



TATA POWER-DDL

TATA POWER DELHI DISTRIBUTION LIMITED

A Tata Power and Delhi Government Joint Venture

Business Plan of Utilities – Investment under MYT Regime

Puneet Munjal

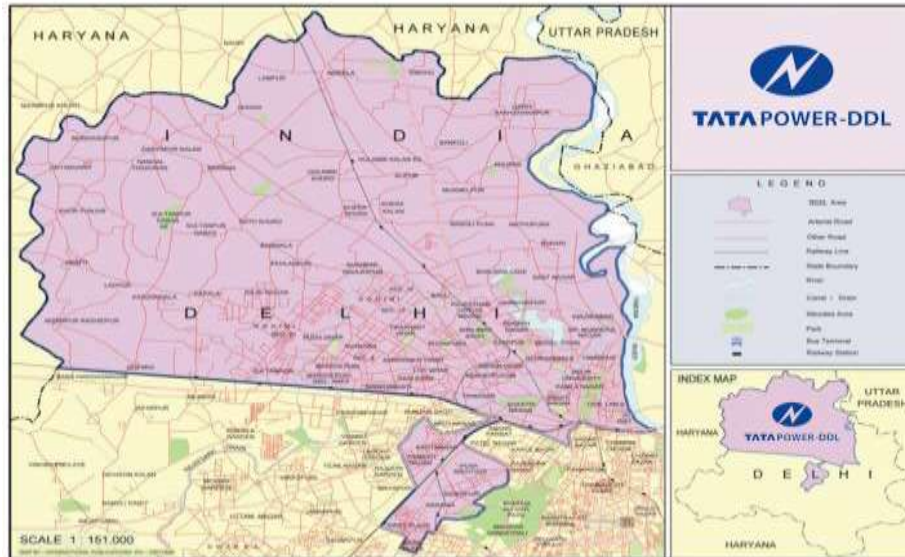
Vice President, Tata Power Delhi Distribution Limited

12th Feb 2019

TATA Power – DDL... The Architect of Transformation in Utility Business



51:49 Joint Venture



One of the Most Successful Private Power Distribution Utility

License Area: North and North West Delhi (510 sq. km)
License Period : 25 years

Parameter	Unit	July '02	March '18	% change
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OPERATIONAL PERFORMANCE

AT&C Losses	%	53.1	8.40	84%
System Reliability – ASAI -Availability Index	%	70	99.67	42%
Transformer Failure Rate	%	11	0.71	94%
Peak Load	MW	930	1852	99%
Length of Network	Ckt. Km	6750	15378	128%
Street Light Functionality	%	40	99.41	149%

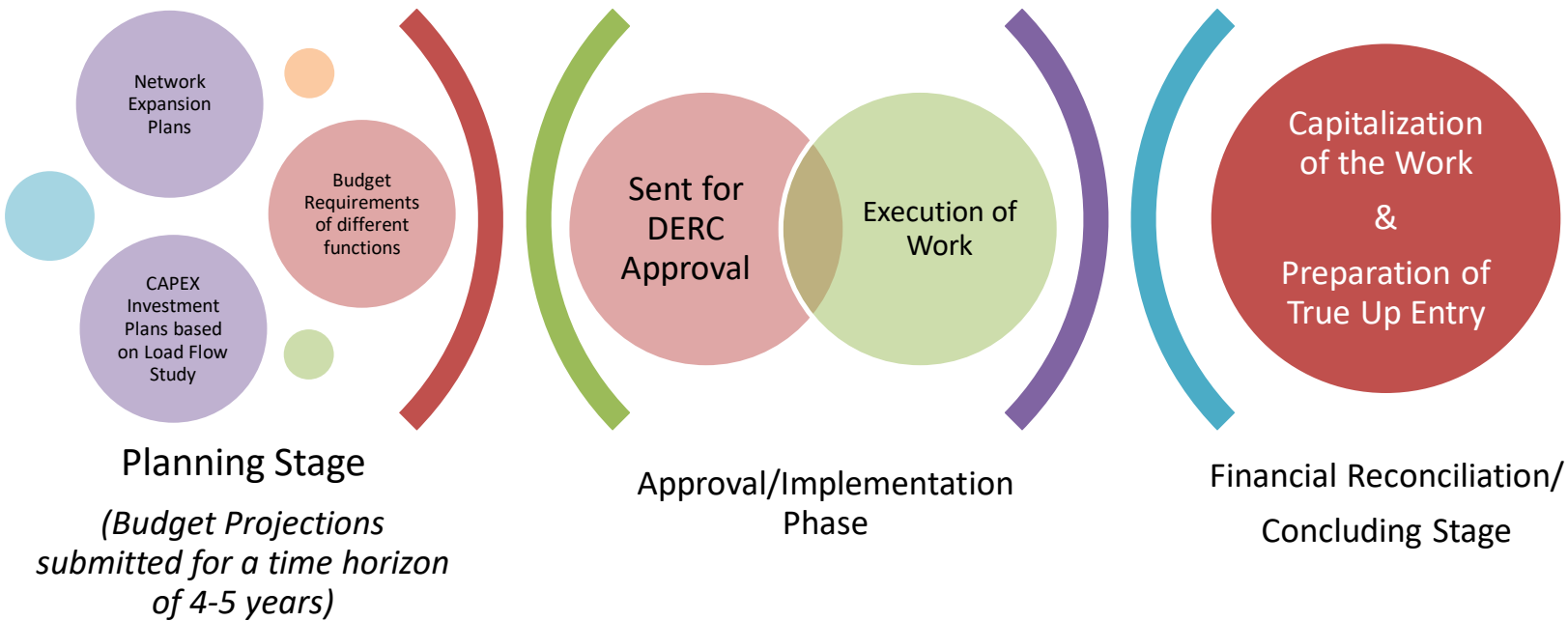
CONSUMER RELATED PERFORMANCE

New Connection Energization Time	Days	51.8	2	96%
Meter Replacement Time	Days	25	2.09	92%
Bill Complaint Resolution	Days	45	4	91%
Mean Time to Repair Faults	Hours	11	2	96%
Call Center Performance - Service Level	%	-	95	
Payment Collection Avenues	Nos.	20	6725	
Consumer Satisfaction Index	%	-	90	

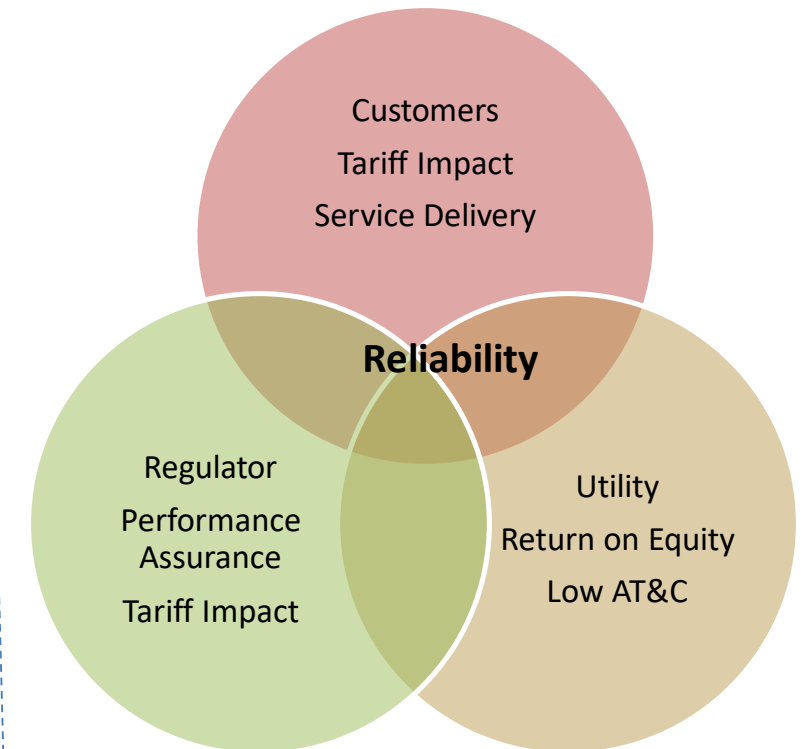
OTHERS

Capex (Cumm)	Mn USD	187	1060	467%
Consumers	Count Mn	0.7	1.64	140%
Employees	Count	5600	3283	41%

MYT Framework



Significance of Capital Investment Plan



Conditions of Capital Investment complied by Discoms

- The License issued to Power Utilities specifies following conditions for Capital Investment & Project Implementation & Discoms need to ensure that
 - ❖ There is a need for the major investment in the Distribution System which the Licensees proposes to undertake;
 - ❖ The Licensee has examined the economic, technical & environmental aspects of all viable alternatives to the proposal for investing in or acquiring new Distribution System assets to meet such need; and
 - ❖ The Licensee has explored all possible avenues and is sourcing funds in the most efficient & economical manner.

Capital Investment Plan

- The DERC (Terms and Conditions for Determination of Tariff) Regulations, 2017 stipulates that Capital Investment Plan submitted by Discoms shall be scheme wise and include
 - Purpose of investment
 - Capital Structure
 - Capitalization Schedule
 - Financing Plan
 - Cost-Benefit Analysis
 - Performance Improvement envisaged in the Control Period
 - Any other factor influencing investment

Capital Investment Plan Submission

Infrastructure Development

- ✓ Admin Works
- ✓ Civil Works
- ✓ IT related
- ✓ Consumer care centres & cash collection centres
- ✓ Testing labs

AT&C Loss Reduction

- ✓ Metering Systems
- ✓ High Voltage Distribution System
- ✓ Replacement of LT bare Conductor with LT ABC
- ✓ Installation of Capacitor bank

Capital Investment Schemes

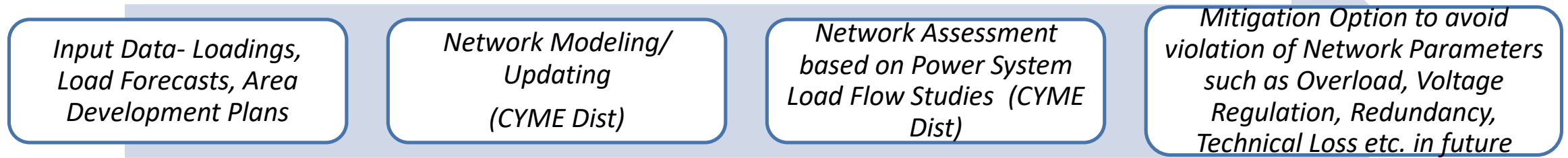
Reliability Improvement

- ✓ Automation & GIS Implementation
- ✓ AMR Installation
- ✓ Replacing old HT Panels with RMU
- ✓ Replacement of Sick Cables
- ✓ Other system improvement works

Load Growth

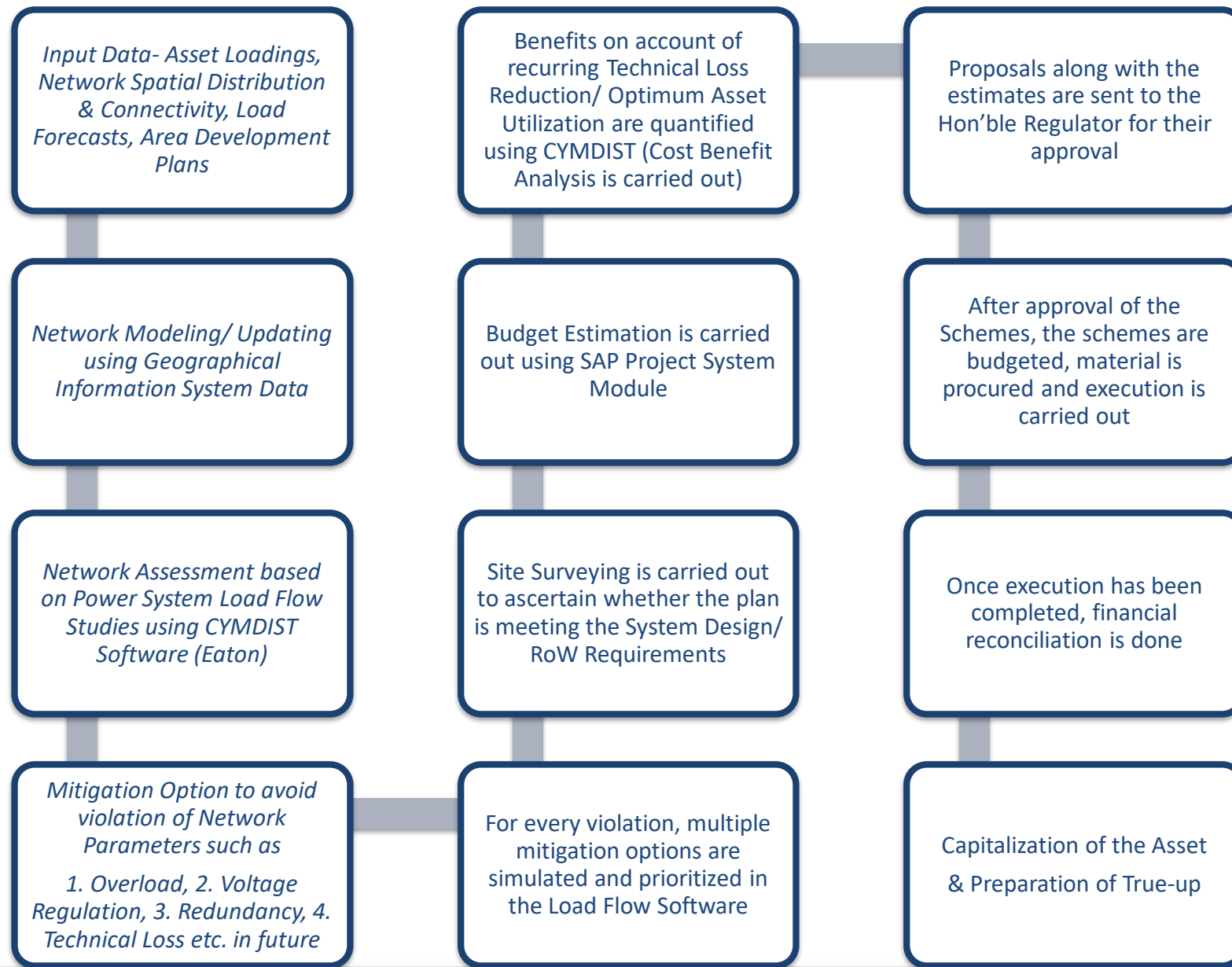
- ✓ New Grids (33/11KV & 66/11KV)
- ✓ Augmentation of existing grids
- ✓ Feeder lines
- ✓ Power Transformer
- ✓ Distribution Transformer

Capital Investment – Load Growth



- Load Growth is primarily on account of two major reasons:
 - Load Growth caused by Green Field Electrification of existing un-electrified areas/ new residential apartments.
 - Natural Load Growth in existing areas caused by Vertical Load, increased spending capacity due to improvement in standard of living.
- Sub Categories are as follows:
 - EHV System Augmentation- Grids, Lines, Cables & Transformers, EHV Related 11kV Schemes.
 - 11kV System Augmentation- Distribution Substation, Circuits, DTs
 - New Commercial/Industrial Establishments and investments made to provide power supply to the un-electrified areas.
 - New Smart/Static Meter Requirement in these un-electrified areas.

Capital Investment - Load Growth



Capital Investment – AT&C Loss Reduction

Technical Loss

1. Based on Load flow of the network over a period of time, the technical losses are estimated at various level of network i.e. 66/33 KV Lines, 66/11 or 33/11 KV PTRs, 11 KV Lines, 11/0.415 KV DT and LT lines.
2. Based on the results obtained; schemes are prepared for technical loss reduction in respective area. Say for example, in some areas the line losses are to be addressed and in other it could be no load loss or load loss of DT.
3. Some of the actions taken are
 - Installation of capacitor banks to take care of reactive compensation
 - Addition of new feeder
 - Installation of new DTs
 - Laying new LT feeders

Commercial Loss

1. Based on following inputs the strategy for commercial loss reduction is prepared
 - Analysis of Energy Audit (Energy Balance) report prepared upto the DT level.
 - Input from field teams (O&M as well as Enforcement)
 - Analysis of AMR data
2. Some of the actions taken are
 - Conversion of LV bare to LV ABC or HVDS system
 - Replacement of meters with Smart meters/static meters

Capital Investment – Reliability Improvement

Following inputs are used to prepare the strategy

1. Area wise SAIDI, CAIDI and SAIFI. This helps in understanding the performance of various areas geographically.
2. Analysis of fault occurrences for each feeder, area and network layer.
3. Analysis of data from SCADA, PQ meters and ABT meters.
4. Analysis of network using load flow and reliability tools

Based on above the schemes are prepared for various actions to be taken

1. Adding new switching devices
2. Automating switching points
3. Adding new DTs, Feeders, interconnectors etc.
4. Implementing new technologies for advances level of restoration schemes.
5. Adding advanced relays and self healing schemes.

Benchmarking of Capital Investment

Capital Investment Benchmarking is a Two Pronged Approach



Cost Data Book

- ❖ DERC published CDB
- ❖ CDB benchmarks the prices based on other DISCOMs trends & market research.
- ❖ CDB is revised from time to time to benchmark the allowed expenditure for any Capex



Competitive Bidding

- ❖ Tata Power-DDL conducts competitive bidding to award contracts.
- ❖ Selected L1 bidder is further negotiated to obtain lower rates.
- ❖ Further, reverse auction method is adopted to obtain most competitive rate

The Licensees invites & finalises tenders for procurement of equipment, material and/or services relating to such major investment, in accordance with a transparent, competitive, fair & reasonable procedure as may be specified by the Commission from time to time.

Approval process for Capital Investment

Document Submission (By Discom)	In Principle Approval (By DERC)	Final Approval (By DERC)
<ul style="list-style-type: none">• Detailed Project Report for all EHV works, 11 KV & LT works• Bill of Materials.• Approval of Expert Technical Committee for Deposit Schemes.• Site Photographs• Site Inspection/visit Form	<ul style="list-style-type: none">• Necessity• Overall suitability• Pay back period• Whether the scheme fits into CEA's overall system planning study for Delhi• Whether in-feed to the new sub station proposed will be available from the system of Delhi Transco Ltd (DTL)	<ul style="list-style-type: none">• Adherence to Competitive Bidding Guidelines• Achievement of scope and objectives in line with the in principle approval• All legal clearances including Electrical Inspectors certificate obtained

1. Capex Schemes of value less than Rs. 20 Lakhs and cumulative upto Rs. 50 Crs are not subjected to DERC approval
2. Deposit schemes of value upto Rs. 2 Crores are not subjected to DERC approval.

Physical verification of Assets by DERC

- ❖ DERC conducts physical audit of all the assets capitalized on Quarterly basis.
- ❖ The list of all the schemes capitalized is submitted to DERC on Quarterly basis (**Annexure 1**)
- ❖ The detailed BoQ of each scheme (**Annexure-2**) along with the respective GIS map is also provided to the Auditors.
- ❖ DERC conducts site visit of all the assets with concerned project officials of Tata Power-DDL.
- ❖ DERC approves the capitalization of the assets based on physical audit of the assets.

S NO.	Scheme NO	Scheme Description	Zone	District	Scheme Type	Date Of Capitalisation	Date and Ref. of approval	Approval Date	Approved Cost (Rs.)	Capitalised Value (Rs.)	Revised Approval, if any in capitalised cost more than approved cost
1	PR/D0507/00032	EHV- Erection of new 66/11KV Siraspur Grid with AIS panels in pipe-bus arrangement.	507	BDL	EHV	22.12.2017	F.17(91)/Engg.DERC/FY 13-14/4374/1638 and F.17(91)/Engg.DERC/FY 13-14/4374/1467	10-Oct-14	238000000	6713507.79	
2	60023357	Scheme to mitigation of Overloading at Dinesh and Pooja SPD DTs and Revamping LT network. DT at Dinesh SPD (400 KVA) is approx 94% in May 17, likely to increase in	507	BDL	HT	14.10.2017	Approval not required as per ret. DERC letter no. F.17(91)/Engg.DERC/2013-14/Misc/4005/2887	1-Oct-13		1395846.24	
3	60023369	LT scheme for extension of LT network in the adjoining area of Jeevan Park Area and Rajeev Nagar for release of new connection and revamping of its adjoining area.	507	BDL	LT	12.10.2017	Approval not required as per ret. DERC letter no. F.17(91)/Engg.DERC/2013-14/Misc/4005/2887	1-Oct-13		568441.95	
4	60023420	Threat mitigation at MIDC colony and also revamping of the MIDC Colony/Slm. and addressing the safety issue at site.1. JUSTIFICATION: Threat Mitigation at MIDC Colony	507	BDL	LT	11.10.2017	Approval not required as per ret. DERC letter no. F.17(91)/Engg.DERC/2013-14/Misc/4005/2887	1-Oct-13		708526.75	

1. Scheme no:	PR/D0507/00032
2. Scheme Name:	EHV- Erection of new 66/11KV Siraspur Grid with AIS panels in pipe-bus arrangement
3. Scheme type: Deposit/Non Deposit	Deposit
4. Start Date	26-Aug-15
5. Completion date	22-Dec-17
6. DERC Approval Letter No. & Date	F.17(91)/Engg.DERC/FY 13-14/4374/1638 and F.17(91)/Engg.DERC/FY 13-14/4374/1467
7. DERC Approved Estimate	238000000
8. Scheme Type	EHV
9. Zone	507
10. District	BDL
Major BOQ	

S.No.	Item	Asset ID	Quantity	Rate Excluding Taxes	Amount excluding Taxes	Rate including Taxes	Amount including Taxes
i	CABLE 11KV AL 3CX400 SQMM XLPE ARM	10301117865	72.65	1499.6	108945.1	1720.8	125014.5
ii	Other Materials				91945.3		105507.2
iii	POWER PLANT COMUN. EQUIP. FOR SUBR	10206002720	1	50089.4	50089.4	57477.6	57477.6
iv	SWITCH ETHERNET AUX 48V DC	10206002722	1	157396.8	157396.8	180612.8	180612.8
v	BATTERY BANK ACCESS RING	10210000424	1	92050.7	92050.7	105628.1	105628.1
vi	ACCESS SWITCHES-1 ROUTER	10206002719	1	486327.0	486327.0	558060.2	558060.2
vii	CAPACITOR BANK-2 12 KV, 7.2MVAR	10205000767	1	2147511.1	2147511.1	2464269.0	2464269.0
viii	RTU SIEMENS CARD	10206002721	1	445403.3	445403.3	511100.3	511100.3
ix	Others				0.0		0.0
x	Civil Cost				-452376.5		-520233.0
xi	Labor & Transportation				1956866.2		2250396.1
xii	Sub Total				5084158.3		5837832.9
xiii	A&G expenses capitalized, if any				0.0		0.0
xiv	Employee Expenses, Capitalized, if any				875674.9		875674.9
xv	IDC capitalized, if any						
xvi	Grand Total				5959833.2		6713507.8

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Verification by DERC for final approval of Capitalization

- DERC verifies whether various equipment & materials for execution of schemes have been procured through fair, transparent & competitive means
- DERC verifies various requisite statutory certificates including Electrical Inspector certificate
- DERC verifies the copies of Purchase Order for procurement of equipment & contracts awarded for services.
- DERC also checks the veracity of payments made against the set Purchase Order through the Journal Vouchers.

Sample Format for Capital Investment proposal submitted to DERC – Load Growth

Scheme Justification

a	Scheme Name.	CAPEX 18-19: INTERCONNECTOR SHIV DHARAM KANTA KIOSK and POLE NO. HT 507-17/52/2, ZONE-507, DISTT.-BDL
b	Scheme No.	PR/S0507/00114
c	Estimated Cost (In Rs Lacs)	TPDDL : 27.48(Excl. of taxes) CDB : 27.48(Excl. of taxes) RR Charges : 3.88 Lacs
d	Scheme category	Load Growth / 11 KV System Augmentation
e	Objective	To shift load of GOONGAWALA WITH T-OFF GALI NO-9 JJ CLY PL/M Feeder to Shiv Dharam Kanta Feeder from Siraspur Grid and to ensure N-1 of trunk feeder.
f	Scope of work in brief (Major Items)	1) HT XLPE-400 CABLE - 685 Metres
g	Completion Period	300 Days *Subject to availability of necessary permission for RoW from agency concerned and availability of land; as applicable.
h	Single Line Diagram of the existing network & proposed network	Attached
i	Justification/ Necessity	Existing Scenario:- GOONGAWALA WITH T-OFF GALI NO-9 JJ CLY PL/M Feeder from SGTN-2 Grid feeds the load of a large area including HVDS area. The loading of GOONGAWALA WITH T-OFF GALI NO-9 JJ CLY PL/M feeder is 269 Amps. However network connectivity is such that only one back up source can be used at a time, therefore during N-1, it was difficult to backfeed the load on backup source. Moreover this feeder was contributing to tech. losses due to high loading. Proposed Scenario:- It is proposed to lay a new interconnector between GOONGAWALA WITH T-OFF GALI NO-9 JJ CLY PL/M and POLE NO. HT 507-17/52/2. This will shift approximately 100 A load from



TATA POWER-DDL

Scheme Proposal

Revision No.:

Project No.:PR/S0507/00114

*All Rates and amount are in INR.

Scheme Notification No.	8800014687
Name of Scheme	CAPEX 18-19-INTERCONNECTOR SHIV DHARAM KANTA KIOSK and POLE NO. HT 507-17/52/2, ZONE-507, DISTT.-BDL
CAPEX Budget Category	Load Growth Schemes
CAPEX Budget Sub Category	11 KV System Augmentation
Budget for FY	2018-2019
Purpose of Scheme	TPDDL-LGS
Name of Applicant	
As Per TPDDL	
Total Cost of Scheme (Rs.) Exclusive of Taxes	2,748,290.93
TPDDL Share (Rs.) - Exclusive of Taxes	2,748,290.93
Customer Share (Rs.) - Exclusive of Taxes	0.00
Annual Revenue Return(%)	73.10
Payback Period(Years)	1.37
As Per Cost Data Book - CDB FY 2017-18	
Total Cost of Scheme (Rs.) Exclusive of Taxes	2,748,166.32
TPDDL Share (Rs.) - Exclusive of Taxes	2,748,166.32
Customer Share (Rs.) - Exclusive of Taxes	0.00
Annual Revenue Return(%)	73.10
Payback Period (Years)	1.37
Credit for dismantle	0.00
RoW Charges For Railway (Rs.)	0.00
Total Road Restoration Charges	387,500.00
Total Civil Cost	0.00
Total EI Cost	0.00
Load Demand (KW)	0.01
Units Saved from Technical Loss per Year	0.01
Estimated Duration for Project Completion (Days)	300
Funding Arrangement	INTERNAL
Approval of Steering Committee	NO
Approval of ETC for deposit Work	No
Railway Permission Required	NO
Availability of Land / Row	MCD
Name of Feeder	SHIV DHARAM KANTA

Sample Format for Capital Investment proposal submitted to DERC – Reliability

Page No.: 1/5

Scheme Justification

a	Scheme Name.	CAPEX 18-19: OVERHEAD TO UNDERGROUND CONVERSION OF RAJA VIHAR VIHAR KHADDA BASTI FEEDER FROM POLE NO. HT516-46/22-23 TO FSS , Zone-507, District- BDL
b	Scheme No.	PR/S0507/00118
c	Estimated Cost (In Rs Lacs)	TPDDL : 3,086,741.21 (Excl. of Taxes) CDB : 3,071,872.83 (Excl. of Taxes) ROAD RESTORATION CHARGES: 725,000.00 (Excl. of Taxes)
d	Scheme category	Reliability Improvement Scheme/ Safety Related CAPEX Work
e	Objective	To improve reliability of RAJA VIHAR KHADDA BASTI FEEDER from BADLI Grid.
f	Scope of work in brief (Major Items)	1) HT XLPE-400 CABLE - 680 Metres
g	Completion Period	300 Days <i>*Subject to availability of necessary permission for RoW from agency concerned and availability of land; as applicable.</i>
h	Single Line Diagram of the existing network & proposed network	Attached
i	Justification/ Necessity	Existing Scenario: Raja vihar khadda basti feeder and DMRC depot feeder from Badli grid are running on same poles in parallel. They both have O/H Bare Dog sections. Therefore in case of any fault on any one feeder , other one also needs to be shut down for safety purposes. This affects the SAIDI index as well pose a serious safety hazard. Proposed Scenario:- In order to ensure to reliability of RAJA VIHAR KHADDA BASTI feeder, O/H section of this feeder approx. 602 m will be replaced by U/G cable for enhancing safety as well as improve reliability parameters - SAIDI , as nos. of consumers will be less affected during any outage/fault condition which will help in compliance of PA timeline in case fault rectification.



TATA POWER-DDL

Scheme Proposal

Revision No.:

Project No.: PR/S0507/00118

*All Rates and amount are in INR

Scheme Notification No.	8800015480
Name of Scheme	CAPEX 18-19: O/H to UG Conversion-Raja Vihar Khadda Basti Feeder
CAPEX Budget Category	Reliability Improvement Scheme
CAPEX Budget Sub Category	Safety Related CAPEX Work
Budget for FY	2018-2019
Purpose of Scheme	TPDDL-RIS
Name of Applicant	
As Per TPDDL	
Total Cost of Scheme (Rs.) Exclusive of Taxes	3,086,741.21
TPDDL Share (Rs.) - Exclusive of Taxes	3,086,741.21
Customer Share (Rs.) - Exclusive of Taxes	0.00
Annual Revenue Return(%)	28.60
Payback Period(Years)	3.78
As Per Cost Data Book - CDB FY 2017-18	
Total Cost of Scheme (Rs.) Exclusive of Taxes	3,071,872.83
TPDDL Share (Rs.) - Exclusive of Taxes	3,071,872.83
Customer Share (Rs.) - Exclusive of Taxes	0.00
Annual Revenue Return(%)	28.60
Payback Period (Years)	3.78
Credit for dismantle	0.00
RoW Charges For Railway (Rs.)	0.00
Total Road Restoration Charges	725,000.00
Total Civil Cost	0.00
Total EI Cost	0.00
Load Demand (KW)	0.01
Units Saved from Technical Loss per Year	0.01
Estimated Duration for Project Completion (Days)	300
Funding Arrangement	INTERNAL
Approval of Steering Committee	NO
Approval of ETC for deposit Work	No
Railway Permission Required	NO
Availability of Land / Row	PWD
Name of Feeder	RAJA VIHAR KHADDA BASTI

Sample Format for Capital Investment proposal submitted to DERC – Infrastructure

Scheme Justification

A	Scheme Name	CAPEX-18-19 : Scheme prepared for training center in CENPEID (Tata Power – DDL)
B	Scheme No.	CV/C0000/00283
C	Estimated Cost (In Rs)	<ul style="list-style-type: none"> Estimated Cost without taxes(Tata Power – DDL) : Rs 20,211,500
D	Scheme category	Infrastructure Development Schemes/ Civil Infrastructure Projects
E	Objective	Construction of new training rooms at CENPEID.
F	Scope of work in brief (Major Items)	New training rooms at CENPEID.
G	Layout Drawing	Attached
H	Justification/ Necessity	<p>Background:</p> <p>Various training programs and workshops are organized at Tata Power DDL Learning Centre, CENPEID for company employees and BAs working with the company. The company is also inducting fresh and young talent both in the AoT and ET/MT category from reputed institutions. At times, to optimize the cost, external faculties are invited at Cenpeid to benefit more participants rather than sending employees outside. Cenpeid has also joined hands with TMTC for conducting premium programs for our senior executives.</p> <p>Of-late Cenpeid has become a highly appreciated Partner Training Institute with Power Finance Corporation for organizing programs under the themes approved by MoP for external utility participants. By organizing such programs, Tata Power DDL has been earning revenue under the MoP themes and also through customized programs being developed for other national and international utilities.</p> <p>The above has resulted into the need to enhance and improve the quality of training infra to cater to external utility participants from India and other International Utilities.</p>



Revision No.:
Project No.:CV/C0000/00283

*All Rates and amount are in INR.

Scheme Notification No.	8800015889
Name of Scheme	SCHEME FOR TRAINING CENTRE AT CENPEID
CAPEX Budget Category	Infrastructure Development Schemes
CAPEX Budget Sub Category	Civil Infrastructure Projects
Budget for FY	2018-2019
Purpose of Scheme	CIVIL WORKS
Name of Applicant	
As Per TPDDL	
Total Cost of Scheme (Rs.) Exclusive of Taxes	20,211,500.00
TPDDL Share (Rs.) - Exclusive of Taxes	20,211,500.00
Customer Share (Rs.) - Exclusive of Taxes	0.00
Annual Revenue Return(%)	0.01
Payback Period(Years)	0.01
As Per Cost Data Book - CDB FY 2017-18	
Total Cost of Scheme (Rs.) Exclusive of Taxes	20,211,500.00
TPDDL Share (Rs.) - Exclusive of Taxes	20,211,500.00
Customer Share (Rs.) - Exclusive of Taxes	0.00
Annual Revenue Return(%)	0.01
Payback Period (Years)	0.01
Credit for dismantle	0.00
RoW Charges For Railway (Rs.)	0.00
Total Road Restoration Charges	0.00
Total Civil Cost	35,000.00
Total EI Cost	0.00
Load Demand (KW)	0.01
Units Saved from Technical Losses per Year	0.01
Estimated Duration for Project Completion (Days)	300
Funding Arrangement	INTERNAL
Approval of Steering Committee	NO
Approval of ETC for deposit Work	NO
Railway Permission Required	NO
Availability of Land / Row	NA
Name of Feeder	NA

Sample Format for Capital Investment proposal submitted to DERC – AT&C Loss Reduction

Capital Investment proposal for AT&C Losses (Sample Format)

Scheme Justification

Scheme Name – Conversion of overhead dog/rabbit conductor to LT ABC at Nimgi Colony in zone-502 (D) KPM Metro Circle in CAPEX 12-13.

Scheme No. - PR/L0502/00002

Notification no. - 8800003448

Executive Summary: In Capex plan of capex 12-13 lot of schemes were proposed by zone. This scheme is approved in proposed CAPEX 12-13 under LT ABC list at S. No. 09. The list of proposal in priority list is attached.

Site Survey for this area has been done by BA, M/s. Surya with zonal team. The site survey report is verified by zone and submitted to CEG for scheme preparation. SLD & BOQ for this scheme has also been provided after survey and is attached with the scheme. As per zonal manager 3 new feeder of LT ABC is required as per the load growth in the area of Nimgi colony in z-502. As per zone, there are 3 no. of ACB existing and having DT losses of 11%.

Justification: Conversion of overhead to LT ABC is required because as per zone the existing overhead conductor is very old and that needs to be replaced. Also there is concern of safety. So LT ABC is used for conversion. Dismantling quantity of bare is 900mtrs and against it there is proposal of 800mtr of LT ABC proposed. The scheme is proposed to improve reliability, minimize the AT&C losses and to meet the load growth of the area. Return on investment calculation is attached in the scheme.

Scope of work:-

1. PCC Poles 9mtr. 4no.s
2. 3X150 sqmm LT ABC 800mtr
3. TYCO Boxes 20No.s
- 4.

Budget Allocation: This scheme is included in approved CAPEX 12-13 under budget of LT ABC Reliability. Total scheme cost is **Rs. 824888.58/-**.

BUDGET AND COST DETAIL				ROI	
Scheme no	Capex Head	Total budget appd. Under this head	Cost of scheme	%RR	PAYBACK PERIOD
PR/L0502/00002	LT ABC	20 Cr.	0.08 Cr.	32.40	3.09

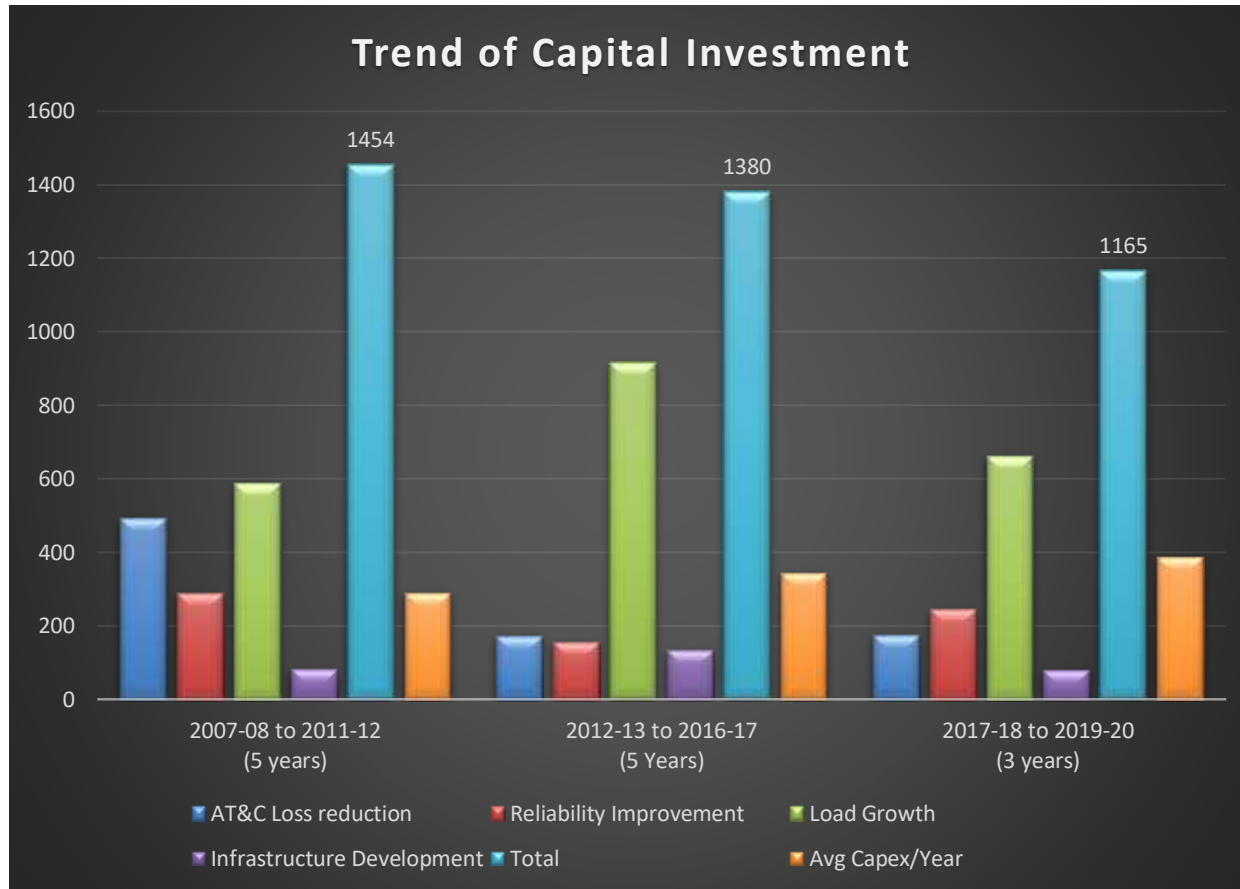


Scheme Proposal

Revision No.:
Project No.:PR/L0502/00002

Scheme Notification No.	8800003438
Name of Scheme	Conversion of bare conductor with LT AB Cable at NIMRI COLONY MCD ZONE 502 (D) KPM
Purpose of Scheme	LOAD GROWTH/ AT&C
Name of Applicant	
Total Cost of Scheme (Rs.)	824,888.58
NDPL Share (Rs.)	824,888.58
Customer Share (Rs.)	0.00
Annual Revenue Return(%)	32.40
Payback Period(Years)	3.09
Load Demand (KW)	0.00
Units Saved from Technical Loss per Year	0.00
Estimated Duration for Project Completion (Days)	50
Execution Agency	HQ(TS&P) - Metro
Percentage Voltage Regulation	0.01
Creation Date	25.05.2012
Approval Date	
Funding Arrangement	INTERNAL
Approval of Steering Committee	NO
Approval of ETC for deposit Work	NO
Availability of Land / Row	MCD/PWD
ANNEXURES	1. History <input type="checkbox"/>
	2. Justification <input type="checkbox"/>
	3. Scope of Work <input type="checkbox"/> [Attached]
	4. Technical Observation <input type="checkbox"/>
	5. Single Line Diagram <input type="checkbox"/>
	6. Geographical Layout <input type="checkbox"/>
	7. VR & RR Sheet <input type="checkbox"/>
Name of Feeder	NIMRI COLONY

Capital Investment trends of MYTs



□ During 1st MYT percentage of capital expenditure for AT&C loss reduction was significant.

□ Almost 66% of capital expenditure was incurred in non-growth heads i.e. AT&C losses, Reliability Improvement & Infrastructure development

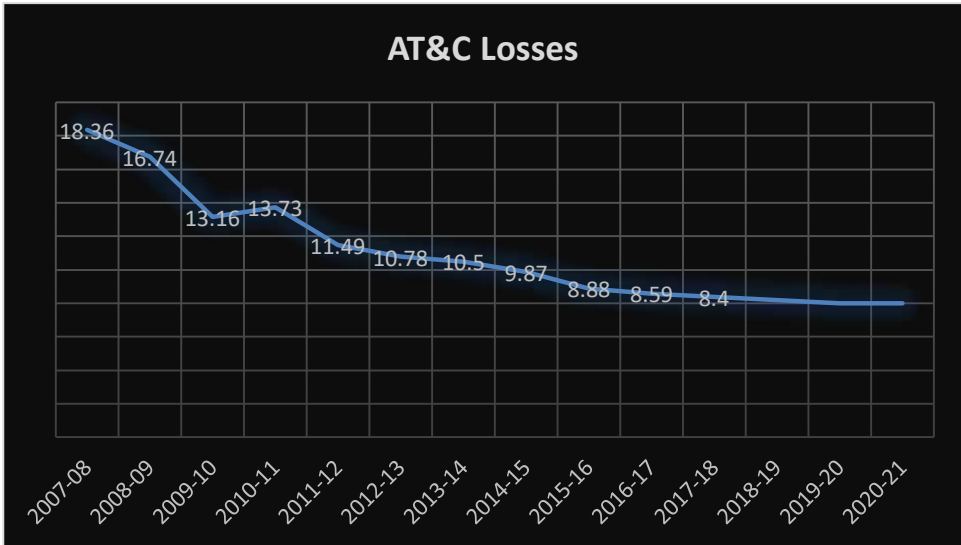
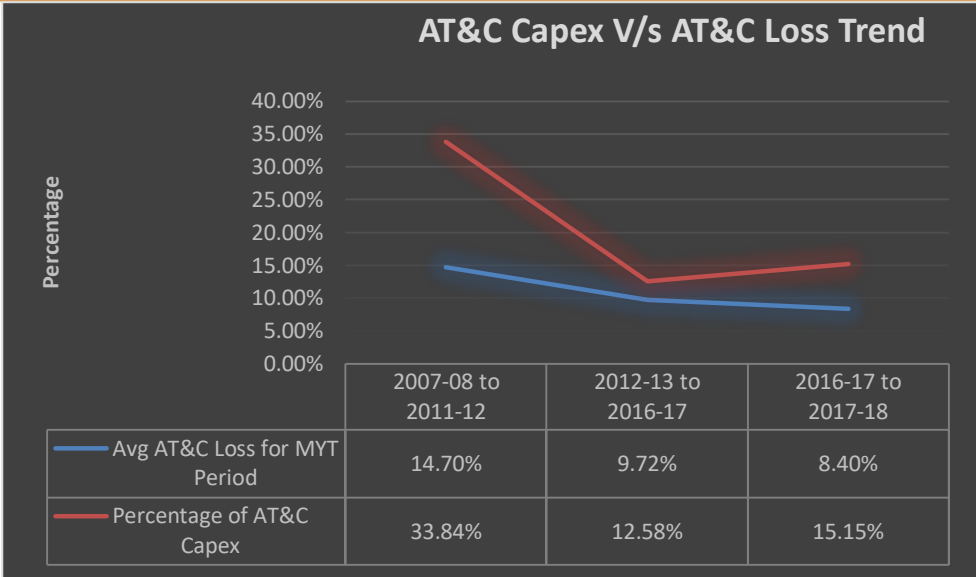
□ In 3rd MYT period, 77.2% of capital expenditure was incurred towards Load Growth demonstrating productive allocation of capex.

□ Reduced AT&C losses freed surplus to meet the load growth in 2nd MYT .

**Capital Investment as approved by DERC
under different heads**

Impact of Capital Investment

Capital Investment towards AT&C V/s trend of reduction in AT&C



□ AT&C losses in 2002 was as high as 53.1% before Tata Power-DDL took over.

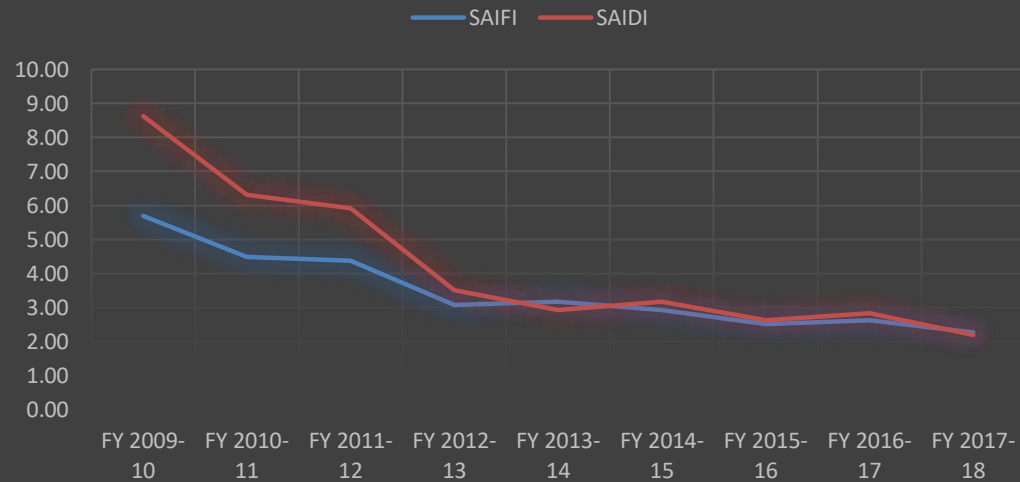
□ In 1st MYT Period, 33.8% of total capital expenditure was incurred to reduce AT&C losses as power theft & technical losses were astronomical.

□ In successive MYTs, the distribution network got strengthened so percentage Capex on AT&C significantly reduced.

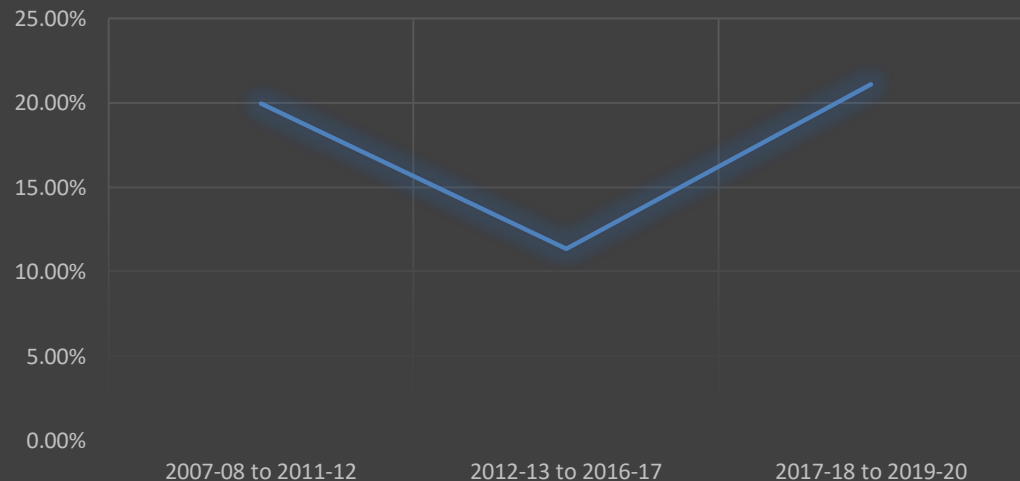
□ Reduced Capex towards AT&C allows higher Capex allocation towards growth & network expansion.

Impact of Capital Investment on Consumers

Trends of SAIFI & SAIDI



Percentage Capex allocated to Reliability Improvement



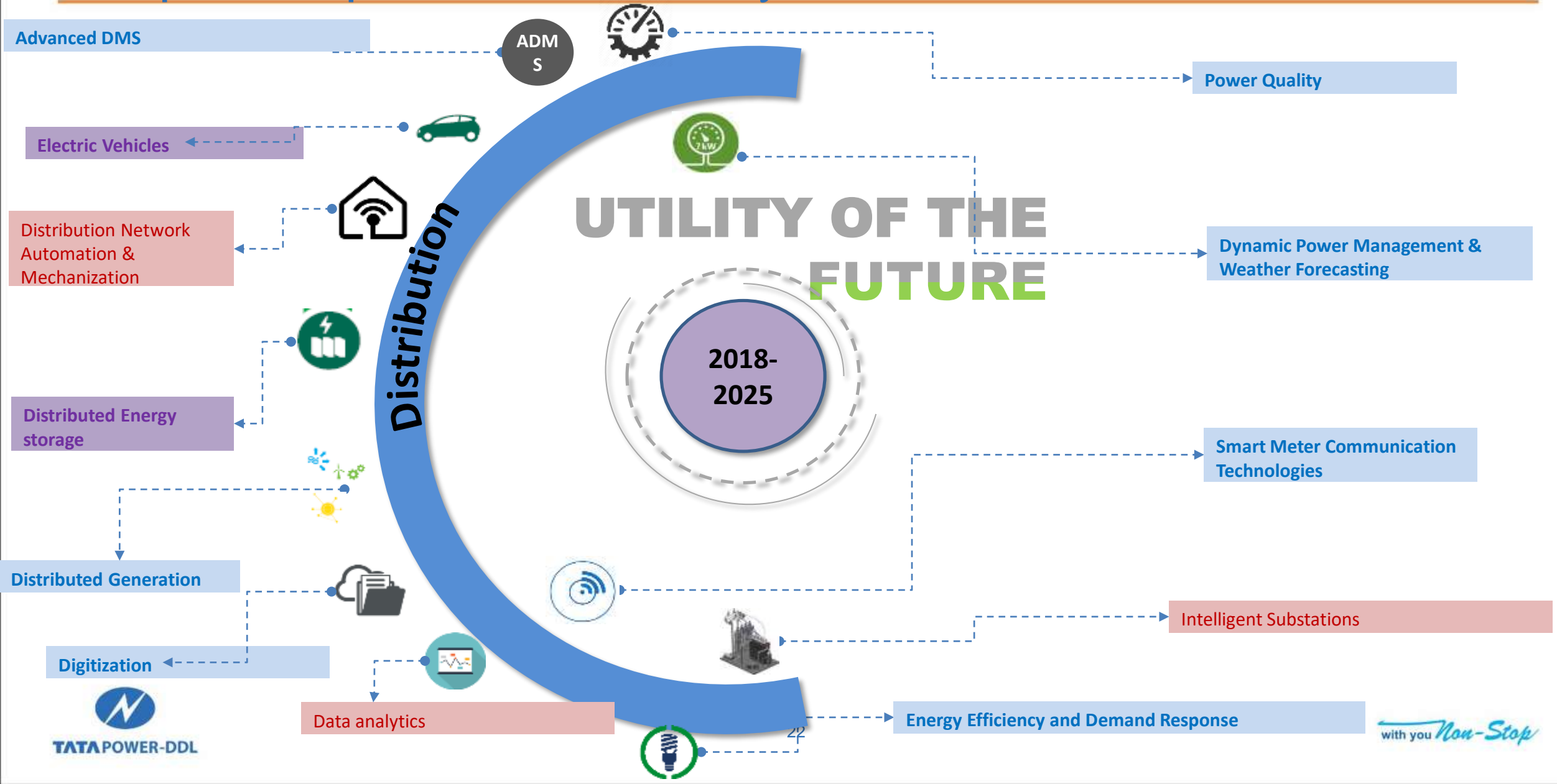
Percentage Capex incurred towards improving Reliability was 19.94% (289 Crs)

The Capital Investment incurred towards Reliability improvement led to satisfactory improvement in Reliability indicators- SAIFI & SAIDI

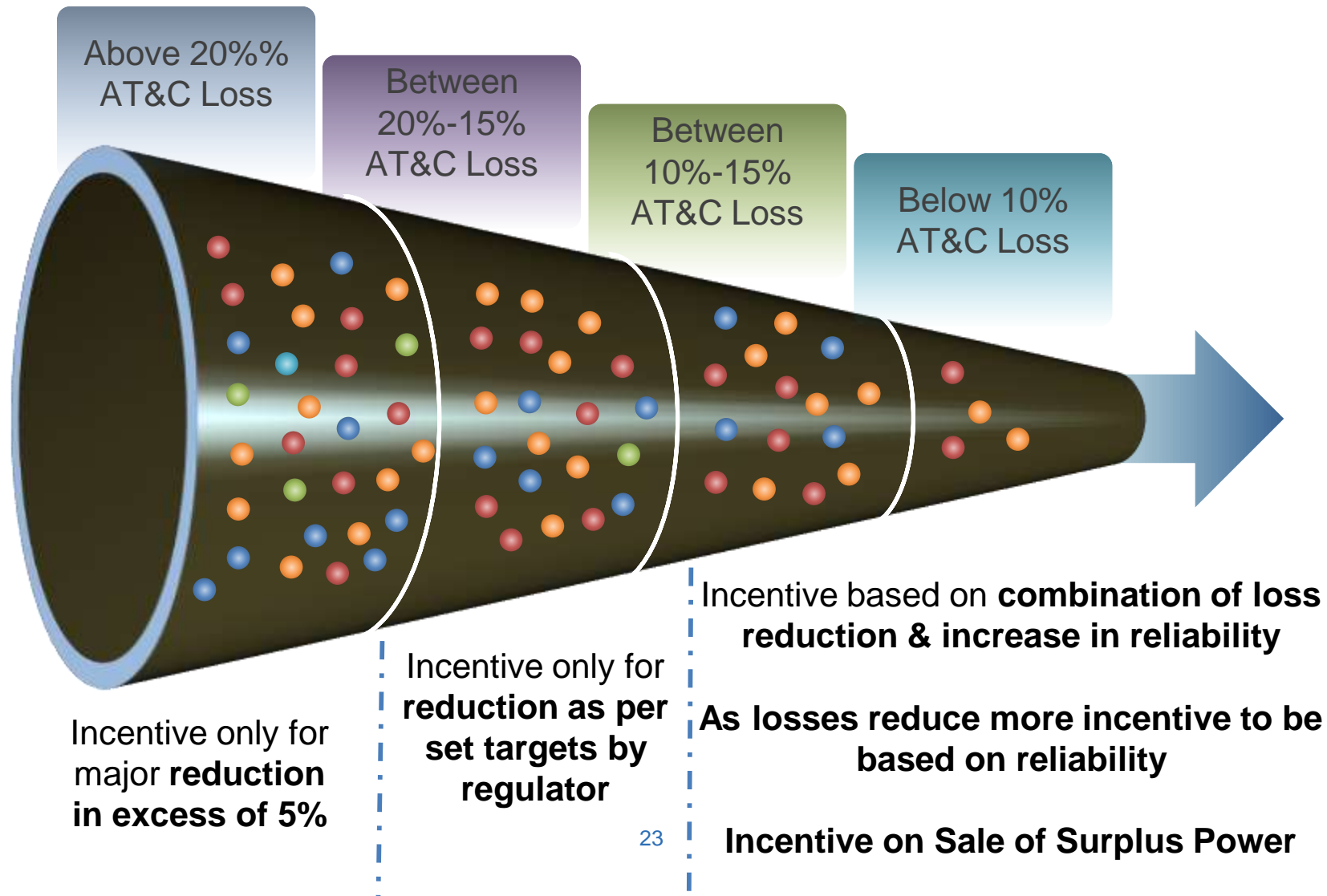
The improved Reliability of network provides fiscal space to allocate Capital expenditure towards network expansion & load growth.

Capital expenditure incurred towards strengthening distribution network in 1st MYT yielded dividends which gave us the fiscal space to allocate majority of Capex 56% towards load growth in 3rd MYT

Capex Required for the Utility of the Future



Towards a New Incentive Model



Government Schemes Implemented through DISCOMs

Distribution Of LED Bulbs At Subsidized LED Bulbs Procured From EESL In Line Objectives Of UJALA Scheme

5-star Energy Efficient Appliances

Net Metering

Solar Rooftop

Installation Of LED Based Street Lights

Installation Of Smart Meters

DSM Schemes	Count (Nos)	Energy Saved (MU)	Peak Load Reduction (MW)	CO2 Reduction (MT)
Rebate based AC Replacement Program	19795	17.65	17.81	5876.98
DSM based energy efficient lighting program	1400000	44.1	10.5	14685.3
Discount Based scheme for energy efficient LED lighting Products & Ceiling fans	155000	7.89	1.44	2627.35
Unnat Jyoti by Affordable LEDs for All (UJALA scheme)	1017271	30.66	7.22	10212.47
Super Energy Efficient Ceiling Fan (BLDC technology based)	1849	0.31	0.09	104.18
Total		100.61	37.06	33506.28

Thank You

Benchmarking of Opex

O&M expenses (Employee expenses, R&M Expenses & A&G Expenses) is determined by DERC on the basis of capacity of assets installed at site i.e., per circuit km of line & per MVA

Particulars	% of O&M Expenses	Applicability
LT Voltage level	70%	N.A.
HT Voltage level	20%	8% in line and 12% in grid
EHT Voltage level	10%	4% in line and 6% in grid

Approved O&M expenses for Tata Power-DDL

Particulars	Unit	2017-18	2018-19	2019-20
66 kV Line	Rs. Lakh/ckt. km	3.297	3.482	3.678
33 kV Line	Rs. Lakh/ckt. km	3.297	3.482	3.678
11kV Line	Rs. Lakh/ckt. km	0.862	0.910	0.961
LT Line system	Rs. Lakh/ckt. km	6.372	6.730	7.107
66/11 kV Grid S/s	Rs. Lakh/MVA	0.927	0.979	1.034
33/11 kV Grid S/s	Rs. Lakh/MVA	0.927	0.979	1.034
11/0.415 kV DT	Rs. Lakh/MVA	1.326	1.400	1.479



1

A&G Expenses

2

R&M Expenses.

3

Employee Expenses.

O&M Cost