

**INTEGRATED POWER DEVELOPMENT SCHEME**  
**(IPDS)**

**State**

Haryana

**Name of Govt Utility  
Implementing Project**

DHBVN

**Name of the Project Area  
(Circle/ Zone/ Utility)**

Rewari/Delhi/DHBVN

**Detail Project Report**

**Strengthening of sub-transmission & distribution network  
including metering**

**Ref no. of DPR**

IPDS/DHBVN/Rewari

Submitted to

**POWER FINANCE CORPORATION LTD.**

**Date of Submission**

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# POWER FINANCE CORPORATION LTD.

## Detail Project Report

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**POWER FINANCE CORPORATION LTD.****Detail Project Report****INPUT DATA**

<b>Utility Details</b>	
<b>Name of State</b>	Haryana
<b>Name of Govt Utility Implementing Project (Expanded Name)</b>	INTEGRATED POWER DEVELOPMENT SCHEME
<b>Name of Govt Utility Implementing Project (Short Name)</b>	IPDS
<b>Name of Pvt/Distribution Franchisee (in case of Pvt/DF/ Cooperative Society)</b>	

**Contact Details of Nodal Officer (Govt Utility Implementing Project)**

<b>Name</b>	K.K.Gupta	
<b>Designation</b>	Chief Engineer PD&C, DHBVN, Hisar	
<b>Address</b>	Vidyut Nagar, DHBVN, Hisar	
<b>Phone Office</b>	01662-223216	
<b>Mobile No.</b>	9812452524	
<b>Fax</b>	01662-223181	
<b>E-mail</b>	<a href="mailto:cepdcdhbn@gmail.com">cepdcdhbn@gmail.com</a>	
<b>Utility level AT&amp;C loss</b>	<b>Unit</b>	<b>AT&amp;C Loss for FY 2012-13</b>
<b>AT&amp;C loss as provided by PFC in latest "Report on Performance of State Power Utilities"</b>	%	24.09%

<b>Project Area Details</b>	
<b>Name of the Project Area Circle</b>	Rewari
<b>Nos. of towns covered</b>	2
<b>Total Population of all towns covered in project area</b>	0.61 Lacks
<b>Nos. of Consumers in all towns covered in the project area</b>	0.18 Lacks

**Contact Details of Project Area Incharge (Govt/Govt Authorised Agency)**

<b>Name</b>	Sh N.K.Verma	
<b>Designation</b>	Superintending Engineer	
<b>Address</b>	Shakti Bhawan , Jhajjar Road , Rewari. Pin 1234001	
<b>Phone Office</b>	01274-250541	
<b>Mobile No.</b>	8607075900	
<b>Fax</b>	01274-258604	
<b>E-mail</b>	<a href="mailto:serewari@gmail.com">serewari@gmail.com</a>	

<b>Data for AT&amp;C Losses Computation for Project Area (All statutory towns of the Circle)</b>	<b>Unit</b>	<b>Data for Previous FY 2013-14</b>
<b>Energy Input</b>	M Units	622.58
<b>Energy Sales</b>	M Units	384.62
<b>Total Revenue Billed</b>	Rs. Lac	2355.07
<b>Total Revenue Collected (excluding arrears)</b>	Rs. Lac	2251.57
<b>Line Losses</b>	%	38.22
<b>Billing Efficiency</b>	%	62%
<b>Collection Efficiency</b>	%	96%
<b>AT&amp;C Losses</b>	%	40.94 (Annexure-3 attached)

**Dedicated team:**

<b>HQ Level</b>	<b>Field Level</b>	
<b>Name &amp; Designation</b>	<b>Name, Designation &amp; Area</b>	
Er. R.K.Sodha	Er. Ranjan Rao, XEN/OP Division , Dharuhera .Mb-9992110806	
SE/PD&C, DHBVN, Hisar		

<b>Date of Submission of Proposal</b>	<b>Date</b>	
<b>DPR Ref No.</b>	<b>No.</b>	IPDS/DHBVN/Rewari
<b>Proposed Project Start Date</b>	<b>Month-Year</b>	
<b>Proposed Month of Completion</b>	<b>Month-Year</b>	

**POWER FINANCE CORPORATION LTD.****Detail Project Report**

## Guidelines for DPR Preparation &amp; Implementation

<b>The DPR shall be prepared, base on IPDS guidelines as issued from MoP, Gol. Some salient features of IPDS guidelines &amp; additional guidelines for DPR preparation is mentioned below. In case of any mis-match between IPDS guideline issued from MoP &amp; DPR guideline as mentioned below, the IPDS guideline as issued from MoP, Gol shall prevail.</b>	
1	DPR is to be prepared based on the broad scope of work validated by Nodal agency at 1st Stage during discussion with utility on NAD, on detailed field survey and latest approved schedule of rates for various items of work. The DPRs shall be duly recommended by the Distribution Reforms Committee (DRC) at the State level. The Nodal Agency will separately provide comparable costs sourced from CPSUs for major equipment for reference of the utility. These reference rates shall be used as ceiling rates for sanctioning of the projects
2	The DPR under the scheme has been formulated for <b>urban areas (Statutory Towns) only</b>
3	In case of private sector Discoms where the distribution of power supply in urban areas is with them, projects under the scheme will be implemented through a concerned State Government Agency and the assets to be created under the scheme will be owned by the State Government / State owned companies. The areas under franchisee shall be covered under the scheme subject to compliance with the terms & conditions of their respective agreements and Cooperative Societies shall also be eligible, but they would be required to submit Audited statements annually regarding the utilization under the approved project through State Cooperative Department and the concerned Discom. Further, all the projects need to be recommended by the State Level DRC.
4	In case of private sector Discoms/Distribution Franchisee/Co-operative Societies, the DPR shall be submitted to PFC by its State Govt Agency.
5	The circle/zone/Utility wise DPRs shall be prepared by the utility and recommended by Distribution Reforms Committee (DRC) at State level. To avoid duplication of works with scope already sanctioned under RAPDRP scheme, Utility shall indicate the additional work component proposed under IPDS DPRs with comparative BOQ for such R-APDRP project area.
6	BoQ for R-APDRP towns in the project area to be filled in Sheet Vol II.b and BoQ for non-RAPDRP towns to be filled in sheet Vol II.c.
7	For ERP & IT component a separate consolidated DPR shall be prepared by respective state.
8	For linking of all 33 KV or 66 KV grid substations/billing offices/Regional/Circle/Zonal offices of Discoms with optic fiber network of NOFNA, a separate and consolidated DPR shall be prepared by the respective utility in consultation with BBNL or any designated agency like BSNL, RailTel, PGCIL etc.
9	The projects shall be implemented on turn-key basis. However, in exceptional circumstances, execution on partial turnkey/departmental basis (to be proposed by utility along with respective DPR duly recommended by DRC) shall be permitted with the approval of the Monitoring Committee.
10	In either mode of implementation (turnkey/partial turnkey/departmental), the maximum time limit for completion of the project viz award and implementation shall not be beyond <b>thirty months</b> from date of communication of the approval of the Monitoring committee.
11	An appropriate Project Management Agency (PMA) will be appointed preferably utility-wise to assist them in project management ensuring timely implementation of the project.
12	The work(s) already executed/to be executed under R-APDRP/NEF/GOI other scheme, etc is/are not eligible under IPDS.
13	The works proposed in the DPR shall aim for meeting utility level AT&C loss reduction trajectory as finalised by MoP in consultation of state utilities (The committed AT&C loss reduction trajectory is given in Annexure-I)
14	Utility to ensure installation of bounadry meters for ring fencing of Non-RAPDRP Towns having population more than 5000.
15	The Utility will have to certify that the DPR is in line with guidelines issued by Ministry of Power/ PFC for IPDS & DRC clearance has been obtained, before the same is forwarded to PFC for consideration of sanction.
16	Utility shall ensure timely availability of any other infrastructure or facilities that are essential for implementation of IPDS works but are not in the scope of Contractor viz. land acquisition, RoW, pole location etc.
17	Utility shall provide detailed informantion regarding existintg infrastructure, any bottleneck in implementation of the works and the works proposed in the project to the Contractor before award of contract.
18	The cost estimates should not include any departmental overhead expenses. All such expenditures should be borne by the utility.
19	No cost escalation shall be admissible for the schemes sanctioned under IPDS. Any additional cost on any account whatsoever to complete the project shall be borne by utility.
20	Distribution Transformers procured under IPDS scheme, shall have efficiency level equivalent / better than that of three star ratings of BEE, where ever BEE standard is applicable. For other DTs, where, BEE standard is not applicable, CEA guidelines shall be followed (available on CEA web site).
21	AMI, Smart meters can be considered for deployment in the towns where SCADA has been/being established under R-APDRP.

22	For Solar Panels - only cost of Solar panels with support structure and Net-meters shall be permissible under IPDS. Utility shall bear cost of associated items.
23	<b>Additional Guideline for DPR preparation</b>
a	Load growth of 05 year in case of HT system & 03 years in case of LT system to be considered for proposing the DPR.
b	For replacement of existing HT & LTCT Electromechanical consumer meters (AMR compatible, open protocol) tamper proof electronic meters and replacement of whole current electromechanical consumer meters, the guidelines of CEA shall be adopted.
c	Service line for new consumers is not eligible in the scheme. In case of installation of meter pillar box or if existing service line is prone to tamper and pilferage the same shall be replaced with armored or XLPE cable for which minimum configuration should be : (i) Single Phase consumers: min. 4 sq.mm (ii) Three Phase consumers: min. 6 sq.mm
d	Installation of new Distribution Transformers in following cases: (i) If the length of LT feeder is more than 300 mtr then new Distribution transformer may be proposed to improve HT: LT ratio. (ii) If existing peak load on DT is more than 70% of its rated capacity then new DT may be proposed. (iii) Even if the length of LT feeder is below 300 meter but the peak load on the feeder is more than 70% of rated thermal capacity of the conductor, new DT should be installed or conductor should be replaced by higher size.
e	Provision of Isolator, HT fuse / horn gap & LA at each Distribution Transformer, if not provided earlier. Alternatively this isolator, HT fuse / horn gap fuse can be replaced with drop out fuse with On Load maintenance facility thereby reducing system interruptions.
f	Provision of LT distribution box for control and protection of outgoing LT circuits.
g	Each Distribution Transformer of 25 KVA & above shall be provided with minimum two LT feeders.
h	If the peak load on existing 11KV feeder is more than 75% of rated thermal capacity of the conductor, conductor with higher capacity may be proposed or feeder bifurcation may be proposed.
i	If peak load on existing 33/11KV S/S is more than 80% of its transformer capacity, new 33/11KV S/S may be proposed.
j	11 Kv feeder segregation may be proposed for reducing boundary metering points, fixing greater accountability and responsibility etc.
k	Ring Main Unit may be proposed in case of underground cabling area only.
l	Sectionalizer may be proposed in SCADA town only.
m	The Distribution Transformer may be provided with the capacitors of following ratings at LT side: (i) 100 KVA : 12 KVR (ii) 63 KVA : 8 KVR (iii) 40 KVA : 6 KVR (iv) 25 KVA : 4 KVR
n	Installation of ABC cables in dense, theft prone & congested areas. Both HT & LT ABC may be proposed. The capacity of ABC shall be 20% more than that of bare conductor, as thermal overloading capacity of ABC is less than Bare conductor.
o	In theft prone area and to improve HT:LT ratio, HVDS may be proposed. Total capacity of HVDS shall be higher by 20% than conventional LT S/S.
p	The following works/ items shall not be eligible for coverage under IPDS scheme: (i) Works already sanctioned under other schemes of Govt. of India (like R-APDRP/RGGVY/DDUGJY/NEF etc.). The projects for which any other grant / subsidy from Government of India has already been received / proposed to be received shall not be eligible under this scheme. (ii) AMI in the towns where SCADA is not planned under R-APDRP (iii) Civil works other than sub station (iv) Service lines to new consumers (v) GIS survey of consumers (vi) Cost of land for sub-stations (vii) Compensation towards right of way (viii) Distribution automation (ix) Office equipment / fixtures (x) Spares (other than mandatory spares prescribed by manufacturer) (xi) Tools and Plants (T&P) (xii) Vehicles (xiii) Salaries and Establishment Expenditure

## POWER FINANCE CORPORATION LTD.

### Detail Project Report

#### Declaration

**This is to certify that:**

- 1 Items Proposed in the DPR is for implementation in urban area (Statutory Towns only).
- 2 DPR has been prepared in line with the guidelines of IPDS issued by Ministry of Power / PFC
- 3 The proposed DPR includes only new works & excludes other works under implementation. Works taken up under GOI scheme viz RAPDRP/RGGVY/NEF, etc is/are not included in this DPR.
- 4 Additional items proposed in R-APDRP towns has been proposed in separate sheet Vol II.b, clearly defining earlier sanction in R-APDRP, proposed new requirement in IPDS with proper justification.
- 5 All works proposed in the DPR are as per DPR Formats issued by Nodal Agency. Any cost other than allowed by Monitoring Committee in the DPR formats shall be borne by the Utility.
- 6 The cost estimates does not include any departmental overhead expenses. All such expenditures would be borne by the utility.
- 7 Utility will henceforth, procure all meters (wherever applicable) as per guidelines/regulations issued by MoP/CEA (circular available on IPDS web portal).
- 8 Utility shall ensure timely availability of any other infrastructure or facilities that are essential for implementation of IPDS works but are not in the scope of Contractor viz. land acquisition, Row, pole location etc.
- 9 Following items have been excluded from the scope of the DPR:
  - (i) Works already sanctioned under other schemes of Govt. of India (like R-APDRP/RGGVY/DDUGJY/NEF etc.). The projects for which any other grant / subsidy from Government of India has already been received / proposed to be received shall not be eligible under this scheme.
  - (ii) AMI in the towns where SCADA is not planned under R-APDRP
  - (iii) Civil works other than sub station
  - (iv) Service lines to new consumers
  - (v) GIS survey of consumers
  - (vi) Cost of land for sub-stations
  - (vii) Compensation towards right of way
  - (viii) Distribution automation
  - (ix) Office equipment / fixtures
  - (x) Spares (other than mandatory spares prescribed by manufacturer)
  - (xi) Tools and Plants (T&P)
  - (xii) Vehicles
  - (xiii) Salaries and Establishment Expenditure
- 10 A senior level officer has been appointed by the Utility as Nodal Officer , who shall be involved from concept to commissioning of the system and co-ordinate from the Utility side for all issues related to implementation of the project. The details of Nodal Officer are given in Input Sheet.
- 11 Utility has created a dedicated team for implementation of projects at field & HQ levels to ensure smooth implementation of scheme. Details of the team are given in Input sheet.
- 12 Utility will appoint a Project Management Agency (PMA) for monitoring & ensuring timely implementation of the scheme
- 13 Cost of consumer meters installed under R-APDRP will not be charged to consumers.
- 14 Work shall be awarded within 06 months from date of communication of the approval of the Monitoring committee. & will be completed within 24 months from date of award. In case of departmental execution, the work will be completed within 30 months from date of communication of the approval of the Monitoring committee.. In either mode of implementation (turnkey/partial turnkey/departmental), the maximum time limit for completion of the project viz award and implementation shall not be beyond thirty months from date of communication of the approval of the Monitoring committee.
- 15 The item rates taken for the materials for preparation of the DPR is based on the approved latest Schedule of Rates.For the materials for which the rates are not available in Schedule of Rates, market Rates (duly approved as per Utility system/procedure) or approved schedule rate of works / stock issue rate of other utility (indicated in the cost estimate) has been taken for this purpose. The Nodal Agency will separately provide comparable costs sourced from CPSUs for major equipment for reference of the utility. These reference rates shall be used as ceiling rates for sanctioning of the projects.
- 16 No cost escalation shall be admissible for the schemes sanctioned under IPDS. Any additional cost on any account whatsoever to complete the project shall be borne by utility.
- 17 10% of the project cost as approved by monitoring committee will be arranged by utility from own source & 30% will be arranged from PFC/REC or other Fis within three months of award/start of project.
- 18 Metering of all feeders and distribution transformers including metering at all input points to the utility shall be ensured under this scheme. Utility shall ensure installation of bounadry meters for ring fencing of Non-RAPDRP Towns having population more than 5000.
- 19 Projects sanctioned under R-APDRP scheme in the state/utility will continue to be implemented as per R-APDRP guidelines
- 20 DPR has been prepared after detailed field survey, study of sytem & with full justification. No revision of DPR OR cost escalation will be proposed by Utility.
- 21 While formulating this DPR, consultation with the respective public representatives including Member of Parliament has been ensured.
- 22 The information and data given in this DPR are correct.
- 23 The DPR is technically & financially viable and tangible & intangible benefits will be achieved from implementation of this DPR making it bankable.
- 24 In case of private sector Discoms/Distribution Franchisee/Co-operative Societies, the project shall be implemented by .....(State Govt Agency).
- 25 The work will bw carried out on semi Turn key basis.
- 26 Works already sanctioned under other schemes of Govt. of India (like R-APDRP/RGGVY/DDUGJY/NEF etc.) are not proposed under this IPDS DPR [The projects for which any other grant / subsidy from Government of India has already been received / proposed to be received shall not be eligible under this scheme].

**Project Area In-charge (Govt/Govt Authorised Agency)**

Signature:

**Name:** Er.N.K. Verma  
**Designation:**superintending Engineer

**Tel. No. / Mobile No. :**860707590C  
**Email address :** serewaridhbnv@gmail.com

**Nodal Officer (Govt Utility Implementing Project)**

**Approved by:**

Signature:

**Name:**  
**Designation:**

**Tel. No. / Mobile No.**



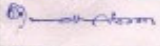
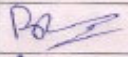
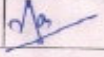
**Email address:**

Mandatory

**Consent of District Electricity Committee (DEC)**

The works covered under Integrated Power Development Scheme (IPDS) Detail Project Report (DPR) for strengthening of sub-transmission and distribution network, feeder segregation, distribution transformer and metering etc. to ensure uninterrupted and reliable energy have been discussed in the District Electricity Committee.

We hereby submit our consent for approval and execution of works under IPDS Scheme for urban area of our District/OP Circle DHBVN REWARI to achieve the ultimate benefit of above Scheme to the urban residents.

Sr. No.	Name		Designation of DEC	Signature
1.	Rao Inderjeet Singh	Senior most MP	Chairman	
2.	Sh. Yash Garg, IAS	DC	Convener	
3.	Sh. Vikram Singh	MLA	Member	
4.	Sh. Randhir Singh Kapriwas	MLA	Member	
5.	Dr. Banwari Lal	MLA	Member	
6.	Er. Navin Kumar	S.E/OP	Member Secretary	

**POWER FINANCE CORPORATION LTD.****Detail Project Report**

## Executive Summary

<b>Project objective:-</b>	This project aims at - (i) 24x7 power supply for consumers in urban area, (ii) reduction of AT&C losses as per trajectory (discom-wise) finalized by the Ministry of Power in consultation with States (iii) providing access to all urban households
<b>Tripartite/Bipartite Agreement Date</b>	

<b>Brief Profile of State/Utility</b>				
<b>Name of State</b>	Haryana			
<b>Name of Utility (Short Name)</b>	DHBVN			
<b>Total Number of Utility Consumers</b>	2942237 ( Till may 2015)			

<b>AT&amp;C loss as provided by PFC in latest "Report on Performance of State Power Utilities"</b>		
		24.09%

**Project Area Profile**

<b>Name of the Project Area Circle</b>		<b>Rewari</b>
<b>Nos. of towns covered</b>		<b>2</b>
<b>Nos. of Consumers in all towns covered in the project area</b>		0.56 Lakhs
<b>Data for AT&amp;C Losses Computation for Project Area (All statutory towns of the Circle)</b>	<b>Unit</b>	<b>Data for Previous FY 2013-14</b>
Energy Input	M Units	622.58
Energy Sales	M Units	384.62
Total Revenue Billed	Rs. Lac	2355.07
Total Revenue Collected (excluding arrears)	Rs. Lac	2251.57
Billing Efficiency	%	62%
Collection Efficiency	%	96%
AT&C Losses	%	40.94 (Annexure-3 attached)

**Name of the towns covered in project area and & its In-charges**

<b>Name of Town</b>	<b>Town In Charge</b>	<b>Contact No.</b>
Dharuhera	SDO/Op. S/D DHBVN, Dharuhera	9992110807
Bawal	SDO/Op. S/D DHBVN, Bawal	9992110816

**Project Funding**

<b>Recommended Project Cost for Sanction</b>	Rs. Lac	775.14			
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<b>Cost Item</b>		<b>Total Cost</b>	<b>Gol</b>	<b>PFC/ Fis</b>	<b>Own</b>
<b>Total Setup Cost</b>	Rs.Lac	775.14	465.08	232.54	77.51

		<b>Base Year-0</b>	<b>Year-1</b>	<b>Year-2</b>	
<b>Phasing of Capital Expenditure</b>	Rs.Lac	46.5082	341.06	387.57	



## **POWER FINANCE CORPORATION LTD.**

### **Detail Project Report**

#### **Background**

1.1 Distribution is the most critical segment of the electricity business chain. The real challenge in the power sector today lies in efficient management of the distribution sector. Availability of a robust sub-transmission and distribution network along with adequate metering arrangements is the need of the day for efficient management of the distribution system.

1.2 Electricity is the key ingredient for accelerated economic growth and is considered vital for nation's overall development. Providing reliable and quality power supply in an efficient manner is an immediate requirement of the day. Amongst the three major layers of Power Sector i.e. Generation, Transmission and Distribution, the Distribution Sector has direct interface with the end consumers and is largely accountable for consumer satisfaction and also for flow of revenues in the entire value chain of Power Sector. Thus, Distribution Sector plays a significant role in sustenance as well as growth of the Power Sector.

1.3 There is a consistent increase in electricity demand, particularly in urban areas, due to increase in customer base, changes in lifestyle and consumption pattern, which requires continual up-gradation and creation of infrastructure for electricity distribution. However, the poor financial health of the distribution utilities has resulted in inadequate investment in the distribution network.

1.4 The Government of India has been providing support to State owned Discoms/Power Departments by extending financial assistance through various programmes. However, the State owned Discoms/Power Departments have not been able to keep pace with the growth in demand of electricity, resulting in critical gaps/missing links in the sub transmission and distribution network. The sub-transmission and distribution network has therefore become a bottleneck in ensuring reliable and quality power supply to the consumers.

1.5 Apart from bridging the gaps in the requisite distribution infrastructure, there is also a need to focus on metering of consumers. End-to-end metering is a vital need of the power sector. Effective metering of all consumers will ensure proper accounting, billing, load pattern assessment and planning of infrastructure required. It also helps in identifying high loss pockets so as to initiate remedial measures towards reduction of losses.

Keeping in view the present financial condition of Discoms/Power Deptt., Gol has launched the Integrated Power Development Scheme (IPDS) to extend financial assistance against capital expenditure to address the gaps in sub transmission & distribution network and metering in Urban areas to supplement the resources of DISCOMs/Power Deptt.

**POWER FINANCE CORPORATION LTD.****Detail Project Report****Volume I: Project Area Details****Project Area Asset Information: Restricted to Urban area (Statutory Towns) only, to be considered under IPDS**

Assets	Unit	Current Position	Proposed under IPDS
Total Number 33 kV Feeders	Nos.	0	1
Total Length of 33 kV Feeders (Overhead)	kM	0.00	2.80
Total Length of 33 kV Feeders (Under-ground)	kM	0.00	0.00
		0.00	
Total Number of 132/11 Kv, 66/11 Kv Sub-stations feeding the Project Area	Nos.	3.00	1.00
Total Number of Power Transformers	Nos.	4.00	0.00
Total Capacity of Power Transformers	MVA	68.00	0.00
		0.00	0.00
Total Number 11 kV Feeders	Nos.	5.00	2.00
Number of Metered 11 kV Feeders	Nos.	5.00	1.00
Total Length of 11 kV Feeders (Overhead)	kM	13.00	2.24
Total Length of 11 kV Feeders (Under-ground)	kM	0.00	0.00
Total Length of LT Lines (Overhead)	kM	81.00	0.00
Total Length of LT Lines (Under-ground)	kM	0.00	0.00
HT/LT Ratio		0.16	
Total Number of Distribution Transformers	Nos.	285.00	21.00
Total Capacity of Distribution Transformers	MVA	27.11	4.2
Total Annual Energy Input of previous FY	MUs	623	685
Current Peak Demand	MVA	100	110
Current Average Demand	MVA	91	100

**POWER FINANCE CORPORATION LTD.****Detail Project Report****Volume IIa: SUMMARY Project Cost**

RWR Circle

**4.1 Summary of Project Cost (Bill of Quantities)**

SN	Particular	Unit	Qty	Project Cost
				from lib & lic Rs. In Lac
A	33/11 KV S/S : New	Nos	1.00	500.00
B	33/11 KV S/S : Additional Transformer	Nos	0.00	0.00
C	33/11 KV S/S : Transformer capacity enhancement	Nos	0.00	0.00
D	Renovation & Modernisation of 33/11 kV SS	Nos.	0.00	0.00
E	New 33 KV new feeders/Bifurcation of feeders:	Kms	2.80	27.86
F	33 KV feeders Reconductoring/Augmentation	Kms	2.00	15.10
G	33 kV Line Bay Extension at EHV station	Nos	0.00	0.00
H	11 kV Line : New Feeder/ Feeder Bifurcation	Kms	2.24	15.01
I	11 kV Line : Augmentation/Reconductoring	Kms	0.00	0.00
J	Arial Bunched Cable	Kms	0.00	0.00
K	UG Cable	Kms	0.00	0.00
L	11 KV Bay Extension	Kms	0.00	0.00
M	Installation of Distribution Transformer	Nos.	21.00	83.37
N	Capacity enhancement of LT sub-station	Nos.	0.00	0.00
O	LT Line : New Feeder/ Feeder Bifurcation	Kms	0.00	0.00
P	LT Line : Augmentation/Reconductoring	Kms	0.00	0.00
Q	Capacitor Bank	MVAR	0.00	0.00
R	HVDS	Nos.	0.00	0.00
S	Metering	Nos.	4098.00	131.80
T	Provisioning of solar panel	Lot	2.00	2.00
U	RMU,Sectionaliser, Auto reclosures, FPI etc.	Lot	0.00	0.00
V	Others (Distribution Transformer & R&M)	Nos.	0.00	0.00
	<b>GRAND TOTAL</b>			<b>775.14</b>

**Detail Project Report**  
**Project area asset detail**

**Details of EHV Sub-stations feeding project area**

Sl. No.	Name of EHV Substation	Voltage Ratio	EHV Transformer Details			Maximum Demand (MVA)
			Rating (MVA)	Nos.	Capacity (MVA)	
1	66 KV S/Stn., Dharuhera	66/11	12.5/16	1	16	16
			12.5/16	1	16	16
2	132 KV S/Stn. Old Bawal	132/11 KV	10/16	1	16	16
3	133 KV S/Stn. HSIIDC Bawal	132/11 KV	16/20	1	20	20

**Details of 33/11 or 66/11 KV Sub-stations feeding project area**

Sl. No.	Name of Substation	Voltage Ratio	EHV Transformer Details			Maximum Demand	
			Rating (MVA)	Nos.	Capacity (MVA)	MVA	MVAR

**Details of connection from EHV to 33/11 or 66/11 KV Sub-stations feeding project area**

Sl. No.	From EHV Substation	To 33/11 or 66/11 KV S/S	Name of 33KV or 66KV feeder	Length of feeder	Type of conductor	Average Demand (MVA)	Peak Demand (MVA)

**Details of interconnection of 33/11 or 66/11 KV Sub-stations feeding project area**

Sl. No.	From 33/11 or 66/11 KV S/S	To 33/11 or 66/11 KV S/S	Name of 33KV or 66KV feeder	Length of feeder	Type of conductor	Average Demand (MVA)	Peak Demand (MVA)


**Details of 11 KV feeders emanating from 33/11 or 66/11 KV Sub-stations feeding project area**

Sl. No.	From 33/11 or 66/11 KV S/S	Name & Capacity of Power Transformer	Name of 11 KV feeder	Type of conductor	Peak Demand (MVA)	Distribution Transformer Details		
						Rating (KVA)	Nos.	Capacity (KVA)
						<b>Total</b>	<b>0</b>	<b>0</b>

<b>Total</b>	<b>0</b>	<b>0</b>
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**Details of 11 KV feeders emanating from EHV Sub-stations feeding project area**

Sl. No.	From EHV Substation	Name & Capacity of Power Transformer	Name of 11 KV feeder	Type of conductor	Peak Demand (MVA)	Distribution Transformer Details		
						Rating (KVA)	Nos.	Capacity (KVA)
1	66/11 KV Dharuhera	2X12.5/16 MVA	Dharuhera		4.57	10	19	190.00
				50mm2		16	4	64.00
				30mm2		25	52	1300.00
				20mm2		63	18	1134.00
				AB Cable		100	19	1900.00
						200	23	4600.00
						250	1	250.00
						<b>Total</b>	<b>136</b>	<b>9438.00</b>
2	66/11 KV Dharuhera	2X12.5/16 MVA	Complex		2.66	10	1	10.00
				50mm2		25	12	300.00
				30mm2		63	9	567.00
				20mm2		100	21	2100.00

				AB Cable		200	22	4400.00
						<b>Total</b>	<b>65</b>	<b>7377.00</b>
3	66/11 KV Dharuhera	2X12.5/16 MVA	Housing Board	50mm2	1.90	200	24	4800.00
				AB Cable				
						<b>Total</b>	<b>24</b>	<b>4800.00</b>
4	132/11 KV Bawal	1x10/16 MVA	Bawal	50mm2	3.8	25	14	350
				30mm2		63	5	315
				20mm2		100	38	3800
				AB Cable		200	2	400
						<b>Total</b>	<b>59</b>	<b>4865.00</b>
5	132/11 KV Bawal	1X16/20 MVA	Residential HSIDC	100mm2	0.19	630	1	630
						<b>Total</b>	<b>1</b>	<b>630.00</b>

<b>Total</b>	<b>285</b>	<b>27110.00</b>
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<b>G. Total</b>	<b>285</b>	<b>27110</b>
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For (Non R-APDRP Town) Rewari Circle

Bill of Quantities

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	Annx No.
<b>A i) HVPNL</b>							
	<b>132 KV S/Stn., Old Bawal (HVPN)</b>						
	Existing capacity of 132/11 KV T/F (1x16 MVA)	MVA	16.00				
		MVA					
		MVA					
	<b>Total</b>	<b>MVA</b>	<b>16.00</b>				
	<b>132 KV S/Stn., HSIIDC Bawal (HVPN)</b>						
	Existing capacity of 132/11 KV T/F (1x20 MVA)	MVA	20.00				
		MVA					
		MVA					
	<b>Total</b>	<b>MVA</b>	<b>20.00</b>				
	<b>66 KV S/Stn., Dharuhera</b>						
	Existing capacity of 66/11 KV T/F (2x16 MVA)	MVA	32.00				
	<b>Total</b>	<b>MVA</b>	<b>32.00</b>				
<b>ii) DHBVN</b>							
	<b>33/11 KV S/S : New</b>						
	New 33/11 KV S/Stn. I.A.Dharuhera II (12.5x1=12.5 MVA)	MVA		12.50	40.00	500.00	
	<b>Total</b>	<b>MVA</b>	<b>-</b>	<b>12.50</b>		<b>500.00</b>	<b>(Anne.-A CRL)</b>
	<b>Sub Total</b>	<b>MVA</b>	<b>68.00</b>	<b>12.50</b>		<b>500.00</b>	<b>(Anne.-A CRL)</b>
<b>B 33/11 KV S/S : Additional Transformer</b>							
	10 MVA T/F at Sector-10 Rewari	MVA	-	-	-	-	-
		MVA					
		MVA					
	<b>Sub Total</b>	<b>MVA</b>	<b>-</b>	<b>-</b>		<b>-</b>	
<b>C 33/11 KV S/S : Transformer capacity enhancement</b>							
		MVA					
		MVA					
		MVA					
	<b>Sub Total</b>	<b>MVA</b>	<b>-</b>	<b>-</b>		<b>-</b>	
<b>D Renovation &amp; Modernisation of 33/11 kv SS</b>							
		Nos					
		Nos					
		Nos					
	<b>Sub Total</b>	<b>Nos</b>	<b>-</b>	<b>-</b>		<b>-</b>	<b>-</b>
<b>E New 33 KV new feeders/Bifurcation of feeders:</b>							
	33 KV Line from 220 KV S/Stn. Mau to I.A Dharuhera of ACSR 150mm2			2.80	9.95	27.86	(Anne.-A CRL)
	<b>Sub Total</b>	<b>Kms</b>	<b>-</b>	<b>2.80</b>		<b>27.86</b>	<b>(Anne.-A CRL)</b>
<b>F 33 KV feeders Reconductoring/Augmentation</b>							
	33 KV Line I.A Dharuhera of augmentation of ACSR from 130 Sqmm to 150 Sqmm			2.00	7.55	15.10	
	<b>Sub Total</b>	<b>Kms</b>	<b>-</b>	<b>2.00</b>		<b>15.10</b>	
<b>G 33 kV Line Bay Extension at EHV station</b>							
		Nos					
		Nos					
		Nos					
	<b>Sub Total</b>	<b>Nos</b>	<b>-</b>	<b>-</b>		<b>-</b>	

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price		Cost proposed under IPDS		Reference
					Rs. Lac	Rs. Lac	Rs. Lac	Rs. Lac	Annx No.
<b>H</b>	<b>11 kV Line : New Feeder/ Feeder Bifurcation</b>								
	Existing 11 KV Line, Raccon ACSR	Kms	5.20						
	Existing 11 KV Line, Rabbit ACSR	Kms	7.80						
	New 11 KV Goyal Colony line with Raccon ACSR (0.75 KM D)			0.74	6.70		4.96		
	11 kv Line for proposed DTs with rabbit ACSR (R+B)	Kms		1.50	6.70		10.05	(Anne.-A CRL)	
	<b>Sub Total</b>	<b>Kms</b>	<b>13.00</b>	<b>2.24</b>			<b>15.01</b>	<b>(Anne.-A CRL)</b>	
<b>I</b>	<b>11 kV Line : Augmentation/Reconductoring</b>								
		Kms					-		
		Kms					-		
		Kms					-		
	<b>Sub Total</b>	<b>Kms</b>	<b>-</b>	<b>-</b>			<b>-</b>		
<b>J</b>	<b>Arial Bunched Cable</b>								
	<b>i) HT</b>								
	<b>Total</b>	<b>Kms</b>	<b>-</b>						
	<b>ii) LT</b>								
	Exisitng of LT AB Cable Single core of size 50mm2	Kms	3.00						
	New LT Line of LT AB Cable 3/C 120+1x70mm2	Kms							
		Kms							
	<b>Total</b>	<b>Kms</b>	<b>3.00</b>						
	<b>Total</b>	<b>Kms</b>	<b>3.00</b>						
<b>K</b>	<b>UG Cable</b>								
	<b>i) HT</b>								
	Exisitng of 3/c 300mm2 Railway Road feeder	Kms							
	New Goyal Colony Feeder 3/c 185mm2	Kms							
	<b>Total</b>	<b>Kms</b>	<b>-</b>						
	<b>ii) LT</b>								
		Kms	-						
		Kms							
		Kms							
	<b>Total</b>	<b>Kms</b>	<b>-</b>						
	<b>Sub Total</b>	<b>Kms</b>	<b>-</b>						
<b>L</b>	<b>11 KV Bay Extension</b>								
		Nos					-		
		Nos					-		
		Nos					-		
	<b>Sub Total</b>	<b>Nos</b>	<b>-</b>	<b>-</b>			<b>-</b>		
<b>M</b>	<b>Installation of Distribution Transformer</b>								
	<b>Existing DT Capacity rating wize</b>	Nos.							
	Existing 10 KVA DT =20 No.	Nos.	20						
	Existing 16 KVA DT =4 No.	Nos.	4						
	Existing 25 KVA DT = (14 No. B/ 64 No. D) =78 No.	Nos.	78				-		
	Existing 63 KVA DT = (5 No. B/ 27 No. D) = 32 No.	Nos.	32				-		
	Existing 100 KVA DT = (38 No. B/ 40 No. D) =78 No.	Nos.	78				-		
	Existing 200 KVA DT = (2 No. B/ 69 No. D) = 71 No.	Nos.	71				-		
	Existing 250 KVA DT = (1 No. D) = 1 No.	Nos.	1				-		
	Existing 630 KVA DT = (1 No. B) = 1 No.	Nos.	1				-		
	Intallation of Transformer 200 KVA= (6 No. B/ 15 No. D) = 21 No. (4.2 MVA)	Nos.		21	3.97		83.37	(Anne.-A CRL)	
	<b>Sub Total</b>	<b>MVA</b>	<b>285.00</b>	<b>21.00</b>	<b>3.97</b>		<b>83.37</b>	<b>(Anne.-A CRL)</b>	
<b>N</b>	<b>Capacity enhancement of LT sub-station</b>								
		MVA	-				-		



S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price		Cost proposed under IPDS		Reference
					Rs. Lac	Rs. Lac	Rs. Lac	Rs. Lac	Annx No.
		MVA						-	
		MVA						-	
		MVA						-	
		MVA						-	
		MVA						-	
		<b>Sub Total</b>	<b>MVA</b>	<b>-</b>	<b>-</b>			<b>-</b>	
<b>O</b>	<b>LT Line : New Feeder/ Feeder Bifurcation</b>								
	Existing LT line of Dog ACSR (6.00-D/ 4.00-B )	Kms		10.00					
	Existing LT line of Raccon ACSR (20.00-D/ 15.00-B )	Kms		35.00					
	Existing LT line of Rabbit ACSR (22.00-D/ 14.00-B )	Kms		36.00					
	<b>New LT Line XLPE un-armoured cable 50mm2 (5 No. D/ 6 No. B)</b>	Kms							
	New LT line of Raccon ACSR (5 No. D / 6 No. B)	Kms							
		<b>Sub Total</b>	<b>Kms</b>	<b>81.00</b>					
<b>P</b>	<b>LT Line : Augmentation/Reconductoring</b>								
		Kms							
		Kms							
		Kms							
		Kms							
		<b>Sub Total</b>	<b>Kms</b>	<b>-</b>					
<b>Q</b>	<b>Capacitor Bank</b>								
		MVAR							
		MVAR							
		MVAR							
		<b>Sub Total</b>	<b>MVAR</b>	<b>-</b>					
<b>R</b>	<b>HVDS</b>								
		Nos		-				-	
		Nos						-	
		Nos						-	
		<b>Sub Total</b>	<b>Nos</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	
<b>S</b>	<b>Metering</b>								
	Prepaid / smart meters in Govt. establishment (58 No. B+40 No. D) = 111 No.	Nos		-	98	0.12	11.76		(Anne.-A CRL)
	AMI, Smart meters in the towns where SCADA being established under R-APDRP.	Nos		-		-	-		
	Boundary meters for ring fencing of Non-RAPDRP Towns with population more than 5000	Nos						-	
	AMR for feeders, Distribution transformer and high load consumers	Nos						-	
	Consumers for existing un-metered connections, replacement of faulty meters & electro-mechanical meters (1500 No. B + 2500 No. D) = 4000 No.	Nos		4,000	4,000	0.03	120.04		S3
	Installation of Pillar Box for relocation of meters outside the premises of consumers including associated cables and accessories	Nos						-	
		<b>Sub Total</b>	<b>Nos</b>	<b>4,000</b>	<b>4,098</b>		<b>131.80</b>		
<b>T</b>	<b>Provisioning of solar panel</b>								
	Location 1 Dharuhera S/D /( Capacity)	KWe		1.00	1.00	1.00	1.00		(Anne.-A CRL)
	Location 2 Bawal S/D /( Capacity)	KWe		1.00	1.00	1.00	1.00		
	Location 3 ..... /( Capacity)	KWe		-	-	-	-		
	Net-Meters	Nos						-	T1
		<b>Sub Total</b>	<b>Nos</b>	<b>-</b>	<b>2.00</b>		<b>2.00</b>		(Anne.-A CRL)
<b>U</b>	<b>RMU,Sectionaliser, Auto reclosures, FPI etc.</b>								
	i) 33 kV Line : Installation of switchable breaker/switches	Nos						-	
	ii) 33 kV Line : Installation of communcable/non-communicable FPIs (O/C&E/F)	Nos						-	

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	Annx No.
iii)	11 kV Line : Installation of RMUs/Sectionalizer alongwith aux power supply to operate sw/breaker.	Nos				-	
iv)	11 kV Line :- Installation of communicable/non communicable FPIs (O/C,E/F)	Nos				-	
v)	11 kV Line : Installation of switchable breakers alongwith aux power supply to operate sw/breaker	Nos				-	
vi)	Installation of remote operable switches for breaker/switches operation for Distribution Transformer alongwith aux power supply to operate sw/breaker	Nos				-	
vii)	Installation of remote operable switches for breaker/switches operation for cap bank alongwith aux power supply to operate sw/breaker .	Nos				-	
<b>Sub Total</b>		<b>Nos</b>	-	-		-	
<b>V</b>	<b>Others</b>						
	<b>Others Item</b>						
	Provision of LT protection unit on Existing Transformer	Nos.					
	Replacement of existing poles in HT Line (11 Mtr.)	Nos.					
	Replacement of existing poles in LT line (9 Mtr.)	Nos.					
	Provision of LA on all existing Distribution Transformer	Nos.					
	Guarding of 11 KV Line	Kms.					
	DT Earthing for all Existing Distribution Transformer	Nos.					
	DT Meter with modem on new Distribution Transformer	Nos.					
	Feeder Pillar Box	Nos.					
	a) 4 in 1	Nos.					
	b) 12 in 1	Nos.					
	c) 16 in 1	Nos.					
	d) 20 in 1	Nos.					
	OLD Distribution T/F R&M (60 No. B / 60 No. D) = 120 No.						
	conversion of LT S-Ph 3w to 3-Ph 5w line						
	Laying of 3Ph 5W line at second side of road						
<b>Sub Total</b>			-				
<b>Grand Total</b>			4,450.00	4,140.54		775.14	(Anne.-A CRL)

**Note:** Unit price and Total Cost are inclusive of all taxes and duties

775.14