

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

**State**

HARYANA

**Name of Govt Utility  
Implementing Project**

DHBVN

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

SIRSA/HISAR/DHBVN

**Detail Project Report**

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

**Ref no. of DPR**

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>	
Name of State	HARYANA
Name of Govt Utility Implementing Project (Expanded Name)	DAKSHIN HARYANA BIJLI VITRAN NIGAM
Name of Govt Utility Implementing Project (Short Name)	DHBVN
Name of Pvt/Distribution Franchisee (in case of Pvt/DF/ Cooperative Society)	-

<b>Contact Details of Nodal Officer (Govt Utility Implementing Project)</b>		
Name	Er. K.K. Gupta	
Designation	C.E-PD&C	
Address	Vidyut Sadan, DHBVN Hisar	
Phone Office	01662-223216	
Mobile No.	9812452524	
Fax	01662-223181	
E-mail	<a href="mailto:cepdcdhbn@gmail.com">cepdcdhbn@gmail.com</a>	
Utility level AT&C loss	Unit	AT&C Loss for FY 2014-15
AT&C loss as provided by PFC in latest "Report on Performance of State Power Utilities"	%	24.09%

<b>Project Area Details</b>	
Name of the Project Area Circle/ Zone/ Utility)	SIRSA/HISAR/DHBVN
Nos. of towns covered	2
Total Population of all towns covered in project area	47218
Nos. of Consumers in all towns covered in the project area	13755

<b>Contact Details of Project Area Incharge (Govt/Govt Authorised Agency)</b>			
Name	Er. RK Verma	Er. S.L Gupta	Er. MR Sachdeva
Designation	SE	XEN	XEN
Address	SE Office/Operation, Sirsa	S/U Division, DHBVN Sirsa	OP Division, DHBVN Dabwali
Phone Office	01666-238453	01666-238436	01668-2206083
Mobile No.	9812190009	9812215200	9812452800
Fax	01666-238459	01666-238459	01666-238459
E-mail	<a href="mailto:sesirsa@gmail.com">sesirsa@gmail.com</a>	<a href="mailto:dgmsuburban@gmail.com">dgmsuburban@gmail.com</a>	<a href="mailto:xendabwali@gmail.com">xendabwali@gmail.com</a>

<b>Data for AT&amp;C Losses Computation for Project Area (All statutory towns of the Circle/ Zone/ Utility)</b>	Unit	Data for Previous FY
Energy Input	M Units	52.59
Energy Sales	M Units	37.31
Total Revenue Billed	Rs. Lac	2147.50
Total Revenue Collected (excluding arrears)	Rs. Lac	2080.93
Billing Efficiency	%	70.95%
Collection Efficiency	%	96.90%
AT&C Losses	%	31.25%

<b>Dedicated team:</b>	
HQ Level	Field Level
Name & Designation	Name, Designation & Area
Er. R.K Sodha	Er. GS Lengha, SDO, Town- Rania, 9812452779, 01698-250346
SE/P&D DHBVN Hisar	Er. S.K Nain , SDO, Town- Kalanwali, 9812452841, 01696-222005

Date of Submission of Proposal	Date	0-Jan-00
DPR Ref No.	No.	0
Proposed Project Start Date	Month-Year	
Proposed Month of Completion	Month-Year	

## POWER FINANCE CORPORATION LTD.

### Detail Project Report

#### Guidelines for DPR Preparation & Implementation

The DPR shall be prepared, base on IPDS guidelines as issued from MoP, Gol. Some salient features of IPDS guidelines & additional guidelines for DPR preparation is mentioned below. In case of any mis-match between IPDS guideline issued from MoP & DPR guideline as mentioned below, the IPDS guideline as issued from MoP, Gol shall prevail.

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</b> (Statutory Towns) <b>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 infrastrucuture, 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 be carried out in semi Turn key basis.
- 26 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 eliaible under this scheme].

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

Signature:

Name: Er. R.K. Verma  
Designation: SE,OP Circle, DHBVN Sirsa

Tel. No. / Mobile No. : 01666-238453, 981219000:  
Email address : sesirsa@gmail.com

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

Approved by:

Signature:

Name:  
Designation:

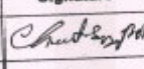

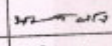
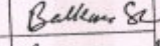
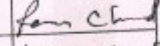
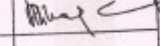

Tel. No. / Mobile No. :  
Email address :

**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 Sirsa to achieve the ultimate benefit of above Scheme to the urban residents.

Sr. No.	Name		Designation of DEC	Signature
1.	Shri Charanjit Singh	MP Sirsa	Chairman	
2.	Shri Nikhil Gajraj, IAS	DC Sirsa	Convener	
3.	Shri Makhan Lal Singla,	MLA Sirsa	Member	
4.	Shri Balkaur Singh,	MLA Kalanwall	Member	
5.	Shri Ram Chand Kamboj	MLA Rania	Member	
6.	Shri Abhey Singh Chautala	MLA Ellenabad	Member	
7.	Smt. Naina Singh Chautala	MLA Dabwali	Member	
8.	Shri R.K. Verma	S.E/OP Circle Sirsa	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>	

#### Brief Profile of State/Utility

<b>Name of State</b>	HARYANA	
<b>Name of Utility (Short Name)</b>	DHBVN	
<b>Total Number of Utility Consumers</b>	2942237 (Till May'15)	
<b>AT&amp;C loss as provided by PFC in latest "Report on Performance of State Power Utilities"</b>		
<b>AT&amp;C Losses</b>	%	24.09

#### Project Area Profile

<b>Name of the Project Area Circle/ Zone/ Utility)</b>		
<b>Nos. of towns covered</b>	2	
<b>Nos. of Consumers in all towns covered in the project area</b>	13755	
<b>Data for AT&amp;C Losses Computation for Project Area (All statutory towns of the Circle/ Zone/ Utility)</b>	Unit	Data for Previous FY
Energy Input	M Units	52.59
Energy Sales	M Units	37.31
Total Revenue Billed	Rs. Lac	2147.5
Total Revenue Collected (excluding arrears)	Rs. Lac	2080.93
Billing Efficiency	%	70.95%
Collection Efficiency	%	96.90%
AT&C Losses	%	31.25%

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

Name of Town	Town In Charge	Contact No.
Rania	Er. Kitab Singh, SDO	9812452779
Kalanwali	Er. S.K Nain, SDO	9812452841

#### Project Funding

<b>Recommended Project Cost for Sanction</b>	Rs. Lac	547.17
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Cost Item		Total Cost	Gol	PFC/ Fls	Own
<b>Total Setup Cost</b>	Rs.Lac	547.17	328.30	164.15	54.72
		<b>Base Year-0</b>	<b>Year-1</b>	<b>Year-2</b>	
<b>Phasing of Capital Expenditure</b>	Rs.Lac	32.83	240.75	273.59	

# **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., GoI 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

<b>Assets</b>	<b>Unit</b>	<b>Current Position</b>	<b>Proposed under IPDS</b>
Total Number 33 KV Feeders	Nos.	1	0
Total Length of 33 KV Feeders (Overhead)	kM	13	12.5
Total Length of 66/33 kV Feeders (Under-ground)	kM	0	0.5
		0	0
Total Number of 220/11 and 33/11 kV Sub-stations feeding the Project Area	Nos.	2	0
Total Number of Power Transformers	Nos.	5	0
Total Capacity of Power Transformers	MVA	58.3	0
Total Number 11 kV Feeders	Nos.	4	2
Number of Metered 11 kV Feeders	Nos.	4	0
Total Length of 11 kV Feeders (Overhead)	kM	44.7	9
Total Length of 11 kV Feeders (Under-ground)	kM	0	0
		0	0
Total Length of LT Lines (Overhead)	kM	74	45.84
Total Length of LT Lines (Under-ground)	kM	0	0
HT/LT Ratio		0.60	0
Total Number of Distribution Transformers	Nos.	276	38
Total Capacity of Distribution Transformers	MVA	33.35	5
		0	0
Total Annual Energy Input of previous FY	MUs	48.66	53.52
Current Peak Demand	MVA	49.6	54.56
Current Average Demand	MVA	34.66	38.12
		0	0
Please specify name of town of Project area covered under Part-A (IT) of R-APDRP, if any.		Rania & Kalanwali	Rania & Kalanwali
Please specify name of town of Project area covered under Part-A (SCADA/DMS) of R-APDRP, if any.		Rania & Kalanwali	Rania & Kalanwali

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

Volume IIa: SUMMARY Project Cost

**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	0	0.00
B	33/11 KV S/S : Additional Transformer	Nos.	0	0.00
C	33/11 KV S/S : Transformer capacity enhancement	Nos.	0	0.00
D	Renovation & Modernisation of 33/11 kV SS	Nos.	0	0.00
E	New 33 KV new feeders/Bifurcation of feeders:	Kms	0	0.00
F	33 KV feeders Reconductoring/Augmentation	Kms	12.5	94.38
G	33 kV Line Bay Extension at EHV station	Nos	0	0.00
H	11 kV Line : New Feeder/ Feeder Bifurcation	Kms	9	60.30
I	11 kV Line : Augmentation/Reconductoring	Kms	0	0.00
J	Arial Bunched Cable (LT)	Kms	45.84	225.99
K	UG Cable (33 KV)	Kms	0	0.00
L	11 KV Bay Extension	Kms	0	0.00
M	Installation of Distribution Transformer	Nos.	38	105.88
N	Capacity enhancement of LT sub-station	Nos.	0	0.00
O	LT Line : New Feeder/ Feeder Bifurcation	Kms	-	0.00
P	LT Line : Augmentation/Reconductoring	Kms	-	0.00
Q	Capacitor Bank	Nos.	0	0.00
R	HVDS	Nos.	0	0.00
S	Metering +Smart meter	Nos.	1846	58.62
T	Provisioning of solar panel	Lot	2	2.00
U	RMU, Sectionaliser, Auto reclosures, FPI etc.	Lot	0	0.00
V	Others (Distribution T/Fs. -R&M)	Lot	0	0.00
	<b>GRAND TOTAL</b>		<b>0</b>	<b>547.17</b>

**547.17**

POWER FINANCE CORPORATION LTD.  
 Detail Project Report  
 Estimated Project Cost - Bill of Quantities

**For Non R-APDRP Towns (Separate BOQ sheet to be furnished for each town)**

**Bill of Quantities**

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under	Reference
<b>A 33/11 KV S/S : New</b>							
1		Nos.	-	-	-	-	
2		Nos.	-	-	-	-	
3		Nos.	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
<b>B 33/11 KV S/S : Additional Transformer</b>							
1		Nos.	-	-	-	-	
2		Nos.	-	-	-	-	
3		Nos.	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
<b>C 33/11 KV S/S : Transformer capacity enhancement</b>							
1		Nos.	-	-	-	-	
2		Nos.	-	-	-	-	
3		Nos.	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
<b>D Renovation &amp; Modernisation of 33/11 kv SS</b>							
1		Nos.	-	-	-	-	
2		Nos.	-	-	-	-	
3		Nos.	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
<b>E New 33 KV new feeders/Bifurcation of feeders:</b>							
1		Kms	-	-	-	-	
2		Kms	-	-	-	-	
3		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
<b>F 33 KV feeders Reconducting/Augmentation</b>							
1	<b>Aug. from 80mm2 to 150mm2</b>	Kms	13.00	12.50	7.55	94.38	
2		Kms	-	-	-	-	
3		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		13.00	12.50	-	94.38	
<b>G 33 kv Line Bay Extension at EHV station</b>							
1		Nos.	-	-	-	-	
2		Nos.	-	-	-	-	
3		Nos.	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
<b>H 11 kv Line : New Feeder/ Feeder Bifurcation</b>							
1	<b>Bif. By providing 100mm2 ACSR Cond.</b>	Kms	26.70	9.00	6.70	60.30	
2		Kms	-	-	-	-	
3		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		26.70	9.00	-	60.30	
<b>I 11 kv Line : Augmentation/Reconducting</b>							
1	<b>Aug. from 20/30mm2 to 100mm2</b>	Kms	18.00	-	4.66	-	
2		Kms	-	-	-	-	
3		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		18.00	-	-	-	
<b>J Arial Bunched Cable</b>							
i) HT							
		Kms	-	-	-	-	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
ii) LT							
	<b>3 CX120+1X70 MM2 LT ABC</b>	Kms	-	45.84	4.93	225.99	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	45.84	-	225.99	
	<b>Total</b>		-	45.84	-	225.99	
<b>K UG Cable</b>							
i) HT							
	<b>33 KV 3/C U/G cable 300mm2</b>	Kms	-	-	-	-	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
ii) LT							
		Kms	-	-	-	-	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
			-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
	<b>Total</b>		12.50	-	-	-	

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under BBS	Unit Price	Cost proposed under	Reference
L	<b>11 KV Bay Extension</b>		-	-	-	-	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
M	<b>Installation of Distribution Transformer</b>		-	-	-	-	
	<b>D-T/F of Cap. 100KVA</b>	Nos.	72.00	26.00	2.24	58.24	
	<b>200KVA</b>	Nos.	38.00	12.00	3.97	47.64	
	<b>Others</b>	Nos.	166.00	-	-	-	
	<b>Sub Total</b>		276.00	38.00	-	105.88	
N	<b>Capacity enhancement of LT sub-station</b>		-	-	-	-	
		Nos.	-	-	-	-	
		Nos.	-	-	-	-	
		Nos.	-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
O	<b>LT Line : New Feeder/ Feeder Bifurcation</b>		-	-	-	-	
	<b>New LT line with 100mm2 ACSR</b>	Kms	66.00	-	5.21	-	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
	<b>Sub Total</b>		66.00	-	-	-	
P	<b>LT Line : Augmentation/Reconductoring</b>		-	-	-	-	
	<b>LT line from 50 mm2 to 100mm2 ACSR</b>	Kms	8.00	-	4.29	-	
		Kms	-	-	-	-	
		Kms	-	-	-	-	
	<b>Sub Total</b>		8.00	-	-	-	
Q	<b>Capacitor Bank</b>		-	-	-	-	
		Nos.	-	-	4.25	-	
		Nos.	-	-	-	-	
		Nos.	-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
R	<b>HVDS</b>		-	-	-	-	
		Nos.	-	-	-	-	
		Nos.	-	-	-	-	
		Nos.	-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
S	<b>Metering</b>		-	-	-	-	
	i) Prepaid / smart meters in Govt. establishment	Nos.	-	36.00	0.12	4.32	
	ii) AMI, Smart meters in the towns where SCADA being established under R-APDRP.	Nos.	-	-	-	-	
	iii) Boundary meters for ring fencing or Non-RAP/DRP Towns with population more than 5000	Nos.	-	-	-	-	
	iv) AMR for feeders, Distribution transformer and high load consumers	Nos.	-	-	-	-	
	v) Consumers for existing un-metered connections, replacement of faulty meters & electro-mechanical meters	Nos.	12,901.00	1,810.00	0.03	54.30	
	vi) Installation of Pilar box for relocation of meters outside the premises of consumers including associated cables and accessories	Nos.	-	-	-	-	
	<b>Sub Total</b>		12,901.00	1,846.00	-	58.62	
T	<b>Provisioning of solar panel</b>		-	-	-	-	
	<b>Location 1-( Circle/XEN/SDO Office Campus ) / ( Capacity-5KWE)</b>	KWe	-	2.00	2.00	2.00	
	Location 2 ..... / ( Capacity)	KWe	-	-	-	-	
	Location 3 ..... / ( Capacity)	KWe	-	-	-	-	
	Net-Meters	Nos.	-	-	-	-	
	<b>Sub Total</b>		-	2.00	-	2.00	
U	<b>RMU,Sectionalizer, Auto reclosures, FPI etc.</b>		-	-	-	-	
	i) 33 kV Line : Installation of switchable breaker/switches	Nos.	-	-	-	-	
	ii) 33 kV Line : Installation of communicable/non-communicable FPIs (O/C&E/F)	Nos.	-	-	-	-	
	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 operate switches for breakers/switches operation for Distribution Transformer alongwith aux power supply to operate sw/breaker	Nos.	-	-	-	-	
	vii) Installation of remote operate switches for breakers/switches operation for cap bank alongwith aux power supply to operate sw/breaker .	Nos.	-	-	-	-	
	<b>Sub Total</b>		-	-	-	-	
V	<b>Others (Distribution T/Fs. -R&amp;M)</b>		-	-	-	-	
			272.00	-	0.15	-	
	<b>Sub Total</b>		272.00	-	-	-	
	<b>Grand Total</b>		-	-	-	547.17	

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

**POWER FINANCE CORPORATION LTD.**

Annexure-2

**Detail Project Report**

Project area asset detail

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

SN	Name of EHV Substation	Voltage Ratio	EHV Transformer Details			Maximum Demand (MVA)	
			Rating (MVA)	Nos.	Capacity (MVA)		
1	220 KVA S/Stn Rania	132/11 KV	10/16 KVA	1	16	16 MVA of P-T/F	5.34 Amp. of 11KV Rania City feeder
		132/11 KV	16/20 MVA	1	20	19.8MVA of P-T/F	3.82 Amp. of 11KV Gaushala feeder

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

SN	Name of Substation	Voltage Ratio	HV Transformer Details			Maximum Demand	
			Rating (MVA)	Nos.	Capacity (MVA)	MVA	MVAR
1	Kalanwali	33/11	2x6.3/8+6.3	3	22.3	19.89MVA of P-T/Fs.	7.94 Amp. of 11KV Kalanwali-1st & 11KV Kalanwali-IInd feeder

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

SN	From EHV Substation	To 33/11 S/S	Name of 33KV feeder	Length of feeder (KM)	Type of conductor	Average Demand (MVA)	Peak Demand (MVA)
-	220 Chormar S/S	33/11 Kalanwali	33 KV Feeder Kalanwali	13	ACSR 80 MM2	16.3	19.89

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

Sl. No.	From 33/11 S/S	To 33/11 KV S/S	Name of 33KV 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 & Cap. of Power T/F.	Name of 11 KV feeder	Type of conductor	Peak Demand (MVA)	Distribution Transformer Details		
						Rating (KVA)	Nos.	Capacity (KVA)
1	33 KV Kalanwali S/S	2x6.3/8+6.3	Kalanwali 1st	80/50/30mm	266	16,25,63,100,200,500,750	70	8007
			Kalanwali 2nd	80/50/30 mm	150	25,63,100, 200, 250, 315, 500, 630, 750	58	8803

**Details of 11 KV feeders emanating from EHV Sub-stations feeding project area**

Sl. No.	From EHV Substation	Name & Cap. of Power T/F.	Name of 11 KV feeder	Type of conductor	Peak Demand (MVA)	Distribution Transformer Details		
						Rating (KVA)	Nos.	Capacity (KVA)
1	220 KVA S/Stn Rania	10/16 KVA	11 KV Rania City	80/50/30mm2	5.34	25, 63, 100, 200, 315, 350	70	7971
	220 KVA S/Stn Rania	16/20 MVA	11 KV Gaushala	80/50/30mm2	3.82	25, 63, 100, 200, 315, 400	78	8575

**Project Benefits:**

a. **Reduction in AT&C loss**

Implementation of the project will facilitate to achieve Utility level AT&C Loss reduction trajectory as per Annexure-III of IPDS Guidelines is shown below:		
Base Year: AT&C Loss for FY 2014-15	%	31.25%
FY 15-16	%	28.70%
FY 16-17	%	26.23%
FY 17-18	%	24.15%
FY 18-19	%	22.34%
FY 19-20	%	20.10%
FY 20-21	%	18.80%
FY 21-22	%	17.50%

b. **Other intangible benefit shall be as follows:**

- . Accurate & reliable energy accounting on sustainable basis.
- . Better accountability at all level.
- . Improve the reliability of the power supply.
- . 24x7 power supply for consumers in urban area.
- . Reduction of Losses to meet AT&C loss reduction trajectory.
- . Providing electricity access to all urban house hold.
- . Improvement in network planning
- . Improvement in quality of supply like voltage level, PF etc.
- . Prompt and effective solution to the consumer queries / grievances.

**Line loss reduction:** With strengthening of network, conductor resistance will be reduced, resulting reduction in cu loss.

**Ensuring better accounting:** With metering of all nodal points, the energy accounting & auditing will be improved, resulting better administrative action:

**Better voltage profile:** With strengthening of network & improvement in PF, tail end voltage will be improved & reactive current will be reduced resulting improvement of quality of power & better consumer satisfaction..

**Decrease in the DT failure:** With addition of DT & enhancement of DT capacity the load on DT will be reduced, resulting decrease in DT failure & improvement in reliability.

**Curbing the theft/ pilferage/ and unaccounted usage:** With ABC, HVDS, meter pillar boxes & proper consumer metering, theft / pilferage & unaccounted usages will be minimised.



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

Volume I: Project Area Details

**Rania**

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	0
Total Length of 33 KV Feeders (Overhead)	kM	0	0
Total Length of 66/33 kV Feeders (Under-ground)	kM	0	0
Total Number of 132/11KV, 66/11 kV and 33/11 kV Sub-stations feeding the Project Area	Nos.	1	0
Total Number of Power Transformers	Nos.	2	0
Total Capacity of Power Transformers	MVA	36	0
Total Number 11 kV Feeders	Nos.	2	1
Number of Metered 11 kV Feeders	Nos.	2	0
Total Length of 11 kV Feeders (Overhead)	kM	24.40	18
Total Length of 11 kV Feeders (Under-ground)	kM	0	0
Total Length of LT Lines (Overhead)	kM	38	60.63
Total Length of LT Lines (Under-ground)	kM	0	0
HT/LT Ratio		0.64	
Total Number of Distribution Transformers	Nos.	148	18
Total Capacity of Distribution Transformers	MVA	16.54	2.60
Total Annual Energy Input of previous FY	MUs	30.45	33.49
Current Peak Demand	MVA	28.8	31.68
Current Average Demand	MVA	20.16	22.17
Please specify name of town or Project area		Rania	Rania
Please specify Part A (IT) of B (IPDS) if covered under Part A (SCADA/DMS) of B		Rania	Rania

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

Volume I: Project Area Details

**Kalanwali**

Project Area Asset Information: Restricted to Urban area (Statutory Towns) only, to be

<b>Assets</b>	<b>Unit</b>	<b>Current Position</b>
Total Number 33 KV Feeders	Nos.	1
Total Length of 33 KV Feeders (Overhead)	kM	13
Total Length of 66/33 kV Feeders (Under-ground)	kM	0
Total Number of 66/11 KV and 33/11 KV Sub-stations feeding the Project Area	Nos.	1
Total Number of Power Transformers	Nos.	3
Total Capacity of Power Transformers	MVA	22.3
Total Number 11 kV Feeders	Nos.	2
Number of Metered 11 kV Feeders	Nos.	2
Total Length of 11 kV Feeders (Overhead)	kM	20.30
Total Length of 11 kV Feeders (Under-ground)	kM	0
Total Length of LT Lines (Overhead)	kM	36
Total Length of LT Lines (Under-ground)	kM	0
HT/LT Ratio		0.56
Total Number of Distribution Transformers	Nos.	128
Total Capacity of Distribution Transformers	MVA	16.81
Total Annual Energy Input of previous FY	MUs	18.21
Current Peak Demand	MVA	20.80
Current Average Demand	MVA	14.5
Please specify name of town or Project area covered under Part A (IT) of P-APDRP, if any.		Kalanwali
Please specify name of town or Project area covered under Part A (SCADA/DMS) of P-APDRP, if any.		Kalanwali

are considered under IPDS

<b>Proposed under IPDS</b>
0
0
0
0
0
0
1
0
9
0
32.1
0
16
2.40
20.03
22.88
15.95
Kalanwali
Kalanwali

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

Rania

Volume IIa: SUMMARY Project Cost

**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	0	0
B	33/11 KV S/S : Additional Transformer	Nos.	0	0
C	33/11 KV S/S : Transformer capacity enhancement	Nos.	0	0
D	Renovation & Modernisation of 33/11 kV SS	Nos.	0	0
E	New 33 KV new feeders/Bifurcation of feeders:	Kms	0	0
F	33 KV feeders Reconductoring/Augmentation	Kms	0	0
G	33 kV Line Bay Extension at EHV station	Nos	0	0
H	11 kV Line : New Feeder/ Feeder Bifurcation	Kms	5	33.5
I	11 kV Line : Augmentation/Reconductoring	Kms	0	0
J	Arial Bunched Cable (LT)	Kms	28	138.04
K	UG Cable	Kms	0	0
L	11 KV Bay Extension	Kms	0	0
M	Installation of Distribution Transformer	Nos.	2.6	54.16
N	Capacity enhancement of LT sub-station	Nos.	0	0
O	LT Line : New Feeder/ Feeder Bifurcation	Kms	0	0.00
P	LT Line : Augmentation/Reconductoring	Kms	0	0
Q	Capacitor Bank	Nos.	0	0
R	HVDS	Nos.	0	0
S	Metering	Nos.	1644	51.03
T	Provisioning of solar panel	Lot	1	1
U	RMU,Sectionaliser, Auto reclosures, FPI etc.	Lot	0	0
V	Others (Distribution T/Fs. -R&M)	Lot	0	0
	<b>GRAND TOTAL</b>			<b>277.73</b>

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

Kalanwali

Volume IIa: SUMMARY Project Cost

**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	0	0
B	33/11 KV S/S : Additional Transformer	Nos.	0	0
C	33/11 KV S/S : Transformer capacity enhancement	Nos.	0	0
D	Renovation & Modernisation of 33/11 kV SS	Nos.	0	0
E	New 33 KV new feeders/Bifurcation of feeders:	Kms	0	0
F	33 KV feeders Reconductoring/Augmentation	Kms	12.5	94.38
G	33 kV Line Bay Extension at EHV station	Nos	0	0
H	11 kV Line : New Feeder/ Feeder Bifurcation	Kms	4	26.8
I	11 kV Line : Augmentation/Reconductoring	Kms	0	0
J	Arial Bunched Cable (LT)	Kms	17.84	87.95
K	UG Cable	Kms	0	0
L	11 KV Bay Extension	Kms	0	0
M	Installation of Distribution Transformer	Nos.	2.4	51.72
N	Capacity enhancement of LT sub-station	Nos.	0	0
O	LT Line : New Feeder/ Feeder Bifurcation	Kms	0	0.00
P	LT Line : Augmentation/Reconductoring	Kms	0	0
Q	Capacitor Bank	Nos.	0	0
R	HVDS	Nos.	0	0
S	Metering	Nos.	202	7.59
T	Provisioning of solar panel	Lot	1	1.00
U	RMU,Sectionaliser, Auto reclosures, FPI etc.	Lot	0	0
V	Others (Distribution T/Fs. -R&M)	Lot	0	0
	<b>GRAND TOTAL</b>			<b>269.44</b>

**POWER FINANCE CORPORATION LTD.**

**Detail Project Report**

Estimated Project Cost - Bill of Quantities

**For Non R-APDRP Towns (Separate BOQ sheet to be furnished for each town)**

**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</b>	<b>33/11 KV S/S : New</b>						
1		Nos	-	0	-	-	
2		Nos				-	
3		Nos.				-	
	<b>Sub Total</b>		0	0		0.00	
<b>B</b>	<b>33/11 KV S/S : Additional Transformer</b>						
1		Nos.					
2		Nos.					
3		Nos.					
	<b>Sub Total</b>		0	0		0	
<b>C</b>	<b>33/11 KV S/S : Transformer capacity enhancement</b>						
1		Nos.				-	
2		Nos.				-	
3		Nos.					
	<b>Sub Total</b>		0	0		0	
<b>D</b>	<b>Renovation &amp; Modernisation of 33/11 kV SS</b>						
1		Nos.					
2		Nos.				-	
3		Nos.					
	<b>Sub Total</b>		0	0		0	
<b>E</b>	<b>New 33 KV new feeders/Bifurcation of feeders:</b>						
1		Kms	-			-	
2		Kms				-	
3		Kms				-	
	<b>Sub Total</b>		0	0		0.00	
<b>F</b>	<b>33 KV feeders Reconductoring/Augmentation</b>						
1		Kms				-	
2		Kms				-	
3		Kms					
	<b>Sub Total</b>		0	0		0	
<b>G</b>	<b>33 kV Line Bay Extension at EHV station</b>						
1		Nos				-	
2		Nos				-	
3		Nos					
	<b>Sub Total</b>		0	0		0	
<b>H</b>	<b>11 kV Line : New Feeder/ Feeder Bifurcation</b>						
1	New Feeder required for bifurcation of 11KV City Rania & Gaushala feeder by providing 100mm <sup>2</sup> ACSR cond.	Kms	24.40	5.00	6.70	33.50	
2		Kms				-	
3		Kms				-	

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	
	<b>Sub Total</b>		24	5		33.50	
I	<b>11 kV Line : Augmentation/Reconductoring</b>						
1	Aug. of ACSR of 11KV line from 20/30mm2 to 100mm2 of 11KV City Rania & Gaushala feeder	Kms	24.40				
2		Kms					
3		Kms					
	<b>Sub Total</b>		24				
J	<b>Arial Bunched Cable</b>						
i)	HT						
		Kms				-	
		Kms					
		Kms					
	<b>Sub Total</b>		0	0		0	
ii)	LT						
	( LT AB cable)	Kms	38.00	28.00	4.93	138.04	
		Kms					
		Kms					
	<b>Sub Total</b>		38.00	28.00		138.04	
	<b>Total</b>		38.00	28.00		138.04	
K	<b>UG Cable</b>						
i)	HT						
		Kms					
		Kms					
		Kms					
	<b>Sub Total</b>		0	0		0	
ii)	LT						
		Kms					
		Kms					
		Kms					
	<b>Sub Total</b>		0	0		0	
	<b>Total</b>		0	0		0	

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	
L	<b>11 KV Bay Extension</b>						
		Kms					
		Kms					
		Kms					
	<b>Sub Total</b>			<b>0</b>	<b>0</b>	<b>0</b>	
M	<b>Installation of Distribution Transformer</b>						
	D-T/F of Cap. 100KVA	Nos.	40	10	2.24	22.40	
	200KVA	Nos.	22	8	3.97	31.76	
	Others	Nos.	86				
	<b>Sub Total</b>		<b>148</b>	<b>18.00</b>		<b>54.16</b>	
N	<b>Capacity enhancement of LT sub-station</b>						
		Nos.					
		Nos.					
		Nos.					
	<b>Sub Total</b>		<b>0</b>	<b>0</b>		<b>0</b>	
O	<b>LT Line : New Feeder/ Feeder Bifurcation</b>						
	New LT line with 100mm <sup>2</sup> , required for system strengthenibg and to assess electricity to new consumers and to replqace lengthy 2/C PVC with LT line.	Kms	38				
		Kms					
		Kms					
	<b>Sub Total</b>		<b>38</b>				
P	<b>LT Line : Augmentation/Reconductoring</b>						
		Kms					
		Kms					
		Kms					
	<b>Sub Total</b>		<b>0</b>				
Q	<b>Capacitor Bank</b>						
		Nos.	0				
		Nos.					
		Nos.					
	<b>Sub Total</b>		<b>0</b>				
R	<b>HVDS</b>						
		Nos.					
		Nos.					
		Nos.					
	<b>Sub Total</b>		<b>0</b>				
S	<b>Metering</b>						
	i) Prepaid / smart meters in Govt. establishment	Nos.	0	19	0.12	2.28	
	ii) AMI, Smart meters in the towns where SCADA being established under R-APDRP	Nos.					
	iii) Boundary meters for ring fencing of Non-RAPDRP Towns with population more than 5000	Nos.					
	iv) AMR for feeders, Distribution transformer and high load consumers	Nos.					
	v) Consumers for existing un-metered connections, replacement of faulty meters & electro-mechanical meters	Nos.	3991	1625	0.03	48.75	
	vi) Installation of Pillar Box for relocation of meters outside the premises of consumers including associated cables and accessories	Nos.					
	<b>Sub Total</b>		<b>3991</b>	<b>1644</b>		<b>51.03</b>	
T	<b>Provisioning of solar panel</b>						



S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	
	Location 1- ( SDO Office Campus ) /( Capacity-5KWE)	KWe	0	1	1.00	1.00	
	Location 2 ..... /( Capacity)	KWe					
	Location 3 ..... /( Capacity)	KWe					
	Net-Meters	Nos.					
	<b>Sub Total</b>		0	1		1.00	
<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 commnicable/non-communicable FPIs (O/C&E/F)	Nos.					
iii)	11 kV Line : Installation of RMUs/Sectionaliser 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	Nos.					
vii)	Installation of remote operable switches for breaker/switches operation for cap bank alongwith aux power supply to operate	Nos.					
	<b>Sub Total</b>		0	0		0	
<b>V</b>	<b>Others (Distribution T/Fs. -R&amp;M)</b>						
			144				
	<b>Sub Total</b>		144				
	<b>Grand Total</b>					277.73	

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

**POWER FINANCE CORPORATION LTD.**

**Detail Project Report**

Estimated Project Cost - Bill of Quantities

**For Non R-APDRP Towns (Separate BOQ sheet to be furnished for each town)**

**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</b>	<b>33/11 KV S/S : New</b>						
1		Nos					
2		Nos					
3		Nos.					
	<b>Sub Total</b>			<b>0</b>			
<b>B</b>	<b>33/11 KV S/S : Additional Transformer</b>						
1		Nos.					
2		Nos.					
3		Nos.					
	<b>Sub Total</b>			<b>0</b>	<b>0</b>	<b>0</b>	
<b>C</b>	<b>33/11 KV S/S : Transformer capacity enhancement</b>						
1		Nos.					
2		Nos.				-	
3		Nos.					
	<b>Sub Total</b>			<b>0</b>	<b>0</b>	<b>0.00</b>	
<b>D</b>	<b>Renovation &amp; Modernisation of 33/11 kV SS</b>						
1		Nos.					
2		Nos.				-	
3		Nos.					
	<b>Sub Total</b>			<b>0</b>	<b>0</b>	<b>0</b>	
<b>E</b>	<b>New 33 KV new feeders/Bifurcation of feeders:</b>						
1		Kms				-	
2		Kms				-	
3		Kms				-	
	<b>Sub Total</b>			<b>0</b>	<b>0</b>	<b>0.00</b>	
<b>F</b>	<b>33 KV feeders Reconductoring/Augmentation</b>						
1	Aug. from 80mm <sup>2</sup> to 150mm <sup>2</sup>	Kms	12.50	12.50	7.55	94.38	
2		Kms				-	
3		Kms					
	<b>Sub Total</b>		<b>12.50</b>	<b>12.50</b>		<b>94.38</b>	
<b>G</b>	<b>33 kV Line Bay Extension at EHV station</b>						
1		Nos				-	
2		Nos				-	
3		Nos					
	<b>Sub Total</b>			<b>0</b>	<b>0</b>	<b>0</b>	
<b>H</b>	<b>11 kV Line : New Feeder/ Feeder Bifurcation</b>						
1	Bifurcation by providing 100mm <sup>2</sup> ACSR cond.	Kms	20.30	4.00	6.70	26.80	
2		Kms				-	
3		Kms				-	

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	
	<b>Sub Total</b>		20.30	4		26.80	
I	11 kV Line : Augmentation/Reconductoring						
1	Aug. from 20/30mm2 to 100mm2	Kms	20.30				
2		Kms					
3		Kms					
	<b>Sub Total</b>		20.3				
J	Arial Bunched Cable						
i)	HT						
		Kms				-	
		Kms					
		Kms					
	<b>Sub Total</b>		0	0		0	
ii)	LT						
	( LT AB cable)	Kms	36.00	17.84	4.93	87.95	
		Kms					
		Kms					
	<b>Sub Total</b>		36.00	17.84		87.95	
	<b>Total</b>		36.00	17.84		87.95	
K	UG Cable						
i)	HT						
	3/C U/G cable 300mm2 (33KV)	Kms					
		Kms					
		Kms					
	<b>Sub Total</b>						
ii)	LT						
		Kms					
		Kms					
		Kms					
	<b>Sub Total</b>						
	<b>Total</b>						

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	
L	<b>11 KV Bay Extension</b>						
		Kms					
		Kms					
		Kms					
	<b>Sub Total</b>		<b>0</b>	<b>0</b>		<b>0</b>	
M	<b>Installation of Distribution Transformer</b>						
	D-T/F of Cap. 100KVA	Nos.	<b>32</b>	<b>16</b>	<b>2.24</b>	<b>35.84</b>	
	200KVA	Nos.	<b>16</b>	<b>4</b>	<b>3.97</b>	<b>15.88</b>	
	Others	Nos.	<b>80</b>				
	<b>Sub Total</b>		<b>128</b>	<b>20</b>		<b>51.72</b>	
N	<b>Capacity enhancement of LT sub-station</b>						
		Nos.					
		Nos.					
		Nos.					
	<b>Sub Total</b>		<b>0</b>	<b>0</b>		<b>0</b>	
O	<b>LT Line : New Feeder/ Feeder Bifurcation</b>						
	New LT line with 100mm2 ACSR conductor	Kms	<b>36</b>				
		Kms					
		Kms					
	<b>Sub Total</b>		<b>36</b>				
P	<b>LT Line : Augmentation/Reconductoring</b>						
	Aug. from 20/30mm2 to 100mm2	Kms	<b>36</b>				
		Kms					
		Kms					
	<b>Sub Total</b>		<b>36</b>				
Q	<b>Capacitor Bank</b>						
		Nos.	<b>0</b>				
		Nos.					
		Nos.					
	<b>Sub Total</b>		<b>0</b>				
R	<b>HVDS</b>						
		Nos.					
		Nos.					
		Nos.					
	<b>Sub Total</b>		<b>0</b>				
S	<b>Metering</b>						
	i) Prepaid / smart meters in Govt. establishment	Nos.	<b>0</b>	<b>17</b>	<b>0.12</b>	<b>2.04</b>	
	ii) AMI, Smart meters in the towns where SCADA being established under R-APDRP.	Nos.					
	iii) Boundary meters for ring fencing of Non-RAPDRP Towns with population more than 5000	Nos.					
	iv) AMR for feeders, Distribution transformer and high load consumers	Nos.					
	v) Consumers for existing un-metered connections, replacement of faulty meters & electro-mechanical meters	Nos.	<b>8910</b>	<b>185</b>	<b>0.03</b>	<b>5.55</b>	
	vi) Installation of Pillar Box for relocation of meters outside the premises of consumers including associated cables and accessories	Nos.					
	<b>Sub Total</b>		<b>8910</b>	<b>202</b>		<b>7.59</b>	
T	<b>Provisioning of solar panel</b>						

S. No.	Item Details	Unit	Existing/ Current Position	Qty proposed under IPDS	Unit Price	Cost proposed under IPDS	Reference
					Rs. Lac	Rs. Lac	
	Location 1- ( SDO Office Campus )/( Capacity-5KWE)	KWe	0	1	1.00	1.00	
	Location 2 ...../( Capacity)	KWe					
	Location 3 ...../( Capacity)	KWe					
	Net-Meters	Nos.					
	<b>Sub Total</b>		0	1		1.00	
<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 commnicable/non-communicable FPIs (O/C&E/F)	Nos.					
iii)	11 kV Line : Installation of RMUs/Sectionaliser 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	Nos.					
vii)	Installation of remote operable switches for breaker/switches operation for cap bank alongwith aux power supply to operate	Nos.					
	<b>Sub Total</b>		0	0		0	
<b>V</b>	<b>Others (Distribution T/Fs. -R&amp;M)</b>						
			128				
	<b>Sub Total</b>		128				
	<b>Grand Total</b>					269.44	

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

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

Justification / Details of Proposed Works ( Separate Sheet for Each TOWN to be furnished )

Rania

**A. Details of 33/11 KV Substation : New**

Sr No.	Circle	IPDS Town	Total Number of Proposed 33 kV substation	Total Capacity of Proposed 33 kV substation ( MVA)	Name of Substation	Unit Cost @Rs 40 lacs/MVA
1	Sirsa	Rania	0	0		0
			0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**B.33/11 KV S/S : Additional Transformer**

Sr No.	Circle	IPDS Town	Total Number of Additional Power Transformer	Total Capacity of Proposed Additional Power Transformer ( MVA)	Name of Substation	Unit Cost @Rs 14 lacs/MVA
1	Sirsa	Rania	0	0		0
			0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**C.33/11 KV S/S : Transformer capacity enhancement**

Sr No.	Circle	IPDS Town	Existing capacity of Power Transformer	Proposed capacity of Power Transformer ( MVA)	Name of Substation	Unit Cost @Rs 14 lacs/MVA
1	Sirsa	Rania	0	0		0
			0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**E.New 33 KV new feeders/Bifurcation of feeders:**

Sr No.	Circle	New Feeder/ Bifurcation	EHV Substation (Feeding source )	Proposed Name of the feeder ( Conductor Size 150 Sqmm)	Length of Feeder (Km)	Unit Rate @ Rs 9.95 lac/Km
1	Sirsa	0	0	0	0	0
					0	0
					0	0
<b>Sub Total</b>						<b>0</b>

**F. 33 KV feeders Reconductoring/Augmentation**

Sr No.	IPDS Town	Augmentation/ Reconductoring	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 150 Sqmm)	Existing size of conductor	Length of Feeder (Km)	Unit Rate @ 7.55 Lac/Km
1	Rania	0	0	0		0	0
						0	0
						0	0
<b>Sub Total</b>							<b>0</b>

**G. 11 kV Line : New Feeder/ Feeder Bifurcation**

Sr No.	IPDS Town	New Feeder/ Bifurcation	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 100 Sqmm)	Length of Feeder (Km)	Unit Rate @ 6.70 Lac/ Km
1	Sirsa	New Feeder required for bifurcation of 11KV City Rania & Gaushala feeder	220KV S/Stn. Rania	11KV Rania City-II	5	33.5
					0	0
					0	0
<b>Sub Total</b>					<b>5</b>	<b>33.5</b>

**H.11 kV Line : Augmentation/Reconductoring**

Sr No.	IPDS Town	Augmentation/ Reconductoring	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 100 Sqmm)	Existing size of conductor	Length of	Unit Rate @ 4.66 lac/Km
1	Rania	Aug. of ACSR of 11KV line from 20/30mm <sup>2</sup> to 100mm <sup>2</sup> of 11KV City Rania & Gaushala feeder	220KV S/Stn. Rania	11KV City Rania & 11KV Gaushala feeder	20mm <sup>2</sup> /30mm <sup>2</sup>	13	60.58
						0	0
						0	0
<b>Sub Total</b>						<b>13</b>	<b>60.58</b>

### I. Arial Bunched Cable ( LT)

Sr No.	IPDS Town	Size of Cable (3Cx120 +1x70 Sqmm)	EHV Substation (Feeding Source )	Name of the feeder	Length of Feeder (Km)	Unit Rate @ Rs 4.93 lac /Km
1	Rania	Replacement of LT bare ACSR cond. with LT AB cable of all LT lines under the town connected with 11KV City Rania & 11KV Gaushala feeder & erection of new LT AB cable for system strengthening & to replace lengthy 2/C PVC with LT line	220KV S/Stn. Rania	11KV City Rania & 11KV Gaushala feeder	28	138.04
					0	0
					0	0
<b>Sub Total</b>					<b>28</b>	<b>138.04</b>

### J.UG Cable

Sr No.	IPDS Town	Size of Cable	EHV Substation (Feeding Source )	Name of the feeder	Length of Feeder (Km)	Unit Rate @ Rs 31.64 Lacs/KM
1	Rania	3x300Sqmm	0	0	0	0
					0	0
					0	0
<b>Sub Total</b>					<b>0</b>	<b>0</b>

### K. Installation of Distribution Transformer

Sr No.	Circle	Feeding Souce ( EHV Substation)	Name of 11 kV Feeder	Proposed 100 KVA DTs ( Nos)	Unit Rate for 100 KVA DT @ 2.24 lac/ DT	Proposed 200 kVA DTs ( Nos)	Unit Rate for 200 KVA DT @3.97
1	Sirsa	220KV S/Stn. Rania	11KV City Rania feeder	5	11.2	5	19.85
2	Sirsa	220KV S/Stn. Rania	11KV Gaushala feeder	5	11.2	3	11.91
					0		0
					0		0
					0		0
<b>Sub Total</b>				<b>10</b>	<b>22.4</b>	<b>8</b>	<b>31.76</b>
<b>Total Cost</b>				<b>54.16</b>			

### List of Govt Esstablishments where Prepaid Meter are to be installed.

Sr No.	IPDS Town	Name of Govt Esstablishment	Total Nos of Prepaid meter Requirement	Unit rate @ Rs 0.12 Lac / meter
1	Rania	B.D.O. office Rania	1	0.12
2	Rania	Tehsil Office Rania	1	0.12
3	Rania	Municipal Committee, Rania	1	0.12
4	Rania	Market Committee, Rania	1	0.12
5	Rania	Fire Brigade Office Rania	1	0.12
6	Rania	B.E.O. Office Rania	1	0.12
7	Rania	Punjab National Bank, Rania	1	0.12
8	Rania	State Bank of India, Rania	1	0.12
9	Rania	State Bank of Patiala, Rania	1	0.12
10	Rania	HDFC Bank, Rania	1	0.12
11	Rania	Union Bank, Rania	1	0.12
12	Rania	Central Bank, Rania	1	0.12
13	Rania	O.B.C. Bank, Rania	1	0.12
14	Rania	Grameen Bank, Rania	1	0.12
15	Rania	Forest Office, Rania	1	0.12
16	Rania	Police Stationl, Rania	1	0.12
17	Rania	Govt. Sr. Sec. School, Rania	1	0.12
18	Rania	Grameen Court Rania	1	0.12
19	Rania	Post Office Rania	1	0.12
<b>Sub Total</b>			<b>19</b>	<b>2.28</b>

### Provision for Solar Panel

Details of 1 kVe Solar panel to be furnished by Town against Proposed New 33 kv Substation

Sr No.	Unit Cost @ Rs	Description	Quantity	Rate
1	1 Lac per KVE	For providing Solar Panel at the office of SDO OP S/Divn. Rania	1	1.00

### T. Switching Substation ( 33 kv and 11 kv)

Sr No.	IPDS Town	Name of Substation	Voltage Level ( 33 kv/ 0.4 kv or 11 kv/0.4 kv)	Unit Rate For 33 kv level	Unit Rate For 11 kv level
1	Rania		0	0	0

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

Justification / Details of Proposed Works ( Separate Sheet for Each TOWN to be furnished )

Kalanwali

**A. Details of 33/11 KV Substation : New**

Sr No.	Circle	IPDS Town	Total Number of Proposed 33 kV substation	Total Capacity of Proposed 33 kV substation ( MVA)	Name of Substation	Unit Cost @Rs 40 lacs/MVA
1	Sirsa	Kalanwali	0	0		0
			0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**B.33/11 KV S/S : Additional Transformer**

Sr No.	Circle	IPDS Town	Total Number of Additional Power Transformer	Total Capacity of Proposed Additional Power Transformer	Name of Substation	Unit Cost @Rs 14 lacs/MVA
1	Sirsa	Kalanwali	0	0		0
			0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**C.33/11 KV S/S : Transformer capacity enhancement**

Sr No.	Circle	IPDS Town	Existing capacity of Power Transformer	Proposed capacity of Power Transformer ( MVA)	Name of Substation	Unit Cost @Rs 14 lacs/MVA
1	Sirsa	Kalanwali	0	0		0
			0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**E.New 33 KV new feeders/Bifurcation of feeders:**

Sr No.	Circle	New Feeder/ Bifurcatoin	EHV Substation (Feeding source )	Proposed Name of the feeder ( Conductor Size 150 Sqmm)	Length of Feeder (Km)	Unit Rate @ Rs 9.95 lac/Km
1	Sirsa	0	0	0	0	0
					0	0
					0	0
<b>Sub Total</b>						<b>0</b>

**F. 33 KV feeders Reconductoring/Augmentation**

Sr No.	IPDS Town	Augmentation/ Reconductoring	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 150 Sqmm)	Existing size of conductor	Length of Feeder (Km)
1	Kalanwali	Aug. of ACSR 80mm2 to 150mm2	220KV S/Stn. Chormar	33KV Line from Odhan to 33KV S/Stn. Kalanwali	80mm2	12.5
						0
						0
<b>Sub Total</b>						<b>12.5</b>

**G. 11 kV Line : New Feeder/ Feeder Bifurcation**

Sr No.	IPDS Town	New Feeder/ Bifurcatoin	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 100 Sqmm)	Length of Feeder (Km)	Unit Rate @ 6.70 Lac/ Km
1	Sirsa	New Feeder required for bifurcation of 11KV Kalanwali-I & 11KV Kalanwali-II feeder	33KV S/Stn. Kalanwali	11KV Kalanwali-III	4	26.8
					0	0
					0	0
<b>Sub Total</b>						<b>4</b>

**H.11 kV Line : Augmentation/Reconductoring**

Sr No.	IPDS Town	Augmentation/ Reconductoring	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 100 Sqmm)	Existing size of conductor	Length of
1	Kalanwali	Aug. of ACSR of 11KV line from 20/30mm2 to 100mm2 of 11KV Kalanwali-I & 11KV Kalanwali-I feeder	33KV S/Stn. Kalanwali	11KV Kalanwali-I & 11KV Kalanwali-I feeder	20mm2/30mm2	5

						0
						0
<b>Sub Total</b>						<b>5</b>

#### I. Arial Bunched Cable ( LT)

Sr No.	IPDS Town	Size of Cable (3Cx120 +1x70 Sqmm)	EHV Substation (Feeding Source )	Name of the feeder	Length of Feeder (Km)	Unit Rate @ Rs 4.93 lac /Km
1	Kalanwali	Replacement of LT bare ACSR cond. with LT AB cable of all LT lines under the town connected with 11KV Kalanwali-I & 11KV Kalanwali-I feeder & erection of new LT AB cable for system strengthening & to replace lengthy 2/C PVC with LT line	33KV S/Stn. Kalanwali	11KV City Rania & 11KV Gaushala feeder	17.84	87.95
					0	0
					0	0
<b>Sub Total</b>						<b>17.84</b>
<b>Sub Total</b>						<b>87.9512</b>

#### J.UG Cable

Sr No.	IPDS Town	Size of Cable	EHV Substation (Feeding Source )	Name of the feeder	Length of Feeder (Km)	Unit Rate @ Rs 31.64 Lacs/KM
1	Kalanwali	3x300Sqmm	220KV S/Stn. Chormar	33KV Line from Odhan to 33KV S/Stn. Kalanwali	0.5	15.82
					0	0
					0	0
<b>Sub Total</b>						<b>0.5</b>
<b>Sub Total</b>						<b>15.82</b>

#### K. Installation of Distribution Transformer

Sr No.	Circle	Feeding Source ( EHV Substation)	Name of 11 kv Feeder	Proposed 100 KVA DTs ( Nos)	Unit Rate for 100 KVA DT @ 2.24 lac/ DT	Proposed 200 kVA DTs ( Nos)
1	Sirsa	220KV S/Stn. Rania	11KV Kalanwali-I feeder	9	20.16	2
2	Sirsa	220KV S/Stn. Rania	11KV Kalanwali-II feeder	7	15.68	2
					0	
					0	
					0	
<b>Sub Total</b>				<b>16</b>	<b>35.84</b>	<b>4</b>
<b>Total Cost</b>				<b>51.72</b>		

#### List of Govt Eshtablishments where Prepaid Meter are to be installed.

Sr No.	IPDS Town	Name of Govt Eshtablishment	Total Nos of Prepaid meter Requirement	Unit rate @ Rs 0.12 Lac / meter
1	Kalanwali	Tehsil Office Kalanwali	1	0.12
2	Kalanwali	Municipal Committee, Kalanwali	1	0.12
3	Kalanwali	Market Committee, Kalanwali	1	0.12
4	Kalanwali	Fire Brigade Office Kalanwali	1	0.12
5	Kalanwali	Punjab National Bank, Kalanwali	1	0.12
6	Kalanwali	State Bank of India, Kalanwali	1	0.12
7	Kalanwali	State Bank of Patiala, Kalanwali	1	0.12
8	Kalanwali	HDFC Bank, Kalanwali	1	0.12
9	Kalanwali	Axis Bank, Kalanwali	1	0.12
10	Kalanwali	Railway Station, Kalanwali	1	0.12
11	Kalanwali	Bus Stand, Kalanwali	1	0.12
12	Kalanwali	Grameen Bank, Kalanwali	1	0.12
13	Kalanwali	Police Station, Kalanwali	1	0.12
14	Kalanwali	Govt. Boys School, Kalanwali	1	0.12
15	Kalanwali	Govt. Girls School, Kalanwali	1	0.12
16	Kalanwali	Post Office Kalanwali	1	0.12
17	Kalanwali	Hospital Kalanwali	1	0.12
<b>Sub Total</b>			<b>17</b>	<b>2.04</b>

#### Provision for Solar Panel

Details of 1 kVe Solar panel to be furnished by Town against Proposed New 33 kv Substation

Sr No.	Unit Cost @ Rs 1 Lac per KVE	For providing Solar Panel at the office of SDO OP S/Divn. Kalanwali		
1			1	1.00

#### T. Switching Substation ( 33 kv and 11 kv)

Sr No.	IPDS Town	Name of Substation	Voltage Level ( 33 kv/ 0.4 kv or 11 kv/0.4 kv)	Unit Rate For 33 kv level	Unit Rate For 11 kv level
			0	0	0


Unit Rate @ 7.55 Lac/Km
94.375
0
0
<b>94.375</b>

Unit Rate @ 4.66 lac/Km
23.3

	0
	0
	<b>23.3</b>

Unit Rate for 200 KVA DT @3.97	
	7.94
	7.94
	0
	0
	0
	<b>15.88</b>



**POWER FINANCE CORPORATION LTD.**  
**Detail Project Report**  
**Justification / Details of Proposed Works ( Circle Level Consolidated )**

**A. Details of 33/11 KV Substation : New**

Sr No.	Circle	IPDS Town	Total Number of Proposed 33 kV substation	Total Capacity of Proposed 33 kV substation ( MVA)	Name of Substation	Unit Cost @Rs 40 lacs/MVA
1	Sirsa	Rania	0	0		0
2	Sirsa	Kalanwali	0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**B.33/11 KV S/S : Additional Transformer**

Sr No.	Circle	IPDS Town	Total Number of Additional Power Transformer	Total Capacity of Proposed Additional Power Transformer (	Name of Substation	Unit Cost @Rs 14 lacs/MVA
1	Sirsa	Rania	0	0		0
2	Sirsa	Kalanwali	0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**C.33/11 KV S/S : Transformer capacity enhancement**

Sr No.	Circle	IPDS Town	Existing capacity of Power Transformer	Proposed capacity of Power Transformer ( MVA)	Name of Substation	Unit Cost @Rs 14 lacs/MVA
1	Sirsa	Rania	0	0		0
2	Sirsa	Kalanwali	0	0		0
			0	0		0
			0	0		0
<b>Sub Total</b>			<b>0</b>	<b>0</b>		<b>0</b>

**E.New 33 KV new feeders/Bifurcation of feeders:**

Sr No.	Circle	New Feeder/ Bifurcation	EHV Substation (Feeding source )	Proposed Name of the feeder ( Conductor Size 150 Sqmm)	Length of Feeder (Km)	Unit Rate @ Rs 9.95 lac/Km
1	Sirsa	0	0	0	0	0
2	Sirsa	0	0	0	0	0
					0	0
<b>Sub Total</b>					<b>0</b>	<b>0</b>

**F. 33 KV feeders Reconductoring/Augmentation**

Sr No.	IPDS Town	Augmentation/ Reconductoring	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 150 Sqmm)	Existing size of conductor	Length of Feeder (Km)	Unit Rate @ 7.55 Lac/Km
1	Rania	0	0	0		0	0
2	Kalanwali	Aug. of ACSR 80mm2 to 150mm2	220KV S/Stn. Chormar	33KV Line from Odhan to 33KV S/Stn. Kalanwali	80mm2	12.5	94.375
						0	0
<b>Sub Total</b>						<b>12.5</b>	<b>94.375</b>

**G. 11 kV Line : New Feeder/ Feeder Bifurcation**

Sr No.	IPDS Town	New Feeder/ Bifurcation	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 100 Sqmm)	Length of Feeder (Km)	Unit Rate @ 6.70 Lac/ Km
1	Sirsa	New Feeder required for bifurcation of 11KV City Rania & Gaushala feeder	220KV S/Stn. Rania	11KV Rania City-II	5	33.5
2	Sirsa	New Feeder required for bifurcation of 11KV Kalanwali-I & 11KV Kalanwali-II feeder	33KV S/Stn. Kalanwali	11KV Kalanwali-III	4	26.8
					0	0
<b>Sub Total</b>					<b>9</b>	<b>60.3</b>

**H.11 kV Line : Augmentation/Reconductoring**

Sr No.	IPDS Town	Augmentation/ Reconductoring	EHV Substation (Feeding Source )	Name of the feeder ( Conductor Size 100 Sqmm)	Existing size of conductor	Length of Feeder (Km)	Unit Rate @ 4.66 lac/Km
1	Rania	Aug. of ACSR of 11KV line from 20/30mm <sup>2</sup> to 100mm <sup>2</sup> of 11KV City Rania & Gaushala feeder	220KV S/Stn. Rania	11KV City Rania & 11KV Gaushala feeder	20mm <sup>2</sup> /30mm <sup>2</sup>	13	60.58
2	Kalanwali	Aug. of ACSR of 11KV line from 20/30mm <sup>2</sup> to 100mm <sup>2</sup> of 11KV Kalanwali-I & 11KV Kalanwali-I feeder	33KV S/Stn. Kalanwali	11KV Kalanwali-I & 11KV Kalanwali-I feeder	20mm <sup>2</sup> /30mm <sup>2</sup>	5	23.3
						0	0
<b>Sub Total</b>						<b>18</b>	<b>83.88</b>

#### I. Aerial Bunched Cable (LT)

Sr No.	IPDS Town	Size of Cable ( 3x120sqmm+1x70 sqmm)	EHV Substation (Feeding Source )	Name of the feeder	Length of Feeder (Km)	Unit Rate @ Rs 4.93 lac /Km
1	Rania	Replacement of LT bare ACSR cond. with LT AB cable of all LT lines under the town connected with 11KV City Rania & 11KV Gaushala feeder & erection of new LT AB cable for system strengthening & to replace lengthy 2/C PVC with LT line	220KV S/Stn. Rania	11KV City Rania & 11KV Gaushala feeder	28	138.04
2	Kalanwali	Replacement of LT bare ACSR cond. with LT AB cable of all LT lines under the town connected with 11KV Kalanwali-I & 11KV Kalanwali-I feeder & erection of new LT AB cable for system strengthening & to replace lengthy 2/C PVC with LT line	33KV S/Stn. Kalanwali	11KV City Rania & 11KV Gaushala feeder	17.84	87.95
					0	0
<b>Sub Total</b>					<b>45.84</b>	<b>225.9912</b>

#### J.UG Cable

Sr No.	IPDS Town	Size of Cable	EHV Substation (Feeding Source )	Name of the feeder	Length of Feeder (Km)	Unit Rate @ Rs 31.64 Lacs/KM
1	Rania	3x300Sqmm	0	0	0	0
2	Kalanwali	3x300Sqmm	220KV S/Stn. Chormar	33KV Line from Odhan to 33KV S/Stn. Kalanwali	0.5	15.82
					0	0
<b>Sub Total</b>					<b>0.5</b>	<b>15.82</b>

#### K. Installation of Distribution Transformer

Sr No.	Circle	Feeding Souce ( EHV Substation)	Name of 11 kv Feeder	Proposed 100 KVA DTs ( Nos)	Unit Rate for 100 KVA DT @ 2.24 lac/	Proposed 200 kVA DTs ( Nos)	Unit Rate for 200 KVA DT
1	Sirsa	220KV S/Stn. Rania	11KV City Rania feeders	10	22.4	8	31.76
2	Sirsa	220KV S/Stn. Rania	11KV Kalanwali-I feeders	16	35.84	4	15.88
					0	0	0
<b>Sub Total</b>				<b>26</b>	<b>58.24</b>	<b>12</b>	<b>47.64</b>
<b>Total Cost</b>				<b>105.88</b>			

#### List of Govt Esstablishments where Prepaid Meter are to be installed.

Sr No.	IPDS Town	Name of Govt Esstablishment	Total Nos of Prepaid meter Requirement	Unit rate @ Rs 0.12 Lac / meter
1	Rania	Different offices	19	2.28
2	Kalanwali	Different offices	17	2.04
<b>Sub Total</b>			<b>36</b>	<b>4.32</b>



**Provision for Solar Panel**

Details of 1 kVe Solar panel to be furnished by Town against Proposed New 33 kV Substation

1	Unit Cost @ Rs 1 Lac per KVE		1	1.00
2	Unit Cost @ Rs 1 Lac per KVE	For providing Solar Panel at the office of SDO OP S/Divn. Kalanwali	1	1.00
Sub Total			2	2.00

**T. Switching Substation ( 33 kV and 11 kV)**

Sr No.	IPDS Town	Name of Substation	Voltage Level ( 33 kV/ 0.4 kv or 11 kV/0.4 kv)	Unit Rate For 33 kV level	Unit Rate For 11 kV level
1	Rania		0	0	0
2	Kalanwali		0	0	0