

|                      |                               |   |
|----------------------|-------------------------------|---|
| NAME OF ORGANISATION | INDIANOIL CORPORATION LIMITED | Available at "Indianoil for Suppliers/Future procurement plan |
| WEBSITE LINK         | https://iocl.co               |   |
| MINISTRY/DEPT        | m/ MoPNG                      |   |

FINANCIAL YEAR 2021 - 22

Capex Procurement Projected - Refineries

| Sl. No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | Vessels/Drums/Tanks   |                                | 427      | Nos.            | 342.39                                      |
| 2       | Pumps   |                                | 898      | Nos.            | 512.08                                      |
| 3       | Reactors  |                                | 64       | Nos.            | 299.32                                      |
| 4       | Column/Column Internals/Column Modification   |                                | 117      | Nos.            | 381.85                                      |
| 5       | Heat Ex/Air coolers/Fin Fan Coolers   |                                | 486      | Nos.            | 692.93                                      |
| 6       | Filters   |                                | 1        | Nos.            | 0.08  |
| 7       | Instrumentation items (DCS, PLC, Analyser,,sensors,, Flowmeter,Transmitter etc.)  |                                | LOT      | LOT             | 71.05                                       |
| 8       | Instrument Cables   |                                | LOT      | LOT             | 27.44                                       |
| 9       | Electrical Items (Transformer, Switchboard,Switch gears, HV/MV Boards,Motors,Hoist,PFIC Panel,VFD,Genset)   |                                | LOT      | LOT             | 69.40                                       |
| 10      | Electrical Cables   |                                | LOT      | LOT             | 45.94                                       |
| 11      | Compressors/Blowers/Fans  |                                | 38       | Nos.            | 354.86                                      |
| 12      | Heaters & Stacks  |                                | 29       | Nos.            | 409.20                                      |
| 13      | Bulk (Pipe/Fittings/Flanges/Valve)  |                                | LOT      | LOT             | 193.72                                      |
| 14      | Package Items(HVAC,ETP,Refigeration,Cooling Tower,DI Guard,Chlorine Injection,Chemical Injection,Side Stream Filter,Ehylene BOG,TEG Borelling,Flare,Communication Mgmt Sytem,Nitrogen Cooling System,Control Monitoring System,Ambience Air Monitoring system,PCK metering Skid,Cathodic Protectin System,FDAS system,CCTV,Custody Transfer Metering Skid,Clean Agent System) |                                | LOT      | LOT             | 1735.93                                     |
| 15      | Fire Fighting system/equipment/package , Foam Concentrate, Manual & Remote Operated High Volume Longe Range Monitor with Accessories  |                                | LOT      | LOT             | 10.00                                       |
| 16      | Incinerator & Instr. Components   |                                | -        | Nos.            | -   |
| 17      | Mech items :EOT Crane,Forklift,Weigh Bridge,Industrial Lift,Belt & Screw conveyors/Dock leveller  |                                | 16       | Nos.            | 2.00  |
| 18      | Steam Turbine   |                                | 1        | Nos.            | 50  |
| 19      | Rotary Valves/Safety Valves/Control Valves/On-off Valves/Emergency Vent Valves/Shutdown Valves  |                                | LOT      | LOT             | 4.72  |
| 20      | Mixers & Agitators  |                                | 35       | Nos.            | 226   |
| 21      | Driers  |                                | -        | -               | -   |
| 22      | Separators  |                                | -        | -               | -   |
| 23      | Boiler  |                                | -        | -               | -   |
| 24      | Lab Equipment   |                                | -        | -               | -   |
| 25      | Pig Launcher & Pig Receiver   |                                | -        | -               | -   |
| 26      | Marine Loading Arm  |                                | -        | -               | -   |
| 27      | Inert Ceramic balls   |                                | -        | -               | -   |
| 28      | Sample Coolers (PI) & Sample Bombs (PE)   |                                | -        | -               | -   |
| 29      | Mounded Bullet  |                                | 5        | Nos.            | 66  |
| 30      | Spare Components (Compressor/Pumps/Feed Coalescer)  |                                | LOT      | LOT             | 10.82                                       |
| 31      | Miscellaneous items (including FR approved project)   |                                | LOT      | LOT             | 826.89                                      |
| 32      | API 610 Centrifugal Pump  |                                | 4        | No.             | 25  |
| 33      | Venturi type Steam Trap   |                                | 8        | Nos             | 1   |
| 34      | Bottom mounted constant spring support  |                                | 24       | Nos             | 2.3   |

Procurement Projected - For Repair & Maintenance of Refineries

| Sl. No. | Description of item            | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|--------------------------------|--------------------------------|----------|-----------------|---|
| 1       | Pump Spares                    |                                |          | Lot             | 49  |
| 2       | Mechanical Seal Spares         |                                |          | Lot             | 58  |
| 3       | Bearings                       |                                |          | Lot             | 5   |
| 4       | Turbine Spares                 |                                |          | Lot             | 119   |
| 5       | Steam Engine Spares            |                                |          | Lot             | 1   |
| 6       | Furnace Spares                 |                                |          | Lot             | 15  |
| 7       | Compressor Spares              |                                |          | Lot             | 62  |
| 8       | Fan & Blower Spares            |                                |          | Lot             | 7   |
| 9       | Agitator & Mixer Spares        |                                |          | Lot             | 2   |
| 10      | ETP,LPG Plant Equipment Spares |                                |          | Lot             | 12  |
| 11      | Air Conditioner Spares         |                                |          | Lot             | 2   |
| 12      | Heat Exchanger Spares          |                                |          | Lot             | 47  |
| 13      | Column/ Reactor Spares         |                                |          | Lot             | 35  |
| 14      | Pipe & Pipe Fittings           |                                |          | Lot             | 130   |
| 15      | Gear Box Spares                |                                |          | Lot             | 9   |
| 16      | Motor Spares                   |                                |          | Lot             | 4   |

|    |  |  |       |                |       |
|----|--|--|-------|----------------|-------|
| 17 | Transformer, Battery, Switch Gear, Cable, Lamp etc. Spares |  |       | Lot            | 82    |
| 18 |  | Liquid oxidation Catalyst for spent caustic regeneration   | 1.5   | MT             | 2.18  |
| 19 |  | Anti Oxidant (AO 1010) Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate)   | 950   | MT             | 33.05 |
| 20 |  | Anti Oxidant AO 168/ AO9   | 1450  | MT             | 37.5  |
| 21 |  | AO1076 (Octadecyl $\beta$ - (3,5-di- tert -butyl-4-hydroxy phenyl)-propionate  | 96    | MT             | 3.8   |
| 22 |  | ATF Merox Catalyst - Pre impregnated activated charcoal  | 36    | M <sup>3</sup> | 0.81  |
| 23 |  | Benzene hydrogenation catalyst for ISOM unit   | 2.1   | MT             | 2.55  |
| 24 |  | CAB catalyst   | 16    | MT             | 2.65  |
| 25 |  | CAB-2 catalyst (Blend of vanadium oxytrichloride & titanium tetrachloride 50/50)   | 31    | MT             | 4.65  |
| 26 |  | Carbon Monoxide (CO) promoter catalyst additive for FCC Unit   | 16    | MT             | 5.87  |
| 27 |  | Catalyst for DCU LPG Merox Unit  | 547   | L              | 0.28  |
| 28 |  | Hindered amine light stabilizer (HALS) - Chimassorb 944  | 9     | MT             | 0.93  |
| 29 |  | Claus Catalyst (Al based)  | 151.2 | M <sup>3</sup> | 1.45  |
| 30 |  | Claus Catalyst charge for Sulphur Recovery Unit (SRU)  | 22    | M <sup>3</sup> | 0.71  |
| 31 |  | Chloride guard adsorbent for Continuous Catalytic Reforming Unit (CCRU) stabilizer feed  | 30.5  | MT             | 0.9   |
| 32 |  | 2-Hydroxy-4-n-octoxybenzophenone (Cyasorb 531/UV-1)  | 6     | MT             | 0.75  |
| 33 |  | Cyclo-Hexyl Methyl Methoxysilane (DONOR C)   | 15    | MT             | 1.55  |
| 34 |  | Di-Cyclo-Pentyl-Di-Methoxy-Silane (DONOR D)  | 3     | MT             | 1.21  |
| 35 |  | Slip additives (Erucamide )  | 110   | MT             | 4.7   |
| 36 |  | Ethylene drying and CO2 removal bed (Adsorbant)  | 8     | MT             | 0.37  |
| 37 |  | Ethylene drying and CO2 removal bed (Foxed) for PP Unit  | 3     | MT             | 0.43  |
| 38 |  | Fluidized Catalytic Cracking Catalyst  | 4435  | MT             | 139   |
| 39 |  | Grease (VASELINE)  | 27    | MT             | 0.72  |
| 40 |  | Hydrotreating and Hydrocracking catalyst for Hydrocracking unit  | 320   | MT             | 80.25 |
| 41 |  | Hydrotreating Catalyst for DHD1 unit   | 478   | MT             | 80.4  |
| 42 |  | ISOM catalyst  | 24    | MT             | 35    |
| 43 |  | Liquid oxidation Catalyst for spent caustic regeneration   | 1.59  | MT             | 2.18  |
| 44 |  | Low temp. hydrogenation catalyst (Tail Gas Treatment Unit)   | 21.57 | MT             | 1.77  |
| 45 |  | Molecular sieves-desiccant (sodium-potassium-alumino silicate)   | 47.6  | MT             | 1.25  |
| 46 |  | Optical brightener   | 1     | MT             | 0.62  |
| 47 |  | PEPQ (Phosphorous trichloride, reaction products with 1,1-biphenyl and 2,4-bis(1,1-dimethylethyl)phenol) (secondary antioxidant)                         | 186   | MT             | 19.80 |
| 48 |  | Peroxide-101 (2, 5 Dimethyl-2,5-di (tert-butyl-peroxy) hexane)   | 92    | MT             | 8.91  |
| 49 |  | PG/Pelargonic acid/ C8-C10 fatty acid  | 330   | MT             | 9.50  |
| 50 | Chemicals, Catalyst & additives                            | PP Catalyst.<br>A composition of Magnesium Chloride and 1,2 Benzenedicarboxylic acid, 1,2 Bis[2-chloro-1-(chloromethyle)ethyl] ester.                    | 7.5   | MT             | 24.20 |
| 51 |  | PPA (Polymer Processing Additive)  | 40    | MT             | 5.29  |
| 52 |  | Propylene drying and CO2 removal bed for PP unit (Fixed bed)   | 9     | MT             | 0.24  |
| 53 |  | Silica gel-desiccant (Compound of Silicon dioxide)   | 187   | MT             | 4.30  |
| 54 |  | T Fuel & U-Fuel for analysis of Cetane number  | 820   | Ltr            | 0.21  |
| 55 |  | UV stabilizer 622  | 150   | MT             | 8.80  |
| 56 |  | ZN-180M (Avant CATALYST) or equivalent   | 240   | Kg             | 0.75  |
| 57 |  | ZSM-5 catalyst   | 100   | MT             | 8.74  |
| 58 |  | Primary Reference Fuel (PRF) {ISO-Octane & n heptane}  | 880   | Kg             | 0.11  |
| 59 |  | ATF (Aviation Turbine fuel) Merox catalyst - Pre impregnated activated charcoal  | 36    | M <sup>3</sup> | 0.81  |
| 60 |  | DSTDP (distearyl thiodipropionate) - acts as a secondary antioxidant for PP polymers.  | 65    | MT             | 2.30  |
| 61 |  | Speciality Grease - Mixture of higher paraffin hydrocarbon used as catalyst protection in Spheripol PP technology for production of Polypropylene.       | 15    | MT             | 0.40  |
| 62 |  | Magnesium Aluminium Hydroxide Carbonate Hydrate (DHT 4A/Hycite 713 ) -used in reaction for acid scavenging in polymer production and processing systems. | 85    | MT             | 1.80  |
| 63 |  | Alkyl Amine Ethoxylate ( ATMER 163 ) - for neutralization of Catalyst & Co catalyst and works as anti- static agent.                                     | 45    | MT             | 2.20  |

|    |                                 |  |      |     |       |
|----|---------------------------------|--|------|-----|-------|
| 64 |                                 | Anitoxidant AO 3114(1,3,5-Tris(3,5-di-tert-butyl-4-hydroxy benzyl)-s-triazine-2,4,6-(1H,3H,5H)trione) - specialized vis- breaking chemical used for speci fic PP grade                       | 28   | MT  | 1.33  |
| 65 |                                 | Non-Aromatic catalyst batch mineral oil (MINERAL OIL ) - used for diluting Donor in order to have better accuracy of the flow measure and also used for flushing in TEAL area.               | 70   | MT  | 1.45  |
| 66 |                                 | HDPE consumable polymerization Catalyst - used for polymerization reaction for production of specific grade of High density polyethylene from Ethylene                                       | 8    | MT  | 21.60 |
| 67 |                                 | Antioxidant (AO-1330 ) -prevents polymer from degradation caused by exposure to heat, ultraviolet radiation (UV) and mechanical shear  | 46   | MT  | 4.8   |
| 68 |                                 | Desiccant for ethylene guard bed (Fixed bed for ethylene purification) - used for removal of Carbon monoxide, carbon dioxide, moisture from Ethylene feed in Swing unit to Ultra low levels. | 63   | MT  | 3.35  |
| 69 |                                 | ST65692 (Biphenyl) -approved additive Packages required for manufacturing of Servo Duotherm S required at Panipat Refinery   | 60   | MT  | 1.20  |
| 70 |                                 | Mixed Butylated Phenol Antioxidant (ST4064) - used in blending in many lubricants  | 87.3 | MT  | 1.66  |
| 71 |                                 | Hydrogenated Terphenyl (ST58606) -approved additive Packages required for manufacturing of Servotherm SHT 32 required by IOCL Refinery.  | 304  | MT  | 9.09  |
| 72 |                                 | TEAL   | 18   | MT  | 0.72  |
| 73 | Mechanical Stores               | Cast Air Preheater Module / Cast & Glass Air Preheater Modules / Glass Air Pre-Heater Modules  | 1    | No  | 1.18  |
| 74 |                                 | Cutter Blades of Extruder  | 1600 | No  | 2.19  |
| 75 |                                 | Hydrogen Tubular Reformer Catalyst Tubes   | 36   | No  | 3.61  |
| 76 |                                 | Rotary Tight Shut off Valve  | 4    | No  | 0.60  |
| 77 | Chemicals, Catalyst & additives | CD (Di- ethyl aluminum chloride)   | 30   | MT  | 1.12  |
| 78 | Chemicals, Catalyst & additives | CJ (Di- ethyl aluminum ethoxide)   | 30   | MT  | 2.56  |
| 79 | Chemicals, Catalyst & additives | GMS-90   | 250  | MT  | 3.3   |
| 80 | Chemicals, Catalyst & additives | Base FCC catalyst for INDMAX Unit.   | 1170 | MT  | 34.5  |
| 81 | Chemicals, Catalyst & additives | DMDS   | 450  | MT  | 14.76 |
| 82 | Chemicals, Catalyst & additives | RM 68 Master batch   | 110  | MT  | 9.52  |
| 83 | Equipment                       | Feed Filter Bank   | 1    | No  | 6.18  |
| 84 | Chemicals, Catalyst & additives | MIBK (METHYL ISOBUTYL KETONE)  | 700  | MT  | 20    |
| 85 | Mechanical Stores               | Radiant Coils  | 2    | Set | 34.78 |
| 86 | Chemicals, Catalyst & additives | Hydrogenation Catalyst (Activated Alumina impregnated with Cobalt and Molybdenum Oxides).  | 52.3 | M3  | 2.54  |
| 87 | Chemicals, Catalyst & additives | Liquid oxidation catalyst for FCC Indmax Unit  | 555  | Kg  | 0.75  |
| 88 | Lab equipment                   | Fully Automated Ball on Cylinder Lubricity Evaluator (BOCLE)   | 1    | No. | 0.86  |
| 89 | Lab equipment                   | Trace Nitrogen Sulphur Analyser  | 1    | No. | 1.21  |

**Procurement Projected Capex and Repair & Maint - Pipelines**

| Sl. No. | Description of item                              | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|--|--------------------------------|----------|-----------------|---|
| 1       | Strainer (Nos)                                   |                                | 7        | Nos.            | 0.12  |
| 2       | Transfer Pump (Nos)                              |                                | 2        | Nos.            | 0.15  |
| 3       | ACDB Panel (Nos)                                 |                                | 25       | Nos.            | 3.18  |
| 4       | API 6D Ball Valves (Nos)                         |                                |          | Nos.            |   |
| 5       | API 6D Valves (Nos)                              |                                |          | Nos.            |   |
| 6       | Ball Valve (Nos)                                 |                                | 164      | Nos.            | 8.61  |
| 7       | Basket Strainer (Nos)                            |                                | 3        | Nos.            | 1.00  |
| 8       | Control valve (Nos)                              |                                | 4        | Nos.            | 1.00  |
| 9       | EEE (Nos)  |                                |          | Nos.            |   |
| 10      | Emergency evacuation equipment (Nos)             |                                | 4        | Nos.            | 2.00  |
| 11      | Engine Spares                                    |                                | Lot      | Lot             | 14.70                                       |
| 12      | ER Probe(Nos)                                    |                                |          | Nos.            | 1.04  |
| 13      | F/F PUMP, Jockey pumps, water filling pumps(Nos) |                                | 7        | Nos.            | 0.70  |
| 14      | Fire Fighting Pipes (km)                         |                                |          | Km              |   |
| 15      | Fire Fighting Pump (Nos)                         |                                | 1        | Nos.            | 1.00  |
| 16      | Flow Tee (Nos)                                   |                                |          | Nos.            |   |
| 17      | Globe Valve (Nos)                                |                                | 4        | Nos.            | 1.00  |
| 18      | Heavy duty access Mats                           |                                |          |                 |   |
| 19      | High Mast(Nos)                                   |                                | 10       | Nos.            | 3.03  |
| 20      | HOT crane (Nos)                                  |                                | 2        | Nos.            | 1.00  |
| 21      | HT Capacitor Panel(Nos)                          |                                | 2        | Nos.            | 0.29  |

|    |   |  |       |      |        |
|----|---|--|-------|------|--------|
| 22 | HT Panel(Nos)   |  | 2     | Nos. | 2.89   |
| 23 | HT/LT/Control cables(km)  |  | 85    | Km   | 0.58   |
| 24 | Instrumentation, Control & SCADA System (Nos)   |  | 3     | Nos. | 1.49   |
| 25 | Insulating coupling (Nos)   |  | 20    | Nos. | 1.00   |
| 26 | Jockey pump (Nos)   |  | 1     | Nos. | 1.00   |
| 27 | LT DG(Nos)  |  | 27    | Nos. | 0.64   |
| 28 | LT Panel(Nos)   |  | 2     | Nos. | 0.00   |
| 29 | Mainline pumping Unit (Nos)   |  | 8     | Nos. | 23.00  |
| 30 | Marine Hoses for SPM  |  |       | Nos. | 9.00   |
| 31 | Mechanical Pipe End connector+ Standard/Long seal Leak clamps+ Encapsulating Leak Clamps  |  |       | Nos. | 1.05   |
| 32 | Metering skid assembly (consisting of Filtration, Metering and Pressure Reduction units) of various sizes for providing connectivity to CGD Entities from Gas pipelines and augmentation of existing facilities (Nos) |  | 4     | Nos. | 1.01   |
| 33 | Metering Skid Ph-III(Nos)   |  |       |      |        |
| 34 | Metering Skid(Nos)  |  |       |      |        |
| 35 | Misc. fire fighting equipment (Nos)   |  | 1     | Nos. | 2.00   |
| 36 | NRPL Mainline pumping unit Replacement  |  |       | Nos. | 20.00  |
| 37 | Other Marine Spares   |  |       | Nos. | 6.30   |
| 38 | pipe fitting(Nos)   |  | 14000 | Nos. | 1.87   |
| 39 | Pipe (km)   |  | 6.8   | Nos. | 6.12   |
| 40 | Remote operated Valve (Nos)   |  | 2     | Nos. | 1.00   |
| 41 | Scraper Barrel  |  | 5     | Nos. | 1.00   |
| 42 | Separator Filter (Nos)  |  |       | Nos. |        |
| 43 | Small size (<4") misc. valve (Nos)  |  |       | Nos. | 1.00   |
| 44 | SRV (Nos)   |  | 1     | Nos. | 0.05   |
| 45 | Station pipes(km)   |  | 13.3  | Nos. | 13.74  |
| 46 | Steel Pipe (KM)   |  | 550   | Km   | 519.00 |
| 47 | Steel Plate (MT)  |  | 569   | Nos. | 5.80   |
| 48 | sump pump and tank (Nos)  |  |       | Nos. |        |
| 49 | Swing check valve (Nos)   |  | 5     | Nos. | 1.00   |
| 50 | Telecom System (comprising of DC power, Networking system, CCTV system, Telephone system, OFC, HDPE, etc.)(Nos)   |  | 3     | Nos. | 75.80  |
| 51 | Transformer(Nos)  |  | 4     | Nos. | 24.88  |
| 52 | Vadinar SPM Replacement project<br>1. Buoy & accessories<br>2. Concrete Coated Pipe   |  | Lot   | Nos. | 500.00 |
| 53 | Valves  |  | Lot   | Lot  | 4.00   |
| 54 | VALVES of all types(Nos)  |  | 332   | Nos. | 3.48   |
| 55 | VFD (Nos)   |  | 6     | Nos. | 20.00  |

**Procurement Projected - Marketing - LPG Group**

| Sl. No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | LPG Pump  |                                | 6        | Nos.            | 3.7   |
| 2       | LPG Compressor  |                                | 9        | Nos.            | 2.84  |
| 3       | Air Compressor  |                                | 6        | Nos.            | 0.8   |
| 4       | Air Dryer   |                                | 3        | Nos.            | 0.45  |
| 5       | DG Set  |                                | 6        | Nos.            | 2.22  |
| 6       | Fire Engine   |                                | 6        | Nos.            | 1.35  |
| 7       | Valve change without Evacuation Machine   |                                | 6        | Nos.            | 1.4   |
| 8       | LPG Loading arm   |                                | 16       | Nos.            | 0.44  |
| 9       | Carousel  |                                | 8        | Nos.            | 23.6  |
| 10      | Computers   |                                | 50       | Nos.            | 0.25  |
| 11      | Additive dosing machines  |                                | 30       | Nos.            | 5.4   |
| 12      | Carousal Cards in Nos.  |                                | 380      | Nos.            | 2.66  |
| 13      | Mech Seals (Refurbishing) Nos.for LPG Pump                                      |                                | 95       | Nos.            | 2.85  |
| 14      | Mech Seals New in Nos. for LPG Pump   |                                | 25       | Nos.            | 2.00  |
| 15      | Valves / Flanges / Gaskets / Spares in Nos.                                     |                                | 300      | Nos.            | 7.50  |
| 16      | Cables (Control / Power) in RMs   |                                | 30000    | Nos.            | 0.45  |
| 17      | Pressure / Temp Transmitters/Gauges in Nos.                                     |                                | 200      | Nos.            | 2.00  |
| 18      | Fire Engine / DG / DC Batteries in Nos.   |                                | 3300     | Nos.            | 4.95  |
| 19      | Conveyor Chain in RM  |                                | 40000    | Nos.            | 4.80  |
| 20      | Air Ends of Screw Compressors   |                                | 40       | Nos.            | 2.00  |
| 21      | Spares (Filters & Accessories) Air Comp in Nos.                                 |                                | 500      | Nos.            | 1.25  |
| 22      | LPG Vap Comp Seals / valves / Plates  |                                | 300      | Nos.            | 0.90  |
| 23      | Lights and Fixtures / Bulbs / glands / JB's / Switches                          |                                | 10000    | Nos.            | 1.00  |
| 24      | Relays / Fuses  |                                | 5000     | Nos.            | 1.00  |
| 25      | Printer Cartridges  |                                | 600      | Nos.            | 0.30  |
| 26      | Sprockets / Cylinders / Shafts / wearing strips / Pneumatic tubing / connectors |                                | 20000    | Nos.            | 4.00  |
| 27      | Misc Spares /Car (sensors / connectors / cables etc)                            |                                | 200      | Nos.            | 2.00  |
| 28      | TLD / TLF Spares  |                                | 800      | Nos.            | 2.00  |
| 29      | Structural steel for Conv / Misc Works in MT                                    |                                | 420      | Nos.            | 1.60  |
| 30      | Diesel / Fire Engine Spares / filters / glands                                  |                                | 700      | Nos.            | 4.9   |
| 31      | Spares for Level gauges / transmitters  |                                | 300      | Nos.            | 3   |
| 32      | Fire / SCADA / GMS Panel Spares / MIMIC / sensors / transmitter                 |                                | 300      | Nos.            | 1.5   |
| 33      | CCTV spares / modules   |                                | 100      | Nos.            | 1.5   |
| 34      | Load cells for weigh bridges / weighing scales / carousals                      |                                | 1000     | Nos.            | 2.5   |
| 35      | Centering Arms of carousals   |                                | 2500     | Nos.            | 0.30  |

**Procurement of LPG Cylinders & P Regulator**

| Sl. No. | Description of item                             | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | 14.2 Kg Cylinders (Including New & Replacement) |                                | 8400000  | Nos.            | 1070.69                                     |
| 2       | 19 Kg Cylinders (Including New & Replacement)   |                                | 900000   | Nos.            | 140.04                                      |
| 3       | 47.5 Kg Cylinders (Including New & Replacement) |                                | 50000    | Nos.            | 19.26                                       |
| 4       | 5 Kg Cylinders (Including New & Replacement)    |                                | 1500000  | Nos.            | 130.01                                      |
| 5       | 425 KG Cylinders                                |                                | 2000     | Nos.            | 13.17                                       |
| 6       | Pressure Regulators                             |                                | 5000000  | Nos.            | 72.44                                       |
| 7       | Self Closing Valve                              |                                | 20000000 | Nos.            | 168.00                                      |

**Procurement Projected \_ Marketing - Lubes**

| Sl. No. | Description of item                       | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | Synthetic base oil Poly alfa olefin 6 CST |                                | 460      | MT              | 12.18                                       |
| 2       | ST5014 (Lithium Hydroxide Monohydrate)    |                                | 275      | MT              | 15.79                                       |
| 3       | ST56058 (PIB 1000)                        |                                | 2140     | MT              | 21.78                                       |

**FINANCIAL YEAR 2022 - 23**

**Capex Procurement Projected \_ Refineries**

| Sl. No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | Vessels/Drums/Tanks   |                                | 99       | Nos.            | 108.06                                      |
| 2       | Pumps   |                                | 275      | Nos.            | 138.08                                      |
| 3       | Reactors  |                                | 10       | Nos.            | 240.00                                      |
| 4       | Column/Column Internals/Column Modification   |                                | 22       | Nos.            | 108.69                                      |
| 5       | Heat Ex/Air coolers/Fin Fan Coolers   |                                | 130      | Nos.            | 142.66                                      |
| 6       | Filters   |                                | -        | Nos.            | -   |
| 7       | Instrumentation items (DCS, PLC, Analyser,,sensors,, Flowmeter,Transmitter etc.)  |                                | LOT      | LOT             | 100.00                                      |
| 8       | Instrument Cables   |                                | LOT      | LOT             | 25.00                                       |
| 9       | Electrical Items (Transformer, Switchboard,Switch gears, HV/MV Boards,Motors,Hoist,PFIC Panel,VFD,Genset)   |                                | LOT      | LOT             | 70.00                                       |
| 10      | Electrical Cables   |                                | LOT      | LOT             | 50.00                                       |
| 11      | Compressors/Blowers/Fans  |                                | 14       | Nos.            | 180.00                                      |
| 12      | Heaters & Stacks  |                                | 2        | Nos.            | 69.61                                       |
| 13      | Bulk(Pipe/Fittings/Flanges/Valve)   |                                | LOT      | LOT             | 90.00                                       |
| 14      | Package Items(HVAC,ETP,Refrigeration,Cooling Tower,DI Guard,Chlorine Injection,Chemical Injection,Side Stream Filter,Ethylene BOG,TEG Borelling,Flare,Communication Mgmt Sytem,Nitrogen Cooling System,Control Monitoring System,Ambience Air Monitoring system,PCK metering Skid,Cathodic Protectin system,FDAS system,CCTV,Custody Transfer Metering Skid,Clean Agent System) |                                | LOT      | LOT             | 433.11                                      |
| 15      | Fire Fighting system/equipment/package , Foam Concentrate, Manual & Remote Operated High Volume Longe Range Monitor with Accessories  |                                | LOT      | LOT             | 40.00                                       |
| 16      | Incinerator & Instr. Components   |                                | -        | Nos.            | -   |
| 17      | Mech items :EOT Crane,Forklift,Weigh Bridge,Industrial Lift,Belt & Screw conveyors/Dock leveller  |                                | -        | Nos.            | -   |
| 18      | Steam Turbine   |                                | -        | Nos.            | -   |
| 19      | Rotary Valves/Safety Valves/Control Valves/On-off Valves/Emergency Vent Valves/Shutdown Valves  |                                | -        | Nos.            | -   |
| 20      | Mixers & Agitators  |                                | -        | Nos.            | -   |
| 21      | Driers  |                                | -        | Nos.            | -   |
| 22      | Separators  |                                | -        | Nos.            | -   |
| 23      | Boiler  |                                | -        | Nos.            | -   |
| 24      | Lab Equipment   |                                | -        | Nos.            | -   |
| 25      | Pig Launcher & Pig Receiver   |                                | -        | Nos.            | -   |
| 26      | Marine Loading Arm  |                                | -        | Nos.            | -   |
| 27      | Inert Ceramic balls   |                                | -        | LOT             | -   |
| 28      | Sample Coolers (PI) & Sample Bombs (PE)   |                                | -        | Nos.            | -   |
| 29      | Mounded Bullet  |                                | -        | Nos.            | -   |
| 30      | Spare Components (Compressor/Pumps/Feed Coalescer)  |                                | -        | Nos.            | -   |
| 31      | Miscellaneous items (including FR approved project)   |                                | LOT      | LOT             | 692.25                                      |

**Procurement Projected - For Repair & Maintenance of Refineries**

| Sl. No. | Description of item                                 | Broad specification Parameters   | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--|----------|-----------------|---|
| 1       | Pump Spares   |  |          | Lot             | 51  |
| 2       | Mechanical Seal Spares                              |  |          | Lot             | 59  |
| 3       | Bearings  |  |          | Lot             | 5   |
| 4       | Turbine Spares                                      |  |          | Lot             | 122   |
| 5       | Steam Engine Spares                                 |  |          | Lot             | 1   |
| 6       | Furnace Spares                                      |  |          | Lot             | 15  |
| 7       | Compressor Spares                                   |  |          | Lot             | 64  |
| 8       | Fan & Blower Spares                                 |  |          | Lot             | 7   |
| 9       | Agitator & Mixer Spares                             |  |          | Lot             | 2   |
| 10      | ETP,LPG Plant Equipment Spares                      |  |          | Lot             | 12  |
| 11      | Air Conditioner Spares                              |  |          | Lot             | 2   |
| 12      | Heat Exchanger Spares                               |  |          | Lot             | 48  |
| 13      | Column/ Reactor Spares                              |  |          | Lot             | 36  |
| 14      | Pipe & Pipe Fittings                                |  |          | Lot             | 133   |
| 15      | Gear Box Spares                                     |  |          | Lot             | 9   |
| 16      | Motor Spares  |  |          | Lot             | 4   |
| 17      | Transformer,Battery,SwitchGear,Cable,Lampetc.Spares |  |          | Lot             | 84  |
| 18      |   | Liquid oxidation Catalyst for spent caustic regeneration   | 1.5      | MT              | 2.18  |
| 19      |   | Anti Oxidant (AO 1010) Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate) | 950      | MT              | 33.05                                       |
| 20      |   | Anti Oxidant AO 168/ AO9   | 1450     | MT              | 37.5  |
| 21      |   | AO1076 (Octadecyl β - (3,5-di- tert -butyl-4-hydroxy phenyl)-propionate                          | 96       | MT              | 3.8   |
| 22      |   | ATF Merox Catalyst - Pre impregnated activated charcoal  | 36       | M <sup>3</sup>  | 0.81  |
| 23      |   | Benzene hydrogenation catalyst for ISOM unit   | 2.1      | MT              | 2.55  |
| 24      |   | CAB catalyst   | 16       | MT              | 2.65  |
| 25      |   | CAB-2 catalyst (Blend of vanadium oxytrichloride & titanium tetrachloride 50/50)                 | 31       | MT              | 4.65  |
| 26      |   | Carbon Monoxide (CO) promoter catalyst additive for FCC Unit                                     | 16       | MT              | 5.87  |
| 27      |   | Catalyst for DCU LPG Merox Unit  | 547      | L               | 0.28  |
| 28      |   | Hindered amine light stabilizer(HALS) - Chimassorb 944   | 9        | MT              | 0.93  |
| 29      |   | Claus Catalyst (Al based)  | 151.2    | M <sup>3</sup>  | 1.45  |
| 30      |   | Claus Catalyst charge for Sulphur Recovery Unit (SRU)  | 22       | M <sup>3</sup>  | 0.71  |
| 31      |   | Chloride guard adsorbent for Continuous Catalytic Reforming Unit (CCRU) stabilizer feed          | 30.5     | MT              | 0.9   |
| 32      |   | 2-Hydroxy-4-n-octoxybenzophenone (Cyasorb 531/ UV-1)   | 6        | MT              | 0.75  |
| 33      |   | Cyclo-Hexyl Methyl Methoxysilane (DONOR C)   | 15       | MT              | 1.55  |

| 34  |                                 | Di-ICyclo-Pentyl-Di-Methoxy-Silane (DONOR D)   | 3        | MT              | 1.21  |
|---|---------------------------------|--|----------|-----------------|---|
| 35  |                                 | Slip additives (Erucamide )  | 110      | MT              | 4.7   |
| 36  |                                 | Ethylene drying and CO2 removal bed (Adsorbant)  | 8        | MT              | 0.37  |
| 37  |                                 | Ethylene drying and CO2 removal bed (Foxed) for PP Unit  | 3        | MT              | 0.43  |
| 38  |                                 | Fluidized Catalytic Cracking Catalyst  | 4435     | MT              | 145.95                                      |
| 39  |                                 | Grease (VASELINE)  | 27       | MT              | 0.72  |
| 40  |                                 | Hydrotreating and Hydrocracking catalyst for Hydrocracking unit  | 320      | MT              | 80.25                                       |
| 41  |                                 | Hydrotreating Catalyst for DHDT unit   | 478      | MT              | 80.4  |
| 42  |                                 | ISOM catalyst  | 24       | MT              | 35  |
| 43  |                                 | Liquid oxidation Catalyst for spent caustic regeneration   | 1.59     | MT              | 2.18  |
| 44  |                                 | Low temp. hydrogenation catalyst (Tail Gas Treatment Unit)   | 21.57    | MT              | 1.77  |
| 45  |                                 | Molecular sieves-desiccant (sodium-potassium-alumino silicate)   | 47.6     | MT              | 1.25  |
| 46  |                                 | Optical brightener   | 1        | MT              | 0.62  |
| 47  |                                 | PEPQ<br>(Phosphorous trichloride, reaction products with 1,1-biphenyl and 2,4-bis(1,1-dimethylethyl)phenol) (secondary antioxidant)  | 186      | MT              | 19.80                                       |
| 48  |                                 | Peroxide-101 (2, 5 Dimethyl-2,5-di (tert-butyl-peroxy) hexane)   | 92       | MT              | 8.91  |
| 49  |                                 | PG/Pelargonic acid/ C8-C10 fatty acid  | 330      | MT              | 9.5   |
| 50  | Chemicals, Catalyst & additives | PP Catalyst.<br>A composition of Magnesium Chloride and 1,2 Benzenedicarboxylic acid, 1,2 Bis[2-chloro-1-(chloromethyl)ethyl] ester.   | 7.5      | MT              | 24.20                                       |
| 51  |                                 | PPA (Polymer Processing Additive)  | 40       | MT              | 5.29  |
| 52  |                                 | Propylene drying and CO2 removal bed for PP unit (Fixed bed)   | 9        | MT              | 0.24  |
| 53  |                                 | Silica gel-desiccant (Compound of Silicon dioxide)   | 187      | MT              | 4.30  |
| 54  |                                 | T Fuel & U-Fuel for analysis of Cetane number  | 820      | Ltr             | 0.21  |
| 55  |                                 | UV stabilizer 622  | 150      | MT              | 8.80  |
| 56  |                                 | ZN-180M (Avant CATALYST) or equivalent   | 240      | Kg              | 0.75  |
| 57  |                                 | ZSM-5 catalyst   | 100      | MT              | 8.74  |
| 58  |                                 | Primary Reference Fuel (PRF) (ISO-Octane & n heptane)  | 880      | Kg              | 0.11  |
| 59  |                                 | ATF (Aviation Turbine fuel) Merox catalyst - Pre impregnated activated charcoal  | 36       | M <sup>3</sup>  | 0.81  |
| 60  |                                 | DSTDP (distearyl thiodipropionate) - acts as a secondary antioxidant for PP polymers.  | 65       | MT              | 2.30  |
| 61  |                                 | Speciality Grease - Mixture of higher paraffin hydrocarbon used as catalyst protection in Spheripol PP technology for production of Polypropylene.   | 15       | MT              | 0.40  |
| 62  |                                 | Magnesium Aluminium Hydroxide Carbonate Hydrate (DHT 4A/Hycite 713) -used in reaction for acid scavenging in polymer production and processing systems.                                      | 85       | MT              | 1.80  |
| 63  |                                 | Alkyl Amine Ethoxylate ( ATMER 163 ) - for neutralization of Catalyst & Co catalyst and works as anti- static agent.   | 45       | MT              | 2.20  |
| 64  |                                 | Antioxidant AO 3114(1,3,5-Tris(3,5-di-tert-butyl-4-hydroxy benzyl)-s-triazine-2,4,6-(1H,3H,5H)trione) - specialized vis-breaking chemical used for specific PP grade                         | 28       | MT              | 1.33  |
| 65  |                                 | Non-Aromatic catalyst batch mineral oil (MINERAL OIL) - used for diluting Donor in order to have better accuracy of the flow measure and also used for flushing in TEAL area.                | 70       | MT              | 1.45  |
| 66  |                                 | HDPE consumable polymerization Catalyst - used for polymerization reaction for production of specific grade of High density polyethylene from Ethylene                                       | 8        | MT              | 21.60                                       |
| 67  |                                 | Antioxidant (AO-1330) -prevents polymer from degradation caused by exposure to heat, ultraviolet radiation (UV) and mechanical shear   | 46       | MT              | 4.8   |
| 68  |                                 | Desiccant for ethylene guard bed (Fixed bed for ethylene purification) - used for removal of Carbon monoxide, carbon dioxide, moisture from Ethylene feed in Swing unit to Ultra low levels. | 63       | MT              | 3.35  |
| 69  |                                 | ST65692 (Biphenyl) -approved additive Packages required for manufacturing of Servo Duotherm S required at Panipat Refinery   | 60       | MT              | 1.20  |
| 70  |                                 | Mixed Butylated Phenol Antioxidant (ST4064) - used in blending in many lubricants  | 87.3     | MT              | 1.66  |
| 71  |                                 | Hydrogenated Terphenyl (ST58606) -approved additive Packages required for manufacturing of Servotherm SHT 32 required by IOCL Refinery.  | 304      | MT              | 9.09  |
| 72  |                                 | TEAL   | 18       | MT              | 0.72  |
| 73  | Mechanical Stores               | Cast Air Preheater Module / Cast & Glass Air Preheater Modules / Glass Air Pre-Heater Modules  | 1        | No              | 1.18  |
| 74  |                                 | Cutter Blades of Extruder  | 1600     | No              | 2.19  |
| 75  |                                 | Hydrogen Tubular Reformer Catalyst Tubes   | 36       | No              | 3.61  |
| 76  |                                 | Rotary Tight Shut off Valve  | 4        | No              | 0.60  |
| 77  | Chemicals, Catalyst & additives | CD (Di- ethyl aluminum chloride)   | 30       | MT              | 1.12  |
| 78  | Chemicals, Catalyst & additives | CJ (Di- ethyl aluminum ethoxide)   | 30       | MT              | 2.56  |
| 79  | Chemicals, Catalyst & additives | Base FCC catalyst for INDMAX Unit.   | 1170     | MT              | 34.5  |
| 80  | Chemicals, Catalyst & additives | DMS  | 450      | MT              | 15.5  |
| 81  | Chemicals, Catalyst & additives | RM 68 Master batch   | 110      | MT              | 10  |
| 82  | Chemicals, Catalyst & additives | MIBK (METHYL ISOBUTYL KETONE)  | 700      | MT              | 21  |
| 83  | Chemicals, Catalyst & additives | Liquid oxidation catalyst for FCC Indmax Unit  | 555      | Kg              | 0.79  |
| <b>Procurement Projected - Capex and Repair &amp; Maint - Pipelines</b> |                                 |  |          |                 |   |
| Sl. No.   | Description of item             | Broad specification Parameters   | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
| 1   | Strainer (Nos)                  |  |          | Nos.            |   |
| 2   | Transfer Pump (Nos)             |  |          | Nos.            |   |
| 3   | ACDB Panel (Nos)                |  |          | Nos.            |   |
|   | API 6D Ball Valves (Nos)        |  |          | Nos.            |   |

|    |   |  |  |      |        |
|----|---|--|--|------|--------|
| 4  | API 6D Valves (Nos)   |  |  | Nos. |        |
| 5  | Ball Valve (Nos)  |  |  | Nos. |        |
| 6  | Basket Strainer (Nos)   |  |  | Nos. |        |
| 7  | Control valve (Nos)   |  |  | Nos. |        |
| 8  | EEE (Nos)   |  |  | Nos. |        |
| 9  | Emergency evacuation equipment (Nos)  |  |  | Nos. |        |
| 10 | Engine Spares   |  |  | Lot  | 15.50  |
| 11 | ER Probe(Nos)   |  |  | Nos. |        |
| 12 | F/F PUMP, Jockey pumps, water filling pumps(Nos)  |  |  | Nos. |        |
| 13 | Fire Fighting Pipes (km)  |  |  | Km   |        |
| 14 | Fire Fighting Pump (Nos)  |  |  | Nos. |        |
| 15 | Flow Tee (Nos)  |  |  | Nos. |        |
| 16 | Globe Valve (Nos)   |  |  | Nos. |        |
| 17 | Heavy duty access Mats  |  |  | Nos. |        |
| 18 |   |  |  |      |        |
| 19 | High Mast(Nos)  |  |  | Nos. |        |
| 20 | HOT crane (Nos)   |  |  | Nos. |        |
| 21 | HT Capacitor Panel(Nos)   |  |  | Nos. |        |
| 22 | HT Panel(Nos)   |  |  | Nos. |        |
| 23 | HT/LT/Control cables(km)  |  |  | Km   |        |
| 24 | Instrumentation, Control & SCADA System (Nos)   |  |  | Nos. |        |
| 25 | Insulating coupling (Nos)   |  |  | Nos. |        |
| 26 | Jockey pump (Nos)   |  |  | Nos. |        |
| 27 | LT DG(Nos)  |  |  | Nos. |        |
| 28 | LT Panel(Nos)   |  |  | Nos. |        |
| 29 | Mainline pumping Unit (Nos)   |  |  | Nos. |        |
| 30 | Marine Hoses for SPM  |  |  | Lot  | 30.00  |
| 31 | Mechanical Pipe End connector+ Standard/Long seal Leak clamps+ Encapsulating Leak Clamps  |  |  | Lot  | 1.10   |
| 32 | Metering skid assembly (consisting of Filtration, Metering and Pressure Reduction units) of various sizes for providing connectivity to CGD Entities from Gas pipelines and augmentation of existing facilities (Nos) |  |  |      |        |
| 33 | Metering Skid Ph-III(Nos)   |  |  |      |        |
| 34 | Metering Skid(Nos)  |  |  |      |        |
| 35 | Misc. fire fighting equipment (Nos)   |  |  |      |        |
| 36 | NRPL Mainline pumping unit Replacement  |  |  | Lot  | 118.00 |
| 37 | Other Marine Spares   |  |  | Lot  | 15.14  |
| 38 | pipe fitting(Nos)   |  |  | Nos. |        |
| 39 | Pipe (km)   |  |  | Nos. |        |
| 40 | Remote operated Valve (Nos)   |  |  | Nos. |        |
| 41 | Scrapper Barrel   |  |  | Nos. |        |
| 42 | Separator Filter (Nos)  |  |  | Nos. |        |
| 43 | Small size (<4") misc. valve (Nos)  |  |  | Nos. |        |
| 44 | SRV (Nos)   |  |  | Nos. |        |
| 45 | Station pipes(km)   |  |  | Nos. |        |
| 46 | Steel Pipe (KM)   |  |  | Km   |        |
| 47 | Steel Plate (MT)  |  |  | Nos. |        |
| 48 | sump pump and tank (Nos)  |  |  | Nos. |        |
| 49 | Swing check valve (Nos)   |  |  | Nos. |        |
| 50 | Telecom System (comprising of DC power, Networking system, CCTV system, Telephone system, OFC, HDPE, etc.)(Nos)   |  |  | Nos. |        |
| 51 | Transformer(Nos)  |  |  | Nos. |        |
| 52 | Vadinar SPM Replacement project<br>1. Buoy & accessories<br>2. Concrete Coated Pipe   |  |  | Nos. |        |
| 53 | Valves  |  |  | Lot  | 4.00   |
| 54 | VALVES of all types(Nos)  |  |  | Nos. |        |
| 55 | VFD (Nos)   |  |  | Nos. |        |

**Procurement Projected \_ Marketing - LPG Group**

| Sl. No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | LPG Pump  |                                | 2        | Nos.            | 1.36  |
| 2       | LPG Compressor  |                                | 3        | Nos.            | 1.04  |
| 3       | Air Compressor  |                                | 2        | Nos.            | 0.29  |
| 4       | Air Dryer   |                                | 1        | Nos.            | 0.17  |
| 5       | DG Set  |                                | 2        | Nos.            | 0.81  |
| 6       | Fire Engine   |                                | 3        | Nos.            | 0.75  |
| 7       | Valve change without Evacuation Machine   |                                | 2        | Nos.            | 0.51  |
| 8       | LPG Loading arm   |                                | 16       | Nos.            | 0.48  |
| 9       | Carousel  |                                | 2        | Nos.            | 6.49  |
| 10      | Computers   |                                | 50       | Nos.            | 0.25  |
| 11      | Additive dosing machines  |                                | 0        | Nos.            | 0   |
| 12      | Carousal Cards in Nos.  |                                | 400      | Nos.            | 2.80  |
| 13      | Mech Seals (Refurbishing) Nos.for LPG Pump                                      |                                | 100      | Nos.            | 3.00  |
| 14      | Mech Seals New in Nos. for LPG Pump   |                                | 25       | Nos.            | 2.00  |
| 15      | Valves / Flanges / Gaskets / Spares in Nos.                                     |                                | 330      | Nos.            | 8.25  |
| 16      | Cables (Control / Power) in RMs   |                                | 33000    | Nos.            | 0.50  |
| 17      | Pressure / Temp Transmitters/Gauges in Nos.                                     |                                | 220      | Nos.            | 2.20  |
| 18      | Fire Engine / DG / DC Batteries in Nos.   |                                | 3600     | Nos.            | 5.40  |
| 19      | Conveyor Chain in RM  |                                | 44000    | Nos.            | 5.28  |
| 20      | Air Ends of Screw Compressors   |                                | 44       | Nos.            | 2.20  |
| 21      | Spares (Filters & Accessories) Air Comp in Nos.                                 |                                | 550      | Nos.            | 1.38  |
| 22      | LPG Vap Comp Seals / valves / Plates  |                                | 330      | Nos.            | 0.99  |
| 23      | Lights and Fixtures / Bulbs / glands / JBs / Switches                           |                                | 12000    | Nos.            | 1.20  |
| 24      | Relays / Fuses  |                                | 5500     | Nos.            | 1.10  |
| 25      | Printer Cartridges  |                                | 650      | Nos.            | 0.33  |
| 26      | Sprockets / Cylinders / Shafts / wearing strips / Pneumatic tubing / connectors |                                | 24000    | Nos.            | 4.80  |
| 27      | Misc Spares /Car (sensors / connectors / cables etc)                            |                                | 210      | Nos.            | 2.10  |
| 28      | TLD / TLF Spares  |                                | 880      | Nos.            | 2.20  |
| 29      | Structural steel for Conv / Misc Works in MT                                    |                                | 450      | Nos.            | 1.71  |
| 30      | Diesel / Fire Engine Spares / filters / glands                                  |                                | 720      | Nos.            | 5.04  |
| 31      | Spares for Level gauges / transmitters  |                                | 330      | Nos.            | 3.3   |
| 32      | Fire / SCADA / GMS Panel Spares / MIMIC / sensors / transmitter                 |                                | 320      | Nos.            | 1.6   |
| 33      | CCTV spares / modules   |                                | 110      | Nos.            | 1.65  |

| 33  | Load cells for weigh bridges / weighing scales / carousals |                                | 1100     | Nos.            | 2.75  |
|---|--|--------------------------------|----------|-----------------|---|
| 34  | Centering Arms of carousals                                |                                | 2500     | Nos.            | 0.30  |
| 35  |  |                                |          |                 |   |
| <b>Procurement of LPG Cylinders &amp; P Regulator</b> |  |                                |          |                 |   |
| Sl. No.   | Description of item  | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
| 1   | 14.2 Kg Cylinders (Including New & Replacement)            |                                | 7300000  | Nos.            | 936.85                                      |
| 2   | 19 Kg Cylinders (Including New & Replacement)              |                                | 800000   | Nos.            | 140.04                                      |
| 3   | 47.5 Kg Cylinders (Including New & Replacement)            |                                | 50000    | Nos.            | 19.26                                       |
| 4   | 5 Kg Cylinders (Including New & Replacement)               |                                | 1000000  | Nos.            | 86.67                                       |
| 5   | 425 KG Cylinders   |                                | 2000     | Nos.            | 13.17                                       |
| 6   | Pressure Regulators  |                                | 4000000  | Nos.            | 57.95                                       |
| 7   | Self Closing Valve   |                                | 20400000 | Nos.            | 171.00                                      |
| <b>Procurement Projected _ Marketing - Lubes</b>      |  |                                |          |                 |   |
| Sl. No.   | Description of item  | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
| 1   | Synthetic base oil Poly alfa olefin 6 CST                  |                                | 500      | MT              | 13.24                                       |
| 2   | ST5014 (Lithium Hydroxide Monohydrate)                     |                                | 300      | MT              | 18.09                                       |
| 3   | ST56058 (PIB 1000)   |                                | 2247     | MT              | 24.01                                       |

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**Capex Procurement Projected \_ Refineries**

| Sl.No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|--------|---|--------------------------------|----------|-----------------|---|
| 1      | Vessels/Drums/Tanks   |                                | -        | Nos.            | -   |
| 2      | Pumps   |                                | -        | Nos.            | -   |
| 3      | Reactors  |                                | -        | Nos.            | -   |
| 4      | Column/Column Internals/Column Modification   |                                | -        | Nos.            | -   |
| 5      | Heat Ex/Air coolers/Fin Fan Coolers   |                                | -        | Nos.            | -   |
| 6      | Filters   |                                | -        | Nos.            | -   |
| 7      | Instrumentation items (DCS, PLC, Analyser,,sensors,, Flowmeter,Transmitter etc.)  |                                | LOT      | LOT             | 40.00                                       |
| 8      | Instrument Cables   |                                | LOT      | LOT             | 10.00                                       |
| 9      | Electrical Items (Transformer, Switchboard,Switch gears, HV/MV Boards,Motors,Hoist,PFIC Panel,VFD,Genset)   |                                | -        | LOT             | -   |
| 10     | Electrical Cables   |                                | LOT      | LOT             | 5.00  |
| 11     | Compressors/Blowers/Fans  |                                | -        | Nos.            | -   |
| 12     | Heaters & Stacks  |                                | -        | Nos.            | -   |
| 13     | Bulk(Pipe/Fittings/Flanges/Valve)   |                                | LOT      | LOT             | 30.00                                       |
| 14     | Package Items(HVAC,ETP,Refrigeration,Cooling Tower,D1 Guard,Chlorine Injection,Chemical Injection,Side Stream Filter,Ethylene BOG,TEG Borelling,Flare,Communication Mgmt Sytem,Nitrogen Cooling System,Control Monitoring System,Ambience Air Monitoring system,PCK metering Skid,Cathodic Protectin System,FDAS system,CCTV,Custody Transfer Metering Skid,Clean Agent System) |                                | LOT      | LOT             | 150.00                                      |
| 15     | Fire Fighting system/equipment/package, Foam Concentrate, Manual & Remote Operated High Volume Longe Range Monitor with Accessories   |                                | LOT      | LOT             | 20.00                                       |
| 16     | Incinerator & Instr. Components   |                                | -        | Nos.            | -   |
| 17     | Mech items :EOT Crane,Forklift,Weigh Bridge,Industrial Lift,Belt & Screw conveyors/Dock leveller  |                                | -        | Nos.            | -   |
| 18     | Steam Turbine   |                                | -        | Nos.            | -   |
| 19     | Rotary Valves/Safety Valves/Control Valves/On-off Valves/Emergency Vent Valves/Shutdown Valves  |                                | -        | Nos.            | -   |
| 20     | Mixers & Agitators  |                                | -        | Nos.            | -   |
| 21     | Driers  |                                | -        | Nos.            | -   |
| 22     | Separators  |                                | -        | Nos.            | -   |
| 23     | Boiler  |                                | -        | Nos.            | -   |
| 24     | Lab Equipment   |                                | -        | Nos.            | -   |
| 25     | Pig Launcher & Pig Receiver   |                                | -        | Nos.            | -   |
| 26     | Marine Loading Arm  |                                | -        | Nos.            | -   |
| 27     | Inert Ceramic balls   |                                | -        | LOT             | -   |
| 28     | Sample Coolers (PI) & Sample Bombs (PE)   |                                | -        | Nos.            | -   |
| 29     | Mounded Bullet  |                                | -        | Nos.            | -   |
| 30     | Spare Components (Compressor/Pumps/Feed Coalescer)  |                                | -        | LOT             | -   |
| 31     | Miscellaneous items (including FR approved project)   |                                | LOT      | LOT             | 176.75                                      |

**Procurement Projected - For Repair & Maintance of Refineries**

| Sl.No. | Description of item                                 | Broad specification Parameters   | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|--------|---|--|----------|-----------------|---|
| 1      | Pump Spares   |  |          | Lot             | 52  |
| 2      | Mechanical Seal Spares                              |  |          | Lot             | 61  |
| 3      | Bearings  |  |          | Lot             | 5   |
| 4      | Turbine Spares                                      |  |          | Lot             | 125   |
| 5      | Steam Engine Spares                                 |  |          | Lot             | 1   |
| 6      | Furnace Spares                                      |  |          | Lot             | 15  |
| 7      | Compressor Spares                                   |  |          | Lot             | 65  |
| 8      | Fan & Blower Spares                                 |  |          | Lot             | 7   |
| 9      | Agitator & Mixer Spares                             |  |          | Lot             | 2   |
| 10     | ETP,LPG Plant Equipment Spares                      |  |          | Lot             | 13  |
| 11     | Air Conditioner Spares                              |  |          | Lot             | 2   |
| 12     | Heat Exchanger Spares                               |  |          | Lot             | 49  |
| 13     | Column/ Reactor Spares                              |  |          | Lot             | 37  |
| 14     | Pipe & Pipe Fittings                                |  |          | Lot             | 137   |
| 15     | Gear Box Spares                                     |  |          | Lot             | 10  |
| 16     | Motor Spares  |  |          | Lot             | 4   |
| 17     | Transformer,Battery,SwitchGear,Cable,Lampetc.Spares |  |          | Lot             | 86  |
| 18     |   | Liquid oxidation Catalyst for spent caustic regeneration   | 1.5      | MT              | 2.18  |
| 19     |   | Anti Oxidant (AO 1010) Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate) | 950      | MT              | 33.05                                       |
| 20     |   | Anti Oxidant AO 168/ AO9   | 1450     | MT              | 37.5  |
| 21     |   | AO1076 (Octadecyl β - (3,5-di- tert -butyl-4-hydroxy phenyl)-propionate                          | 96       | MT              | 3.8   |
| 22     |   | ATF Mercox Catalyst - Pre impregnated activated charcoal   | 36       | M <sup>3</sup>  | 0.81  |
| 23     |   | Benzene hydrogenation catalyst for ISOM unit   | 2.1      | MT              | 2.55  |
| 24     |   | CAB catalyst   | 16       | MT              | 2.65  |
| 25     |   | CAB-2 catalyst (Blend of vanadium oxytrichloride & titanium tetrachloride 50/50)                 | 31       | MT              | 4.65  |

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| 26  |  | Carbon Monoxide (CO) promoter catalyst additive for FCC Unit   | 16    | MT             | 5.87   |
| 27  |  | Catalyst for DCU LPG Merox Unit  | 547   | L              | 0.28   |
| 28  |  | Hindered amine light stabilizer (HALS) - Chimassorb 944  | 9     | MT             | 0.93   |
| 29  |  | Claus Catalyst (Al based)  | 151.2 | M <sup>3</sup> | 1.45   |
| 30  |  | Claus Catalyst charge for Sulphur Recovery Unit (SRU)  | 22    | M <sup>3</sup> | 0.71   |
| 31  |  | Chloride guard adsorbent for Continuous Catalytic Reforming Unit (CGRU) stabilizer feed  | 30.5  | MT             | 0.9    |
| 32  |  | 2-Hydroxy-4-n-octoxybenzophenone (Cyasorb 531/ UV-1)   | 6     | MT             | 0.75   |
| 33  |  | Cyclo-Hexyl Methyl Methoxysilane (DONOR C)   | 15    | MT             | 1.55   |
| 34  |  | Di-iCyclo-Pentyl-Di-Methoxy-Silane (DONOR D)   | 3     | MT             | 1.21   |
| 35  |  | Slip additives (Erucamide)   | 110   | MT             | 4.7    |
| 36  |  | Ethylene drying and CO2 removal bed (Adsorbant)  | 8     | MT             | 0.37   |
| 37  |  | Ethylene drying and CO2 removal bed (Foxed) for PP Unit  | 3     | MT             | 0.43   |
| 38  |  | Fluidized Catalytic Cracking Catalyst  | 4435  | MT             | 153.25 |
| 39  |  | Grease (VASELINE)  | 27    | MT             | 0.72   |
| 40  |  |  |       |                |        |
| 41  |  | Hydrotreating and Hydrocracking catalyst for Hydrocracking unit  | 320   | MT             | 80.25  |
| 42  |  | Hydrotreating Catalyst for DHDT unit   | 478   | MT             | 80.4   |
| 43  |  | ISOM catalyst  | 24    | MT             | 35     |
| 44  |  | Liquid oxidation Catalyst for spent caustic regeneration   | 1.59  | MT             | 2.18   |
| 45  |  |  |       |                |        |
| 46  |  | Low temp. hydrogenation catalyst (Tail Gas Treatment Unit)   | 21.57 | MT             | 1.77   |
| 47  |  |  |       |                |        |
| 48  |  | Molecular sieves-desiccant (sodium-potassium-alumino silicate)   | 47.6  | MT             | 1.25   |
| 49  |  | Optical brightener   | 1     | MT             | 0.62   |
| 50  |  |  |       |                |        |
| 51  |  | PEPQ<br>(Phosphorous trichloride, reaction products with 1,1-biphenyl and 2,4-bis(1,1-dimethylethyl)phenol) (secondary antioxidant)  | 186   | MT             | 19.80  |
| 52  |  |  |       |                |        |
| 53  |  | Peroxide-101 (2, 5 Dimethyl-2,5-di (tert-butyl-peroxy) hexane)   | 92    | MT             | 8.91   |
| 54  |  | PG/Pelargonic acid/ C8-C10 fatty acid  | 330   | MT             | 9.5    |
| 55  |  | PP Catalyst.   |       |                |        |
| 56  |  | A composition of Magnesium Chloride and 1,2 Benzene dicarboxylic acid, 1,2 Bis[2-chloro-1-(chloromethylethyl)ethyl] ester.   | 7.5   | MT             | 24.20  |
| 57  |  | PPA (Polymer Processing Additive)  | 40    | MT             | 5.29   |
| 58  |  |  |       |                |        |
| 59  |  | Propylene drying and CO2 removal bed for PP unit (Fixed bed)   | 9     | MT             | 0.24   |
| 60  |  |  |       |                |        |
| 61  |  | Silica gel-desiccant (Compound of Silicon dioxide)   | 187   | MT             | 4.30   |
| 62  |  | T Fuel & U-Fuel for analysis of Cetane number  | 820   | Ltr            | 0.21   |
| 63  |  | UV stabilizer 622  | 150   | MT             | 8.80   |
| 64  |  | ZN-180M (Avant CATALYST) or equivalent   | 240   | Kg             | 0.75   |
| 65  |  | ZSM-5 catalyst   | 100   | MT             | 8.74   |
| 66  |  | Primary Reference Fuel (PRF) (ISO-Octane & n heptane)  | 880   | Kg             | 0.11   |
| 67  |  | ATF (Aviation Turbine fuel) Merox catalyst - Pre impregnated activated charcoal  | 36    | M <sup>3</sup> | 0.81   |
| 68  |  |  |       |                |        |
| 69  |  | DSTD (distearyl thiodipropionate) - acts as a secondary antioxidant for PP polymers.   | 65    | MT             | 2.30   |
| 70  |  |  |       |                |        |
| 71  |  | Speciality Grease - Mixture of higher paraffin hydrocarbon used as catalyst protection in Spheripol PP technology for production of Polypropylene.   | 15    | MT             | 0.40   |
| 72  |  |  |       |                |        |
| 73  |  | Magnesium Aluminium Hydroxide Carbonate Hydrate (DHT 4A/Hycite 713) - used in reaction for acid scavenging in polymer production and processing systems.                                     | 85    | MT             | 1.80   |
| 74  |  |  |       |                |        |
| 75  |  | Alkyl Amine Ethoxylate (ATMER 163) - for neutralization of Catalyst & Co catalyst and works as anti-static agent.  | 45    | MT             | 2.20   |
| 76  |  |  |       |                |        |
| 77  |  | Antioxidant AO 3114 (1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-s-triazine-2,4,6-(1H,3H,5H)trione) - specialized vis-breaking chemical used for specific PP grade                         | 28    | MT             | 1.33   |
| 78  |  |  |       |                |        |
| 79  |  | Non-Aromatic catalyst batch mineral oil (MINERAL OIL) - used for diluting Donor in order to have better accuracy of the flow measure and also used for flushing in TEAL area.                | 70    | MT             | 1.45   |
| 80  |  |  |       |                |        |
| 81  |  | HDPE consumable polymerization Catalyst - used for polymerization reaction for production of specific grade of High density polyethylene from Ethylene                                       | 8     | MT             | 21.60  |
| 82  |  |  |       |                |        |
| 83  |  | Antioxidant (AO-1330) - prevents polymer from degradation caused by exposure to heat, ultraviolet radiation (UV) and mechanical shear  | 46    | MT             | 4.8    |
| 84  |  |  |       |                |        |
| 85  |  | Desiccant for ethylene guard bed (Fixed bed for ethylene purification) - used for removal of Carbon monoxide, carbon dioxide, moisture from Ethylene feed in Swing unit to Ultra low levels. | 63    | MT             | 3.35   |
| 86  |  |  |       |                |        |
| 87  |  | ST65692 (Biphenyl) - approved additive Packages required for manufacturing of Servo Duotherm S required at Panipat Refinery  | 60    | MT             | 1.20   |
| 88  |  |  |       |                |        |
| 89  |  | Mixed Butylated Phenol Antioxidant (ST4064) - used in blending in many lubricants  | 87.3  | MT             | 1.66   |
| 90  |  |  |       |                |        |
| 91  |  | Hydrogenated Terphenyl (ST58606) - approved additive Packages required for manufacturing of Servotherm SHT 32 required by IOCL Refinery.   | 304   | MT             | 9.09   |
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| 93  |  | TEAL   | 18    | MT             | 0.72   |
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| 82 | Chemicals, Catalyst & additives | RM 68 Master batch  | 110  | MT  | 10.5  |
| 83 | Chemicals, Catalyst & additives | MIBK (METHYL ISOBUTYL KETONE)   | 700  | MT  | 22.05 |
| 84 | Mechanical Stores               | Radiant Coils   | 2    | Set | 38.26 |
| 85 | Chemicals, Catalyst & additives | Hydrogenation Catalyst (Activated Alumina impregnated with Cobalt and Molybdenum Oxides). | 52.3 | M3  | 2.79  |
| 86 | Chemicals, Catalyst & additives | Liquid oxidation catalyst for FCC Indmax Unit   | 555  | Kg  | 0.83  |

**Procurement Projected \_ Capex and Repair & Maint - Pipelines**

| Sl. No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | Strainer (Nos)  |                                |          | Nos.            |   |
| 2       | Transfer Pump (Nos)   |                                |          | Nos.            |   |
| 3       | ACDB Panel (Nos)  |                                |          | Nos.            |   |
| 4       | API 6D Ball Valves (Nos)  |                                |          | Nos.            |   |
| 5       | API 6D Valves (Nos)   |                                |          | Nos.            |   |
| 6       | Ball Valve (Nos)  |                                |          | Nos.            |   |
| 7       | Basket Strainer (Nos)   |                                |          | Nos.            |   |
| 8       | Control valve (Nos)   |                                |          | Nos.            |   |
| 9       | EEE (Nos)   |                                |          | Nos.            |   |
| 10      | Emergency evacuation equipment (Nos)  |                                |          | Nos.            |   |
| 11      | Engine Spares   |                                |          | Lot             | 15.50                                       |
| 12      | ER Probe(Nos)   |                                |          | Nos.            |   |
| 13      | F/F PUMP, Jockey pumps, water filling pumps(Nos)  |                                |          | Nos.            |   |
| 14      | Fire Fighting Pipes (km)  |                                |          | Km              |   |
| 15      | Fire Fighting Pump (Nos)  |                                |          | Nos.            |   |
| 16      | Flow Tee (Nos)  |                                |          | Nos.            |   |
| 17      | Globe Valve (Nos)   |                                |          | Nos.            |   |
| 18      | Heavy duty access Mats  |                                |          | Lot             |   |
| 19      | High Mast(Nos)  |                                |          | Nos.            |   |
| 20      | HOT crane (Nos)   |                                |          | Nos.            |   |
| 21      | HT Capacitor Panel(Nos)   |                                |          | Nos.            |   |
| 22      | HT Panel(Nos)   |                                |          | Nos.            |   |
| 23      | HT/LT/Control cables(km)  |                                |          | Km              |   |
| 24      | Instrumentation, Control & SCADA System (Nos)   |                                |          | Nos.            |   |
| 25      | Insulating coupling (Nos)   |                                |          | Nos.            |   |
| 26      | Jockey pump (Nos)   |                                |          | Nos.            |   |
| 27      | LT DG(Nos)  |                                |          | Nos.            |   |
| 28      | LT Panel(Nos)   |                                |          | Nos.            |   |
| 29      | Mainline pumping Unit (Nos)   |                                |          | Nos.            |   |
| 30      | Marine Hoses for SPM  |                                |          | Nos.            | 30.00                                       |
| 31      | Mechanical Pipe End connector+ Standard/Long seal Leak clamps+ Encapsulating Leak Clamps  |                                |          | Nos.            | 3.95  |
| 32      | Metering skid assembly (consisting of Filtration, Metering and Pressure Reduction units) of various sizes for providing connectivity to CGD Entities from Gas pipelines and augmentation of existing facilities (Nos) |                                |          | Nos.            |   |
|         | Metering Skid Ph-III(Nos)   |                                |          | Nos.            |   |
| 33      | Metering Skid(Nos)  |                                |          | Nos.            |   |
| 34      | Misc. fire fighting equipment (Nos)   |                                |          | Nos.            |   |
| 35      | NRPL Mainline pumping unit Replacement  |                                |          | Nos.            | 70.00                                       |
| 36      | Other Marine Spares   |                                |          | Nos.            | 9.32  |
| 37      | pipe fitting(Nos)   |                                |          | Nos.            |   |
| 38      | Pipe (km)   |                                |          | Nos.            |   |
| 39      | Remote operated Valve (Nos)   |                                |          | Nos.            |   |
| 40      | Scrapper Barrel   |                                |          | Nos.            |   |
| 41      | Separator Filter (Nos)  |                                |          | Nos.            |   |
| 42      | Small size (<4") misc. valve (Nos)  |                                |          | Nos.            |   |
| 43      | SRV (Nos)   |                                |          | Nos.            |   |
| 44      | Station pipes(km)   |                                |          | Nos.            |   |
| 45      | Steel Pipe (KM)   |                                |          | Km              |   |
| 46      | Steel Plate (MT)  |                                |          | Nos.            |   |
| 47      | sump pump and tank (Nos)  |                                |          | Nos.            |   |
| 48      | Swing check valve (Nos)   |                                |          | Nos.            |   |
| 49      | Telecom System (comprising of DC power, Networking system, CCTV system, Telephone system, OFC, HDPE, etc.)(Nos)   |                                |          | Nos.            |   |
| 50      | Transformer(Nos)  |                                |          | Nos.            |   |
| 51      | Vadinar SPM Replacement project   |                                |          |                 |   |
| 52      | 1. Buoy & accessories<br>2. Concrete Coated Pipe  |                                |          | Nos.            |   |
|         | Valves  |                                |          | Lot             | 4.00  |
| 53      | VALVES of all types(Nos)  |                                |          | Nos.            |   |
| 54      | VFD (Nos)   |                                |          | Nos.            |   |
| 55      |   |                                |          |                 |   |

**Procurement Projected \_ Marketing - LPG Group**

| Sl. No. | Description of item                         | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | LPG Pump                                    |                                | 5        | Nos.            | 3.7   |
| 2       | LPG Compressor                              |                                | 3        | Nos.            | 1.09  |
| 3       | Air Compressor                              |                                | 4        | Nos.            | 0.61  |
| 4       | Air Dryer                                   |                                | 2        | Nos.            | 0.35  |
| 5       | DG Set                                      |                                | 1        | Nos.            | 0.38  |
| 6       | Fire Engine                                 |                                | 3        | Nos.            | 0.52  |
| 7       | Valve change without Evacuation Machine     |                                | 3        | Nos.            | 0.8   |
| 8       | LPG Loading arm                             |                                | 16       | Nos.            | 0.5   |
| 9       | Carousel                                    |                                | 1        | Nos.            | 3.39  |
| 10      | Computers                                   |                                | 0        | Nos.            | 0   |
| 11      | Additive dosing machines                    |                                | 0        | Nos.            | 0   |
| 12      | Carousal Cards in Nos.                      |                                | 400      | Nos.            | 2.80  |
| 13      | Mech Seals (Refurbishing) Nos.for LPG Pump  |                                | 100      | Nos.            | 3.00  |
| 14      | Mech Seals New in Nos. for LPG Pump         |                                | 25       | Nos.            | 2.00  |
| 15      | Valves / Flanges / Gaskets / Spares in Nos. |                                | 330      | Nos.            | 8.25  |
| 16      | Cables (Control / Power) in RMs             |                                | 33000    | Nos.            | 0.50  |
| 17      | Pressure / Temp Transmitters/Gauges in Nos. |                                | 220      | Nos.            | 2.20  |
| 18      | Fire Engine / DG / DC Batteries in Nos.     |                                | 3600     | Nos.            | 5.40  |
|         | Conveyor Chain in RM                        |                                | 44000    | Nos.            | 5.28  |

|    |   |     |      |      |
|----|---|-----|------|------|
| 19 | Air Ends of Screw Compressors                   | 44  | Nos. | 2.20 |
| 20 | Spares (Filters & Accessories) Air Comp in Nos. | 550 | Nos. | 1.38 |
| 21 | LPG Vap Comp Seals / valves / Plates            | 330 | Nos. | 0.99 |
| 22 |   |     |      |      |

|    |   |  |       |      |      |
|----|---|--|-------|------|------|
| 23 | Lights and Fixtures / Bulbs / glands / JB's / Switches                          |  | 12000 | Nos. | 1.20 |
| 24 | Relays / Fuses  |  | 5500  | Nos. | 1.10 |
| 25 | Printer Cartridges  |  | 650   | Nos. | 0.33 |
| 26 | Sprockets / Cylinders / Shafts / wearing strips / Pneumatic tubing / connectors |  | 24000 | Nos. | 4.80 |
| 27 | Misc Spares /Car (sensors / connectors / cables etc)                            |  | 210   | Nos. | 2.10 |
| 28 | TLD / TLF Spares  |  | 880   | Nos. | 2.20 |
| 29 | Structural steel for Conv / Misc Works in MT                                    |  | 450   | Nos. | 1.71 |
| 30 | Diesel / Fire Engine Spares / filters / glands                                  |  | 720   | Nos. | 5.04 |
| 31 | Spares for Level gauges / transmitters  |  | 330   | Nos. | 3.3  |
| 32 | Fire / SCADA / GMS Panel Spares / MIMIC / sensors / transmitter                 |  | 320   | Nos. | 1.6  |
| 33 | CCTV spares / modules   |  | 110   | Nos. | 1.65 |
| 34 | Load cells for weigh bridges / weighing scales / carousals                      |  | 1100  | Nos. | 2.75 |
| 35 | Centering Arms of carousals   |  | 2500  | Nos. | 0.30 |

**Procurement of LPG Cylinders & P Regulator**

| Sl.No. | Description of item                             | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|--------|---|--------------------------------|----------|-----------------|---|
| 1      | 14.2 Kg Cylinders (Including New & Replacement) |                                | 6300000  | Nos.            | 803.02                                      |
| 2      | 19 Kg Cylinders (Including New & Replacement)   |                                | 800000   | Nos.            | 140.04                                      |
| 3      | 47.5 Kg Cylinders (Including New & Replacement) |                                | 50000    | Nos.            | 19.26                                       |
| 4      | 5 Kg Cylinders (Including New & Replacement)    |                                | 1000000  | Nos.            | 86.67                                       |
| 5      | 425 KG Cylinders                                |                                | 3000     | Nos.            | 19.76                                       |
| 6      | Pressure Regulators                             |                                | 3500000  | Nos.            | 50.70                                       |
| 7      | Self Closing Valve                              |                                | 20800000 | Nos.            | 175.00                                      |

**Procurement Projected \_ Marketing - Lubes**

| Sl.No. | Description of item                       | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|--------|---|--------------------------------|----------|-----------------|---|
| 1      | Synthetic base oil Poly alfa olefin 6 CST |                                | 520      | MT              | 13.77                                       |
| 2      | ST5014 (Lithium Hydroxide Monohydrate)    |                                | 300      | MT              | 18.99                                       |
| 3      | ST56058 (PIB 1000)                        |                                | 2359     | MT              | 26.47                                       |

## Capex Procurement Projected\_ Refineries

| Sl.No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|--------|---|--------------------------------|----------|-----------------|---|
| 1      | Vessels/Drums/Tanks   |                                | -        | Nos.            | -   |
| 2      | Pumps   |                                | -        | Nos.            | -   |
| 3      | Reactors  |                                | -        | Nos.            | -   |
| 4      | Column/Column Internals/Column Modification   |                                | -        | Nos.            | -   |
| 5      | Heat Ex/Air coolers/Fin Fan Coolers   |                                | -        | Nos.            | -   |
| 6      | Filters   |                                | -        | Nos.            | -   |
| 7      | Instrumentation items (DCS, PLC, Analyser,,sensors,, Flowmeter,Transmitter etc.)  |                                | -        | LOT             | -   |
| 8      | Instrument Cables   |                                | -        | LOT             | -   |
| 9      | Electrical Items (Transformer, Switchboard,Switch gears, HV/MV Boards,Motors,Hoist,PFIC Panel,VFD,Genset)   |                                | -        | LOT             | -   |
| 10     | Electrical Cables   |                                | -        | LOT             | -   |
| 11     | Compressors/Blowers/Fans  |                                | -        | Nos.            | -   |
| 12     | Heaters & Stacks  |                                | -        | Nos.            | -   |
| 13     | Bulk(Pipe/Fittings/Flanges/Valve)   |                                | -        | LOT             | -   |
| 14     | Package Items(HVAC,ETP,Refrigeration,Cooling Tower,DI Guard,Chlorine Injection,Chemical Injection,Side Stream Filter,Ethylene BOG,TEG Borelling,Flare,Communication Mgmt Sytem,Nitrogen Cooling System,Control Monitoring System,Ambience Air Monitoring system,PCK metering Skid,Cathodic Protectin System,FDAS system,CCTV,Custody Transfer Metering Skid,Clean Agent System) |                                | -        | LOT             | -   |
| 15     | Fire Fighting system/equipment/package , Foam Concentrate, Manual & Remote Operated High Volume Longe Range Monitor with Accessories  |                                | -        | LOT             | -   |
| 16     | Incinerator & Instr. Components   |                                | -        | Nos.            | -   |
| 17     | Mech items :EOT Crane,Forklift,Weigh Bridge,Industrial Lift,Belt & Screw conveyors/Dock leveller  |                                | -        | Nos.            | -   |
| 18     | Steam Turbine   |                                | -        | Nos.            | -   |
| 19     | Rotary Valves/Safety Valves/Control Valves/On-off Valves/Emergency Vent Valves/Shutdown Valves  |                                | -        | LOT             | -   |
| 20     | Mixers & Agitators  |                                | -        | Nos.            | -   |
| 21     | Driers  |                                | -        | Nos.            | -   |
| 22     | Separators  |                                | -        | Nos.            | -   |
| 23     | Boiler  |                                | -        | Nos.            | -   |
| 24     | Lab Equipment   |                                | -        | Nos.            | -   |
| 25     | Pig Launcher & Pig Receiver   |                                | -        | Nos.            | -   |
| 26     | Marine Loading Arm  |                                | -        | Nos.            | -   |
| 27     | Inert Ceramic balls   |                                | -        | LOT             | -   |
| 28     | Sample Coolers (PI) & Sample Bombs (PE)   |                                | -        | Nos.            | -   |
| 29     | Mounded Bullet  |                                | -        | Nos.            | -   |
| 30     | Spare Components (Compressor/Pumps/Feed Coalescer)  |                                | -        | LOT             | -   |
| 31     | Miscellaneous items (including FR approved project)   |                                | -        | LOT             | -   |

## Procurement Projected - For Repair &amp; Maintenance of Refineries

| Sl.No. | Description of item                                  | Broad specification Parameters   | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|--------|--|--|----------|-----------------|---|
| 1      | Pump Spares  |  |          | Lot             | 53  |
| 2      | Mechanical Seal Spares                               |  |          | Lot             | 62  |
| 3      | Bearings   |  |          | Lot             | 5   |
| 4      | Turbine Spares                                       |  |          | Lot             | 129   |
| 5      | Steam Engine Spares                                  |  |          | Lot             | 1   |
| 6      | Furnace Spares                                       |  |          | Lot             | 16  |
| 7      | Compressor Spares                                    |  |          | Lot             | 67  |
| 8      | Fan & Blower Spares                                  |  |          | Lot             | 7   |
| 9      | Agitator & Mixer Spares                              |  |          | Lot             | 2   |
| 10     | ETP,LPG Plant Equipment Spares                       |  |          | Lot             | 13  |
| 11     | Air Conditioner Spares                               |  |          | Lot             | 3   |
| 12     | Heat Exchanger Spares                                |  |          | Lot             | 51  |
| 13     | Column/ Reactor Spares                               |  |          | Lot             | 38  |
| 14     | Pipe & Pipe Fittings                                 |  |          | Lot             | 140   |
| 15     | Gear Box Spares                                      |  |          | Lot             | 10  |
| 16     | Motor Spares   |  |          | Lot             | 5   |
| 17     | Transformer,Battery,Switch Gear,Cable,Lampetc.Spares |  |          | Lot             | 88  |
| 18     |  | Liquid oxidation Catalyst for spent caustic regeneration   | 1.5      | MT              | 2.18  |
| 19     |  | Anti Oxidant (AO 1010) Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate) | 950      | MT              | 33.05                                       |
| 20     |  | Anti Oxidant AO 168/ AO9   | 1450     | MT              | 37.5  |
| 21     |  | AO1076 (Octadecyl β - (3,5-di- tert -butyl-4-hydroxy phenyl)-propionate                          | 96       | MT              | 3.8   |
| 22     |  | ATF Merox Catalyst - Pre impregnated activated charcoal  | 36       | M <sup>3</sup>  | 0.81  |
| 23     |  | Benzene hydrogenation catalyst for ISOM unit   | 2.1      | MT              | 2.55  |
| 24     |  | CAB catalyst   | 16       | MT              | 2.65  |
| 25     |  | CAB-2 catalyst (Blend of vanadium oxytrichloride & titanium tetrachloride 50/50)                 | 31       | MT              | 4.65  |
| 26     |  | Carbon Monoxide (CO) promoter catalyst additive for FCC Unit                                     | 16       | MT              | 5.87  |
| 27     |  | Catalyst for DCU LPG Merox Unit  | 547      | L               | 0.28  |
| 28     |  | Hindered amine light stabilizer(HALS) - Chimassorb 944   | 9        | MT              | 0.93  |
| 29     |  | Claus Catalyst (Al based)  | 151.2    | M <sup>3</sup>  | 1.45  |
| 30     |  | Claus Catalyst charge for Sulphur Recovery Unit (SRU)  | 22       | M <sup>3</sup>  | 0.71  |
| 31     |  | Chloride guard adsorbent for Continuous Catalytic Reforming Unit (CCRU) stabilizer feed          | 30.5     | MT              | 0.9   |
| 32     |  | 2-Hydroxy-4-n-octoxybenzophenone (Cyasorb 531/ UV-1)   | 6        | MT              | 0.75  |
| 33     |  | Cyclo-Hexyl Methyl Methoxysilane (DONOR C)   | 15       | MT              | 1.55  |
| 34     |  | Di-ICyclo-Pentyl-Di-Methoxy-Silane (DONOR D)   | 3        | MT              | 1.21  |

|    |                                 |  |       |                |        |
|----|---------------------------------|--|-------|----------------|--------|
| 35 |                                 | Slip additives (Erucamide )  | 110   | MT             | 4.7    |
| 36 |                                 | Ethylene drying and CO2 removal bed (Adsorbant)  | 8     | MT             | 0.37   |
| 37 |                                 | Ethylene drying and CO2 removal bed (Foxed) for PP Unit  | 3     | MT             | 0.43   |
| 38 |                                 | Fluidized Catalytic Cracking Catalyst  | 4435  | MT             | 160.91 |
| 39 |                                 | Grease (VASELINE)  | 27    | MT             | 0.72   |
| 40 |                                 | Hydrotreating and Hydrocracking catalyst for Hydrocracking unit  | 320   | MT             | 80.25  |
| 41 |                                 | Hydrotreating Catalyst for DHDT unit   | 478   | MT             | 80.4   |
| 42 |                                 | ISOM catalyst  | 24    | MT             | 35     |
| 43 |                                 | Liquid oxidation Catalyst for spent caustic regeneration   | 1.59  | MT             | 2.18   |
| 44 |                                 | Low temp. hydrogenation catalyst (Tail Gas Treatment Unit)   | 21.57 | MT             | 1.77   |
| 45 |                                 | Molecular sieves-desiccant (sodium-potassium-alumino silicate)   | 47.6  | MT             | 1.25   |
| 46 |                                 | Optical brightener   | 1     | MT             | 0.62   |
| 47 |                                 | PEPQ<br>(Phosphorous trichloride, reaction products with 1,1-biphenyl and 2,4-bis(1,1-dimethylethyl)phenol) (secondary antioxidant)  | 186   | MT             | 19.80  |
| 48 |                                 | Peroxide-101 (2, 5 Dimethyl-2,5-di (tert-butyl-peroxy) hexane)   | 92    | MT             | 8.91   |
| 49 |                                 | PG/Pelargonic acid/ C8-C10 fatty acid  | 330   | MT             | 9.50   |
| 50 |                                 | PP Catalyst.<br>A composition of Magnesium Chloride and 1,2 Benzenedicarboxylic acid, 1,2 Bis[2-chloro-1-(chloromethylethyl) ester.  | 7.5   | MT             | 24.20  |
| 51 | Chemicals, Catalyst & additives | PPA (Polymer Processing Additive)  | 40    | MT             | 5.29   |
| 52 |                                 | Propylene drying and CO2 removal bed for PP unit (Fixed bed)   | 9     | MT             | 0.24   |
| 53 |                                 | Silica gel-desiccant (Compound of Silicon dioxide)   | 187   | MT             | 4.30   |
| 54 |                                 | T Fuel & U-Fuel for analysis of Cetane number  | 820   | Ltr            | 0.21   |
| 55 |                                 | UV stabilizer 622  | 150   | MT             | 8.80   |
| 56 |                                 | ZN-180M (Avant CATALYST) or equivalent   | 240   | Kg             | 0.75   |
| 57 |                                 | ZSM-5 catalyst   | 100   | MT             | 8.74   |
| 58 |                                 | Primary Reference Fuel (PRF) (ISO-Octane & n heptane)  | 880   | Kg             | 0.11   |
| 59 |                                 | ATF (Aviation Turbine fuel) Merox catalyst - Pre impregnated activated charcoal  | 36    | M <sup>3</sup> | 0.81   |
| 60 |                                 | DSTDP (di-teraryl thiodipropionate) - acts as a secondary antioxidant for PP polymers.   | 65    | MT             | 2.30   |
| 61 |                                 | Speciality Grease - Mixture of higher paraffin hydrocarbon used as catalyst protection in Spheripol PP technology for production of Polypropylene.   | 15    | MT             | 0.40   |
| 62 |                                 | Magnesium Aluminium Hydroxide Carbonate Hydrate (DHT 4A/Hycite 713) - used in reaction for acid scavenging in polymer production and processing systems.                                     | 85    | MT             | 1.80   |
| 63 |                                 | Alkyl Amine Ethoxylate ( ATMER 163 ) - for neutralization of Catalyst & Co catalyst and works as anti- static agent.   | 45    | MT             | 2.20   |
| 64 |                                 | Antioxidant AO 3114(1,3,5-Tris(3,5-di-tert-butyl-4-hydroxy benzyl)-s-triazine-2,4,6-(1H,3H,5H)trione) - specialized vis-breaking chemical used for specific PP grade                         | 28    | MT             | 1.33   |
| 65 |                                 | Non-Aromatic catalyst batch mineral oil (MINERAL OIL) - used for diluting Donor in order to have better accuracy of the flow measure and also used for flushing in TEAL area.                | 70    | MT             | 1.45   |
| 66 |                                 | HDPE consumable polymerization Catalyst - used for polymerization reaction for production of specific grade of High density polyethylene from Ethylene                                       | 8     | MT             | 21.60  |
| 67 |                                 | Antioxidant (AO-1330) - prevents polymer from degradation caused by exposure to heat, ultraviolet radiation (UV) and mechanical shear  | 46    | MT             | 4.8    |
| 68 |                                 | Desiccant for ethylene guard bed (Fixed bed for ethylene purification) - used for removal of Carbon monoxide, carbon dioxide, moisture from Ethylene feed in Swing unit to Ultra low levels. | 63    | MT             | 3.35   |
| 69 |                                 | ST65692 (Biphenyl) - approved additive Packages required for manufacturing of Servo Duotherm S required at Panipat Refinery  | 60    | MT             | 1.20   |
| 70 |                                 | Mixed Butylated Phenol Antioxidant (ST4064) - used in blending in many lubricants  | 87.3  | MT             | 1.66   |
| 71 |                                 | Hydrogenated Terphenyl (ST58606) - approved additive Packages required for manufacturing of Servootherm SHT 32 required by IOCL Refinery.  | 304   | MT             | 9.09   |
| 72 |                                 | TEAL   | 18    | MT             | 0.72   |
| 73 |                                 | Cast Air Preheater Module / Cast & Glass Air Preheater Modules / Glass Air Pre-Heater Modules  | 1     | No             | 1.18   |
| 74 | Mechanical Stores               | Cutter Blades of Extruder  | 1600  | No             | 2.19   |
| 75 |                                 | Hydrogen Tubular Reformer Catalyst Tubes   | 36    | No             | 3.61   |
| 76 |                                 | Rotary Tight Shut off Valve  | 4     | No             | 0.60   |
| 77 | Chemicals, Catalyst & additives | CD (Di- ethyl aluminum chloride)   | 30    | MT             | 1.12   |
| 78 | Chemicals, Catalyst & additives | CJ (Di- ethyl aluminum ethoxide)   | 30    | MT             | 2.60   |
| 79 | Chemicals, Catalyst & additives | GMS-90   | 250   | MT             | 3.3    |
| 80 | Chemicals, Catalyst & additives | Base FCC catalyst for INDMAX Unit.   | 1170  | MT             | 34.5   |
| 81 | Chemicals, Catalyst & additives | DMS  | 450   | MT             | 16.27  |
| 82 | Chemicals, Catalyst & additives | RM 68 Master batch   | 110   | MT             | 11.02  |
| 83 | Chemicals, Catalyst & additives | MIBK (METHYL ISOBUTYL KETONE)  | 700   | MT             | 23.15  |
| 87 | Chemicals, Catalyst & additives | Liquid oxidation catalyst for FCC Indmax Unit  | 555   | Kg             | 0.87   |

**Procurement Projected \_ Capex and Repair & Maint - Pipelines**

| Sl. No. | Description of item      | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|--------------------------|--------------------------------|----------|-----------------|---|
| 1       | Strainer (Nos)           |                                |          | Nos.            |   |
| 2       | Transfer Pump (Nos)      |                                |          | Nos.            |   |
| 3       | ACDB Panel (Nos)         |                                |          | Nos.            |   |
|         | API 6D Ball Valves (Nos) |                                |          | Nos.            |   |

|    |  |  |  |      |       |
|----|--|--|--|------|-------|
| 4  | API 6D Valves (Nos)  |  |  | Nos. |       |
| 5  | Ball Valve (Nos)   |  |  | Nos. |       |
| 6  | Basket Strainer (Nos)  |  |  | Nos. |       |
| 7  | Control valve (Nos)  |  |  | Nos. |       |
| 8  | EEE (Nos)  |  |  | Nos. |       |
| 9  | Emergency evacuation equipment (Nos)   |  |  | Nos. |       |
| 10 | Engine Spares  |  |  | Lot  | 15.50 |
| 11 | ER Probe(Nos)  |  |  | Nos. |       |
| 12 | F/F PUMP, Jockey pumps, water filling pumps(Nos)   |  |  | Nos. |       |
| 13 | Fire Fighting Pipes (km)   |  |  | Km   |       |
| 14 | Fire Fighting Pump (Nos)   |  |  | Nos. |       |
| 15 | Flow Tee (Nos)   |  |  | Nos. |       |
| 16 | Globe Valve (Nos)  |  |  | Nos. |       |
| 17 | Heavy duty access Mats   |  |  | Lot  |       |
| 18 | High Mast(Nos)   |  |  | Nos. |       |
| 19 | HOT crane (Nos)  |  |  | Nos. |       |
| 20 | HT Capacitor Panel(Nos)  |  |  | Nos. |       |
| 21 | HT Panel(Nos)  |  |  | Nos. |       |
| 22 | HT/LT/Control cables(km)   |  |  | Km   |       |
| 23 | Instrumentation, Control & SCADA System (Nos)  |  |  | Nos. |       |
| 24 | Insulating coupling (Nos)  |  |  | Nos. |       |
| 25 | Jockey pump (Nos)  |  |  | Nos. |       |
| 26 | LT DG(Nos)   |  |  | Nos. |       |
| 27 | LT Panel(Nos)  |  |  | Nos. |       |
| 28 | Mainline pumping Unit (Nos)  |  |  | Nos. |       |
| 29 | Marine Hoses for SPM   |  |  | Nos. | 48.00 |
| 30 | Mechanical Pipe End connector+ Standard/Long seal Leak clamps+ Encapsulating Leak Clamps   |  |  | Nos. | 1.22  |
| 31 | Meteringskid assembly (consisting of Filtration, Metering and Pressure Reduction units) of various sizes for providing connectivity to CGD Entities from Gas pipelines and augmentation of existing facilities (Nos) |  |  | Nos. |       |
| 32 | Metering Skid Ph-III(Nos)  |  |  | Nos. |       |
|    | Metering Skid(Nos)   |  |  | Nos. |       |
| 33 | Misc. fire fighting equipment (Nos)  |  |  | Nos. |       |
| 34 | NRPL Mainline pumping unit Replacement   |  |  | Nos. |       |
| 35 | Other Marine Spares  |  |  | Nos. | 11.30 |
| 36 | pipe fitting(Nos)  |  |  | Nos. |       |
| 37 | Pipe (km)  |  |  | Nos. |       |
| 38 | Remote operated Valve (Nos)  |  |  | Nos. |       |
| 39 | Scrapper Barrel  |  |  | Nos. |       |
| 40 | Separator Filter (Nos)   |  |  | Nos. |       |
| 41 | Small size (<4") misc. valve (Nos)   |  |  | Nos. |       |
| 42 | SRV (Nos)  |  |  | Nos. |       |
| 43 | Station pipes(km)  |  |  | Nos. |       |
| 44 | Steel Pipe (KM)  |  |  | Km   |       |
| 45 | Steel Plate (MT)   |  |  | Nos. |       |
| 46 | sump pump and tank (Nos)   |  |  | Nos. |       |
| 47 | Swing check valve (Nos)  |  |  | Nos. |       |
| 48 | Telecom System (comprising of DC power, Networkingsystem, CCTV system, Telephone system, OFC, HDPE, etc.) (Nos)  |  |  | Nos. |       |
| 49 | Transformer(Nos)   |  |  | Nos. |       |
| 50 | Vadinar SPM Replacement project  |  |  |      |       |
| 51 | 1. Buoy & accessories<br>2. Concrete Coated Pipe   |  |  | Nos. |       |
| 52 | Valves   |  |  | Lot  | 4.00  |
|    | VALVES of all types(Nos)   |  |  | Nos. |       |
| 53 | VFD (Nos)  |  |  | Nos. |       |
| 54 |  |  |  |      |       |
| 55 |  |  |  |      |       |

**Procurement Projected - Marketing - LPG Group**

| Sl. No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | LPG Pump  |                                | 8        | Nos.            | 6.24  |
| 2       | LPG Compressor  |                                | 4        | Nos.            | 1.51  |
| 3       | Air Compressor  |                                | 5        | Nos.            | 0.8   |
| 4       | Air Dryer   |                                | 0        | Nos.            | 0   |
| 5       | DG Set  |                                | 1        | Nos.            | 0.39  |
| 6       | Fire Engine   |                                | 4        | Nos.            | 0.73  |
| 7       | Valve change without Evacuation Machine   |                                | 5        | Nos.            | 1.4   |
| 8       | LPG Loading arm   |                                | 32       | Nos.            | 1.04  |
| 9       | Carousel  |                                | 1        | Nos.            | 3.54  |
| 10      | Computers   |                                | 0        | Nos.            | 0   |
| 11      | Additive dosing machines  |                                | 0        | Nos.            | 0   |
| 12      | Carousal Cards in Nos.  |                                | 400      | Nos.            | 2.80  |
| 13      | Mech Seals (Refurbishing) Nos.for LPG Pump                                      |                                | 100      | Nos.            | 3.00  |
| 14      | Mech Seals New in Nos. for LPG Pump   |                                | 25       | Nos.            | 2.00  |
| 15      | Valves / Flanges / Gaskets / Spares in Nos.                                     |                                | 330      | Nos.            | 8.25  |
| 16      | Cables (Control / Power) in RMs   |                                | 33000    | Nos.            | 0.50  |
| 17      | Pressure / Temp Transmitters/Gauges in Nos.                                     |                                | 220      | Nos.            | 2.20  |
| 18      | Fire Engine / DG / DC Batteries in Nos.   |                                | 3600     | Nos.            | 5.40  |
| 19      | Conveyor Chain in RM  |                                | 44000    | Nos.            | 5.28  |
| 20      | Air Ends of Screw Compressors   |                                | 45       | Nos.            | 2.25  |
| 21      | Spares (Filters & Accessories) Air Comp in Nos.                                 |                                | 550      | Nos.            | 1.38  |
| 22      | LPG Vap Comp Seals / valves / Plates  |                                | 330      | Nos.            | 0.99  |
| 23      | Lights and Fixtures / Bulbs / glands / JB's / Switches                          |                                | 12000    | Nos.            | 1.20  |
| 24      | Relays / Fuses  |                                | 5500     | Nos.            | 1.10  |
| 25      | Printer Cartridges  |                                | 650      | Nos.            | 0.33  |
| 26      | Sprockets / Cylinders / Shafts / wearing strips / Pneumatic tubing / connectors |                                | 24000    | Nos.            | 4.80  |
| 27      | Misc Spares /Car (sensors / connectors / cables etc)                            |                                | 210      | Nos.            | 2.10  |
| 28      | TLD / TLF Spares  |                                | 880      | Nos.            | 2.20  |
| 29      | Structural steel for Conv / Misc Works in MT                                    |                                | 450      | Nos.            | 1.71  |
| 30      | Diesel / Fire Engine Spares / filters / glands                                  |                                | 720      | Nos.            | 5.04  |
| 31      | Spares for Level gauges / transmitters  |                                | 330      | Nos.            | 3.3   |
|         | Fire / SCADA / GMS Panel Spares / MIMIC / sensors / transmitter                 |                                | 320      | Nos.            | 1.6   |

| 32  | CCTV spares / modules                                      |                                | 110      | Nos.            | 1.65  |
|---|--|--------------------------------|----------|-----------------|---|
| 33  | Load cells for weigh bridges / weighing scales / carousals |                                | 1100     | Nos.            | 2.75  |
| 34  | Centering Arms of carousals                                |                                | 2500     | Nos.            | 0.30  |
| 35  |  |                                |          |                 |   |
| <b>Procurement of LPG Cylinders &amp; P Regulator</b> |  |                                |          |                 |   |
| Sl. No.   | Description of item  | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
| 1   | 14.2 Kg Cylinders (Including New & Replacement)            |                                | 6300000  | Nos.            | 803.02                                      |
| 2   | 19 Kg Cylinders (Including New & Replacement)              |                                | 800000   | Nos.            | 140.04                                      |
| 3   | 47.5 Kg Cylinders (Including New & Replacement)            |                                | 40000    | Nos.            | 15.41                                       |
| 4   | 5 Kg Cylinders (Including New & Replacement)               |                                | 1500000  | Nos.            | 130.01                                      |
| 5   | 425 KG Cylinders   |                                | 5000     | Nos.            | 32.93                                       |
| 6   | Pressure Regulators  |                                | 3500000  | Nos.            | 50.70                                       |
| 7   | Self-Closing Valve   |                                | 21200000 | Nos.            | 178.00                                      |
| <b>Procurement Projected _ Marketing - Lubes</b>      |  |                                |          |                 |   |
| Sl. No.   | Description of item  | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
| 1   | Synthetic base oil Poly alfa olefin 6 CST                  |                                | 550      | MT              | 14.56                                       |
| 2   | ST5014 (Lithium Hydroxide Monohydrate)                     |                                | 325      | MT              | 21.60                                       |
| 3   | ST56058 (PIB 1000)   |                                | 2477     | MT              | 29.18                                       |

## Capex Procurement Projected \_ Refineries

| Sl. No.   | Description of item  | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement Rs/Crores    |
|---|--|--------------------------------|----------|-----------------|---|
| 1   | Vessels/Drums/Tanks  |                                | 324      | Nos.            | 240   |
| 2   | Pumps  |                                | 659      | Nos.            | 386   |
| 3   | Reactors   |                                | 28       | Nos.            | 168   |
| 4   | Column/Column Internals/Column Modification  |                                | 79       | Nos.            | 368   |
| 5   | Heat Ex/Air coolers/Fin Fan Coolers  |                                | 473      | Nos.            | 623   |
| 6   | Filters  |                                | 11       | Nos.            | 3   |
| 7   | Instrumentation items (DCS, PLC, Analyser,,sensors, Flowmeter,Transmitter etc.)  |                                | LOT      | LOT             | 125   |
| 8   | Instrument Cables  |                                | LOT      | LOT             | 2   |
|   | Electrical Items (Transformer, Switchboard,Switch gears, HV/MV Boards,Motors,Hoist,PFIC Panel,VFD,Genset)  |                                | LOT      | LOT             | 104   |
| 10  | Electrical Cables  |                                | LOT      | LOT             | 10  |
| 11  | Compressors/Blowers/Fans   |                                | 31       | Nos.            | 350   |
| 12  | Heaters & Stacks   |                                | 14       | Nos.            | 257   |
| 13  | Bulk(Pipe/Fittings/Flanges/Valve)  |                                | LOT      | LOT             | 144   |
| 14  | Package Items(HVAC,ETP,Refrigeration,Cooling Tower,DI Guard,Chlorine Injection,Chemical Injection,Side Stream Filter,Ethylene BOG,TEG Barrelling,Flare,Communication Mgmt Sytem,Nitrogen Cooling System,Control Monitoring System,Ambience Air Monitoring system,PCK metering Skid,Cathodic Protectin System,FDAS system,CCTV,Custody Transfer Metering Skid,Clean Agent System) |                                | LOT      | LOT             | 731   |
| 15  | Fire Fighting system/equipment/package , Foam Concentrate, Manual & Remote Operated High Volume Longe Range Monitor with Accessories   |                                | LOT      | LOT             | 24  |
| 16  | Incinerator & Instr. Components  |                                | 13       | Nos.            | 28  |
| 17  | Mech items :EOT Crane,Forklift,Weigh Bridge,Industrial Lift,Belt & Screw conveyors/Dock leveller   |                                | 17       | Nos.            | 10  |
| 18  | Steam Turbine  |                                |          | Nos.            |   |
| 19  | Rotary Valves/Safety Valves/Control Valves/On-off Valves/Emergency Vent Valves/Shutdown Valves   |                                | LOT      | LOT             | 75  |
| 20  | Mixers & Agitators   |                                | 80       | Nos.            | 19  |
| 21  | Driers   |                                | 3        | Nos.            | 2   |
| 22  | Separators   |                                | 5        | Nos.            | 4   |
| 23  | Boiler   |                                | 1        | Nos.            | 6   |
| 24  | Lab Equipment  |                                | 34       | Nos.            | 11  |
| 25  | Pig Launcher & Pig Receiver  |                                | 2        | Nos.            | 1   |
| 26  | Marine Loading Arm   |                                | 1        | Nos.            | 9   |
| 27  | Inert Ceramic balls  |                                | LOT      | LOT             | 1   |
| 28  | Sample Coolers (PI) & Sample Bombs (PE)  |                                | 54       | Nos.            | 1   |
| 29  | Mounded Bullet   |                                |          | Nos.            |   |
| 30  | Spare Components (Compressor/Pumps/Feed Coalescer)   |                                | LOT      | LOT             | 24  |
| 31  | Miscellaneous items (including FR approved project)  |                                | LOT      | LOT             | 547   |
| <b>Procurement Projected - For Repair &amp; Maintenance of Refineries</b> |  |                                |          |                 |   |
| Sl. No.   | Description of item  | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |

|    |  |  |       |                |        |
|----|--|--|-------|----------------|--------|
| 1  | Pump Spares  |  |       | Lot            | 57.6   |
| 2  | Mechanical Seal Spares                                     |  |       | Lot            | 67.2   |
| 3  | Bearings   |  |       | Lot            | 6      |
| 4  | Turbine Spares   |  |       | Lot            | 139.2  |
| 5  | Steam Engine Spares  |  |       | Lot            | 1.2    |
| 6  | Furnace Spares   |  |       | Lot            | 16.8   |
| 7  | Compressor Spares  |  |       | Lot            | 73.2   |
| 8  | Fan & Blower Spares  |  |       | Lot            | 8.4    |
| 9  | Agitator & Mixer Spares                                    |  |       | Lot            | 2.4    |
| 10 | ETP,LPG Plant Equipment Spares                             |  |       | Lot            | 14.4   |
| 11 | Air Conditioner Spares                                     |  |       | Lot            | 2.4    |
| 12 | Heat Exchanger Spares                                      |  |       | Lot            | 55.2   |
| 13 | Column/ Reactor Spares                                     |  |       | Lot            | 40.8   |
| 14 | Pipe & Pipe Fittings                                       |  |       | Lot            | 152.4  |
| 15 | Gear Box Spares  |  |       | Lot            | 10.8   |
| 16 | Motor Spares   |  |       | Lot            | 4.8    |
| 17 | Transformer, Battery, Switch Gear, Cable, Lamp etc. Spares |  | Lot   | Lot            | 96     |
| 18 | Chemicals, Catalyst & additives                            | Liquid oxidation Catalyst for spent caustic regeneration   | 1.5   | MT             | 2.616  |
| 19 |  | Anti Oxidant (AO 1010) Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate) | 950   | MT             | 39.66  |
| 20 |  | Anti Oxidant AO 168/ AO9   | 1450  | MT             | 45     |
| 21 |  | AO1076 (Octadecyl $\beta$ - (3,5-di- tert -butyl-4-hydroxy phenyl)-propionate                    | 96    | MT             | 3.8    |
| 22 |  | ATF Merox Catalyst - Pre impregnated activated charcoal  | 36    | M <sub>3</sub> | 0.972  |
| 23 |  | Benzene hydrogenation catalyst for ISOM unit   | 2.1   | MT             | 3.06   |
| 24 |  | CAB catalyst   | 16    | MT             | 3      |
| 25 |  | CAB-2 catalyst (Blend of vanadium oxytrichloride & titanium tetrachloride 50/50)                 | 31    | MT             | 5.58   |
| 26 |  | Carbon Monoxide (CO) promoter catalyst additive for FCC Unit                                     | 16    | MT             | 7.044  |
| 27 |  | Catalyst for DCU LPG Merox Unit  | 547   | L              | 0.336  |
| 28 |  | Hindered amine light stabilizer(HALS) - Chimassorb 944   | 9     | MT             | 1.116  |
| 29 |  | Claus Catalyst (Al based)  | 151.2 | M <sub>3</sub> | 1.74   |
| 30 |  | Claus Catalyst charge for Sulphur Recovery Unit (SRU)  | 22    | M <sub>3</sub> | 0.852  |
| 31 |  | Chloride guard adsorbent for Continuous Catalytic Reforming Unit (CCRU) stabilizer feed          | 30.5  | MT             | 1.08   |
| 32 |  | 2-Hydroxy-4-n-octoxybenzophenone (Cyasorb 531/ UV-1)   | 6     | MT             | 0.9    |
| 33 |  | Cyclo-Hexyl Methyl Methoxysilane (DONOR C)   | 15    | MT             | 1.86   |
| 34 |  | Di-ICyclo-Pentyl-Di-Methoxy-Silane (DONOR D)   | 3     | MT             | 1.452  |
| 35 |  | Slip additives (Erucamide )  | 110   | MT             | 5.1    |
| 36 |  | Ethylene drying and CO2 removal bed (Adsorbant)  | 8     | MT             | 0.444  |
| 37 |  | Ethylene drying and CO2 removal bed (Foxed) for PP Unit  | 3     | MT             | 0.516  |
| 38 |  | Fluidized Catalytic Cracking Catalyst  | 4435  | MT             | 168.96 |
| 39 |  | Grease (VASELINE)  | 27    | MT             | 0.864  |
| 40 |  | Hydrotreating and Hydrocracking catalyst for Hydrocracking unit                                  | 320   | MT             | 96.3   |
| 41 |  | Hydrotreating Catalyst for DHDT unit   | 478   | MT             | 96.48  |
| 42 |  | ISOM catalyst  | 24    | MT             | 42     |
| 43 |  | Liquid oxidation Catalyst for spent caustic regeneration   | 1.59  | MT             | 2.616  |
| 44 |  | Low temp. hydrogenation catalyst (Tail Gas Treatment Unit)                                       | 21.57 | MT             | 2.124  |
| 45 |  | Molecular sieves-desiccant (sodium-potassium-alumino silicate)                                   | 47.6  | MT             | 1.5    |
| 46 |  | Optical brightener   | 1     | MT             | 0.744  |

|    |                   |  |      |                |        |
|----|-------------------|--|------|----------------|--------|
| 47 |                   | PEPQ (Phosphorous trichloride, reaction products with 1,1-biphenyl and 2,4-bis(1,1-dimethylethyl)phenol) (secondary antioxidant)   | 186  | MT             | 23.76  |
| 48 |                   | Peroxide-101 (2, 5 Dimethyl-2,5-di (tert-butyl-peroxy) hexane)   | 92   | MT             | 10.692 |
| 49 |                   | PG/Pelargonic acid/ C8-C10 fatty acid  | 330  | MT             | 10.56  |
| 50 |                   | PP Catalyst. A composition of Magnesium Chloride and 1,2 Benzenedicarboxylic acid, 1,2 Bis[2-chloro-1-(chloromethyle)ethyl] ester.   | 7.5  | MT             | 29.04  |
| 51 |                   | PPA (Polymer Processing Additive)  | 40   | MT             | 6.348  |
| 52 |                   | Propylene drying and CO2 removal bed for PP unit (Fixed bed)   | 9    | MT             | 0.288  |
| 53 |                   | Silica gel-desiccant (Compound of Silicon dioxide)   | 187  | MT             | 5.16   |
| 54 |                   | T Fuel & U-Fuel for analysis of Cetane number  | 820  | Ltr            | 0.252  |
| 55 |                   | UV stabilizer 622  | 150  | MT             | 10.56  |
| 56 |                   | ZN-180M (Avant CATALYST) or equivalent   | 240  | Kg             | 0.9    |
| 57 |                   | ZSM-5 catalyst   | 100  | MT             | 10.488 |
| 58 |                   | Primary Reference Fuel (PRF) (ISO-Octane & n heptane)  | 880  | Kg             | 0.132  |
| 59 |                   | ATF (Aviation Turbine fuel) Mercox catalyst - Pre impregnated activated charcoal   | 36   | M <sub>3</sub> | 0.972  |
| 60 |                   | DSTDP (distearyl thiodipropionate) - acts as a secondary antioxidant for PP polymers.  | 65   | MT             | 2.76   |
| 61 |                   | Speciality Grease - Mixture of higher paraffin hydrocarbon used as catalyst protection in Spheripol PP technology for production of Polypropylene.   | 15   | MT             | 0.48   |
| 62 |                   | Magnesium Aluminium Hydroxide Carbonate Hydrate (DHT 4A/Hycite 713 ) -used in reaction for acid scavenging in polymer production and processing systems.                                     | 85   | MT             | 2.16   |
| 63 |                   | Alkyl Amine Ethoxylate ( ATMER 163 ) - for neutralization of Catalyst & Co catalyst and works as anti- static agent.   | 45   | MT             | 2.64   |
| 64 |                   | Antioxidant AO 3114(1,3,5-Tris(3,5-di-tert-butyl-4-hydroxy benzyl)-s-triazine-2,4,6-(1H,3H,5H)trione) - specialized vis-breaking chemical used for specific PP grade                         | 28   | MT             | 1.596  |
| 65 |                   | Non-Aromatic catalyst batch mineral oil (MINERAL OIL ) - used for diluting Donor in order to have better accuracy of the flow measure and also used for flushing in TEAL area.               | 70   | MT             | 1.74   |
| 66 |                   | HDPE consumable polymerization Catalyst - used for polymerization reaction for production of specific grade of High density polyethylene from Ethylene                                       | 8    | MT             | 25.92  |
| 67 |                   | Antioxidant (AO-1330 ) -prevents polymer from degradation caused by exposure to heat, ultraviolet radiation (UV) and mechanical shear  | 46   | MT             | 5.76   |
| 68 |                   | Desiccant for ethylene guard bed (Fixed bed for ethylene purification) - used for removal of Carbon monoxide, carbon dioxide, moisture from Ethylene feed in Swing unit to Ultra low levels. | 63   | MT             | 4.02   |
| 69 |                   | ST65692 (Biphenyl) -approved additive Packages required for manufacturing of Servo Duotherm S required at Panipat Refinery   | 60   | MT             | 1.44   |
| 70 |                   | Mixed Butylated Phenol Antioxidant (ST4064) - used in blending in many lubricants  | 87.3 | MT             | 1.992  |
| 71 |                   | Hydrogenated Terphenyl (ST58606) -approved additive Packages required for manufacturing of Servotherm SHT 32 required by IOCL Refinery.  | 304  | MT             | 10.908 |
| 72 | Mechanical Stores | Cast Air Preheater Module / Cast & Glass Air Preheater Modules / Glass Air Pre-Heater Modules  | 1    | No             | 1.416  |
| 73 |                   | Cutter Blades of Extruder  | 1600 | No             | 2.628  |
| 74 |                   | Hydrogen Tubular Reformer Catalyst Tubes   | 36   | No             | 4.332  |
| 75 |                   | Rotary Tight Shut off Valve  | 4    | No             | 0.72   |
| 76 |                   | Benchmarking study for P-25 Project  | 1    | No             | 2.4    |

|    |                                 |  |      |     |        |
|----|---------------------------------|--|------|-----|--------|
| 77 |                                 | License, Know-How, Process package, Catalyst(s), Proprietary equipment (if any) for production of Polyester Melt for continuous polymerization Unit along with project management consultancy services | 1    | Lot | 214.8  |
| 78 |                                 | Lining up of agency for platinum/palladium umpire analysis on limited global tender basis.   | 12   | Lot | 0.108  |
| 79 |                                 | Loss On Ignition (%) and Platinum content (%) testing in Continuous Catalytic Reformer (CCR) fresh catalyst  | 1    | No  | 0.048  |
| 80 |                                 | Maintenance of Welded Type Plate combine feed Exchanger of CRU   | 1    | No  | 2.052  |
| 81 | Specialty Services              | Off the shelf "Online e-Modules on Leadership Competencies"  | 1000 | No  | 1.104  |
| 82 |                                 | Supply of Basic Design and Engineering Package (BDEP), Catalyst(s), Proprietary items and assistance services for quality Revamp of BS-VI FCC GDS at Gujarat Refinery                                  | 1    | Lot | 25.94  |
| 83 |                                 | Supply of License, Basic Engineering and Design package and equipment and services   | 1    | Lot | 128.64 |
| 84 |                                 | Assay analysis of spent catalyst - required to quantify precious metal i.e. Palladium content in Spent catalyst for settlement of quantity of recovery of precious metal from spent catalyst.          | 1    | Lot | 0.144  |
| 85 | Chemicals, Catalyst & Additives | TEAL   | 18   | MT  | 0.75   |
| 86 | Chemicals, Catalyst & additives | CD (Di- ethyl aluminum chloride)   | 30   | MT  | 1.20   |
| 87 | Chemicals, Catalyst & additives | CJ (Di- ethyl aluminum ethoxide)   | 30   | MT  | 2.68   |
| 88 | Chemicals, Catalyst & additives | GMS-90   | 250  | MT  | 3.8    |
| 89 | Chemicals, Catalyst & additives | Base FCC catalyst for INDMAX Unit.   | 1170 | MT  | 34.5   |
| 90 | Chemicals, Catalyst & additives | DMDS   | 450  | MT  | 17.09  |
| 91 | Chemicals, Catalyst & additives | RM 68 Master batch   | 110  | MT  | 11.58  |
| 92 | Chemicals, Catalyst & additives | MIBK (METHYL ISOBUTYL KETONE)  | 700  | MT  | 24.31  |
| 93 | Mechanical Stores               | Radiant Coils  | 2    | Set | 42.08  |
| 94 | Chemicals, Catalyst & additives | Hydrogenation Catalyst (Activated Alumina impregnated with Cobalt and Molybdenum Oxides).  | 52.3 | M3  | 3.07   |
| 95 | Chemicals, Catalyst & additives | Liquid oxidation catalyst for FCC Indmax Unit  | 555  | Kg  | 0.92   |

**Procurement Projected \_ Capex and Repair & Maint - Pipelines**

| Sl. No. | Description of item  | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|--|--------------------------------|----------|-----------------|---|
| 1       | Strainer (Nos)   |                                |          |                 |   |
| 2       | Transfer Pump (Nos)  |                                |          |                 |   |
| 3       | ACDB Panel (Nos)   |                                | 147      | Nos.            | 19.27                                       |
| 4       | API 6D Ball Valves (Nos)   |                                | 644      | Nos.            | 26.63                                       |
| 5       | API 6D Valves (Nos)  |                                | 147      | Nos.            | 9.35  |
| 6       | Ball Valve (Nos)   |                                | 1027     | Nos.            | 72.60                                       |
| 7       | Basket Strainer (Nos)  |                                | 60       | Nos.            | 8.53  |
| 8       | Control valve (Nos)  |                                | 75       | Nos.            | 14.76                                       |
| 9       | EEE (Nos)  |                                | 15.00    | Nos.            | 6.13  |
| 10      | Emergency evacuation equipment (Nos)   |                                | 74       | Nos.            | 23.98                                       |
| 11      | Engine Spares  |                                | Lot      | Lot             | 16.80                                       |
| 12      | ER Probe(Nos)  |                                | 59       | Nos.            | 7.67  |
| 13      | F/F PUMP, Jockey pumps, water filling pumps(Nos)   |                                |          |                 | 0.00  |
| 14      | Fire Fighting Pipes (km)   |                                | 0.175    | Km              | 0.07  |
| 15      | Fire Fighting Pump (Nos)   |                                | 3        | Nos.            | 0.60  |
| 16      | Flow Tee (Nos)   |                                | 99       | Nos.            | 12.38                                       |
| 17      | Globe Valve (Nos)  |                                | 74       | Nos.            | 1.22  |
| 18      | Heavy duty access Mats   |                                | Lot      | Lot             | 6.23  |
| 19      | High Mast(Nos)   |                                | 80       | Nos.            | 9.59  |
| 20      | HOT crane (Nos)  |                                | 8        | Nos.            | 10.73                                       |
| 21      | HT Capacitor Panel(Nos)  |                                | 5        | Nos.            | 0.76  |
| 22      | HT Panel(Nos)  |                                | 5        | Nos.            | 10.38                                       |
| 23      | HT/LT/Control cables(km)   |                                | 830      | Km              | 1.82  |
| 24      | Instrumentation, Control & SCADA System (Nos)  |                                | 10       | Nos.            | 13.81                                       |
| 25      | Insulating coupling (Nos)  |                                | 556      | Nos.            | 4.60  |
| 26      | Jockey pump (Nos)  |                                | 2        | Nos.            | 0.05  |
| 27      | LT DG(Nos)   |                                | 185      | Nos.            | 4.55  |
| 28      | LT Panel(Nos)  |                                | 38       | Nos.            | 6.00  |
| 29      | Mainline pumping Unit (Nos)  |                                | 22       | Nos.            | 67.81                                       |
| 30      | Marine Hoses for SPM   |                                |          | Nos.            | 96.00                                       |
| 31      | Mechanical Pipe End connector+ Standard/Long seal Leak clamps+ Encapsulating Leak Clamps   |                                |          | Nos.            | 4.1   |
| 32      | Meteringskid assembly (consisting of Filtration, Metering and Pressure Reduction units) of various sizes for providing connectivity to CGD Entities from Gas pipelines and augmentation of existing facilities (Nos) |                                | 4        | Nos.            | 9.1   |
| 33      | Metering Skid Ph-III(Nos)  |                                | 8        | Nos.            | 43.04                                       |
| 34      | Metering Skid(Nos)   |                                | 4        | Nos.            | 27.85                                       |
| 35      | Misc. fire fighting equipment (Nos)  |                                | 47       | Nos.            | 27.90                                       |
| 36      | NRPL Mainline pumping unit Replacement   |                                |          |                 |   |
| 37      | Other Marine Spares  |                                |          | Nos.            | 10.18                                       |
| 38      | pipe fitting(Nos)  |                                | 127300   | Nos.            | 1.62  |
| 39      | Pipe (km)  |                                | 146.1    | Nos.            | 134.03                                      |
| 40      | Remote operated Valve (Nos)  |                                | 23       | Nos.            | 1.92  |
| 41      | Scraper Barrel   |                                | 72       | Nos.            | 12.46                                       |
| 42      | Separator Filter (Nos)   |                                | 2        | Nos.            | 3.24  |
| 43      | Small size (<4") misc. valve (Nos)   |                                | 103      | Nos.            | 5.18  |
| 44      | SRV (Nos)  |                                | 1        | Nos.            | 0.17  |
| 45      | Station pipes(km)  |                                | 2.3      | Nos.            | 3.53  |
| 46      | Steel Pipe (KM)  |                                | 2078     | Km              | 2352.00                                     |
| 47      | Steel Plate (MT)   |                                | 1680     | Nos.            | 10.92                                       |
| 48      | sump pump and tank (Nos)   |                                | 1        | Nos.            | 0.16  |

|    |  |  |     |      |        |
|----|--|--|-----|------|--------|
| 49 | Swing check valve (Nos)  |  | 100 | Nos. | 2.62   |
| 50 | Telecom System (comprising of DC power, Networking system, CCTV system, Telephone system, OFC, HDPE, etc.) (Nos) |  | 10  | Nos. | 113.34 |
| 51 | Transformer (Nos)  |  | 10  | Nos. | 74.52  |
| 52 | Vadinar SPM Replacement project<br>1. Buoy & accessories<br>2. Concrete Coated Pipe                              |  |     | Nos. |        |
| 53 | Valves   |  | Lot | Lot  | 5      |
| 54 | VALVES of all types (Nos)  |  |     | Nos. |        |
| 55 | VFD (Nos)  |  | 15  | Nos. | 24.00  |
| 56 | Anti-Chafe Chains for Vadinar  |  | 14  | No   | 0.97   |
| 57 | Subsea Hoses for Paradip SPM-I   |  | 2   | No   | 0.84   |

**Procurement Projected \_ Marketing - LPG Group**

| Sl. No. | Description of item   | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | LPG Pump  |                                | 14       | Nos.            | 10.34                                       |
| 2       | LPG Compressor  |                                | 14       | Nos.            | 6.77  |
| 3       | Air Compressor  |                                | 15       | Nos.            | 2.30  |
| 4       | Air Dryer   |                                | 4        | Nos.            | 0.77  |
| 5       | DG Set  |                                | 7        | Nos.            | 3.47  |
| 6       | Fire Engine   |                                | 14       | Nos.            | 1.92  |
| 7       | Valve change without Evacuation Machine   |                                | 4        | Nos.            | 1.12  |
| 8       | LPG Loading arm   |                                | 16       | Nos.            | 0.53  |
| 9       | Carousel  |                                | 20       | Nos.            | 70.80                                       |
| 10      | Computers   |                                | 200      | Nos.            | 1.20  |
| 11      | Additive dosing machines  |                                | 50       | Nos.            | 10.80                                       |
| 12      | Carousel Cards in Nos.  |                                | 360      | Nos.            | 3.02  |
| 13      | Mech Seals (Refurbishing) Nos. for LPG Pump                                     |                                | 93       | Nos.            | 3.35  |
| 14      | Mech Seals New in Nos. for LPG Pump   |                                | 20       | Nos.            | 1.92  |
| 15      | Valves / Flanges / Gaskets / Spares in Nos.                                     |                                | 270      | Nos.            | 8.10  |
| 16      | Cables (Control / Power) in RMs   |                                | 27900    | Nos.            | 0.50  |
| 17      | Pressure / Temp Transmitters/Gauges in Nos.                                     |                                | 186      | Nos.            | 2.23  |
| 18      | Fire Engine / DG / DC Batteries in Nos.   |                                | 3100     | Nos.            | 5.58  |
| 19      | Conveyor Chain in RM  |                                | 45500    | Nos.            | 6.55  |
| 20      | Air Ends of Screw Compressors   |                                | 37       | Nos.            | 2.22  |
| 21      | Spares (Filters & Accessories) Air Comp in Nos.                                 |                                | 465      | Nos.            | 1.39  |
| 22      | LPG Vap Comp Seals / valves / Plates  |                                | 279      | Nos.            | 1.01  |
| 23      | Lights and Fixtures / Bulbs / glands / JBs / Switches                           |                                | 9300     | Nos.            | 1.12  |
| 24      | Relays / Fuses  |                                | 4650     | Nos.            | 1.12  |
| 25      | Printer Cartridges  |                                | 558      | Nos.            | 0.34  |
| 26      | Sprockets / Cylinders / Shafts / wearing strips / Pneumatic tubing / connectors |                                | 18600    | Nos.            | 3.72  |
| 27      | Misc Spares / Car (sensors / connectors / cables etc)                           |                                | 186      | Nos.            | 2.23  |
| 28      | TLD / TLF Spares  |                                | 744      | Nos.            | 2.23  |
| 29      | Structural steel for Conv / Misc Works in MT                                    |                                | 400      | Nos.            | 1.82  |
| 30      | Diesel / Fire Engine Spares / filters / glands                                  |                                | 651      | Nos.            | 5.47  |
| 31      | Spares for Level gauges / transmitters  |                                | 279      | Nos.            | 3.35  |
| 32      | Fire / SCADA / GMS Panel Spares / MIMIC / sensors / transmitter                 |                                | 279      | Nos.            | 1.395                                       |
| 33      | CCTV spares / modules   |                                | 93       | Nos.            | 1.67  |
| 34      | Load cells for weigh bridges / weighing scales / carousals                      |                                | 900      | Nos.            | 2.70  |
| 35      | Centering Arms of carousals   |                                | 2250     | Nos.            | 0.32  |

**Procurement of LPG Cylinders & P Regulator**

| Sl. No. | Description of item                             | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | 14.2 Kg Cylinders (Including New & Replacement) |                                | 11000000 | Nos.            | 1686.32                                     |
| 2       | 19 Kg Cylinders (Including New & Replacement)   |                                | 900000   | Nos.            | 168.05                                      |
| 3       | 47.5 Kg Cylinders (Including New & Replacement) |                                | 50000    | Nos.            | 23.11                                       |
| 4       | 5 Kg Cylinders (Including New & Replacement)    |                                | 2000000  | Nos.            | 208.01                                      |
| 5       | 425 KG Cylinders                                |                                | 3000     | Nos.            | 23.71                                       |
| 6       | Pressure Regulators                             |                                | 7500000  | Nos.            | 130.38                                      |
| 7       | Self Closing Valve                              |                                | 19800000 | Nos.            | 199.20                                      |

**Procurement Projected \_ Marketing - Lubes**

| Sl. No. | Description of item                       | Broad specification Parameters | Quantity | Accounting Unit | Estimated Value of procurement in Rs/Crores |
|---------|---|--------------------------------|----------|-----------------|---|
| 1       | Synthetic base oil Poly alfa olefin 6 CST |                                | 600      | MT              | 15.89                                       |
| 2       | ST5014 (Lithium Hydroxide Monohydrate)    |                                | 325      | MT              | 22.68                                       |
| 3       | ST56058 (PIB 1000)                        |                                | 2601     | MT              | 32.18                                       |