

Annexure A-3

Capital Expenditure Plan for FY2005-06

ANNEXURE A-3

LIST OF CAPITAL WORKS - FY 06

| No. | Description of Capital Work | | (Rs.) Quantity/ rate/ Amount |
|------------|--|-----|------------------------------------|
| I | NEW SERVICES / AUGMENTATION OF LOAD (Cost Analysis on page A-3.5 to 3.9) | | |
| A | 33 kV Industrial | | |
| | Nos. | | 4 |
| | Load (kVA) | | 4000 |
| | Capex | Rs. | 4,525,886 |
| B | 11 kV Industrial | | |
| | Nos. | | 12 |
| | Load (kVA) | | 3000 |
| | Capex | Rs. | 3,642,816 |
| C | Urban Service (L & F) | | |
| | Nos. | | 3500 |
| | Load (kW) | | 7000 |
| | Capex | Rs. | 23,131,517 |
| D | Non Domestic Light, Fan and Power | | |
| | Nos. | | 200 |
| | Load (K. W.) | | 1000 |
| | Capex | Rs. | 2,369,920 |
| E | Public Lamps | | |
| | Nos. | | 15 |
| | Load (kW) | | 225 |
| | Capex | Rs. | 1,938,825 |
| F | Light, Fan and Power for Public Institutions | | |
| | Nos. | | 20 |
| | Load (kW) | | 500 |
| | Capex | Rs. | 2,668,903 |
| G | PTW Service | | |
| | Nos. | | 35 |
| | Load (hp) | | 175 |
| | Capex | Rs. | 1,931,080 |
| H.1 | MV Industrial (less than 25 H.P.) | | |
| | Nos. | | 25 |
| | Load (hp) | | 250 |
| | Capex | Rs. | 527,575 |
| H.2 | MV Industrial (greater than 25 H.P.) | | |
| | Nos. | | 55 |
| | Load (hp) | | 2200 |
| | Capex | Rs. | 7,644,728 |

| No. | Description of Capital Work | | Quantity/ rate/ Amount |
|-----------------------------|---|-----|---------------------------|
| I Public Water Works | Nos. | | 2 |
| | Load (kW) | | 50 |
| | Capex | Rs. | 263,994 |
| J Temporary Supply | Nos. | | 250 |
| | Load (kW) | | 1750 |
| | Capex | Rs. | 2,909,250 |
| | Sub Total | Rs. | 51,554,494 |
| 2 | REPLACEMENT STOCK (Cost Analysis on page A-3.10. Outline of works and Justification on A-3.24 to 3.25.) | | |
| | A Static meters | | |
| | i. 3 Phase 3 Wire HT (3 Nos.) | Rs. | 71,436 |
| | ii. 3 Phase 4 Wire (Trivector) (5 Nos.) | Rs. | 84,740 |
| | iii. 3 Phase 4 Wire LT (12 Nos.) | Rs. | 43,836 |
| | iv. 1 Phase 2 Wire (50 nos) | Rs. | 53,685 |
| | B Instrument Transformers | | |
| | i. LT Current Transformer (20 sets) | Rs. | 19,880 |
| | ii. 11 kV Current transformer (2 sets) | Rs. | 23,740 |
| | iii. 33 kV indoor current transformer (1 set) | Rs. | 75,710 |
| | iv. 33 kV outdoor current transformer (1 set) | Rs. | 48,488 |
| | v. 11 kV VT (2 sets) | Rs. | 37,004 |
| | vi. 33 kV indoor VT (2 set) | Rs. | 118,668 |
| | vii. 33 kV outdoor VT (1 set) | Rs. | 74,646 |
| | C 11/0.433 kV Distribution Transformers | | |
| | i. 25 kVA (10 Nos.) | Rs. | 259,480 |
| | ii. 63 kVA (10 Nos.) | Rs. | 601,070 |
| | iii. 100 kVA (5 Nos.) | Rs. | 324,665 |
| | D Poles | | |
| | i. HT Pole | | |
| | a) STP Pole (12 Nos.) | Rs. | 186,600 |
| | b) PCC Pole (15 Nos.) | Rs. | 117,750 |
| | ii. LT Pole (25 Nos.) | | |
| | a) STP Pole (7 Nos.) | Rs. | 116,200 |
| | b) PCC Pole (25 Nos.) | Rs. | 222,500 |
| | Sub Total | Rs. | 2,480,098 |
| 3 | NEW 33/11 kV SUB STATIONS (Cost Analysis on page A-3.11 to 3.13. Outline of works and Justification on A-3.26 to 3.27.) | | |
| | A Installation of second transformer at Girdharpur 33/11 kV Substation | Rs. | 8,173,627 |
| | B Balance work of 33/11 kV Sub Station at EPIP | Rs. | 2,681,612 |
| | C Construction of 33/11 kV Substation at Sector Delta-2 | Rs. | 11,663,486 |
| | Sub Total | Rs. | 22,518,724 |

| No. | Description of Capital Work | | Quantity/ rate/ Amount |
|----------|---|-----|---------------------------|
| 4 | <i>NETWORK IMPROVEMENT</i> (Cost Analysis on page A-3.14 to 3.16. Outline of works and Justification on A-3.28 to 3.30.) | | |
| A | Feeder Pillar Boxes (100nos.) | Rs. | 4,349,200 |
| B | Installation of 11 kV TPMO (75 Nos.) | Rs. | 495,000 |
| C | Protection of 11/0.433 kV Distribution Transformer | | |
| | i) 25 kVA (125 Nos.) | Rs. | 99,304 |
| | ii) 63 kVA (90 Nos.) | Rs. | 144,442 |
| | iii) 100 kVA (85 Nos.) | Rs. | 203,427 |
| D | Locking Arrangement for Feeder Pillar Boxes at Residential Sectors (600 Nos.) | | 166,668 |
| | | Rs. | |
| E | Strengthening of Steel Tubular Poles (300 Nos.) | Rs. | 360,000 |
| F | Energy Accounting Measure | | |
| | i Metering at LT side of Distribution Transformer (20 Nos.) | Rs. | 277,460 |
| G | Renovation of Distribution Network in Urban Sectors | Rs. | 10,442,000 |
| H | Construction of 33 kV double circuit overhead mains from Delta-2 sector to Kasna 33/11 kV Switching station | | |
| | | Rs. | 18,573,170 |
| | Sub Total | Rs. | 35,110,672 |
| 5 | <i>ENERGY CONSERVATION AND VILLAGE METERING</i> (Cost Analysis on page A-3.17 to 3.18. Outline of works and Justification on A-3.31.) | | |
| A | New 11 kV Lines for Domestic Consumers | Rs. | 5,037,860 |
| B | New 11 kV Lines for Agricultural Consumers | Rs. | 2,015,144 |
| C | LT Lines with Insulated Wires | Rs. | 12,737,552 |
| D | New Domestic Metering | Rs. | 7,425,000 |
| E | 10 kVA Transformers | Rs. | 1,359,897 |
| F | Soft Cost @ 5% | Rs. | 1,428,773 |
| G | Contingencies @ 5% | Rs. | 1,500,211 |
| | Sub Total | Rs. | 31,504,437 |
| 6 | <i>PROCESS / SYSTEM AUTOMATION</i> (Cost Analysis on page A-3.19 to 3.21. Outline of works and Justification on A-3.32 to 3.39.) | | |
| A | Implementation of Supervisory Control and Data Acquisition System (SCADA) | | |
| | i At 33/11 kV EPIP Substation | Rs. | 1,632,500 |
| | ii At 33/11 kV Delta-2 Substation | Rs. | 735,000 |
| | iii At 33/11 kV Girdharpur substation for the new transformer | | 520,000 |
| | | Rs. | |

| No. | Description of Capital Work | | Quantity/ rate/ Amount |
|----------|---|-----|---------------------------|
| B | IT Projects | | |
| i | Implementation of SAP Solutions (Contd. From FY05) | Rs. | 3,200,000 |
| ii | Purchase of additional Smallworld (GIS) License | Rs. | 825,000 |
| iii | Upgrading of Hardware Infrastructure Capacity | Rs. | 1,700,000 |
| iv | Purchase of Desktops, Printers and Laptop | Rs. | 1,500,000 |
| v | Purchase of Software Licences | Rs. | 600,000 |
| vi | Gigabit Networking for Servers | Rs. | 600,000 |
| vii | Implementation of Enterprise Security Solution | Rs. | 1,000,000 |
| viii | Implementation of Bill Vending Kiosks | Rs. | 575,000 |
| ix | Implementation of Bar Coded Collections | Rs. | 500,000 |
| x | Upgrading of Website | Rs. | 200,000 |
| xi | Purchase of Presentation Equipment | Rs. | 200,000 |
| C | New Computers for Operations | Rs. | 500,000 |
| D | AMR (Automated Meter Reading) | Rs. | 2,808,810 |
| E | Software for Customer Interface Centre | Rs. | 1,000,000 |
| | Sub Total | Rs. | 18,096,310 |
| 7 | COMMUNICATION & TESTING EQUIPMENT (Cost Analysis on page A-3.22. Outline of works and Justification on A-3.40.) | | |
| A | Communication Sets | Rs. | 30,000 |
| B | Testing Equipment | | |
| i | Secondary Injection set | Rs. | 120,000 |
| ii | Digital Earth Resistance Tester | Rs. | 25,000 |
| iii | Motorised Meggar | Rs. | 24,000 |
| | Sub Total | Rs. | 199,000 |
| 8 | CIVIL WORKS (Cost Analysis on page A-3.23. Outline of works and Justification on A-3.41.) | | |
| A | New Office Facilities at Delta 33/11 kV Substation | Rs. | 2,500,000 |
| B | Other Civil Work | Rs. | 500,000 |
| C | Purchase of Vehicles | Rs. | 1,200,000 |
| | Sub Total | Rs. | 4,200,000 |
| | | | |
| | Total | Rs. | 165,663,734 |
| | Add: Capitalization of Salary | Rs. | 3,000,000 |
| | GRAND TOTAL | Rs. | 168,663,734 |

COST ANALYSIS - CAPITAL EXPENDITURE

I NEW SERVICES / AUGMENTATION OF LOAD

1A Typical Cost for Installation of 33 kV Industrial Service

Assumptions:

(a) 400m of O/H mains extension & 400m U/G Road crossing

(b) Outdoor type metering

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|----------------|
| 1 | 13 Mtr. Long Steel Tubular Poles | 10 | 10500.00 | 2400.00 | 129,000 |
| 2 | Danger Plate | 10 | 50.00 | 0.00 | 500 |
| 3 | Earthing System | 12 | 450.00 | 200.00 | 7,800 |
| 4 | Pin Insulators | 21 | 700.00 | 75.00 | 16,275 |
| 5 | Stay Sets | 24 | 900.00 | 250.00 | 27,600 |
| 6 | Earth Clamp | 5 | 77.00 | 20.00 | 485 |
| 7 | ACSR Dog Conductor (m) | 1200 | 48.00 | 7.00 | 66,000 |
| 8 | 4 SWG G.I. Wire | 400 | 8.00 | 2.00 | 4,000 |
| 9 | 4.5 m long M.S. Channel of size 125*65*65*6 complete with clamps, nuts & bolts with Painting | 18 | 2100.00 | 450.00 | 45,900 |
| 10 | 2.6 m long M.S. Channel of size 125*65* 65*6 complete with clamps, nuts & bolts with Painting | 4 | 1500.00 | 300.00 | 7,200 |
| 11 | 1.61 m long M.S. Channel of size 125*65* 65*6 with 2 nos of 1.0 mtr long supporting angle of size 65*65*6 mm | 3 | 1500.00 | 500.00 | 6,000 |
| 12 | 0.3 m long M.S. Channel of size 125*65* 65*6 with 2 nos of 1.0 mtr long supporting angle of size 65*65*6 mm | 3 | 258.75 | 50.00 | 926 |
| 13 | 11 KV grade 70 KN Disc Insulators with Hardware | 18 | 840.00 | 150.00 | 17,820 |
| 14 | Anticlimbing Devices | 7 | 92.00 | 20.00 | 784 |
| 15 | Epoxy Paint for anti corrosion | 7 | 92.00 | 20.00 | 784 |
| 16 | 3c*150 sqmm 33KV grade XLPE Cable (m) | 400 | 1004.00 | 64.00 | 427,200 |
| 17 | 6"G.I Pipe complete with st,sockets | 80 | 594.00 | 50.00 | 51,520 |
| 18 | 2 " G.I. Pipe complete with bend, T-sockets & st. sockets | 50 | 165.60 | 75.00 | 12,030 |
| 19 | Rotary Isolator | 1 | 22690.65 | 3500.00 | 26,191 |
| 20 | Metering Cubicle | 1 | 30580.00 | 4000.00 | 34,580 |
| 21 | H.T. Trivector Meter | 1 | 22000.00 | 500.00 | 22,500 |
| 22 | O/D C.T.(2 nos.) | 1 | 37409.00 | 1600.00 | 39,009 |
| 23 | Lightning Arrestor | 3 | 9775.00 | 750.00 | 31,575 |
| 24 | G.I. Strip for Earthing | 30 | 97.75 | 25.00 | 3,683 |
| 25 | O/D P.T (3 nos.) | 1 | 52770.00 | 2400.00 | 55,170 |
| 26 | Cross Bracing Angle of size 50*50*6mm (Length 2*3.5=7.0 mts) | 6 | 1380.00 | 200.00 | 9,480 |
| 27 | Outdoor Termination | 2 | 18008.00 | 2000.00 | 40,016 |
| 28 | Control Cable (m) | 150 | 115.00 | 20.00 | 20,250 |
| 29 | Road Restoration | LS | 0.00 | 0.00 | 25000 |
| 30 | E - Clamp | 6 | 135.70 | 30.00 | 994 |
| 31 | Fees for clearance from DOES | | | | 1200 |
| | | | | Total Cost | 1131472 |

1B Typical Cost for Installation of 11 kV Service

Assumptions:

- (a) One span of O/H mains extension & 200m service cable
 (b) Indoor type metering

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---|------|---------------|-------------------|---------------|
| 1 | 3c x150 sqmm 11 KV grade XLPE Cable (m) | 200 | 695.00 | 34.00 | 145,800 |
| 2 | I/D XLPE Termination | 2 | 5621.00 | 1500.00 | 14,242 |
| 3 | O/D XLPE Termination | 1 | 8075.00 | 1500.00 | 9,575 |
| 4 | 12 mtr STP | 2 | 8500.00 | 1800.00 | 20,600 |
| 5 | ACSR Rabbit Conductor (m) | 180 | 21.00 | 7.00 | 5,040 |
| 6 | 11kV Pin Insulator | 6 | 135.00 | 12.00 | 882 |
| 7 | 11 KV grade 70 KN Disc Insulators with Hardware | 6 | 840.00 | 150.00 | 5,940 |
| 8 | TPMO | 1 | 4800.00 | 1800.00 | 6,600 |
| 9 | 2.135 mtr channel (nos.) | 5 | 761.00 | 270.00 | 5,155 |
| 10 | 11kV Lightning arrestor | 3 | 5750.00 | 500.00 | 18,750 |
| 11 | GI Wire (m) | 30 | 8.00 | 2.00 | 300 |
| 12 | Earthing System | 4 | 450.00 | 200.00 | 2,600 |
| 13 | Earth Clamp | 2 | 77.00 | 20.00 | 194 |
| 14 | 6 inch dia. G. I. Pipe | 8 | 594.00 | 50.00 | 5,152 |
| 15 | Metering Cubicle | 1 | 9868.00 | 2000.00 | 11,868 |
| 16 | Meter | 1 | 18000.00 | 500.00 | 18,500 |
| 17 | Current Transformer (2 nos.) | 1 | 11000.00 | 1600.00 | 12,600 |
| 18 | Voltage Transformer | 1 | 18970.00 | 800.00 | 19,770 |
| | | | | Total Cost | 303568 |

1C i. Typical Cost of Installation of Underground L&F Services:

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---------------------------------------|------|---------------|-------------------|-------------|
| 1 | 4C x 16 sq mm armoured Cable (m) | 35 | 99.00 | 12.00 | 3,885 |
| 2 | G.I.Pipe (3 inch) | 3 | 279.00 | 50.00 | 987 |
| 3 | PVC Pipe (2 inch) | 4 | 22.00 | 2.00 | 96 |
| 4 | Insulated tamper proof LT Meter Board | 1 | 835.00 | 100.00 | 935 |
| 5 | Static Meter | 1 | 895.00 | 60.00 | 955 |
| 6 | PVC Flexible Wire (m) | 6 | 36.27 | 2.37 | 232 |
| | | | | Total Cost | 7090 |

1C ii. Typical Cost of Installation of Service in Housing Society

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--------------|------|---------------|-------------------|-------------|
| 1 | Static Meter | 1 | 2222.00 | 60.00 | 2,282 |
| | | | | Total Cost | 2282 |

| | |
|--|---------------------|
| | Nos. |
| Total No. of Services | 3500 |
| No. of Services in Housing Society | 350 |
| Other Underground L&F services | 3150 |
| Total Cost (= 100X2007+1900X8142) | Rs. 23131517 |

1D Typical Cost for Installation of Non Domestic Light, Fan and Power Service

Assumptions:

- (a) For load of upto 25 kW
(b) Direct service from LT mains

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|-------------------------------------|------|---------------|-------------------|--------------|
| 1 | 3 1/2 core 70 sqmm LT PVC Cable (m) | 25 | 189.00 | 16.00 | 5,125 |
| 2 | MS Meter Box | 1 | 2203.00 | 350.00 | 2,553 |
| 3 | 63A Porcelain Kit Kat | 4 | 121.90 | 10.00 | 528 |
| 4 | 3 phase 4wire Static Meter | 1 | 1947.00 | 60.00 | 2,007 |
| 5 | 3" G I Pipe | 3 | 279.00 | 50.00 | 987 |
| 6 | Earthing of MS Board | 1 | 450.00 | 200.00 | 650 |
| | | | | Total Cost | 11850 |

Note : Cable in consumer premises = 10 mtr.

1E Typical Cost for Installation of Public Lamps Service

Assumptions:

- (a) For load above 25HP
(b) Direct service from HT mains

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---------------------------------------|------|---------------|-------------------|---------------|
| 1 | 3 1/2 core 70 sqmm LT PVC Cable (m) | 25 | 189.00 | 16.00 | 5,125 |
| 2 | 3 phase 4wire Static Meter (Bivector) | 1 | 8944.00 | 500.00 | 9,444 |
| 3 | LT CT | 1 | 994.00 | 150.00 | 1,144 |
| 4 | MS Meter Box | 1 | 2203.00 | 350.00 | 2,553 |
| 5 | 63A TPN MCB | 1 | 1150.00 | 50.00 | 1,200 |
| 6 | 3 phase 4wire Static Meter | 1 | 1947.00 | 60.00 | 2,007 |
| 7 | Double Pole Structure | 1 | 22352.55 | 5928.00 | 28,281 |
| 8 | Transformer(63 kVA) | 1 | 66593.05 | 1100.00 | 67,693 |
| 9 | 4" G I Pipe | 3 | 497.95 | 100.00 | 1,794 |
| 10 | TPMO with DO Fuse | 1 | 4964.55 | 1800.00 | 6,765 |
| 11 | Earthing | 5 | 450.00 | 200.00 | 3,250 |
| | | | | Total Cost | 129255 |

1F Typical Cost for Installation of Public Institutions Service

Assumptions:

- (a) Direct service from HT mains

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|---------------|
| 1 | 3 1/2 core 70 sqmm LT PVC Cable (m) | 25 | 189.00 | 16.00 | 5,125 |
| 2 | MS Meter Box | 1 | 2203.00 | 350.00 | 2,553 |
| 3 | 3 phase 4wire Static Meter (trivector) | 1 | 16948.00 | 500.00 | 17,448 |
| 4 | LT CT (set) | 1 | 994.00 | 150.00 | 1,144 |
| 5 | Double Pole Structure | 1 | 22352.55 | 5928.00 | 28,281 |
| 6 | Transformer(63 kVA) | 1 | 66593.05 | 1100.00 | 67,693 |
| 7 | 3" G I Pipe | 3 | 279.00 | 50.00 | 987 |
| 8 | TPMO with DO Fuse | 1 | 4964.55 | 2000.00 | 6,965 |
| 9 | Earthing | 5 | 450.00 | 200.00 | 3,250 |
| | | | | Total Cost | 133445 |

1G Typical Cost for Installation of PTW Service(400V):

Assumptions:

(a) For load of 5HP

(b) 100 m of HT mains extension

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|------------------------------------|------|---------------|-------------------|--------------|
| 1 | S.P PCC Pole with h/w & insulators | 1 | 2742.75 | 1156.00 | 3,899 |
| 2 | DP PCC Pole with h/w & insulators | 1 | 11749.55 | 3728.00 | 15,478 |
| 3 | ACSR Rabbit Conductor (m) | 155 | 21.00 | 7.00 | 4,326 |
| 4 | G I Wire (m) | 52 | 8.00 | 2.00 | 515 |
| 5 | 4core 16 sqmm PVC Cable (m) | 10 | 71.00 | 8.00 | 790 |
| 6 | MS Service Bracket | 1 | 1478.00 | 700.00 | 2,178 |
| 7 | Meter Board | 1 | 1293.00 | 100.00 | 1,393 |
| 8 | 10 kVA Transformer (11kV/ 0.4kV) | 1 | 20810.40 | 950.00 | 21,760 |
| 9 | MS Meter Box | 1 | 2203.00 | 350.00 | 2,553 |
| 10 | 3 phase 4wire Static Meter | 1 | 2222.00 | 60.00 | 2,282 |
| | | | | Total Cost | 55174 |

1H1 Typical Cost for Installation of MV Industrial Service

(Less than 25 H.P)

Assumptions:

(a) Direct service from LT mains

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|-------------------------------------|------|---------------|-------------------|--------------|
| 1 | 3 1/2 core 70 sqmm LT PVC Cable (m) | 25 | 189.00 | 16.00 | 5,125 |
| 2 | MS Meter Box | 1 | 2203.00 | 350.00 | 2,553 |
| 3 | 63A TPN MCB | 1 | 1150.00 | 50.00 | 1,200 |
| 4 | 3 phase 4wire Bivector Meter | 1 | 8944.00 | 500.00 | 9,444 |
| 5 | LT CT (set) | 1 | 994.00 | 150.00 | 1,144 |
| 6 | 3" G I Pipe | 3 | 279.00 | 50.00 | 987 |
| 7 | Earthing of MS Board | 1 | 450.00 | 200.00 | 650 |
| | | | | Total Cost | 21103 |

Note : Cable in consumer premises = 10 mtr.

1H2 Typical Cost for Installation of MV Industrial Service

(Greater than 25 H.P)

Assumptions:

(a) Direct service from HT mains

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|---------------|
| 1 | 3 1/2 core 70 sqmm LT PVC Cable (m) | 25 | 189.00 | 16.00 | 5,125 |
| 2 | 3 phase 4wire Static Meter (Trivector) | 1 | 16948.00 | 500.00 | 17,448 |
| 3 | MS Meter Box | 1 | 2203.00 | 350.00 | 2,553 |
| 4 | LT CT (set) | 1 | 994.00 | 150.00 | 1,144 |
| 5 | Double Pole Structure | 1 | 22352.55 | 5928.00 | 28,281 |
| 6 | Cost of Transformer (100 kVA) | 1 | 72142.95 | 1100.00 | 73,243 |
| 7 | 3" G I Pipe | 3 | 279.00 | 50.00 | 987 |
| 8 | TPMO with DO Fuse | 1 | 4964.55 | 2000.00 | 6,965 |
| 9 | Earthing | 5 | 450.00 | 200.00 | 3,250 |
| | | | | Total Cost | 138995 |

II Typical Cost for Installation of Public Water Works Service

Assumptions:

(a) Direct service from HT mains

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|-------------------------------------|------|---------------|-------------------|---------------|
| 1 | 3 1/2 core 70 sqmm LT PVC Cable (m) | 25 | 189.00 | 16.00 | 5,125 |
| 2 | 3 phase 4wire Static Meter | 1 | 15500.00 | 500.00 | 16,000 |
| 3 | LT CT (set) | 1 | 994.00 | 150.00 | 1,144 |
| 4 | MS Meter Box | 1 | 2203.00 | 350.00 | 2,553 |
| 5 | Double Pole Structure | 1 | 22352.55 | 5928.00 | 28,281 |
| 6 | Transformer(63 kVA) | 1 | 66593.05 | 1100.00 | 67,693 |
| 7 | 3" G I Pipe | 3 | 279.00 | 50.00 | 987 |
| 8 | TPMO with DO Fuse | 1 | 4964.55 | 2000.00 | 6,965 |
| 9 | Earthing | 5 | 450.00 | 200.00 | 3,250 |
| | | | | Total Cost | 131997 |

Note : Cable in consumer premises = 10 mtr.

IJ Typical Cost for Installation of Temporary Supply Service

Assumptions:

(a) For load of upto 25 kW

(b) Direct service from LT mains

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|-------------------------------------|------|---------------|-------------------|--------------|
| 1 | 3 1/2 core 70 sqmm LT PVC Cable (m) | 25 | 189.00 | 16.00 | 5,125 |
| 2 | MS Meter Box | 1 | 1293.00 | 100.00 | 1,393 |
| 3 | 63A TPN MCB | 1 | 1150.00 | 50.00 | 1,200 |
| 4 | 3 phase 4wire Electronic Meter | 1 | 2222.00 | 60.00 | 2,282 |
| 5 | 3" G I Pipe | 3 | 279.00 | 50.00 | 987 |
| 6 | Earthing of MS Board | 1 | 450.00 | 200.00 | 650 |
| | | | | Total Cost | 11637 |

2 REPLACEMENT STOCK

2C Typical Cost for Replacement Stock of 11/0.433 kV Distribution Transformers

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|-----------------------------------|------|---------------|-------------------|---------------|
| 1 | 25 kVA Transformer (11kV/ 0.4kV) | 1 | 23748.00 | 2200.00 | 25,948 |
| 2 | 63 kVA Transformer (11kV/ 0.4kV) | 1 | 57907.00 | 2200.00 | 60,107 |
| 3 | 100 kVA Transformer (11kV/ 0.4kV) | 1 | 62733.00 | 2200.00 | 64,933 |
| | | | | Total Cost | 150988 |

2D Typical Cost for Replacement Stock of Poles

i. For 11 kV Mains

a) STP Pole

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|--------------|
| 1 | 12 mtr. long STP Pole with insulator | 1 | 8500.00 | 2400.00 | 10,900 |
| 2 | Restranging of ACSR Rabbit Conductor (m) | 450 | | 7.00 | 3,150 |
| 3 | G I Wire (m) | 150 | 8.00 | 2.00 | 1,500 |
| | | | | Total Cost | 15550 |

b) PCC Pole

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---------------------------|------|---------------|-------------------|-------------|
| 1 | PCC Pole with insulator | 1 | 2000.00 | 1200.00 | 3,200 |
| 2 | ACSR Rabbit Conductor (m) | 450 | | 7.00 | 3,150 |
| 3 | G I Wire (m) | 150 | 8.00 | 2.00 | 1,500 |
| | | | | Total Cost | 7850 |

ii. For LT Mains

a) STP Pole

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|--------------|
| 1 | 12 mtr. long STP Pole with h/w & insulator | 1 | 8500.00 | 2400.00 | 10,900 |
| 2 | ACSR Rabbit Conductor (m) | 600 | | 7.00 | 4,200 |
| 3 | G I Wire (m) | 150 | 8.00 | 2.00 | 1,500 |
| | | | | Total Cost | 16600 |

b) PCC Pole

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--------------------------------|------|---------------|-------------------|-------------|
| 1 | PCC Pole with h/w & insulators | 1 | 2000.00 | 1200.00 | 3,200 |
| 2 | ACSR Rabbit Conductor (m) | 600 | | 7.00 | 4,200 |
| 3 | G I Wire (m) | 150 | 8.00 | 2.00 | 1,500 |
| | | | | Total Cost | 8900 |

3 NEW 33/11 kV SUB STATIONS

3A Installation of second transformer at Girdharpur 33/11 kV Substation

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|---------------------|
| 1 | 12 Mtr. Long Steel Tubular Poles | 4 | 8,500.00 | 3061.00 | 46,244 |
| 2 | Danger Plate | 10 | 50.00 | | 500 |
| 3 | 36kV ,1250 Amps,25 kA Outdoor Breaker with supporting structures | 1 | 465,745.28 | 5000.00 | 470,745 |
| 4 | 36kV Outdoor Double-Core C.Ts | 3 | 31,050.31 | 800.00 | 95,551 |
| 5 | 33 kV Outdoor Double-Core P.Ts. | 3 | 33,198.86 | 800.00 | 101,997 |
| 6 | 33kV Horizontal-Mounting, 400 Amp Double-Break Motor-Operated Isolator with Earth Switch | 3 | 197,080.90 | 5500.00 | 607,743 |
| 7 | 11 kV Switch (1I/C+1B/C+1O/G) | 1 | 1796446.08 | 15000.00 | 1,811,446 |
| 8 | Lightning Arrestor (ZnO Type) | 3 | 25,236.01 | 1000.00 | 78,708 |
| 9 | Junction Box for C.Ts & P.Ts | 2 | 4,485.00 | 1000.00 | 10,970 |
| 10 | ACSR Panther Conductor | 120 | 281.59 | 25.00 | 36,791 |
| 11 | GI Wire (6 SWG) for lightning protection | 100 | 46.28 | 5.00 | 5,128 |
| 12 | Control & Relay Panel | 1 | 199,605.12 | 20000.00 | 219,605 |
| 13 | Earthing Electrodes (nos.) | 10 | 7,245.00 | 4500.00 | 117,450 |
| 14 | Steel required for structures in the switch yard (in MT) | 8 | 93,675.00 | 10000.00 | 829,400 |
| 15 | Bus Support & Single Tension Insulator with hardware | LS | | | 18,750.00 |
| 16 | Clamps Connectors & Marshalling Kiosk | LS | | | 13,500.00 |
| 17 | Foundation (cum.) | 50 | 8,946.60 | 1000.00 | 497,330 |
| 18 | 11 kV XLPE (3C) 300 sq mm Cable (m) | 120 | 1,298.75 | 225.00 | 182,850 |
| 19 | Outdoor Terminations for XLPE Cable | 2 | 10,879.20 | 3085.00 | 27,928 |
| 20 | Indoor Terminations for XLPE Cable | 2 | 7,132.80 | 2617.00 | 19,500 |
| 21 | 33/11kV transformer 5 MVA | 1 | 2927541.76 | 25000.00 | 2,952,542 |
| 22 | Control Cable (m) | 200 | 74.75 | 20.00 | 18,950 |
| 23 | Fees for clearance from DOES | LS | | | 10,000.00 |
| | | | | Total Cost | 8,173,626.98 |

3B Balance work of 33/11 kV Sub Station at EPIP

Total cost towards construction of 33/11 kV EPIP Substation

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|----------------------|
| 1 | 36kV ,1250 Amps,25 kA Outdoor | 1 | 465,745.28 | 5000.00 | 470,745 |
| 2 | 11 kV Switch (1I/C + 3O/G) | 1 | 2395261.44 | 15000.00 | 2,410,261 |
| 3 | Control & Relay Panel | 1 | 199,605.12 | 20000.00 | 219,605 |
| 4 | 11 kV XLPE (3C) 300 sq mm Cable (m) | 500 | 1,298.75 | 225.00 | 761,875 |
| 5 | Indoor Terminations for XLPE Cable | 5 | 7,132.80 | 2617.00 | 48,749 |
| 6 | Outdoor Terminations for XLPE Cable | 5 | 10,879.20 | 3085.00 | 69,821 |
| 7 | AC Distribution Box (433V) | 1 | 124,205.00 | 5000.00 | 129,205 |
| 8 | Earthing Electrodes Cu (nos.) | 2 | 18,166.79 | 4500.00 | 45,334 |
| 9 | Earthing Electrodes (nos.) | 50 | 7,245.00 | 4500.00 | 587,250 |
| 10 | Rubber mat | 4 | 4,474.40 | 250.00 | 18,898 |
| 11 | Fire extinguisher | 4 | 7,311.54 | 250.00 | 30,246 |
| 12 | Danger Plate | 14 | 50.00 | | 700 |
| 13 | Shock treatment chart | 2 | 837.96 | 100.00 | 1,876 |
| 14 | LT cable 3.5 C x 70 sqmm | 100 | 189.00 | 16.00 | 20,500 |
| 15 | LT cable 4C x 16 sqmm | 300 | 99.00 | 12.00 | 33,300 |
| 16 | Marshlling kiosk | 1 | 25,147.00 | 2500.00 | 27,647 |
| 17 | 36kV Outdoor Double-Core C.Ts | 3 | 31,050.31 | 800.00 | 95,551 |
| 18 | 33 kV Outdoor Double-Core P.Ts.(3 nos.) | 3 | 33,198.86 | 800.00 | 101,997 |
| 19 | 33kV Horizontal-Mounting, 400 Amp Double-Break Motor-Operated Isolator with Earth Switch | 3 | 197,080.90 | 5500.00 | 607,743 |
| 20 | Lightning Arrestor (ZnO Type) | 3 | 25,236.01 | 1000.00 | 78,708 |
| 21 | ACSR Panther Conductor | 250 | 281.59 | 12.00 | 73,397 |
| 22 | GI Wire (5/8 SWG) for lightning protection | 250 | 46.28 | 5.00 | 12,820 |
| 23 | Steel required for structures (MT) | 12 | 93,675.00 | 10000.00 | 1,244,100 |
| 24 | Disc insulator | LS | 64,018.00 | 8350.17 | 72,368 |
| 25 | Substation Transformer (33/0.4 kV, 250 kVA) | 1 | 320,616.49 | 3000.00 | 323,616 |
| 26 | Substation lighting / utilities | 1 | 116,794.60 | 0.00 | 116,795 |
| 27 | 13 Mtr. Long Steel Tubular Poles | 4 | 6,131.00 | 3220.00 | 37,404 |
| 28 | 110V Battery Bank for 200Ah capacity, battery charger | 1 | 385,000.00 | 18000.00 | 403,000 |
| 29 | Civil work (sq. ft.) | 1500 | 1,300.00 | | 1,950,000 |
| 30 | Foundation (cum.) | 70 | 8,946.60 | 1000.00 | 696,262 |
| 31 | Control Cable (m) | 300 | 65.00 | 23.91 | 26,674 |
| 32 | Fees for clearance from DOES | LS | 10,000.00 | | 10,000 |
| | | | | Total Cost | 10,726,446.39 |

Note :

25% of work to be done in FY 06, hence capex to be made against the project amounts to Rs.

2,681,611.60

3C Cost for construction of 33/11 kV Substation at Sector Delta-2

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|----------------------|
| 1 | 33/11kV transformer 5 MVA | 1 | 3147619.2 | 25000.00 | 3,172,619 |
| 2 | 36kV ,1250 Amps,25 kA Outdoor | 1 | 465,745.28 | 5000.00 | 470,745 |
| 3 | 11 kV Switch (1I/C + 4O/G, out of which 2 are with double cable box arrangement) | 1 | 3194076.8 | 15000.00 | 3,209,077 |
| 12 | Control & Relay Panel | 1 | 199,605.12 | 20000.00 | 219,605 |
| 4 | 11 kV XLPE (3C) 300 sq mm Cable (m) | 500 | 1,298.75 | 225.00 | 761,875 |
| 5 | Indoor Terminations for XLPE Cable | 5 | 7,132.80 | 2617.00 | 48,749 |
| 6 | Outdoor Terminations for XLPE Cable | 5 | 10,879.20 | 3085.00 | 69,821 |
| 7 | AC Distribution Box (433V) | 1 | 124,205.00 | 5000.00 | 129,205 |
| 8 | Earthing Electrodes Cu (nos.) | 2 | 18,166.79 | 4500.00 | 45,334 |
| 9 | Earthing Electrodes (nos.) | 50 | 7,245.00 | 4500.00 | 587,250 |
| 10 | Rubber mat | 4 | 4,474.40 | 250.00 | 18,898 |
| 11 | Fire extinguisher | 4 | 7,311.54 | 250.00 | 30,246 |
| 12 | Danger Plate | 14 | 50.00 | | 700 |
| 13 | Shock treatment chart | 2 | 837.96 | 100.00 | 1,876 |
| 14 | LT cable 3.5 C x 70 sqmm | 100 | 189.00 | 16.00 | 20,500 |
| 15 | LT cable 4C x 16 sqmm | 300 | 99.00 | 12.00 | 33,300 |
| 16 | Marshlling kiosk | 1 | 25,147.00 | 2500.00 | 27,647 |
| 17 | 36kV Outdoor Double-Core C.Ts | 3 | 31,050.31 | 800.00 | 95,551 |
| 18 | 33 kV Outdoor Double-Core P.Ts.(3 nos.) | 3 | 33,198.86 | 800.00 | 101,997 |
| 19 | 33kV Horizontal-Mounting, 400 Amp Double-Break Motor-Operated Isolator with Earth Switch | 3 | 197,080.90 | 5500.00 | 607,743 |
| 20 | Lightning Arrestor (ZnO Type) | 3 | 25,236.01 | 1000.00 | 78,708 |
| 21 | ACSR Panther Conductor | 250 | 281.59 | 12.00 | 73,397 |
| 22 | GI Wire (5/8 SWG) for lightning protection | 250 | 46.28 | 5.00 | 12,820 |
| 23 | Steel required for structures (MT) | 12 | 93,675.00 | 10000.00 | 1,244,100 |
| 24 | Disc insulator | LS | 64,018.00 | 8350.17 | 72,368 |
| 25 | Substation Transformer (33/0.4 kV, 250 kVA) | 1 | 320,616.49 | 3000.00 | 323,616 |
| 26 | Substation lighting / utilities | 1 | 116,794.60 | 0.00 | 116,795 |
| 27 | 13 Mtr. Long Steel Tubular Poles | 4 | 10,500.00 | 3220.00 | 54,880 |
| 28 | 110V Battery Bank for 300Ah capacity, battery charger | 1 | 450,957.55 | 18000.00 | 468,958 |
| 29 | Civil work (sq. ft.) | 1500 | 1,300.00 | | 1,950,000 |
| 30 | Foundation (cum.) | 70 | 8,946.60 | 1000.00 | 696,262 |
| 31 | Boundary Wall | LS | 560,000.00 | | 560,000 |
| 32 | Land Filling | LS | 210,000.00 | | 210,000 |
| 34 | Control Cable (m) | 300 | 65.00 | 23.91 | 26,674 |
| 35 | Fees for clearance from DOES | LS | 10,000.00 | | 10,000 |
| | | | | Total Cost | 15,551,314.50 |

Note :

75% of work to be done in FY 06, hence capex to be made against the project amounts to Rs.

11,663,485.88

4 NETWORK IMPROVEMENT

4A Feeder Pillar Boxes

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---------------------|------|---------------|-------------------|-----------------|
| 1 | Feeder pillar boxes | 1 | 36192.00 | 2500.00 | 38,692 |
| 2 | Earthing | 2 | 450.00 | 200.00 | 1,300 |
| 3 | Civil Foundation | 1 | 3000.00 | 500.00 | 3,500 |
| | | | | Total Cost | 43492.00 |

4B Typical Cost for Installation of 11 kV TPMO

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|------|------|---------------|-------------------|----------------|
| 1 | TPMO | 1 | 4800.00 | 1800.00 | 6,600 |
| | | | | Total Cost | 6600.00 |

4C Typical Cost for Protection of 11/0.433 kV Distribution Transformer

(in Rs.)

i. 25 kVA Capacity

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--------------------------------|------|---------------|-------------------|------------|
| 1 | 32 Amp HRC Fuse | 3 | 56.00 | | 168 |
| 2 | Fuse Base for 32 Amps HRC Fuse | 3 | 152.00 | | 456 |
| 3 | Copper Thimble and Strip | 1 | 40.00 | | 40 |
| 4 | Labour Charges | 1 | 0.00 | 130.43 | 130 |
| | | | | Total Cost | 794 |

(in Rs.)

ii. 63 kVA Capacity

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---------------------------------|------|---------------|-------------------|-------------|
| 1 | 100 Amp HRC Fuse | 3 | 188.00 | | 564 |
| 2 | Fuse Base for 100 Amps HRC Fuse | 3 | 274.00 | | 822 |
| 3 | Copper Thimble and Strip | 1 | 45.00 | | 45 |
| 4 | Labour Charges | 1 | 0.00 | 173.91 | 174 |
| | | | | Total Cost | 1605 |

(in Rs.)

iii. 100 kVA Capacity

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---------------------------------|------|---------------|-------------------|-------------|
| 1 | 160 Amp HRC Fuse | 3 | 274.00 | | 822 |
| 2 | Fuse Base for 160 Amps HRC Fuse | 3 | 379.00 | | 1,137 |
| 3 | Copper Thimble and Strip | 1 | 136.00 | | 136 |
| 4 | MS Fuse Box | 1 | 80.00 | | 80 |
| 5 | Labour Charges | 1 | 0.00 | 217 | 217 |
| | | | | Total Cost | 2393 |

4D Locking Arrangement For Feeder Pillar Boxes

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---------------------------|------|---------------|-------------------|---------------|
| 1 | Nmbering of Feeder Pillar | 600 | | 50 | 30,000 |
| 2 | Pad Lock | 600 | 200 | 28 | 136,668 |
| | | | | Total Cost | 166668 |

4E Strengthening of Steel Tubular Pole

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|------|---------------|-------------------|----------------|
| 1 | 3' long Angle Bkt with Muffing and Grouting Material | 500 | 950 | 250.00 | 600,000 |
| | | | | Total Cost | 600,000 |

4F Energy Accounting Measure

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|-------------------------|------|---------------|-------------------|--------------|
| 1 | LT C.T.(set) | 1 | 994.00 | 150.00 | 1,144 |
| 2 | 3 1/2 c*150 sqmm cable | 15 | 326.00 | 21.00 | 5,205 |
| 3 | Meter Board (MS) | 1 | 2203.00 | 350.00 | 2,553 |
| 4 | Meter | 1 | 1947.00 | 60.00 | 2,007 |
| 5 | 2.135 m long MS channel | 2 | 761.00 | 270.00 | 2,062 |
| 6 | Earthing | 1 | 450.00 | 200.00 | 650 |
| 7 | PVC Flexible Wire (m) | 6 | 27.00 | 15.00 | 252 |
| | | | | Total Cost | 13873 |

4G Renovation of Distribution Network in Urban Sectors

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--------------------------------|------|---------------|-------------------|-----------------|
| 1 | RMU {(2 LBS + 2 VCB) per set} | 8 | 650,000.00 | 10000.00 | 5,280,000 |
| 2 | 11 kV O/D XLPE termination kit | 24 | 9,000.00 | 4000.00 | 312,000 |
| 3 | LT Panel | 8 | 250,000.00 | 25000.00 | 2,200,000 |
| 4 | Sub distribution Feeder Pillar | 53 | 40,000.00 | 10000.00 | 2,650,000 |
| | | | | Total Cost | 10442000 |

4H Construction of 33 kV double circuit overhead mains from Delta-2 sector to Kasna 33/11 kV Switching station

Assumptions:

- (a) Span length - 60 mtr.
- (b) Double pole will be erected to support double circuit
- (c) Double circuit will be of suspension type

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|--|-------|---------------|-------------------|--------------------|
| 1 | 13 Mtr. Long Rail Poles | 286 | 19500.00 | 3436.00 | 6559696.00 |
| 2 | 3.2 m long M.S. Channel of size 125*65*65*6 cor | 347 | 2532.00 | 354.00 | 1001442.00 |
| 3 | 4.0 m long M.S. Channel of size 100*50* 50*6 co | 32 | 2077.00 | 405.00 | 79424.00 |
| 4 | 2.8 m long M.S. Channel of size 125*65* 65*6 co | 120 | 2296.00 | 354.00 | 318000.00 |
| 5 | 2.2 m long M.S. Channel of size 125*65* 65*6 co | 217 | 1641.00 | 315.00 | 424452.00 |
| 6 | 1.3 m long M.S. Channel of size 125*65* 65*6 co | 168 | 1530.00 | 405.00 | 325080.00 |
| 7 | Cross bracing bracket (2 nosx35m) fabricated from 50x50x6mm ms angle | 185 | 2610.00 | 472.00 | 570170.00 |
| 8 | 11 KV grade 90 KN Disc Insulators | 2196 | 510.00 | 142.00 | 1431792.00 |
| 9 | Tension hardware | 318 | 1209.00 | 57.00 | 402588.00 |
| 10 | Suspension hardware | 414 | 1046.00 | 57.00 | 456642.00 |
| 11 | 33 kV Pin Insulator with GI Pin | 366 | 701.00 | 95.00 | 291336.00 |
| 12 | Danger Plate | 286 | 148.00 | 28.00 | 50336.00 |
| 13 | Earthing System | 290 | 757.00 | 283.00 | 301600.00 |
| 14 | Stay Sets | 460 | 1641.00 | 315.00 | 899760.00 |
| 15 | Earth Clamp | 1004 | 237.00 | 57.00 | 295176.00 |
| 16 | ACSR Panther Conductor (m) | 36000 | 105.00 | 14.00 | 4284000.00 |
| 17 | 6 SWG G.I. Wire | 5500 | 8.00 | 0.00 | 44000.00 |
| 18 | Erection of cradle guard with 6 SWG G.I. Wire | 900 | 0.00 | 47.00 | 42300.00 |
| 19 | 7/12 SWG G.I. Wire | 8000 | 14.00 | 4.00 | 144000.00 |
| 20 | Jointing Sleeve | 50 | 900.00 | 5014.00 | 295700.00 |
| 21 | Binding wire | 400 | 150.00 | | 60000.00 |
| 22 | PG Clamp | 318 | 585.00 | 57.00 | 204156.00 |
| 23 | Anticlimbing Devices | 1430 | 50.00 | 14.00 | 91520.00 |
| | | | | Total Cost | 18573170.00 |

5 ENERGY CONSERVATION AND VILLAGE METERING

| No | Item | Qty. | UOM | Unit Cost (in Rs.) | Total Cost (in Rs.) | Investment to be made in FY06 (%) | Budgetary Estimate for FY06 (in Rs.) | Remarks |
|-----------------|--|------|---------|-----------------------|------------------------|---|--|--------------------------|
| A | New 11 kV Lines for Domestic Consumers | 10 | ckt. km | 503786 | 5037860 | 100% | 5037860 | Refer Item A of Annexure |
| B | New 11 kV Lines for Agricultural Consumers | 4 | ckt. km | 503786 | 2015144 | 100% | 2015144 | Refer Item A of Annexure |
| C | LT Lines with Insulated Wires | 41 | ckt. km | 310672 | 12737552 | 100% | 12737552 | Refer Item B of Annexure |
| D | New Domestic Metering | 3000 | Nos. | 2475 | 7425000 | 100% | 7425000 | |
| E | 10 kVA Transformer | 200 | Nos. | 19427 | 3885420 | 35% | 1359897 | |
| Subtotal | | | | | 31100976 | | 28575453 | |
| F | Soft Cost @ 5% | | | | 1555049 | | 1428773 | |
| G | Contingencies @ 5% | | | | 1632801 | | 1500211 | |
| Total | | | | | 34288826 | | 31504437 | |

Noida Power Company Limited

A Typical Cost of Construction of 1 ckt. km of 11kV overhead line

Assumptions

- | | |
|---------------------------|---------|
| 1. Average Span Length | 60 mtr. |
| 2. Post type construction | |
| 3. No. of single pole | 12 |
| 4. No. of double pole | 5 |

(in Rs.)

| SL. NO. | ITEM | QTY. | Material Cost | Labour Cost | Total |
|---------|---|------|---------------|-------------------|---------------|
| 1 | 12 mtr. long STP | 22 | 8500.00 | 2000.00 | 231,000 |
| 2 | Danger plate | 22 | 50.00 | | 1,100 |
| 3 | Earthing system | 22 | 650.00 | 200.00 | 18,700 |
| 4 | Pin Insulator | 51 | 250.00 | 12.00 | 13,362 |
| 5 | Stay sets | 28 | 1100.00 | 250.00 | 37,800 |
| 6 | Earth clamp | 17 | 77.00 | 20.00 | 1,649 |
| 7 | ACSR Rabbit conductor | 3060 | 25.00 | 7.00 | 97,920 |
| 8 | 6 SWG GI wire | 1040 | 11.00 | 2.00 | 13,520 |
| 9 | 2.135 mtr long MS channel of size 100*50*50*6 mm complete with clamps, nuts & bolts with painting | 36 | 951.25 | 270.00 | 43,965 |
| 10 | 1.15 mtr long MS channel of size 100*50*50*6 mm complete with clamps, nuts & bolts with painting | 12 | 500.00 | 150.00 | 7,800 |
| 11 | 0.3 mtr long MS channel of size 100*50*50*6 mm complete with clamps, nuts & bolts with painting | 12 | 212.50 | 50.00 | 3,150 |
| 12 | 11kV grade Disc insulator with hardware | 24 | 1050.00 | 150.00 | 28,800 |
| 13 | Anticlimbing device | 28 | 80.00 | 20.00 | 2,800 |
| 14 | E-clamp | 15 | 118.00 | 30.00 | 2,220 |
| | | | | | - |
| | | | | Total Cost | 503786 |

B Typical Cost of Installing 1 ckt. km of LT line with Insulated Wires

Assumptions:

- | | |
|-------------------|------|
| 1. LT span length | 30 m |
|-------------------|------|

(in Rs.)

| Sl. No. | Description | Qty. | Material Cost | Labour Cost | Total |
|---------|---|------|---------------|-------------------|---------------|
| 1 | 8.5 m long Prestressed Concrete Pole of class 10 as per IS:785 /64 suitable for 200 kgf working load | 8 | 1600.00 | 900.00 | 20,000 |
| 2 | Stay including supply of grouting materials Straining Screws, Stay Rod, Stay Wire, etc. | 8 | 1100.00 | 250.00 | 10,800 |
| 3 | LT Fittings for 3 phase 5/wire or 6/wire LT Mains including Shackle Insulators, Shackle Pins, Nuts, Bolts, etc. | 40 | 250.00 | 43.00 | 11,720 |
| 4 | Staining Screw | 16 | 185.00 | 12.00 | 3,152 |
| 5 | Junction Box | 20 | 2800.00 | 150.00 | 59,000 |
| 6 | Earthing System | 20 | 750.00 | 200.00 | 19,000 |
| 7 | Aerial Bunched Cable | 1000 | 175.00 | 12.00 | 187,000 |
| | | | | Total Cost | 310672 |

6 PROCESS / SYSTEM AUTOMATION

A Implementation of Supervisory Control and Data Acquisition System

i At 33/11 kV EPIP Substation

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|--|--------|--------------------|-------------------|----------------|
| 1 | Optic Fibre Cable (6 Fibre) | 4.5 km | 50.00 | 35.00 | 382,500 |
| 2 | Cost of hardware for SCADA Implementation | 1 | 650000.00 | | 650,000 |
| 3 | Cost for updating software for SCADA operation | 1 | 600000.00 | | 600,000 |
| | | | | Total Cost | 1632500 |

ii At 33/11 kV Delta-2 Substation

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---|--------|--------------------|-------------------|---------------|
| 1 | Optic Fibre Cable (6 Fibre) | 1.0 km | 50.00 | 35.00 | 85,000 |
| 2 | Cost of hardware for SCADA Implementation | 1 | 650000.00 | | 650,000 |
| | | | | Total Cost | 735000 |

iii At 33/11 kV Girdharpur substation for the new

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---|------|--------------------|-------------------|---------------|
| 1 | Cost of hardware for SCADA Implementation | 1 | 520000.00 | | 520,000 |
| | | | | Total Cost | 520000 |

6B IT Projects

i Implementation of SAP Solutions (contd. from previous year)

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---|------|--------------------|-------------------|------------------|
| 1 | Implementation Fee to be paid to HCL Technologies | | | 2,600,000 | 2,600,000 |
| 2 | Allowance for Additional Customizations | | | 600,000 | 600,000 |
| | | | | Total Cost | 3,200,000 |

ii Purchase of additional Smallworld License

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---------------------------------|------|--------------------|-------------------|----------------|
| 1 | Fee for core Smallworld License | 1 | 825,000 | | 825,000 |
| | | | | Total Cost | 825,000 |

iii Upgrading of Hardware Infrastructure Capacity

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---|---------|--------------------|-------------------|------------------|
| 1 | Cost of additional Hard Disks | 10 nos. | 800,000 | | 800,000 |
| 2 | Cost of Server to host SAP Knowledge Management and Enterprise Portal | 1 no. | 400,000 | | 400,000 |
| 3 | Upgrading of RISC-based Server | Lumpsum | 300,000 | | 300,000 |
| 4 | Upgrading of Intel-based Server | Lumpsum | 200,000 | | 200,000 |
| | | | | Total Cost | 1,700,000 |

iv Purchase of Desktops, Printers and Laptop

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|--|---------|--------------------|-------------------|------------------|
| 1 | Procurement/Upgrading of Desktops | 35 nos. | 1,250,000 | | 1,250,000 |
| 2 | Procurement of Laptop | 1 no. | 165,000 | | 165,000 |
| 3 | Procurement of High Speed Dot Matrix Printer | 1 no. | 85,000 | | 85,000 |
| | | | | Total Cost | 1,500,000 |

v Purchase of Software Licences

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---|----------------|--------------------|-------------------|----------------|
| 1 | Microsof Exchange Server | 0 user license | 300,000 | | 300,000 |
| 2 | Symantec Enterprise Anti-virus Protection | 60 clients | 150,000 | | 150,000 |
| 3 | Microsoft Office Licences | 10 licenses | 150,000 | | 150,000 |
| | | | | Total Cost | 600,000 |

vi Gigabit Networking for Servers

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|--|--------|--------------------|-------------------|----------------|
| 1 | Layer 3 Gigabit (Cu) Switch | 1 no. | 350,000 | | 350,000 |
| 2 | Gigabit Ethernet Cards for HP-UX Servers | 2 nos. | 200,000 | | 200,000 |
| 3 | Gigabit Ethernet Cards for Intel-based Servers | 2 nos. | 50,000 | | 50,000 |
| | | | | Total Cost | 600,000 |

vii Implementation of Enterprise Security Solution

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---|------|--------------------|-------------------|------------------|
| 1 | Implementation Fee for Enterprise Security Solution | | 1,000,000 | | 1,000,000 |
| | | | | Total Cost | 1,000,000 |

viii Implementation of Copy Bill Kiosks

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|-------------------------|---------|--------------------|-------------------|-------------------|
| 1 | Software Implementation | Lumpsum | | 225,000.00 | 225,000.00 |
| 2 | Procurement of hardware | 3 nos. | 350,000.00 | | 350,000.00 |
| | | | | Total Cost | 575,000.00 |

ix Implementation of Bar Coded Billing

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|--|---------|--------------------|-------------------|----------------|
| 1 | Procurement of Bar Code Printers and Scanner | Lumpsum | 500,000 | | 500,000 |
| | | | | Total Cost | 500,000 |

x Upgrading of Website

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|---------|---|---------|--------------------|-------------------|-------------------|
| 1 | Adding new content and functionalities to Corporate website | Lumpsum | 200,000 | | 200,000.00 |
| | | | | Total Cost | 200,000.00 |

xi Purchase of Presentation Equipment

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|------------|--|---------|-----------------------|-------------------|----------------|
| 1 | Procurement of LCD Projector, Speakers and Panaboard | Lumpsum | 200,000 | | 200,000 |
| | | | | Total Cost | 200,000 |

6C New computers for operations

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|------------|-------------------------|---------|-----------------------|-------------------|----------------|
| 1 | Procurement of Desktops | 10 nos. | 50,000 | | 500,000 |
| | | | | Total Cost | 500,000 |

6D Automated Meter Reading (AMR)

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|------------|--|------|-----------------------|-------------------|-------------------|
| 1 | 3ph. 3 wire static Tri Vector Meter compatible with AMR software by using GSM technology | 90 | 20000.00 | | 1,800,000 |
| 2 | GSM Modem | 90 | 10000.00 | | 900,000 |
| 3 | Adaptor for providing DC supply to GSM Modem | 90 | 1040.00 | | 93,600 |
| 4 | SIM Card connection for data transfer | 90 | 169.00 | | 15,210 |
| | | | | Total Cost | 2808810.00 |

7 **COMMUNICATION AND TESTING**

7A Communication Sets

(in Rs.)

| SL. NO. | ITEM | QTY. | Unit Material Cost | Labour Cost | Total |
|------------|----------------------------|---------|-----------------------|-------------------|---------------|
| 1 | Procurement of Mobile Sets | 10 nos. | 3,000 | | 30,000 |
| | | | | Total Cost | 30,000 |

8 CIVIL WORKS

8A New Office Facilities at Delta 33/11 kV substation

(in Rs.)

| | Description | Qty. | Unit Material Cost | Labour Cost | Total |
|----|---------------------|------|--------------------|-------------------|----------------|
| 1 | Table | 16 | 6900 | 1043.48 | 127,096 |
| 2 | Credenza | 16 | 3400 | 869.57 | 68,313 |
| 3 | Chair | 60 | 2400 | 0.00 | 144,000 |
| 4 | Storage cabinet | 35 | 540 | 104.35 | 22,552 |
| 5 | Wooden partittion | 3000 | 200 | 34.78 | 704,348 |
| 6 | Doors | 8 | 4400 | 869.57 | 42,157 |
| 7 | Flooring | 4000 | 48 | 8.70 | 226,783 |
| 8 | Skitting | 4000 | 18 | 5.22 | 92,870 |
| 9 | Oil bound Distemper | 5000 | 10 | 2.61 | 63,043 |
| 10 | False Ceiling | 4000 | 40 | 10.43 | 201,739 |
| 11 | Light | 50 | 870 | 104.35 | 48,717 |
| 12 | Telephone | 4 | 550 | 86.96 | 2,548 |
| 13 | AC | LS | 500000 | 100000.00 | 600,000 |
| 14 | Outside painting | LS | 100000 | 50000.00 | 150,000 |
| | | | | Total Cost | 2494165 |

Say = Rs. 2500000

OUTLINE OF WORKS

REPLACEMENT STOCK

(Refer Item 2 of Capex List)

2A Replacement of Static Meters

Proposal

Procuring the following:

- i. 3 nos of 3-phase, 3-wire, class 0.5, static trivector energy meters with T.O.D. features.
- ii. 5 nos. of 3-phase, 4-wire CT operated class 0.5, static trivector energy meters with T.O.D. features.
- iii. 12 no of 3-phase, 4-wire whole current meters.
- iv. 50 nos. of 1-phase, 2-wire meters.

Purpose

To install static meters to replace burnt and defective meters.

Capital Outlay

Rs.2,53,697/-

2B Replacement of Instrument Transformers

Proposal

Procuring and installing the following:

- i. 20 sets of LT Current Transformer
- ii. 2 sets of 11 kV Current Transformer
- iii. 1 set of 33 kV Outdoor Current Transformer
- iv. 1 set of 33 kV Indoor type Current Transformer
- v. 2 sets of 11 kV Voltage Transformer
- vi. 2 set of 33 kV indoor type Voltage Transformer
- vii. 1 set of 33 kV outdoor type Voltage Transformer

Purpose

To replace burnt and defective instrument transformers.

Capital Outlay

Rs.3,98,136/-

2C Replacement of 11/0.433 kV Distribution Transformers

Proposal

Procuring and installing the following:

- i. 10 Nos. of 25 kVA 11/0.433 kV distribution transformers
- ii. 10 Nos. of 63 kVA 11/0.433 kV distribution transformers
- iii. 5 Nos. of 100 kVA 11/0.433 kV distribution transformers

Purpose

To replace old, worn-out transformers, which have outlived its utility and are irreparable.

Capital Outlay

Rs.11,85,215/-

2D Replacement of Poles

Proposal

Erecting the following:

- HT Pole
 - i. STP Pole – 12 Nos.
 - ii. PCC Pole – 15 Nos.
- LT Pole
 - i. STP Pole – 7 Nos.
 - ii. PCC Pole – 25 Nos

Purpose

To replace broken, unserviceable and damaged poles

Capital Outlay

Rs.6,43,050/-

NEW 33/11 kV SUBSTATION

(Refer Item 3 of Capex List)

A. Installation of second transformer at Girdharpur 33/11 kV Substation

Proposal

Commissioning of the second 5 MVA, 33/11 kV transformer at Girdharpur 33/11 kV Substation.

Purpose

Presently the supply network in Girdharpur and its adjoining area is being fed from only one 5 MVA transformer at Girdharpur 33/11 kV Substation. With the rapid electrification works undertaken by the Company involving metering of rural domestic households and segregating agricultural and domestic network, the capacity of Girdharpur 33/11 kV Substation is required to be augmented by installing one 5 MVA transformer.

Capital Outlay

Total estimated Expenditure: Rs.81,59,911/-

B. Balance work of 33/11 kV Sub Station at EPIP

Proposal

Commissioning of 33/11 kV 5 MVA Sub-station at EPIP, Greater Noida

Purpose

The project is in progress and scheduled to be completed in 2005 – 06. Total estimated expenditure towards procurement, erection and commissioning of the 33/11 kV Substation is Rs. 1,07,26,446/-, out of which 26,81,612/- will be spent in the year 2005-06

Capital Outlay

Total estimated Expenditure: Rs.26,81,612/-

C. Construction of a new 33/11 kV Substation at Delta – 2 Sector

Proposal

Commissioning of 5 MVA 33/11 kV Substation at Delta – 2 Sector.

Purpose

Delta and adjoining area is fast becoming a residential load centre warranting an estimated load demand of 3 MVA by December 2005. The present supply arrangement is catered from Alpha 33/11 kV Sub Station through a single 11 kV feeder. The existing network will not be able to cope with such demand, necessitating augmentation of supply arrangement by commissioning a new 33/11 kV Sub Station at Delta – 2 sector for which land has already been earmarked by Greater Noida Authority.

Capital Outlay

Total estimated Expenditure: Rs.1,55,33,839/-, out of which Rs. 1,16,50,379/- will be spend in this year.

NETWORK IMPROVEMENT

(Refer Item 4 of Capex List)

A. Feeder Pillar Box

Proposal

Commissioning of 100 Nos. of feeder pillar boxes

Purpose

To rationalize overloaded LT network and achieve greater flexibility in operations

Capital Outlay

Rs.43,49,200/-

B Installation of 11 kV TPMO

Proposal

Installing 75 nos. of TPMO (Triple Pole Manually Operated) switches at the 11 kV side of the 11/0.4 kV transformers

Purpose

To isolate 11 kV and LT installations as and when required without affecting the parent feeder

Capital Outlay

Rs.4,95,000/-

C. Protection of Distribution Transformers

Proposal

Incorporating HRC fuse arrangement at the LT side of 300 nos. of 11/0.4 kV distribution transformers of different capacities

Purpose

To protect the transformers against overloading and downstream network faults

Capital Outlay

Rs. 4,47,173/-

D. Locking Arrangement for Feeder Pillar Boxes at Residential Sectors

Proposal

Installing locking arrangement at 600 nos. of LT distribution feeder pillar-boxes located at the residential sectors

Purpose

To safeguard against unauthorized access and pilferage

Capital Outlay

Rs.1,66,668/-

E. Strengthening of Steel Tubular Poles

Proposal

Welding MS Angle to 300 nos. of pole bases

Purpose

To reinforce the base and enhance the life of poles

Capital Outlay

Rs.3,60,000/-

F Energy Accounting Measures

Proposal

Installing metering arrangement on LT side of 11/0.4 kV distribution transformers.

Purpose

To conduct periodic energy audits.

Capital Outlay

Rs.2,77,460/-

G Renovation of Distribution Network in Urban sectors

Proposal

1. Installation of 7 Set of 11 kV Ring Main Unit (RMU) at different 11/0.4 kV Substations in urban township area.
2. Replacement of irreparable LT installations in 11/0.4 kV substations and downstream network.

Purpose

- i) To segment and rationalize 11 kV network at township area so as to make it more flexible.
- ii) To incorporate adequately graded protective measures in network installations for facilitating fault-localization and segregation of unhealthy network.

Capital Outlay

Rs. 10,442,000/-

H. Construction of double circuit 33 kV overhead lines from Delta – 2 Sector to Kasna 33/11 kV Substation

Proposal

To erect 7.5 km of double circuit overhead lines on rail pole supports from proposed 33/11 kV Delta – 2, Sector Substation to Kasna Switching station

Purpose

Presently the supply to Kasna area is being maintained from Kasna 33 kV switching station, having dual 33 kV feed from Surajpur 132 kV Substation. With the increase in load, the 33 kV feeders are expected to be overloaded by October'05. Hence a new 33 kV feeder is proposed to reinforce the supply arrangement. One more additional 33 kV feed is considered so as make the network ring-main ensuring greater reliability and flexibility.

Capital Outlay: Rs.1,85,73,170/-

ENERGY CONSERVATION AND VILLAGE METERING

(Refer Item 5 of Capex List)

A: Energy Conservation and Village Metering

Proposal

To meter 3000 domestic households and provide connection to 70 agricultural pumps through High Voltage Distribution System (HVDS) by erecting 14 km of 11 kV lines and 41 km of LT overhead line with Ariel Bunched Cable (ABC).

Purpose

The project of metering the unmetered supply in rural has been undertaken since 2002-03, in compliance of the regulatory fiats and the directions laid down in the Electricity Act'2003. The project will inter alia help reduce technical losses, facilitate energy accounting and curtail system demand.

Capital Outlay

Rs.3,15,89,873/-

PROCESS / SYSTEM AUTOMATION

(Refer Item 6 of Capex List)

A: Supervisory Control and Data Acquisition System (SCADA)

Proposal

- i) To lay 4.5 km of Optic Fibre Cable (OFC) and install hardware for SCADA System at new 33/11 kV EPIP Sub-Station to cover 1 – 33/11 kV transformer, 1 – 11 kV incomer and 4 – outgoing 11 kV feeders.
- ii) To lay 1 km of OFC and install hardware for SCADA System at new 33/11 kV Delta – 2 Sector Sub-Station to cover 1 – 33/11 kV transformer, 1 – 11 kV incomer and 4 – outgoing 11 kV feeders.
- iii) To install hardware for SCADA System at 33/11 kV Girdharpur Sub Station upon commissioning of the proposed transformer to cover 1 – 33/11 kV transformer, 1 – 11 kV incomer and 4 – outgoing 11 kV feeders.

Purpose

The 33/11 kV Sub-Stations are being developed as unmanned stations. Objective is to optimize manpower deployment, undertake remote network sensing and operation, and gather real time data, which can be integrated with the GIS database for analytical work. Productivity enhancement is being targeted to manage the network complexity in a growing system by relying on automated processes and without increase in establishment.

Capital Outlay

Rs.28,87,500/-

B. IT Projects

i) Implementation of mySAP IS-U/CCS Project

Proposal

The mySAP IS-U/CCS project, focused on the customer-centric Information Systems concerning the functions of Billing & Collection, Application Processing and Customer Care, commenced in December 2004 and is expected to be completed by July 2005.

Purpose

On completion of implementation, the Company will have the benefit of a Customer Information System, which can handle the rapid increase in the consumer-base and rise in complexity of processing of data that requires integration with related applications such as Oracle Applications and GIS. Concurrently, strong foundation for Customer Relationship Management will also be created. Moreover, facilities will be created for data warehousing to undertake automated demand estimates and other reports required in the context of annual tariff filings.

Capital Outlay

Rs.32,00,000/-

ii) Purchase of SmallWorld Licences

Proposal

One additional licences of core SmallWorld (GIS) software are to be purchased to allow additional users to create, update or view landbase, network or customer information in the SmallWorld environment.

Purpose

As information in the GIS environment is being increasingly utilized to derive business advantages in the form of superior network design and monitoring, it has become necessary to procure an additional software license to spread the usage of GIS in daily business practices.

Capital Outlay

Rs.8,25,000/-

iii) Upgrading of Hardware Infrastructure Capacity

Proposal

To upgrade the storage and processing capacities of existing Servers as well as purchase a new Server to host an in-house Knowledge Management and Enterprise Portal.

Purpose

As the volume of data and usage of enterprise-level Information Systems are increasing, it has become necessary to upgrade the hardware infrastructure to ensure that data and information processing do not suffer from hardware limitations. A dedicated Intel-based Server will be needed to host a Knowledge Management and Enterprise Portal, for which software licenses from SAP are already available. Once implemented, the Portal will provide a vital source of consolidated information and knowledge inputs relevant to the work practices of the organization.

Capital Outlay

Rs.17,00,000/-

iv) Purchase of Desktops, Printer and Laptop

Proposal

To purchase one laptop, one High-Speed Dot Matrix printer and 10 new desktops as well as upgrade 25 existing desktops.

Purpose

New desktops will be necessary to improve productivity of employees not currently having access to enabling software systems. A High Speed Dot Matrix printer will be required to keep pace with increasing printing requirements. A laptop will be required for the Chief Executive's use. 25 existing desktops will have to be upgraded as the present hardware architecture of these desktops is incompatible with security requirements as well as the requirements of the new mySAP Business Suite currently being implemented.

Capital Outlay

Rs.15,00,000/-

v) Purchase of Software Licences

Proposal

To acquire licenses of a Mail Server, an Enterprise-level Anti-Virus software as well as office-automation software for the new desktops to be purchased in 2005-06.

Purpose

Existing Mail Server has a limitation of 50 user licenses, beyond which it cannot be upgraded. As the number of users is expected to increase beyond 50 during 2005-06, it will be necessary to procure license for a new Mail Server. The existing Anti-Virus software is not functioning efficiently and needs to be replaced by a new Anti-Virus software that would additionally offer scanning of email attachments and ant-spam protection for the Mail Server. To provide the facilities of office automation software to the new users who will be using the ten desktops to be purchased in 2005-06, it would be necessary to purchase additional licenses.

Capital Outlay

Rs.6,00,000/-

vi) Gigabit Networking for Servers

Proposal

To purchase a Gigabit Ethernet Switch as well as Gigabit Ethernet Network Interface Cards for four existing Servers.

Purpose

As currently all Servers are connected to stacked Fast Ethernet switches, data throughput is suffering on account of bandwidth limitations. Moreover, as centralized backup is also taking place over the Local Area Network, more allowances have to be made for the backup window. A Gigabit Ethernet backbone meant exclusively for Servers would improve data throughput for users as well as faster backups over LAN, thus obviating expensive investments in a SAN architecture for the time being.

Capital Outlay

Rs.6,00,000/-

vii) Implementation of Enterprise Information Security Solution

Proposal

External domain experts are to be engaged to carry out an assessment of the present Information Security environment in the organization and implement corrective measures.

Purpose

With implementation of several enterprise-class Information Systems, such as Oracle E-Business Suite, SmallWorld (GIS) and mySAP Business Suite, which are supporting critical business processes, and with the commencement of Wireless Broadband link for 24-hour Internet connectivity, it has become imperative to take stock of the current information security environment and take corrective measures, where necessary.

Capital Outlay

Rs.10,00,000/-

viii) Implementation of Bill Vending Kiosks

Proposal

Three Bill Vending kiosks are to be installed at suitable locations so that customers of NPCL can take out copy bills by operating a touch screen-based system on a self-service basis.

Purpose

With a significant number of customers not occupying premises in Greater Noida on a permanent basis, there is a steady requirement of copy bills, which has to be attended to by NPCL's employees. Bill vending kiosks are intended to free internal resources from this activity as well as improve customers' conveniences.

Capital Outlay

Rs.5,75,000/-

ix) Implementation of Bar Coded Collections

Proposal

Bar Code printers and scanners are to be procured to print billing information in Bar Coded format on Bills and to scan the same information during collections and transfer the same to the Collections database without requiring manual data entry.

Purpose

With rapid increase in the customer base, use of bar codes in Collections will speed up transactions at the Company's Collection Centres, reduce the queuing time for customers as well as improve data integrity as errors due to manual data entry can be avoided in the process.

Capital Outlay

Rs.5,00,000/-

x) Upgrading of Website

Proposal

The upgrades to the website planned for 2005-06 are accepting applications and payments online as well as providing content and features customized according to feedback received from users.

Purpose

The website of NPCL is likely to give rise to new expectations regarding information and customer service among the customers of the Company. The measures mentioned above are intended to meet these expectations as well as optimize customer service delivery processes and improve resource utilization.

Capital Outlay

Rs.2,00,000/-

xi) Purchase of Presentation Equipment

Proposal

To procure one LCD Projector with screen, a pair of speakers with amplifiers and one Panaboard.

Purpose

To create in-house facilities for presentations thereby obviating substantial recurring expenditure the Company incurring on account of hiring these equipment from time to time..

Capital Outlay

Rs.2,00,000/-

C. New Computers for Operations

Proposal

Purchase of 10 nos. of computers.

Purpose

The desktop computers will be used by the Company's officials and staffs manning the proposed control room and, monitoring and analysing meter readings to be collated through AMR.

Capital Outlay

Rs.5,00,000/-

D. AMR (Automated Meter Reading)

Proposal

The Automated Meter Reading is proposed to be done using GSM network of existing service providers at 90 consumer locations by replacing 3 phase 3 wire Tri-vector meter by AMR compatible meters.

Purpose

The Automatic Meter Reading system is intended to remotely collect the meter readings using a communication medium, without persons physically visiting the consumer's premises and reading the meters visually.

Typically, the purpose of AMR will be to eliminate the direct cost of manual meter reading and in addition, it will act as a tool for culling data on feeder demand, real-time technical losses on 33 kV feeders, voltage-profile etc.

Through AMR following benefits will be derived:

- a. Saving of man-hour being used presently for reading meters.
- b. Monitoring of readings of “suspect” consumers
- c. Obtaining readings of consumers at the material time of transferring of incoming supply to consumers from one feeder to another

Capital Outlay

Rs.28,08,810/-

E. Software for Customer Interface Centre

Proposal

Purchase of software for Customer Interface Centre

Purpose

To log consumer’s supply complaint, to redirect attending crew for solving those complaints in a better way and also monitor the performance of the attending crew this software is required.

Capital Outlay

Rs.10, 00,000/-

COMMUNICATION AND TESTING EQUIPMENT

(Refer Item7 of Capex List)

A. Communication Equipment

Proposal

Purchase of 10 nos. of mobile sets.

Purpose.

To facilitate two way communication amongst operational staffs and control room service associates.

Capital Outlay

Rs. 30,000/-

B. Testing Equipment

Proposal

Purchase of 1 no. of Secondary Injection Sets, 1 no. of Digital Earth Resistance Tester and 1 no. of Motorized Meggar.

Purpose.

To test the healthiness of equipment and network installations.

Capital Outlay

Rs. 1,69,000/-

CIVIL WORK
(Refer Item 8 of Capex List)

A. New Office Facilities at Delta 33/11 kV substation

Proposal

Creating office facilities at the first floor of the Kasna Switching Station

Purpose

To establish control room for facilitating Multi Buyer Multi Seller System and relocate supervisory staff engaged in consumer interfacing and trouble call management so as to cope with the increased workload.

Capital Outlay

Rs.25,00,000/-

B. Miscellaneous Civil Works

Proposal

To convert a patch of land to metalled road in front of the switch rooms at Surajpur (South) and Udyog Kendra 33/11 kV Substation.

Purpose

To facilitate traffic movement as and when required.

Capital Outlay

Rs.5,00,000/-

C. New Vehicles

Proposal

Purchasing of vehicles

Purpose

For the use of Company's officials for business purposes..

Capital Outlay

Rs.12,00,000/-