opening	10.00	10.00	10.00	10.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.83	1.67
	Net Loan-Opening	10.00	10.00	9.17	8.33
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.83	0.83	0.83
	Net Loan-Closing	10.00	9.17	8.33	7.50
	Average Loan	10.00	9.58	8.75	7.92
	Rate of Interest	9.30%	9.30%	9.30%	9.30%
	Interest	0.93	0.89	0.81	0.74
	Rep Schedule	12 annual installments from 28.6.2016			
4	SBI (21.03.2012)				
	Gross loan opening	10.00	10.00	10.00	10.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.91	1.82



	Net Loan-Opening	10.00	10.00	9.09	8.18
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.91	0.91	0.91
	Net Loan-Closing	10.00	9.09	8.18	7.27
	Average Loan	10.00	9.55	8.64	7.73
	Rate of Interest	9.55%	9.55%	9.55%	9.55%
	Interest	0.96	0.91	0.82	0.74
	Rep Schedule	22 half yearly installment from 31.8.2016			
5	FC Bond				
	Gross loan opening	100.62	100.62	100.62	100.62
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	100.62	100.62	100.62	100.62
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	100.62	100.62	100.62	100.62
	Average Loan	100.62	100.62	100.62	100.62
	Rate of Interest	4.10%	4.10%	4.10%	4.10%
	Interest	4.13	4.13	4.13	4.13
	Rep Schedule	Final payment on 17.1.2023			
6	IFC (IFC-A Loan)				
	Gross loan opening	134.16	134.16	134.16	134.16
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	13.42
	Net Loan-Opening	134.16	134.16	134.16	120.74
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	13.42	13.42
	Net Loan-Closing	134.16	134.16	120.74	107.33
	Average Loan	134.16	134.16	127.45	114.04
	Rate of Interest	3.44%	3.44%	3.44%	3.44%
	Interest	4.62	4.62	4.38	3.92
	Rep Schedule	20 Half yearly equal installments from 15.9.2017			
7	Bond XLII				
	Gross loan opening	10.00	10.00	10.00	10.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	10.00	10.00	10.00	10.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	3.33
	Net Loan-Closing	10.00	10.00	10.00	6.67
	Average Loan	10.00	10.00	10.00	8.33
	Rate of Interest	8.80%	8.80%	8.80%	8.80%
	Interest	0.88	0.88	0.88	0.73
	Rep Schedule	Redeemable at par on 13.3.2023			
8	Bond XLIV				
	Gross loan opening	35.00	35.00	35.00	35.00



	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	35.00	35.00	35.00	35.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	11.67
	Net Loan-Closing	35.00	35.00	35.00	23.33
	Average Loan	35.00	35.00	35.00	29.17
	Rate of Interest	8.70%	8.70%	8.70%	8.70%
	Interest	3.05	3.05	3.05	2.54
	Rep Schedule	Redeemable at par in 3 equal installments on 15.7.2018, 15.7.2023 and 15.7.2028			
9	Bond XLVII				
	Gross loan opening	200.00	200.00	200.00	200.00
	Cumulative Repayment upto COD/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	200.00	200.00	200.00	200.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	16.67
	Net Loan-Closing	200.00	200.00	200.00	183.33
	Average Loan	200.00	200.00	200.00	191.67
	Rate of Interest	8.93%	8.93%	8.93%	8.93%
	Interest	17.86	17.86	17.86	17.12
	Rep Schedule	Redeemable in 12 equal annual installments from 20.10.2018			
	Total Loan				
	Gross loan opening	687.34	726.20	726.20	726.20
	Cumulative Repayment upto COD/previous year	0.00	0.00	1.74	16.90
	Net Loan-Opening	687.34	726.20	724.46	709.30
	Additions during the year	38.86	0.00	0.00	0.00
	Repayment during the year	0.00	1.74	15.16	46.83
	Net Loan-Closing	726.20	724.46	709.30	662.47
	Average Loan	706.77	725.33	716.88	685.89
	Rate of Interest	6.9726%	7.0012%	7.0286%	7.0511%
	Interest	49.28	50.78	50.39	48.36

