April 6, 2023

To,

The Secretary,

Maharashtra Electricity Regulatory Commission

World Trade Centre, Centre No. 1

13th Floor, Cuffe Parade, Mumbai- 400005

Sub: Email dated 13th February, 2023 in the matter of Hon'ble MERC additional clarifications/queries

Ref: TPL Application for Grant of License vide Case No. 1 of 2023

Q1 - TPL has projected sales of ~15 to 25% of the total sales within the proposed licence area and accordingly capex has been projected by TPL in its network rollout plan. TPL to submit the capex required for network roll-out plan to supply to all the consumers (100 % USO and also 100% sales in the proposed licence area) within the proposed supply area along with the break-up of major capital items and cost thereof incl. basis for estimation of such capex estimation.

A) At the outset, it is submitted that TPL has furnished all the requisite details of capex proposed to be incurred during the next 5 years in the proposed license area. The same is in line with the expected consumers to be served by TPL. However, in accordance with the directive of Hon'ble MERC, the Capex Estimate for Network Rollout plan to supply electricity to all the consumers (100 % USO and 100% sales in the proposed licence area) within the proposed supply area works out to Rs. 6805/- Crore. TPL has considered the necessary data and cost of various materials and services required to prepare detailed estimate for CAPEX. Accordingly, TPL has provided the details of major CAPEX items estimated to cater consumer base equivalent to 100% of MSEDCL's consumers in the proposed license area at present. It is important to note that existing consumer base of MSEDCL has evolved over decades and as a prudent practice, network is required to be developed alongwith

TORRENT POWER LIMITED
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growth and demand of the consumers. It is unlikely that entire consumer base will require parallel network in next five years. However, as required, TPL has prepared the revised capex plan to create a backbone network across entire proposed area through which connection to consumers can easily be released within the timelines provided in law for hypothetical scenario of network required to serve consumer base equivalent to 100% of MSEDCL's existing customers.

B) Further, it may kindly be noted that, TPL has presently not considered such capex for the area of Thane-I and II and Wagle Estate encompassing Kisan Nagar, Tarangan, Kailash Nagar, Pachpakhadi, Vrindavan, Saket, Majiwada,Wagle Estate, Kolshet, Lokmanya Nagar, and Vasant Vihar in its present rollout plan considering aspects such as ROW / Corridor for network etc.

C) Break-up of major capital items: The requisite details are provided at **Annexure-1**.

Q2- TPL to clarify and submit the necessary documents to show how it will meet the requirement of Capital Adequacy and Creditworthiness as specified in the Distribution of Electricity Licence (Additional Requirements of Capital Adequacy, Creditworthiness and Code of Conduct) Rules, 2005 considering the capex estimated to supply to all the consumers within the proposed area of supply along with updated solvency certificate (considering all the Petitions together), updated Credit Rating Report in support thereof.

At the outset, we would like to refer the provision of Distribution of Electricity Licence (Additional Requirements of Capital Adequacy, Creditworthiness and Code of Conduct) Rules, 2005:

"3. Requirements of capital adequacy and creditworthiness—

(1) The Appropriate Commission shall, upon receipt of an application for grant of licence for distribution of electricity under Sub-section (1) of Section 15 of the Electricity Act,2003, decide the requirement of capital investment

for distribution network after hearing the applicant and keeping in view of the size of the area of supply and the service obligation within that area in terms of Section 43.

(2) The applicant for grant of licence shall be required to satisfy the Appropriate Commission the on a norm of 30% equity on cost of investment as determined under sub-rule (1), he including the promoters, in case the applicant is a company, would be in a position to make available resources for such equity of the project on the basis of networth and generation of internal resources of his business including of promotors in the preceding three years after excluding his other committed investments."

Explanation. - For the purposes of this sub-rule, it is hereby clarified that for grant of a license for distribution of electricity within the same area in terms of sixth proviso to section 14 of the Act, the entire area covering either a Municipal Corporation as defined in article 243Q of the Constitution or three adjoining revenue districts, or a smaller area as may be notified by the Appropriate Government shall be the minimum area of supply."

(relevant extract)

As seen above, the Applicant is required to demonstrate that it is in position to make available resource for 30% equity on cost of investment. TPL has projected Capital investment of about 15,007 Cr during 5 year of Business Plan of all three license areas. Accordingly, 26% of 30% would correspond to 1171 Cr. which is within the limits of Networth / IRG as per the formula considered by the Hon'ble Commission after duly factoring in the other committed investments. Further, TPL has furnished a solvency certificate, showing networth of Rs. 9,966 Crore.

Now as seen from Q1) the Hon'ble Commission has sought estimated Capital investment required to serve 100% customers in the proposed license area of all three applications. In this regard, it is submitted that the Applicant proposes to incur the capital investment

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of Rs. 30,000 Crore considering estimates of all three license applications. For assessing the capital adequacy of TPL, as per prevailing framework of Ld. MERC, the following two conditions needs to be satisfied.

Test 1: Is the maximum of (NW1, NW2, NW3) – CE ≥ CIC

AND

Test 2: Is five (5) times the maximum of (IRG1, IRG2, IRG3) – CE ≥ CIC

Where:

IRG1: Internal Resource Generation for the last audited financial year

IRG2: Internal Resource Generation for the year before the last audited financial year

IRG3: Internal Resource Generation for two years before the last audited financial year

CE: 26% of the Committed Equity investments elsewhere

CIC: 26% of (30% of Capital Investment Criteria) as estimated from capital expenditure requirement.

NW1: Net worth for the last audited financial year

NW2: Net worth for the year before the last audited financial year

NW3: Net worth for two years before the last audited financial year

The multiplying factor for Internal Resource Generation (IRG) is taken as "five (5)", which reflects the minimum number of years needed to setup the distribution system in the applied licence area.

Accordingly, TPL has used the two conditions to demonstrate the capital adequacy for the License application. The Net worth and Internal Resource Generation (IRG) for TPL for the last three financial years are as under:

Year (Rs.Cr)	Reference	FY 2019-20	FY 2020-21	FY 2021-22
Net worth	**Annexure-2**	9172.10	10232.84	9947.03
IRG	**Annexure-3**	2043.73	1683.82	1444.50

As regards the committed equity investment elsewhere (other than the proposed License area), it submitted that TPL has a future committed investment of about Rs. 10,000 Crore. Considering criteria specified for Test 1 & Test 2, 26% of 30% of committed equity investment elsewhere works out to Rs. 780 Crore.

Therefore, according to the first test, the Net worth, adjusted for the future committed equity investments elsewhere, is computed to be Rs.9,453 Crore, as shown in table below:

Particulars (Rs. Cr)	Maximum of Networth for last three years (NW1, NW2, NW3)	Committed Equity (CE)	Adjusted Networth (Maximum of (NW1, NW2, NW3) - CE)
Test 1	10,233	780	9,453

Thus, TPL satisfies the Net worth criteria as the adjusted Net worth of Rs. 9,453 Cr is far greater than the minimum equity requirement of Rs. 1171 Crore corresponding to original Capital Investment of Rs 15,007 Cr planned collectively for all three proposed license areas.

Without prejudice to the above, even if capital investment of Rs. 30,000 Cr, collectively for all three proposed areas, to cater to 100% consumers is required to be considered, the Equity requirement works out to Rs. 2340 Crs (considering criteria specified for Test 1 & Test 2 @ 26% of 30% Equity) for total Capex projections. Thus, in this scenario as well, the adjusted Net worth is far greater than the minimum equity requirement of Rs. 2340 Crore and in turn, TPL satisfies the Net worth criteria.

Also, the Internal Resource Generation (IRG) adjusted for the equity investments committed elsewhere works out to Rs. 9,439 Cr as shown in table below:

Particulars (Rs. Cr)	5 times the maximum of (IRG1, IRG2, IRG3)	CE	5 times the maximum of (IRG1, IRG2, IRG3) - CE
Test 2	Rs.10,219 Cr	Rs. 780 Cr	Rs 9,439 Cr.

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Thus, the adjusted IRG (Rs. 9,439 Cr) is far greater than the equity requirement (Rs. 1171 Cr corresponding to original capex plan of Rs. 15007 Cr) and in turn, TPL satisfies the IRG criteria.

Similarly, without prejudice to the above, even if capital investment of Rs. 30,000 Cr, collectively for all three proposed areas, to cater to 100% consumers is required to be considered, the Equity requirement works out to Rs. 2340 Crs (considering criteria specified for Test 1 & Test 2 @ 26% of 30% Equity) for total Capex projections. Thus, in this scenario as well, the adjusted IRG of Rs. 9,439 Cr is far greater than the minimum equity requirement of Rs. 2340 Crore and in turn, TPL also satisfies the IRG criteria.

Further, in compliance to the requirement, copy of Solvency Certificate issued by the Bank is also attached herewith for ready reference at **Annexure-4**. It may kindly be noted that Solvency Certificate issued by the Bank is also based on Networth only and it clarifies that TPL remains solvent to the extent of its Networth.

It is important to note that Networth is required to be seen in respect of Equity requirement and has nothing to do with debt portion. As per industry practice, the equity contribution is normally 30% of cost of the investment and balance is funded through Debt from the Financial Institutions. For debt funding, assets are required to be mortgaged with the Financial Institutions as security. As seen above, TPL has capabilities to arrange necessary Equity even for the hypothetical CAPEX requirement to cater to 100% Consumers. Once it is established that Equity is available, the debt would be available for balance portion of capital investment based on credit rating. TPL's Credit Rating is one of the highest in the industry i.e. Long Term Credit Rating of AA+/ Stable and Short Term Credit Rating of A1+ issued by CRISIL Rating Agency. This Credit Rating is the one of the highest Credit Rating among Private Sector Power Companies in India, demonstrating the strong credentials of Torrent Power. It may kindly be noted that as far as Credit Rating Certificate is concerned, the same is issued in September, 2022. Copy of Rating Report is attached at **Annexure-5**. Further, it may kindly be noted that such Certificate is normally issued annually post publication of annual financial performance unless there is any trigger event during the course of the year. In TPL's case, there is no trigger event for revision in credit rating. Hence there is no change in credit rating

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certificate issued in September, 2022 and same amounts to existing Credit Rating; which is presently applicable valid today. This is corroborated by Hon'ble APTEL in Appeal No. 7 of 2010 wherein the Hon'ble APTEL observed as under:

"The Capital Adequacy is determined on the above basis; and on the basis of the Capital Adequacy so determined the ability of the Applicant to raise finances and funds has to be determined. ***The creditworthiness of the Applicant will have to be tested by considering whether external borrowings from Banks or Financial institutions will be available to the Applicant based on the fulfilment of the Capital Adequacy norms."***

Basis TPL's capital adequacy in terms of arranging equity coupled with Credit Rating as detailed in earlier paras, it is amply clear that TPL possesses necessary capability to raise external borrowings from Banks/Financial institutions to fund the debt requirement of 70% of capital investment proposed in the license area.

Having said this, it is once again reiterated that 100% CAPEX requirements (Original and Revised Estimates on the basis of Hypothetical Scenario to cater to 100% Consumers) is over a period of time and not on day one of grant of license. Further, MSEDCL has also established its network over decades in line with the growth materialization in the area.

Q3 - TPL in its Business Plan has submitted area wise network roll-out plan for each year. TPL should provide criteria and detailed justification including details of field survey (if any) considered for proposed network roll-out plan. TPL may evaluate alternate options for development of network roll-out plan and submit such options along with the merits/demerits thereof.

Prior to the submission of the petition, TPL has carried out a preliminary field survey of the proposed license area to understand the relevant aspects like various types of consumers, consumer density, electrical network infrastructure etc. of the existing licensee. Based on field survey observations, TPL has proposed the network rollout plan in the petition for over 5 years' period. In the entire proposed license area, presently around 87% of total consumers account for Residential and agricultural categories whereas around 13% covers Commercial & Industrial categories. TPL submits details as sought as **Annexure-6**.

Q4 - TPL in its reply to data gaps has submitted that Network roll out plan in initial years is planned in prominent areas having moderately high residential density. TPL to submit the break-up of area wise estimated sales in various consumer categories.

TPL would like to reiterate that it has proposed the network rollout plan in initial years in prominent areas having moderately high residential density. In this regard, the breakup of area wise estimated sales of various categories considering that 100% consumers shall be availing supply from TPL is provided at **Annexure-7.**

Q5 - TPL has submitted in its reply that 'upon completion of proposed network roll out plan, any consumer who applies to TPL, supply shall be released as per prevailing MERC Regulations/Protocols'. TPL to clarify if supply will be released to consumers only after network is laid as per roll-out plan in particular area.

TPL has proposed network roll out plan in such a way that it covers high consumer density pockets across license area. Any consumer who applies to TPL, supply shall be released irrespective of category within timelines prescribed by the Hon'ble Commission in its regulations. In case TPL receives applications for release of connections in the area that is not covered in the network roll out plan, TPL shall endeavour to accommodate the same by laying the network in the said area.

We trust that the above meets with your requirements.

For, Torrent Power Limited

Chetan Bundela
Vice President (Corporate Affairs)
Encl: As above.

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Annexure-1

Major Capital Items	UOM	Approx. Qty	Unit Rate (Rs. Lakhs)	Total Cost (Rs. Cr.)
EHV Substation (200 MVA Capacity)	Nos.	12	12000	1,440
33 kV Feeders	KMs	24	50.56	12
22 kV Feeders	KMs.	1400	45.78	641
11 kV feeders	KMs.	258	34.82	90
Power Transformers (33-22/11 kV 10 MVA)	Nos.	35	242	85
Distribution Transformer substation (22/0.433 kV)	Nos.	5293	33.52	1,774
Distribution Transformer substation (11/0.415 kV)	Nos.	565	31.18	176
LT Network	KMs.	5858	23.84	1,397
Meters	Nos.	501111		-
Single Phase		483747	0.00695	34
Three Phase		16610	0.01683	3
HT		754	1.38	10
Other Items				1,144
Total				**6,805**

Annexure-2

PANKAJ B. SHAH & CO.
CHARTERED ACCOUNTANTS
313, MEDICINE MARKET,
OPP. SHEFALI CENTER,
PALDI, CROSS ROAD,
AHMEDABAD - 380 006.

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the Net worth of **M/s Torrent Power Limited** (CIN: L31200GJ2004PLC044068) ("the Company") having its registered office at "Samanvay", 600, Tapovan, Ambawadi, Ahmedabad – 380 015, is as under:

These figures stated below have been extracted from the respective year audited Standalone financial statements of the Company.

(Rs. in Crores)

Particulars	As at 31 March, 2020	As at 31 March, 2021	As at 31 March, 2022
Networth	9,172.10	10,232.84	9,947.03

Computation of Net worth as below:

(Rs. in Crores)

Particulars	As at 31 March, 2020	As at 31 March, 2021	As at 31 March, 2022
Equity Share Capital	480.62	480.62	480.62
Add : Reserves and Surplus			
Securities premium	0.03	0.03	0.03
Debenture redemption reserve	258.10	187.26	108.30
Contingency reserve	11.59	13.46	15.37
Special reserve	78.07	78.07	78.07
General reserve	3,583.89	3,583.89	3,583.89
Retained earnings	4,774.97	5,907.90	5,699.74
Less : Revaluation Reserves	-	-	-
Less : Intangible assets	(15.17)	(18.39)	(18.99)
Less : Miscellaneous Expenditure to extent not written off and carry forward losses	-	-	-
Net Worth	**9,172.10**	**10,232.84**	**9,947.03**

For Pankaj B Shah & Co.,
Chartered Accountants,
(Firm Reg. No. 107343W)

PANKAJ B. SHAH & CO. F.R.NO. 107343W AHMEDABAD CHARTERED ACCOUNTANTS M. NO. 17170

Date: 19th Nov. 2022
Place: Ahmedabad

(Pankaj B Shah)
Proprietor
Membership No. 17170
UDIN(22017170BDODOA7689)

PANKAJ B. SHAH & CO.
CHARTERED ACCOUNTANTS
313, MEDICINE MARKET,
OPP. SHEFALI CENTER,
PALDI, CROSS ROAD,
AHMEDABAD - 380 006.

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the Internal Resource Generation of **M/s Torrent Power Limited** (CIN: L31200GJ2004PLC044068) ("the Company") having its registered office at "Samanvay", 600, Tapovan, Ambawadi, Ahmedabad – 380 015, is as under:

These figures stated below have been extracted from the respective year audited Standalone financial statements and financial information provided by the Company.

(Rs. in Crores)

Particulars	FY 19-20	FY 20-21	FY 21-22
Internal Resource Generation	2,043.73	1,683.82	1,444.50

Computation of Internal Resource Generation as below:

(Rs. in Crores)

Particulars	FY 19-20	FY 20-21	FY 21-22
Profit after Tax	1,238.14	1,324.91	409.71
Add:			
Depreciation & Amortisation	1,230.16	1,179.85	1,233.79
Decrease in working capital (excluding Cash and Bank Balances)	217.98	309.04	-
Any other Non-Cash Expenditure (including deferred tax)	1,000.00	-	1,300.00
Less:			
Scheduled loan repayments	(644.37)	(1,103.83)	(1,099.65)
Increase in working capital (excluding Cash and Bank Balances)	-	-	(136.57)
Any other Non-Cash Income (Including deferred tax)	(998.18)	(26.15)	(262.78)
Internal Resource Generation	**2,043.73**	**1,683.82**	**1,444.50**

For Pankaj B Shah & Co.,
Chartered Accountants,
(Firm Reg. No. 107343W)

PANKAJ B. SHAH & CO. F.R.NO. 107343W AHMEDABAD M. NO. 17170 CHARTERED ACCOUNTANTS

Date: 19th Nov. 2022
Place: Ahmedabad

Pankaj B. Shah

(Pankaj B Shah)
Proprietor
Membership No. 17170
UDIN(22017170BDOFMH8935)

Annexure-4

भारतीय स्टेट बैंक
STATE BANK OF INDIA

CCG-A/AMT-1/2022-23/141

Date: 17.11.2022

SOLVENCY CERTIFICATE

To
The Secretary,
Maharashtra Electricity Regulatory Commission (MERC),
Mumbai, Maharashtra

Dear Sir,

SOLVENCY CERTIFICATE : M/S TORRENT POWER LIMITED

This is to state that M/s Torrent Power Limited incorporated under the Companies Act, 1956 with Corporate Identification Number L31200GJ2004PLC044068 and having its Regd. Office/Head Office at "Samanvay", 600, Tapovan, Nehrunagar, Ambawadi, Ahmedabad-380015, are a customer of our Bank for over 15 years, and are presently enjoying certain credit facilities with us. The conduct of account(s) of the company has been satisfactory. The Company, can be considered good upto Rs. 9966 crore in terms of Net Worth shown in their Audited Balance sheet as on 31.03.2022. This certificate is being issued only for the purpose of Application for license.

It is clarified that this Certificate is issued without any risk and responsibility on the part of State Bank of India or any of its officials in any respect whatsoever, more particularly either as guarantor or otherwise. This certificate must be taken as a private & confidential report given by the Bank without prejudice and on the express condition that State Bank of India & its officials are held free by you from any liability in connection with it.

This certificate is issued for the abovementioned specific purpose, and at the specific request of our customer M/s. Torrent Power Limited.

Yours faithfully,

(Authorized Signatory)
State Bank of India
CCG Branch, Ahmedabad

bank.sbi

GM : +91 79 2656 1044-45
AMT-1 : +91 79 2656 1273
AMT-2 : +91 79 2642 6563
AMT-3 : +91 79 2656 0767
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IB : +91 79 2642 6897
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+91 79 2656 1178
sbi.04152@sbi.co.in

વાણિજ્યિક ગ્રાહક સમૂહ શાખા
૫૮, શ્રીમાળી સોસાયટી,
નવરંગપુરા,
અમદાવાદ - ૩૮૦ ૦૦૯.

वाणिज्यिक ग्राहक समूह शाखा
५८, श्रीमाली सोसायटी,
नवरंगपुरा,
अहमदाबाद - ३८० ००९.

Commercial Clients Group Branch
58, Shrimali Society,
Navrangpura,
Ahmedabad - 380 009.

Ratings
CRISIL Ratings Limited (A subsidiary of CRISIL Limited)

CRISIL
An S&P Global Company

Torrent Power Limited

Credit rating report

October 2022

Contents

Instruments and ratings

Total Bank Loan Facilities Rated	Rs.166000 Million
Long Term Rating	CRISIL AA+/Stable
Short Term Rating	CRISIL A1+

Refer to Annexure for Details of Instruments & Bank Facilities

Rs.3000 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.6000 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.6000 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.1750 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.2000 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.3000 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.2200 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.250 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.1200 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.950 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.1750 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.2500 Million Non Convertible Debentures	CRISIL AA+/Stable
Rs.16500 Million Commercial Paper	CRISIL A1+

Analytical contacts

Manish Gupta
Senior Director - CRISIL Ratings Limited
Phone:+91 124 672 2000
manish.gupta@crisil.com

Ankit Hakhu
Director - CRISIL Ratings Limited
Phone:+91 124 672 2000
ankit.hakhu@crisil.com

Customer service helpdesk

Timings: 10:00 am to 7:00 pm
Toll-free number: 1800 267 1301
To receive a copy of rationale and/or rating report, write to
crisilratingdesk@crisil.com
For analytical queries, write to
ratingsinvestordesk@crisil.com

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CRISIL Ratings' complexity levels are assigned to various types of financial instruments. The CRISIL Ratings' complexity levels are available on www.crisil.com/complexity-levels. Users are advised to refer to the CRISIL Ratings' complexity levels for instruments that they consider for investment. Users may also call the Customer Service Helpdesk with queries on specific instruments.

Rating history

Date	Long Term	Fixed Deposit	Short Term	Rating Watch/Outlook
February 17, 2022	CRISIL AA+		CRISIL A1+	Stable
June 30, 2021	CRISIL AA		CRISIL A1+	Positive
January 10, 2020	CRISIL AA		CRISIL A1+	Stable
May 8, 2019	CRISIL AA-		CRISIL A1+	Stable

Analytical approach and adjustments

Portfolio performance/networth/ gearing/parent or group support	Analytical treatment
Consolidation	CRISIL Ratings has fully consolidated the business and financial risk profiles of TPL along with those of its special-purpose vehicles engaged in the renewable business, considering 100% ownership of the parent and strong operational and financial linkages between the entities. These include Jodhpur Wind Farms Pvt Ltd (rated 'CRISIL AA+ (CE)/Stable'), Latur Renewable Pvt Ltd (rated 'CRISIL AA+ (CE)/Stable'), Torrent Solargen Ltd.(rated CRISIL AA/Stable), Torrent Saurya Urja 6 Private Limited (formerly known as LREHL Renewables India SPV1 Ltd), Surya Vidyut Ltd., Visual Percept Solar Projects Pvt Ltd.

Rationale

CRISIL Ratings on the bank facilities, NCDs and commercial paper programme of Torrent Power Limited (TPL) continues to reflect strong profitability which along with prudent and staggered capital expenditure (capex) plans, has aided sustained improvement in leverage levels, with net debt to EBITDA reaching to 2.3 times as of March 31 2022 from the levels of more than 3 times in fiscal 2017. The rating also factors in expectation of steady profitability and net debt/EBITDA sustaining below 2.6 times, despite outflow towards acquisitions, over the medium term.

For fiscal 2022, the company reported adjusted earning before interest, taxes, depreciation and amortisation (EBITDA) of around Rs 3,600 Crore as against Rs 3,500 Crore for fiscal 2021, largely driven by a strong rebound in the franchisee distribution business in Agra and Bhiwandi, and robust profitability in the licensee distribution business.

Operating performance is expected to improve further in fiscal 2023, with continued improvement in franchisee distribution business on account of expected reduction in transmission and distribution losses. Also, focus on the license distribution business, with an assured return on equity and judicious expansion in the renewable business, should support growth in EBITDA.

On April 1, 2022, the company completed acquisition of 51% equity stake in Dadra and Nagar Haveli and Daman and Diu Power Distribution Company Ltd (DNDD), which holds the distribution license for the union territory. While consideration for the equity stake stands at Rs 555 Crore, this will increase the contribution of the license distribution business, which entails regulated returns. Further, during the fourth quarter of fiscal 2022, the company completed the acquisition of Surya Vidyut Ltd (156 MW wind capacity) and Visual Percept Solar Projects Pvt Ltd (25 MW solar capacity) and LREHL Renewables India SPV1 Ltd (50 MW solar capacity). These acquisitions are expected to have aggregate enterprise value of around Rs 1,207 Crores. Furthermore, on June 13, 2022, TPL completed acquisition of 100% stake in Sunshakti Solar Power Projects Pvt Ltd (50 MW solar capacity) for enterprise value of Rs 416 Crores. These acquisitions are in addition to regular capex plans of the company towards existing businesses and under implementation renewable capacities (415 MW). However strong net cash accrual should cover part of the capex/acquisition plans, and resultantly, net debt to EBITDA is likely to sustain below 2.6 times over the medium term. Also, given the elevated solar module prices currently, against the bid tariffs, the planned capex towards 300 MW solar power projects (out of 415 MW of renewable capacity expansion) could get pushed to fiscal 2024, which would further provide cushion against the cash accruals.

The rating continue to factor in stable cash flow from regulated businesses and the diversified business risk profile and strong liquidity of TPL. These strengths are partially offset by absence of long-term power purchase agreements (PPAs) for DGEN.

Rating drivers

Supporting factors	Constraining factors
• Strong operating profile and regulated tariff framework. • Robust market position of the power distribution business with diverse consumer base. • Strong financial risk profile	• Susceptibility to risk related to offtake for DGEN.

Outlook: Stable

Business risk profile of TPL will remain strong over the medium term, driven by stable cash flow from the regulated and renewables businesses. Sustained business performance and prudent capital allocation should support the healthy financial risk profile.

Rating sensitivity factors

Upward factors:

- PPAs getting tied up and material cash flow generation from DGEN, and
- Strong improvement in profitability and capital structure with sustenance of net debt/EBITDA below 2 times

Downwards factors

- Larger-than-expected capex or debt-funded acquisitions resulting in material deterioration in capital structure
- Significantly lower than expected profitability and sustained net debt/EBITDA of more than 2.8 times

Company overview

TPL is engaged in the power generation and distribution business. It is a distribution licensee in Ahmedabad, Gandhinagar, Surat, Dahej SEZ, DSIR, and Dadra and Nagar Haveli and Daman and Diu; and the distribution franchisee for Bhiwandi, Agra and SMK. Its power generation plants are in Sabarmati (AMGEN, a 362-MW coal-based station) in Ahmedabad, Surat (1,147.5 MW gas-based SUGEN plant with 382.5 MW expansion), and Dahej (1,200 MW gas-based combined cycle DGEN power plant). The renewable portfolio includes 49.6 MW wind power plant (WPP) at Lalpur, 51 MW solar power plant at Charanka, 252 MW Suzlon WPP at Kutch and Bhavnagar, 50.9 MW WPP at Mahidad, and 87 MW GENSU solar power plant at Surat (all in Gujarat).

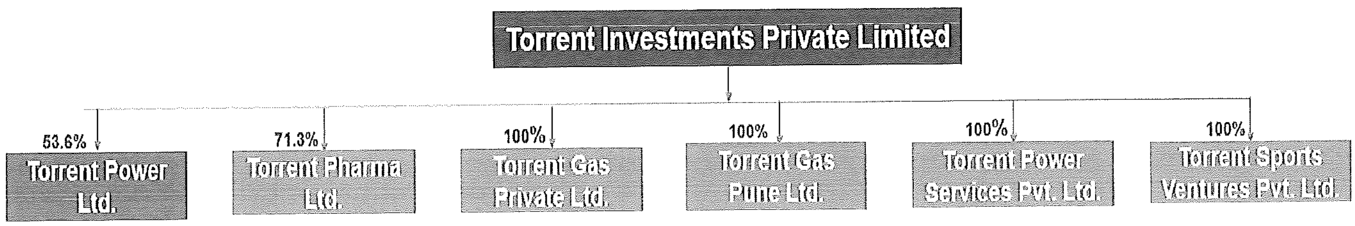
The company also has a 120 MW (60 MWX2) WPP in Karnataka and 126 MW (63 MWX2) WPP in Maharashtra through its wholly owned subsidiaries, and a 50 MW (25 MWX2) WPP in Kutch through an associate company. Recently, the company has added a renewable portfolio of 281 MW (156 MW wind + 125 MW solar), through acquisition of Surya Vidyut Ltd, Visual Percept Solar Projects Pvt Ltd., Torrent Saurya Urja 6 Private Limited (formerly known as LREHL Renewables India SPV1 Pvt. Ltd.), and Sunshakti Solar Power Projects Pvt. Ltd. TPL is also implementing wind and solar projects with capacity of 415 MW. Recently, it has also received LOA from SECI for implementing 300 MW wind power project in Karnataka.

Ownership structure (as on June 30, 2022)

Shareholder particulars		% holding	Shares pledged as % of shares held
1	Promoters (Partners in case of a partnership firm)	53.57	-
2	Institutions	27.97	-
3	Central Government/ State Government/ President of India	1.47	-
4	Non-institutions	16.99	-
	Total	100.00	-

Source: *Bombay Stock Exchange*

Group structure



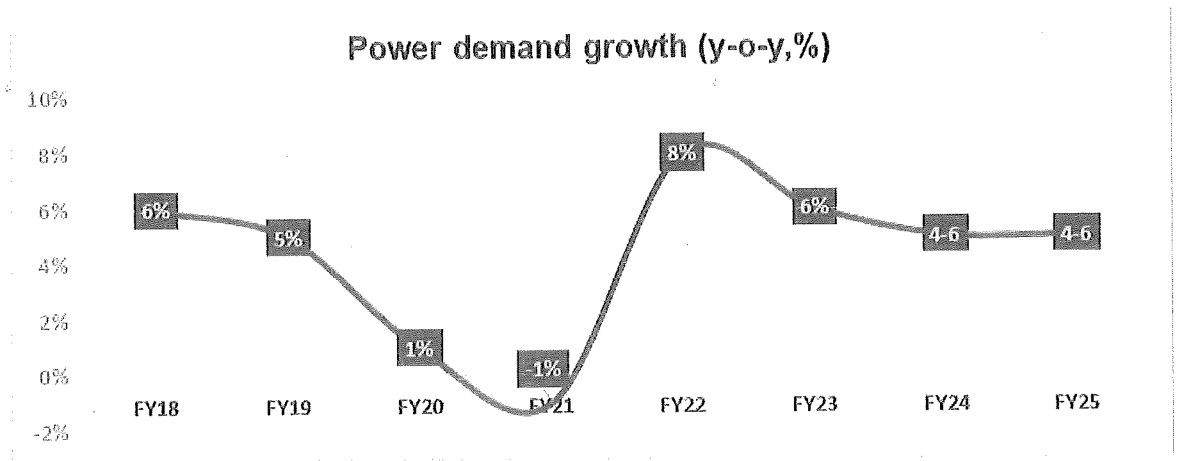
Key credit factors

Industry risk profile

Power demand to log 5-5.5% CAGR after the pandemic blip The first quarter of fiscal 2022, which was expected to see a strong rebound over a low base of previous year, was hit by second wave of pandemic, as partial lockdowns in major states saw moderation in power demand over April-May 2021. Abatement of the second wave allowed states to relax lockdowns gradually over June-July, with industrial and commercial activities slowly coming back to normalcy in various geographical pockets, albeit with cautious restrictions wherever local administrations deemed necessary. Power demand registered a ~8% growth in fiscal 2022 over fiscal 2021 on the back of strong economic activity, overcoming a minor blip in demand caused by slight tightening of restrictions owing to mild third Covid-19 wave in January 2022, with the fourth quarter growing at a moderate 4.3% growth on a high base of the previous fiscal. Power demand surged in the first quarter of fiscal 2023 on the back of a severe heatwave raging through the nation, apart from continued momentum in economic activity. As a result, power demand registered a 18.6% on-year growth in the first quarter of fiscal 2023 despite a high base of the same quarter of the previous fiscal.

The economy is expected to continue recovery in fiscal 2023 as the population and businesses adjust to functioning in the pandemic environment, aided by trickle-down effect of economic relief measures. Industrial consumption is likely to continue its momentum over the fiscal driven by sustained consumer sentiment and restarting of the capex cycle. Commercial power consumption is set to recover further as educational institutions and offices move towards a gradual reopening through a hybrid (online-offline) environment as Covid-19 vaccination makes steady progress and the caseload remains under control, whereas commercial activities such as retail, entertainment, travel, and hospitality are seeing a strong pick-up aided by pent-up demand. Domestic power demand is likely to slightly taper off, as home-bound citizens gradually return to offices and educational institutions, even if partially. Agricultural consumption could remain stable due to its essential status, with expected good monsoon likely to contribute to improved economic activity in rural areas. As a result, power demand growth is expected to log 6-6.5% on-year growth in fiscal 2023. Power demand is expected to register 5-5.5% CAGR between fiscals 2022 and 2027, supported by economic growth recovery, expansion in reach via strengthening of T&D infrastructure, and improved power quality.

Power demand: Historical trend and outlook



Source: Central Electricity Authority (CEA); CRISIL Research

Note: E – Estimated, F – Forecast

Capacity additions in conventional power generation to fall marginally over fiscal 2023-2027 period, capacity additions to be led by central and state sectors

Capacity additions in the conventional power generation segment are expected to fall marginally to 32-33 GW (excluding renewables) over fiscals 2023 to 2027 from ~34 GW over fiscals 2018 to 2022. Lower power demand and the government's focus on increasing the share of renewables in the nation's energy mix are likely to prod gencos to go slow on new conventional capacity addition plans over the subsequent years. However, the need for generation capacity equipped for flexible operations in order to scale generation up-down quickly to meet peak demand will support coal capacity additions in the medium term, as renewable capacities are not aligned to this requirement due to reliance on environment-sourced fuels. Coal capacity additions are expected to be driven entirely by central and state sectors, as major private gencos such as Tata Power Company JSW Energy have announced ambitious targets to add renewable energy (RE) capacity, signaling a decisive shift towards incremental RE capacity going forward. Consequently, CRISIL Research expects 70-75% of the 32-33 GW conventional capacity additions over fiscals 2023 to 2027 to be coal-based, led by a large number of planned projects and the fact that coal remains the most widely available and cheapest among the conventional sources of power.

Solar power capacity additions expected at 70-75 GW over the next five fiscals (2023-2027)
CRISIL Research expects solar power capacity additions of 70-75 GW over fiscal 2023-2027, as compared with 38 GW over fiscal 2018-22. Growth in capacity additions will be driven by government support, with an aggressive tendering roadmap outlined and being followed by the government so far. Few external factors such as improvement in technology (floating solar, module efficiency) and low capital costs are also key to enabling additions. However, the additional taxation & revision of GST from 5% to 12% will increase capital costs and consequent willingness of state discom offtake.

17-20 GW of wind capacity expected to be added over next five years
CRISIL Research expects capacity additions to grow, albeit moderately over the next five years led by allotment of central transmission utility connected capacities, technology and states raising their non-solar RPO targets. However, incremental challenges pertaining to wind site/ land availability, grid connectivity, viability at low tariffs and delay in timely payments from discoms continue to drag on existing wind pipeline by impacting scheduled dates of commissioning and constraining future additions.

Business risk profile

Robust market position of the power distribution business with diverse consumer base:
TPL enjoys a strong market position being the sole power distribution licensee for Ahmedabad, Surat, Gandhinagar, and DNDD, as the second licensee for Dahej SEZ and DSIR, and the power distribution franchisee for Bhiwandi, Agra and SMK. It sells power directly to more than 3.94 million consumers across the domestic, industrial and commercial divisions.

The Electricity Act, 2003, established open access and parallel licensee regulations in Gujarat, opening the power sector in the state to new players and ending the Torrent group's monopoly in its existing service areas of Ahmedabad, Gandhinagar, and Surat. However, duplication of distribution lines remains a difficult proposition for new entrants. The implementation of open access and parallel license regulations is unlikely to have major implications for TPL in the foreseeable future, given that it has maintained strong operations marked by low T&D losses as well as ensured continuous supply of power. Also, its tariff, especially for industrial consumers, is already competitive. CRISIL Ratings believes TPL will maintain its strong market position in its service area, thus securing its business from the threat of new entrants and ensuring stable revenue.

TPL has an urban-centric customer base, which comprises a diverse mix of industrial, commercial, and domestic consumers. Hence, the company has maintained high collection efficiency of nearly 100% in Ahmedabad, Gandhinagar, Surat and Dahej SEZ. The diverse customer profile ensures stability in revenue over the long term.

Strong operating profile and regulated tariff framework
TPL is the power distributor for Ahmedabad, Gandhinagar, Surat, Dholera SIR, Dahej SEZ, and DNDD and the distribution franchisee for Bhiwandi, SMK and Agra. The company has demonstrated strong operational efficiency in Gujarat distribution circles (4.2% for Ahmedabad, 3.4% for Surat and 0.5% for Dahej in the distribution license business), which have among the lowest transmission and distribution (T&D) losses in India (refer charts 1 and 2). In its franchise businesses, TPL has achieved significant improvement in profitability underpinned by steady growth in consumption and tariffs along with sharp reduction in AT&C losses (improving to 11.6% for Bhiwandi [Maharashtra] and 12.1% for Agra [Uttar Pradesh]), which is expected to sustain. Given its extensive experience in the distribution business, TPL's aggregate technical and commercial losses are likely to remain stable in the Gujarat, Maharashtra and Uttar Pradesh distribution circles.

Chart 1 : Operational efficiency – Distribution License

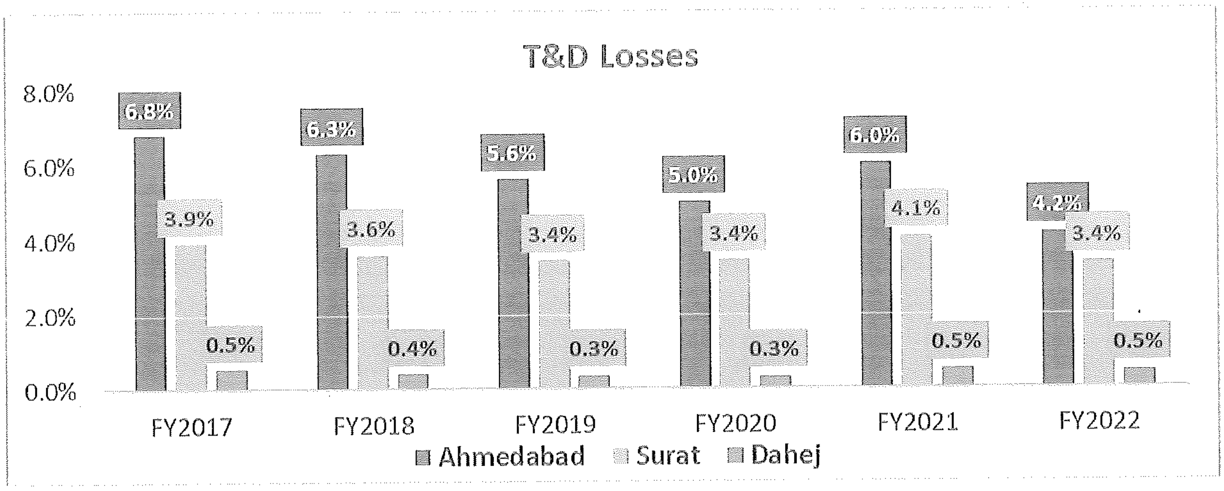
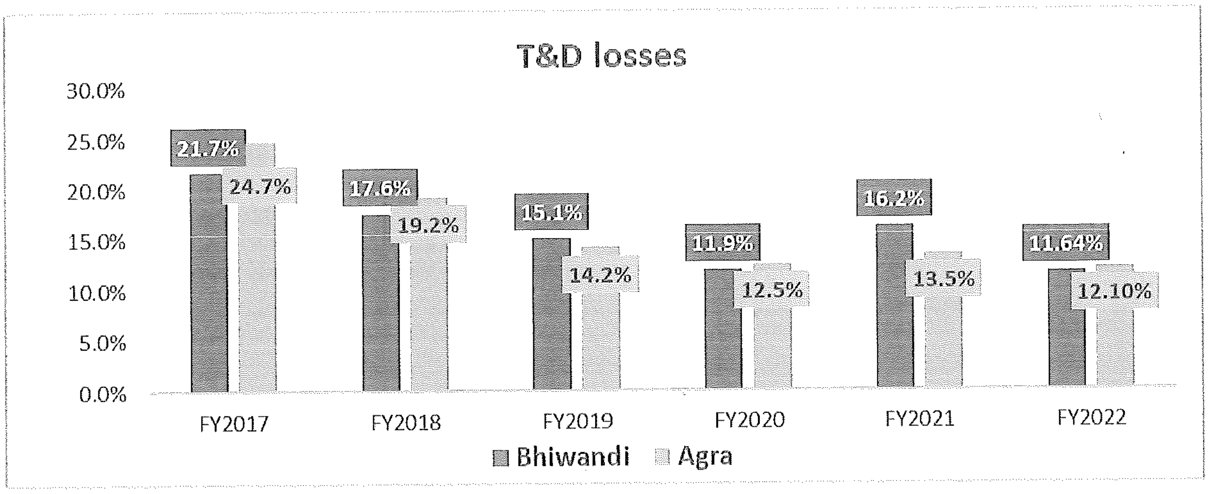


Chart 2: Operational efficiency – Distribution Franchise



The company will continue to benefit from stable cash flow, backed by a regulated tariff structure, and high operating efficiency and performance of its distribution and generation businesses (AMGEN and SUGEN plants), both of which assure a 14-15.5% post-tax return on equity. Regulated businesses, on an average, formed about 64% of revenue and 78% of EBITDA over the last three fiscals. Acquisition of DNDD along with ramp-up of the Dholera Special Industrial Region (DSIR; Gujarat) and Shil, Mumbra and Kalwa (SMK; Maharashtra) distribution circles is likely to enhance the return profile in the long term. Capital allocation will continue to remain skewed significantly towards the regulated businesses.

Susceptibility to risk related to offtake for DGEN

The 1,200 MW DGEN plant, which accounts for about 30% of the total generation capacity, is stranded due to lack of approved PPAs and non-availability of LNG at affordable prices. Though the unit operated at a limited plant load factor in fiscals 2020 and 2021, aided by favourable LNG (liquefied natural gas) prices and bilateral contracts, it would continue to report losses.

Financial risk profile

Strong financial risk profile

Financial profile has witnessed improvement over the past few fiscals. Net gearing and net debt to EBITDA ratios stood at 0.9 time and 2.3 times, respectively, as on March 31, 2022, against to 1.1 times and 3.2 times respectively on March 31, 2017. This was driven by high profitability and relatively lower capex.

Capex intensity (including acquisitions) is expected to increase during fiscal 2023. Hence, leverage levels could moderate in fiscal 2023, yet incremental EBITDA from new assets shall help net debt to EBITDA to sustain below 2.6 times over the medium term.

Liquidity: Strong

CRISIL Ratings believes, expected annual cash accrual of over Rs 23,000 million during fiscals 2023 and 2024 are sufficient to meet yearly term debt repayment in the range of Rs 9000-12,550 million during the period. Liquidity is further supported by cash balance of around Rs 8830 million and unutilized fund-based limit of Rs 4500 million as on March 31, 2022. Capex for fiscals 2023 and 2024 is likely to be funded through a mix of internal accrual and debt.

Peer comparison

Fiscal 2021	Units	Torrent Power Ltd.	The Tata Power Co. Ltd	SJVN Ltd.
Rating		CRISIL AA+/Stale/A1+	CRISIL AA/Stable/A1+	CRISIL AA+/Stable/A1+
Analytical Approach		Consolidation	Consolidation	Consolidation
Market Position				
1. Scale of Operations – Revenues	Rs Billion	118.12	330.79	30.51
2. Project portfolio		• Generation portfolio 4.1 GW (of which renewables ~1 GW) • Distribution: Licensee of 4 circles, franchisee distribution in another 3 circles	• Generation portfolio: 11.9 GW (of which renewables:2.9 GW) • Transmission lines: 3,539 CKM • Distribution: Licensee in 7 circles	• Generation portfolio: 1912 MW (Hydro), 103 MW (solar and wind) • Transmission portfolio: 86 ckm of transmission lines
Operational efficiency				
1. Operating margins	%	27.6	22.0	79.9
2. RoCE	%	12.7	13.1	15.6
3. Other parameters	-	**Generation:** • **PPA** tied up for around 62% of operational capacity • **PAF** above normative levels. **Distribution:** • AT&C losses – **Licensee area:** Ahmedabad:6%, Surat: 4.1%, Dholera:0.5%, **Franchisee area** Bhiwandi 16.2%, Agra 13.5%.	**Generation:** • **PPA** tied up for 100% of operational capacity • **PAF** above normative levels for conventional capacities (other than CGPL) **Distribution:** • AT&C losses: Delhi 7%, Mumbai: <5%, Odisha discom: 21%-25% **Transmission:** • Availability above	• Operational portfolio 100% tied-up • Regulated tariff structure for entire hydro capacity (90% of overall portfolio) • PAF above normative levels for hydro plants

Fiscal 2021	Units	Torrent Power Ltd.	The Tata Power Co. Ltd	SJVN Ltd.
			normative levels	
Financial Risk Profile				
1. Gearing	Times	0.70	2.2	0.2
2. Interest Cover	Times	4.83	2.7	100.2
3. Net cash accruals/ Adj. debt	Times	0.31	0.1	0.49

Other information

Repayment schedule

	FY23	FY24	FY25	FY25 onwards
% repayment	15%	13%	11%	61%

Contingent liabilities (consolidated):

Below are contingent liabilities disclosed by the company. CRISIL Ratings believes these pertain to regular business operations of the company and are not likely to have an adverse impact.

In Rs million	March-2022	March-2021
Claims against the Group not acknowledged as debt	1640.4	1483.6
Disputed taxes and duties	974.0	648.8
Total	**2614.4**	**2132.4**

Financial summary

(Standalone; CRISIL Ratings-adjusted numbers)

		As on/ For the year ended March 31		
		2022 Actual	**2021 Actual**	**2020 Actual**
Operating Income	Rs Billion	137.7	118.1	134.9
OPBDIT	Rs Billion	33.4	32.6	34.4
PAT	Rs Billion	13.4*	13.2	12.3
Net Cash Accruals	Rs Billion	29.4	22.4	15.1
Equity Share Capital	Rs Billion	4.8	4.8	4.8
Adjusted Networth	Rs Billion	99.5	102.3	91.7
Adjusted Debt	Rs Billion	78.7	71.7	83.2
OPBDIT Margins	%	24.2	27.6	25.5
Net Profit Margins	%	9.7	11.2	9.2
ROCE	%	12.9	12.7	12.8
PBDIT / Int. & Finance Charges	Times	6.1	4.83	4.09
Net Cash Accruals / Adjusted Debt	Times	0.37	0.31	0.18
Adjusted Debt / Adjusted Networth	Times	0.80	0.70	0.91
Adjusted Debt / OPBDIT	Times	2.36	2.20	2.42
TOL/ ANW	Times	1.37	1.22	1.49
Operating Income/Gross Block	Times	0.58	0.52	0.62
Gross Current Assets days	Days	109	112	97

**adjusted for impairment loss (net of deferred tax reversal) of Rs 928 Crores*

YTD Section

(Standalone: Company reported)

	Unit	**30- June- 2022 3 Months Actuals**	**30- June- 2021 3 Months Actuals**
Operating Income	Rs Billion	46.51	29.98
Net Profit	Rs Billion	4.81	1.99
Net Margin	%	10.3	6.7

Based on financials reported by the company

Annexure 1: Details of facilities

1. Term Loan

#	Bank Facility	Amount (Rs Million)	Outstanding Rating
a.	Punjab National Bank	3083.9	CRISIL AA+/Stable
b.	Canara Bank	2500	CRISIL AA+/Stable
c.	Bank of Baroda	25241.1	CRISIL AA+/Stable
d.	State Bank of India	27359.1	CRISIL AA+/Stable
-	**Total**	**58184.1**	-

2. Cash Credit

#	Bank Facility	Amount (Rs Million)	Outstanding Rating
a.	Axis Bank	100	CRISIL AA+/Stable
b.	Punjab National Bank	3000	CRISIL AA+/Stable
c.	Bank of Baroda	4000	CRISIL AA+/Stable
d.	State Bank of India	4400	CRISIL AA+/Stable
-	**Total**	**11500**	-

3. Proposed Term Loan

#	Bank Facility	Amount (Rs Million)	Outstanding Rating
a.	-	42704.9	CRISIL AA+/Stable
-	**Total**	**42704.9**	-

4. Letter of credit & Bank Guarantee

#	Bank Facility	Amount (Rs Million)	Outstanding Rating
a.	Axis Bank	12000	CRISIL A1+
b.	Punjab National Bank	1390	CRISIL A1+
c.	Bank of Baroda	6000	CRISIL A1+
d.	State Bank of India	10000	CRISIL A1+
e.	HDFC Bank Limited	5610	CRISIL A1+
-	**Total**	**35000**	-

5. Proposed Short Term Bank Loan Facility

#	Bank Facility	Amount (Rs Million)	Outstanding Rating
a.	-	18611	CRISIL A1+
-	**Total**	**18611**	-

Interchangeable with long term bank facilities

Annexure 2 : List of entities consolidated

Names of entities consolidated	Extent of consolidation	Rationale for consolidation
Jodhpur Wind Farms Pvt Ltd	Full	100% ownership and strong operational and financial linkages
Latur Renewable Pvt Ltd	Full	100% ownership and strong operational and financial linkages
Torrent Solargen Ltd	Full	100% ownership and strong operational and financial linkages
Visual Percept Solar Projects Pvt Ltd^	Full^	100% ownership and strong operational and financial linkages
Torrent Saurya Urja 6 Private Limited (formerly known as LREHL Renewables India SPV1 Ltd)*	Full	100% ownership and strong operational and financial linkages
Surya Vidyut Ltd.*	Full**	100% ownership and strong operational and financial linkages

^Acquired in February 2022,
**Acquired in March 2022*

Criteria details

Links to related criteria
CRISILs Approach to Financial Ratios
Rating criteria for manufaturing and service sector companies
CRISILs Bank Loan Ratings - process, scale and default recognition
Rating Criteria for Power Distribution Utilities
CRISILs Criteria for rating short term debt
CRISILs Criteria for Consolidation

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Torrent Power Limited – Parallel Licence Application

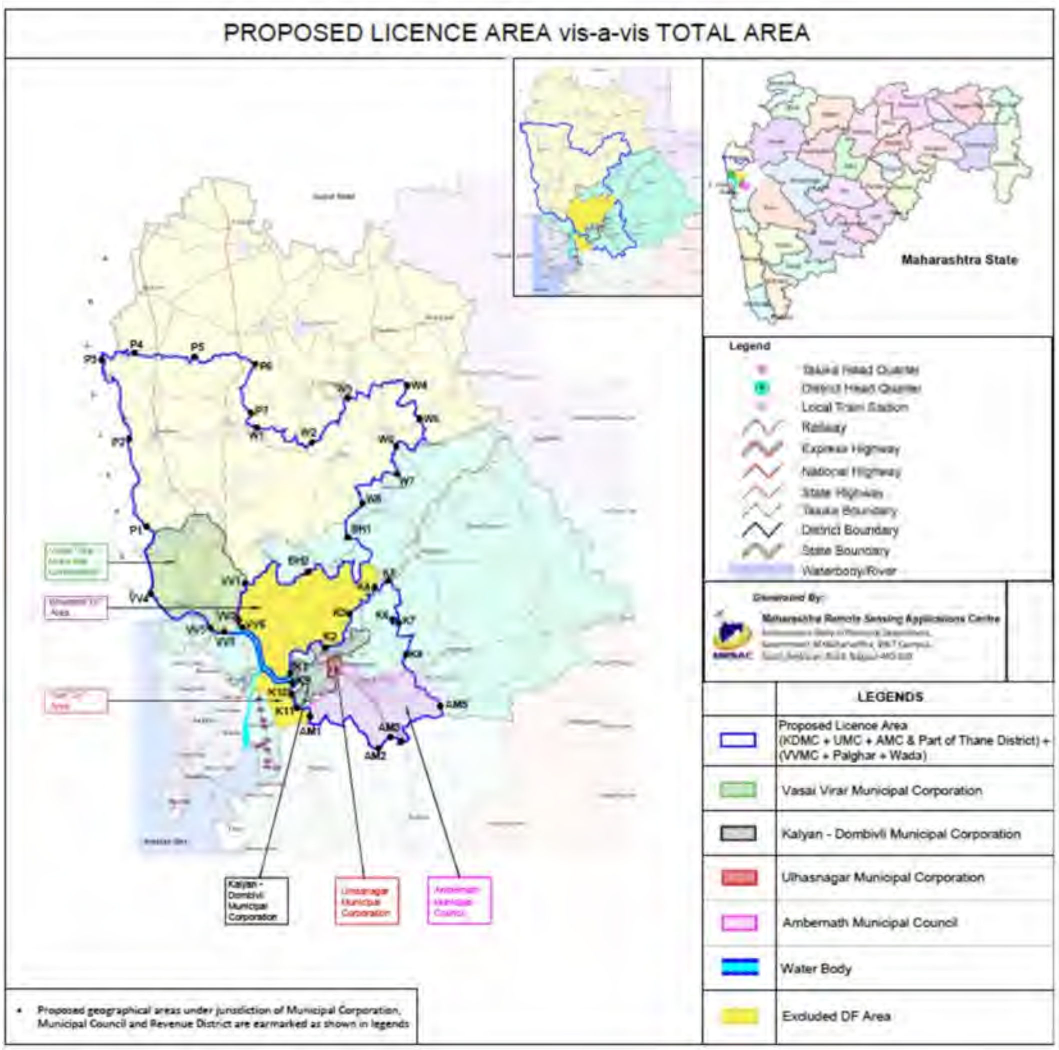
Network Rollout Plan in VVMC, KDMC, UMC, AMC and part of Palghar & Thane district

Introduction

Torrent Power Limited (TPL) is proposing to secure Electrical Distribution License for the Vasai Virar Municipal Corporation (VVMC), Kalyan Dombivli Municipal Corporation (KDMC), Ulhasnagar Municipal Corporation (UMC), Ambernath Municipal Council (AMC) and part of Palghar District. The proposed area is geographically continuous.

About the Area

Area map



Palghar, the 36th district of the state of Maharashtra, came into existence from August 1, 2014. The industrial town of Boisar is having the largest industrial estates of Maharashtra, at Tarapur MIDC.

Vasai-Virar city is the only metropolitan city (having population more than 10 lakh) in Palghar district, having Municipal Corporation (VVMC). Vasai Virar city has significant growth potential due to proximity to Mumbai and Thane.

Wada is emerging as a new industrial hub with several industrial undertakings and foundries being established recently.

Kalyan Taluka is having Kalyan & Dombivli (i.e. twin cities). These are major towns with Kalyan Dombivli Municipal Corporation (KDMC). Dombivli has huge MIDC area.

Ulhasnagar Taluka consists of Ulhasnagar city. Over the years chemical industry has flourished in Ulhasnagar Municipal Corporation (UMC) area.

Ambernath taluka has two major towns i.e., Ambernath & Badlapur. Ambernath Municipal Council (AMC) is covering Ambernath City. Ambernath is famous for ancient Shiv Mandir & Ordinance Factory.

Details of existing transmission Network- EHV substations in the proposed area

Division	Area	EHV S/S	Voltage (kV)
VVMC and Part of Palghar District			
Vasai	Juchandra, Naikpada, Vasai, Kharivali, Abitghar, Wada	Wada Vasai Bhaveghar	220/22 220/22 220/33/22
Virar O and M	Nallasopara, Virar, Achole	Nalasopara EHVT, Vasai EHVT	220/22 100 / 22
Part of Palghar	Boisar, Safale, Aliyali, Tarapur, Pastal, Bhadrapada, Shirgaon	Boisar – II Dahanu Boisar - I	220/132 /33 132/33 132/33
KDMC, UMC, AMC, TMC (Excluding DF) and part of Thane District			
Dombivli Urban	Dombivli East, Dombivli West	Dombivali	100/22
Kalyan East	Lodha, Palava, Casa Rio, Kalyan East	Pal	220/22
Kalyan Rural	Badlapur East, Badlapur West	Temghar Tata Kamba Morivali	220/22 110/22 100/22
Kalyan Urban	Kalyan West, Godrej hill, Raunak City	Mohane Tata Kamba	100/22 100/22
Ulhasnagar Division I	Punjabi Colony, Gol Maidan, Waldhuni	Mohane	100/22
Ulhasnagar Division II	Ambernath East, Badlapur, Jambhul, Morivali, Anandnagar	Anand Nagar Jambhul Morivali	220/22 220/100 100/22

Background

TPL is one of the leading power companies in India and has a strong presence across the entire value chain of generation, transmission and distribution of electricity. TPL has vast experience and expertise of handling power distribution business successfully in various cities across India like Ahmedabad, Gandhinagar, Surat, Dahej in Gujarat and Daman & Diu, Dadra & Nagar Haveli (Union Territories) as a distribution licensee and Bhiwandi, Shil, Mumbra, Kalwa (SMK) areas in Maharashtra and Agra in Uttar Pradesh as a distribution franchisee.

In power distribution field, TPL has created world class infrastructure in its areas of operation, coupled with its operational excellence. TPL strives to provide world class reliable and quality power supply to its consumers by adopting state-of-the-art technology and automation in operations. TPL has delivered on stakeholders' expectations year after year on significant parameters like operational efficiency, customer service and ethical & transparent operations. TPL aims to build resilient and long-term supply chains to ensure reliable power supply to all its consumers. By virtue of this, the underlying design philosophy for the proposed network rollout plan is public safety, optimum utilisation of public space, aesthetic appearance of assets, concern for environment and reliability.

Based on above, TPL has proposed a robust and the best suitable plan in the current scenario which, in initial 2 years, starts with areas having high residential consumer density and spread across proposed license area. TPL gradually expands to cover the developing areas in the entire geography of the proposed license area to meet the supply requirements by the 5th year. However, during the development of network, TPL will be flexible to modify its plan to accommodate deviations based on the need of the consumers.

Approach

TPL has carried out a field survey of the proposed license area to understand the relevant aspects like various types of consumers, consumer density, electrical network infrastructure, bay availability etc. of the existing transmission licensee, which will help TPL to work out a robust and realistic network rollout plan. Based on field survey findings and collated technical and commercial data, TPL has proposed the network rollout plan in the petition for over 5 years' period.

In the initial years, the power evacuation will be done from the available bays in the existing transmission licensee EHV substations. In case the existing transmission licensee substation is on periphery or outside the load centre area, a network rollout plan will be chalked out to cover the load pockets in such a manner that all categories of consumers can be catered to for providing power supply. This will ensure non-discrimination towards existing consumers. In such case, the network development will happen from periphery to the load centre.

In parallel, new EHV substation and the downstream power evacuation network of TPL is planned. These assets are likely to remain lightly loaded in initial years. The plan is to have our EHV/HV substations near to the load centre so that the consumers can be served with minimum cable lengths, optimum capex and minimum timelines. Potential high growth areas are ideal for setting up EHV/HV substations. For such areas, due diligence with developers / local authorities will be initiated for necessary land acquisition on priority.

The areas where there is no development or relatively less development as on date, will be studied for future load growth. The low-end growth areas will also be provided with HT / LT network to cater to the consumers.

Any consumer who applies to TPL, supply shall be released in accordance with the regulatory framework. In case TPL receives applications for release of connections in the area that is not covered in the network roll out plan, TPL shall be flexible to cover such area to release supply basis the Regulatory Framework in this regard.

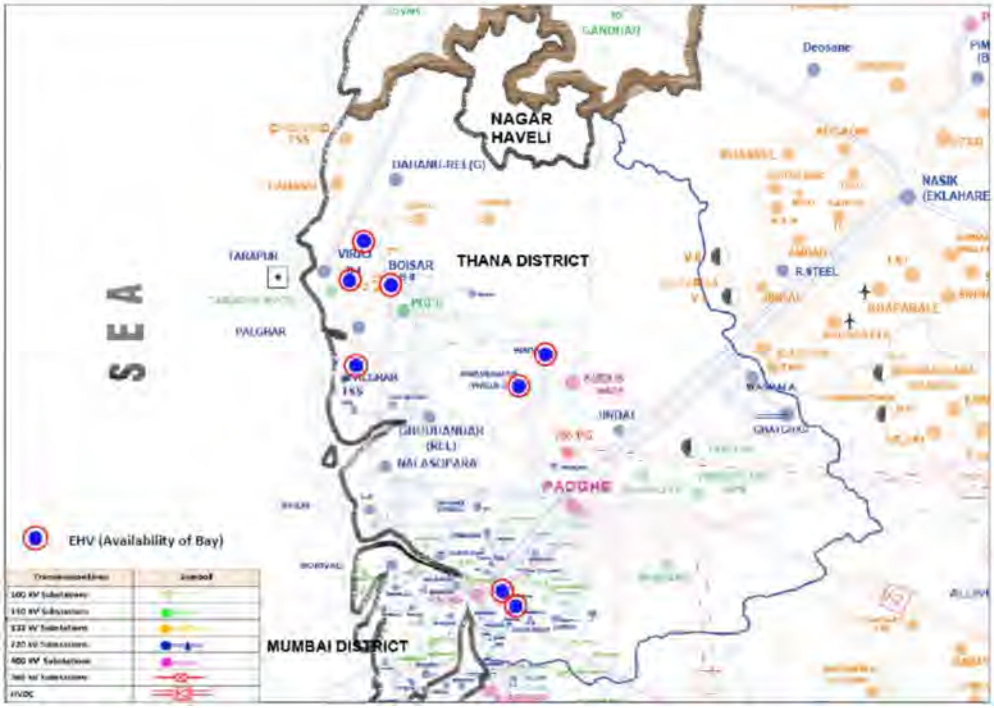
As explained above, TPL in the initial years, has planned the network rollout parallelly, from the existing transmission licensee's EHV substations viz. Dombivali, Palghar, Boisar-I, Viraj, Boisar-II, PAL, Wada, Bhaveghar located at Dombivali, Palghar, Boisar, Kalyan East, Wada and have the availability of bays. This network covers the geography of the area like

Nandivli, Patri Pool, Chinchpada, KBK Nagar, Palghar, Umroli, Alyali, Manor, Gundecha, Valan, Boisar, Shanti Nagar, Navapur Road, Trivedi Nagar, Warangade, Nagzari, MIDC Boisar, Lodha, Palava, Casa Rio, Kalyan East, Wadawali, Abitghar, Ambadi, Tusa, Khaniwali, Bhaveghar, Khariwali, Tansa, Musarne, Kudus etc. which have high residential density.

Following EHV have been considered from where HV feeders can be laid.

PALGHAR KDMC AMC UMC					
Sr. No.	**Name of Sub station**	**33/22 Bays unutilized**	**Division**	**Subdivision**	**Areas to be served**
1	100/22 KV DOMBIVALI SUBSTATION	1	Kalyan East	Kalyan EAST -I	Nandivli, Patri Pool, Chinchpada, KBK Nagar,
2	132/33 KV PALGHAR	3	Palghar	Palghar	Palghar, Umroli, Alyali, Manor, Gundecha, Valan
3	132/33/11 KV BOISAR-I SUBSTN	1	Palghar	MIDC (Boisar)	Boisar, Shanti nagar, Navapur Road, Trivedi nagar, Warangade, Nagzari
4	220 KV VIRAJ	6	Palghar	Boisar (R)	Palghar, Umroli, Alyali, Manor, Gundecha, Valan
5	220/132/33 KV BOISAR-II SUBSTN	1	Palghar	MIDC (Boisar)	MIDC Boisar, Boisar, Shanti nagar, Navapur Road, Trivedi nagar, Warangade, Nagzari
6	220/22 KV PAL EHV SUBSTATION	2	Kalyan East	Kalyan East	Lodha, Palava, Casa Rio, Kalyan East
7	220/22 KV WADA SUBSTN	2	Vasai	Wada	Wadawali, Abitghar, Ambadi, Tusa, Khaniwali, Bhaveghar, Khariwali, Tansa, Musarne, Kudus
8	220/33/22 KV BHAVEGHAR S/STN	14	Vasai	Wada	Wadawali, Abitghar, Ambadi, Tusa, Khaniwali, Bhaveghar, Khariwali, Tansa, Musarne, Kudus
	TOTAL	**30**			

Schematic showing EHV substations with spare bays available

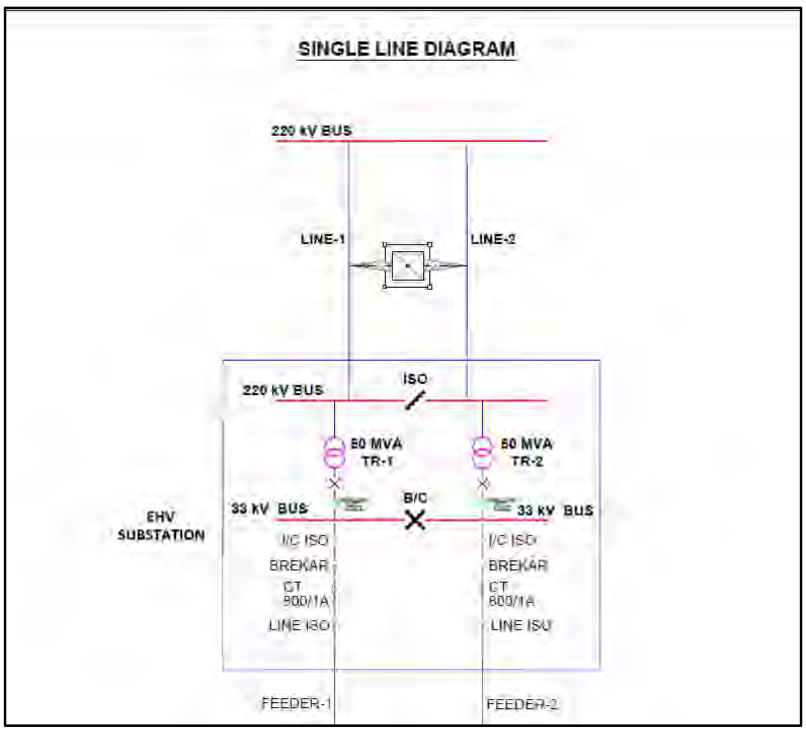


Underlying considerations for Distribution Network Planning

- It is proposed to create robust and resilient network, considering the climatic conditions such as heavy rains / flood.
- Underground HT network in towns/cities will be laid at proper depth and through ducts (wherever applicable) to ensure safety and reliability.
- Power Transformers capacity shall be considered in such a way so as to ensure n-1 redundancy. The power transformers equipped with On Load Tap Changers for stable voltage profile.
- The distribution substations will be equipped with automated SCADA compatible Ring Main Units.
- The Distribution transformer capacity will be as per long term load requirement.
- Dry type transformers or Ester oil filled transformers will be used at suitable places to ensure safety and environment protection.
- APFC panels will be installed at substations to ensure reactive power compensation.
- The projects will be monitored using latest project management software.
- Deployment of advanced technological features such as GIS, SCADA, Field Force Application to facilitate efficient operations.

- **EHV network**
    - The location of TPL EHV substation will be selected in such a way that it is preferably in the midst or at least in the vicinity of a load centre. At the same time, it should be very near to the EHV lines so that the cost for tapping EHV source is minimised.
    - In case of space constraints, Gas Insulated Switchgears (GIS) will be proposed to minimise space requirements. Tubular EHV transmission poles will be utilised, if required, to minimise the tower footprints.
    - The EHV transformers will have n-1 redundancy.
    - Schematic arrangement of EHV substation is depicted in **Fig. 1.**

Fig. 1 EHV substation



- **HV network**

22 kV network

- It is proposed to source power through 22 kV feeders originating from Transmission Licensee's substations. To maximise the utilisation of available bays, back-to-back feeders are proposed in the initial years.

- Higher number of feeders emanating from the Transmission Licensee's substations will enable TPL to form ring mains network. Additional spare cables will be kept laid in the routes, which are common after coming out of the EHV substations. This will minimise the RO charges per feeder and will avoid repeated works within/ nearby EHV substation premises in future when the load increases.
- Extra cables will be kept electrically charged to avoid damage to the spare cables. This also may result in less loading of cables in the initial years but will prevent repeated excavations in future and lesser nuisance to the public.
- In case of overhead lines, the conductor sizes will be designed on higher side to take care of future demands. This will avoid future expenditure on conductor and tower replacement.

33 kV network

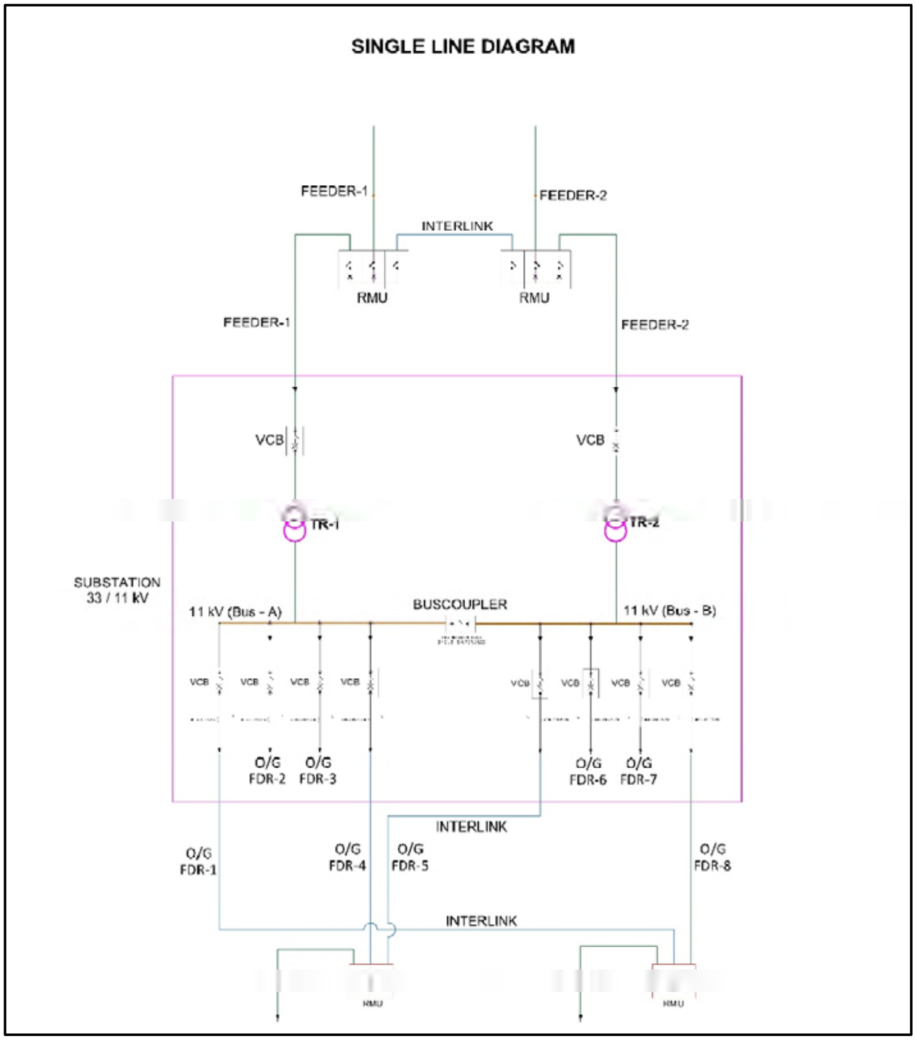
- The methodology for developing 33 kV network will be similar to 22 kV network stated above.
- However, the difference in this network configuration is that 33 kV network will charge 33/11 kV substations of TPL and 11 kV distribution network will be formed to feed consumer substations.

33/11 kV substations

- TPL will initiate acquiring substation space for 33/11 kV substations on priority in proposed development area.
- Each substation will have at least 2 Power transformers for redundancy.
- Each power transformer will have a bus section with at least 5 nos. 11 kV breakers.
- To maximise the utilisation of available bays, back-to-back feeders are proposed at least in the initial years. The network development plan will optimise the number of cables in common trench to minimise the RO charges.
- In case of overhead lines, the conductor sizes will be designed on higher side to take care of future demands. This will avoid future expenditure on conductor and tower replacement.

- Schematic arrangement of 33/11 kV substation is depicted in **Fig. 2.**

Fig. 2 33/11 kV substation



22 kV / 415 V, 11 kV / 415 V Consumer substations

- Consumer substations are the ones which are used for developing LT network for feeding consumers.
- These substations will be fed at 22 kV or 11 kV at HT depending upon the network configuration in the area.
- These substations will be connected in Ring Mains network to achieve desired redundancy.
- As far as possible, the distribution transformer capacity will be kept at least 500

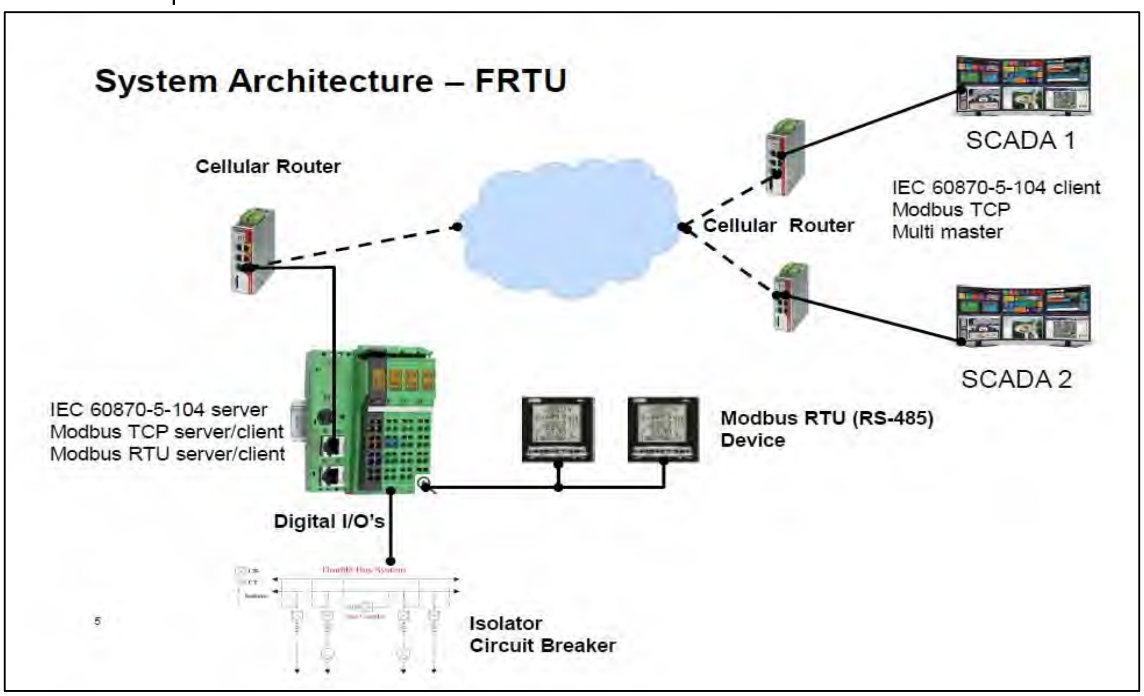
kVA irrespective of the initial loading, so as to avoid upgradation in future.

- While acquiring space for distribution substation, space for additional transformer will be reserved for providing additional transformer in case there is anticipation for higher demand in future.
- Multilevel substations will be designed for utilisation of vertical space and minimising effective footprint in crowded localities.
- The distribution substations will be equipped with automated SCADA compatible Ring Main Units. Schematic arrangement is depicted in **Fig. 3**.

Fig. 3 SCADA compatible Ring Main Units

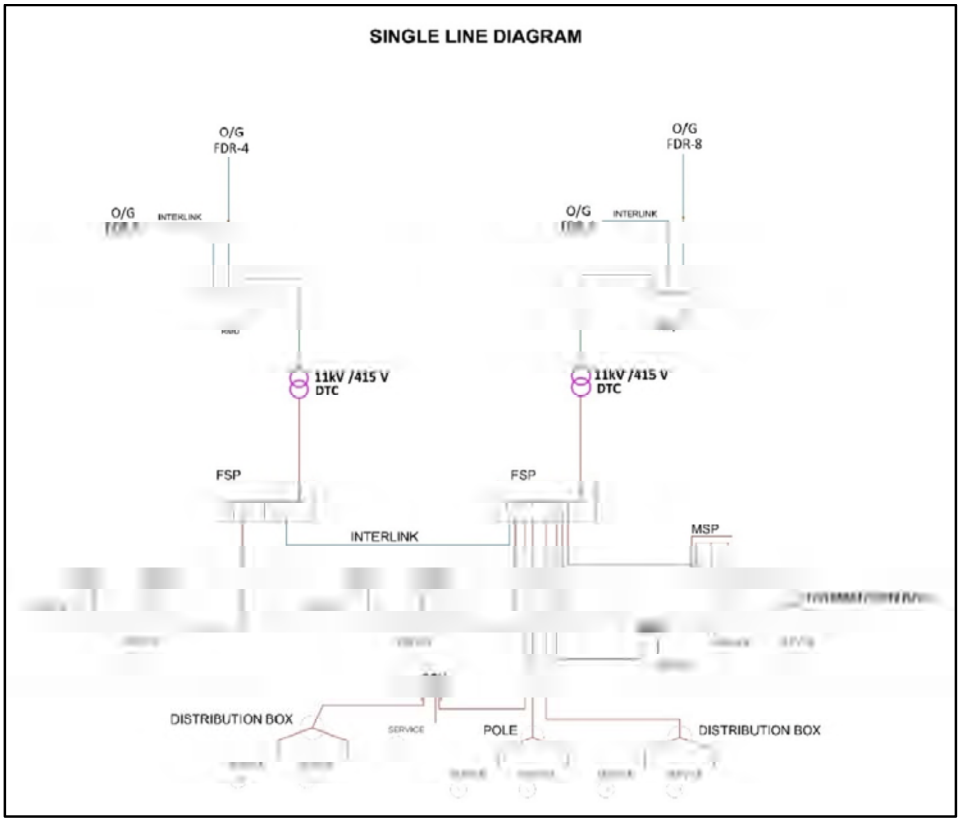
➢ **LT Network**

- It will be equipped with MCCB, HRC fuses of appropriate capacity to enable interruption to minimum number of consumers in case of a fault.



- LT Network will be interconnected in ring system and designed to ensure easy changeover during system disturbances for uninterrupted power supply. Typical network configuration of LT network is as shown in **Fig. 4.**

Fig. 4 LT network configuration



- In case of overhead lines, the conductor and pole sizes will be designed on higher side to take care of future demands. This will avoid future expenditure on conductor and pole replacement.

➢ **Protection system**

- Protection system from EHV to LV network will be synchronised system to achieve minimum disturbance to the network.
- The protection system will be designed using advance microprocessor-based digital and numeric relays.
- This will facilitate detection of abnormal conditions like faults in electrical circuits and automatically operate the switchgear to isolate faulty equipment from the system as quickly as possible to reduce outage time during tripping.

Over the years TPL has adopted the latest technologies in Distribution network not only to provide quality and reliable power but to achieve footprint minimization and better aesthetics.

From above, it is evident that, TPL has envisaged network roll out plan for the proposed license area in such a way that it covers high consumer density pockets across license area simultaneously. In view of this, for developed urban areas, TPL has proposed underground network for better reliability. The area wise network rollout is planned to cater supply requirements of all consumers spread across length and breadth of the proposed license area with optimum combination of underground and overhead network. The capex plan for the network rollout is aimed to fulfil the USO obligation including all the consumer categories i.e., Residential, Commercial, Industrial, Agricultural and Others.

Annexure-7

Estimated Current Sales - Subdivision / Area Wise - Thane & Palghar

			Sales					
Division	**Subdivision**	**Area**	**Total**	**HT**	**Residential**	**Comm & Ind**	**Agri**	**Others**
DOMBIVALI URBAN DIVSION	DOMBIVALI (E) S/DN-I	Tilak Nagar, Pendse nagar, Sudama Nagar, Ramnagar, kelkar Road, Tukaram nagar	99.18	0.16	71.07	22.74	-	5.22
	DOMBIVALI (W) SN-III	Mhatrewadi,Anandnagar, Vishnunagar, Garibancha Wada, Umesh Nagar	82.87	0.12	70.71	9.29	-	2.74
	DOMBIVALI(E) S/DN-II	Gograswadi, Sonarpada,Nandivli, Regency , P&T Colony, Star Colony, Gandhi Nagar	98.09	0.10	77.79	14.26	-	5.93
	DOMBIVALI(W) S/DN-IV	Devicha Pada, Navapada, Chinchodyacha Pada, Shastri Nagar, Kopar	52.55	0.05	43.26	6.57	-	2.66
	Total		**332.68**	**0.42**	**262.84**	**52.86**	**-**	**16.56**
KALYAN (EAST) DIVISION	CASA RIO	Lodha Casa Rio Complex, Ushargaon	5.08	2.21	1.94	0.59	-	0.34
	KALYAN (E) S/DN.I	Nandivli, Patri Pool, Kalyan East	368.85	148.91	162.67	49.97	0.08	7.22
	KALYAN (E) S/DN.II	Chinchpada, KBK Nagar,	41.23	5.09	25.44	7.81	-	2.89
	KALYAN (E) S/DN.III	Sonarpada Gaon, Sagaon,	320.28	75.76	181.30	55.70	0.03	7.49
	M/S LODHA DWELLERS PVT. LTD.	Palava Township	28.22	8.50	14.62	4.49	-	0.60
	PALAVA-II	Palava Township	12.54	4.80	5.86	1.80	-	0.08
	Total		**776.20**	**245.27**	**391.82**	**120.37**	**0.11**	**18.61**
KALYAN RURAL DIVISION	BADLAPUR (E) S/DN.	Morivali, Katrap, Kulgaon, Wangni	558.00	258.98	163.67	64.88	1.40	69.07
	BADLAPUR (W) S/DN.	Sonivali, Barvi	291.36	70.43	105.84	28.65	3.24	83.19
	KALYAN CC O&M S/DN	Falegaon, Goveli, Khadwali, Pimpalghar, Pimplas	422.83	197.73	93.59	67.20	2.83	61.50
	Total		**1,272.19**	**527.14**	**363.09**	**160.73**	**7.47**	**213.76**
KALYAN URBAN DIVISION	KALYAN (W) S/DN-I	Chikanghar, Joshibaug, Kalyan Court, Mohane Road,Gauripada, Rambaug, Pornima Chowk	361.25	181.69	126.17	24.81	-	28.57
	KALYAN (W) S/DN-II	Khadakpada,Wayale nagar, Aadharwadi,Wadeghar, Gandhare , Talyacha Pada,Radha Nagari,Raunak City	159.60	8.35	107.07	18.94	-	25.24
	KALYAN (W) S/DN-III	Shivaji Chowk area, Sahjanand Chowk,Station road, Santoshi Mata Road, Bazarpeth	71.78	4.99	29.61	23.77	-	13.41
	Total		**592.64**	**195.03**	**262.84**	**67.53**	**-**	**67.23**
PALGHAR DIVISION	BOISAR (R) S/DN.	Boisar,Shanti nagar,Navapur Road,Trivedi nagar,Warangade, Nagzari	424.41	238.69	106.59	40.84	10.70	27.59
	MIDC(BOISAR) S/DN.	MIDC Area,Tarapur	1,658.82	1,510.67	28.09	113.90	0.17	6.01
	PALGHAR S/DN.	Palghar,Umroli,Alyali,Manor,Gundecha,Valan	565.98	278.72	104.98	133.94	6.69	41.65
	SAFALA S/DN.	Saphale,Kelwa,Kapase,Rambaug	70.89	9.10	31.18	10.44	6.65	13.52
	Total		**2,720.10**	**2,037.17**	**270.84**	**299.12**	**24.20**	**88.78**
ULHASNAGAR DIVISION I	ULHASNAGAR I S/DN.	Goal Maidan, Rotary Club of Ulhasnagar , Aman Talkies road,	64.87	1.05	43.29	14.45	-	6.08
	ULHASNAGAR II S/DN.	Punjabi Colony,Mukund Nagar,	84.13	0.38	28.38	49.05	-	6.31
	ULHASNAGAR III S/DN.	Telephone exchange, Waldhuni, Vitthalwadi	123.14	0.66	56.85	54.75	-	10.88
	Total		**272.13**	**2.09**	**128.52**	**118.25**	**-**	**23.27**
ULHASNAGAR DIVISION II	AMBERNATH(EAST)S/DN.	Anandnagar, MIDC area. NMRL, Ambernath city	438.74	261.98	85.81	51.80	0.02	39.13
	AMBERNATH(WEST)S/DN.	Chinchpada, New Balaji Nagar, Morivali, Badlapur,Murlidhar Nagar, Jambhul	272.89	122.82	75.64	35.92	0.00	38.51
	ULHASNAGAR V S/DN.	Doodhnaka, Shobhraj Garden,Gaikwada Pada, Kailash colony, Ulhasnagar V area	105.99	1.07	35.08	48.35	0.00	21.49
	ULHASNAGAR IV S/DN.	Kurla Camp, Sector 17,Ulhasnagar IV area	85.10	0.85	39.39	21.58	-	23.28
	Total		**902.72**	**386.71**	**235.93**	**157.65**	**0.03**	**122.40**
VASAI DIVISION	VASAI RD. EAST S/DN.	Juchandra,Navghar,Gauripada,Rajavali,Bhoidapada,Kaman,Dhumal Nagar, Naikpada	1,125.24	284.31	197.46	633.04	0.19	10.23
	VASAI RD. URBAN S/DN	Umela,Malaji Pada,Naigaon,Parnaka,Dattani	111.54	12.71	75.35	16.78	1.55	5.15
	VASAI RD. WEST S/DN.	Suncity, Chulana Road,Station road,Vasai west	82.31	3.80	62.68	11.74	0.02	4.07
	WADA S/DN.	Wadawali,Abitghar,Ambadi,Tusa,Khaniwali,Bhaveghar,Khariwali, Tansa,Musarne,Kudus. Wada MIDC	754.02	690.21	21.54	34.35	2.21	5.72
	Total		**2,073.11**	**991.03**	**357.04**	**695.90**	**3.97**	**25.17**
VIRAR O and M DIVISION	ACHOLE SDN	Achole,Vinayak Hospital,Deendayal Updhya Road,Dwarka	115.67	1.55	92.90	16.65	-	4.58
	M/s Achole Developers Pvt.Ltd.	Achole Developers	5.22	2.87	-	2.35	-	-
	NALASOPARA EAST S/DN	Tulinj Road,Gajanan Nagar,Damodar nagar,Kargil Road,Kesare Road, Nalasopara East	113.61	0.39	95.99	14.42	-	2.81
	NALASOPARA WEST S/DN	Cheddanagar,Nirmal,Umrala,Sopara, Nalasopara West	120.37	0.71	94.08	18.00	1.69	5.89
	VIRAR EAST S/DN.	Virar,Vajreshwari,Manvelpada, Khaniwade,Shirgaon	235.81	30.21	140.52	57.01	0.68	7.39
	VIRAR WEST S/DN.	Virar,MHADA Housing society, Bolinj,Padmavati Nagar,JP Nagar	217.96	9.33	164.57	32.62	0.07	11.37
	Total		**808.65**	**45.07**	**588.06**	**141.05**	**2.44**	**32.04**
Total			**9,750.41**	**4,429.93**	**2,860.98**	**1,813.46**	**38.21**	**607.83**