# Hindustan Dorr Oliver Ltd

**Corporate Presentation**

DORR-OLIVER
HINDUSTAN DORR-OLIVER LIMITED

DORR-OLIVER
HINDUSTAN DORR-OLIVER LIMITED

# Contents

# 1. Executive Summary

# Executive Summary (1/2)

**At a glance**

- Hindustan Dorr Oliver Limited (HDO) is one of the most preferred EPC companies in India in Mineral beneficiation, Chemical and Fertilizers, **Water & Waste Water management**, Nuclear Power and Pulp & Paper industries.
- HDO has strong capabilities across design engineering, process equipment manufacturing and execution of turnkey EPC projects.
- Approved by most of the leading global project management consultants including UDHE, TOYO, LINDE, EIL, JACOBS, PDIL, Samsung, Technimont ICB, etc.
- Successfully executed several prestigious projects for clients such as IOCL, ONGC, BPCL-Kochi, BPCL-Mahul, BINA, HPCL, GAIL, GNFC, RCF, GSFC, IFFCO, PPL, Haldia Petrochemicals, HPCL Mittal Energy, Vedanta Resources, NALCO, NMDC, SAIL, NPCIL, etc.
- Manufactures heavy and complex engineering components such as pressure vessels, heat exchangers etc. for various industry segments, and other proprietary equipment for its own turnkey EPC projects.
- Current order book stands at INR 9,000 mn (USD 150 mn). Of this orders of INR 7,500 mn (USD 125 mn) are held by the EPC Group and the balance INR 1,500 mn (USD 25 mn) by the Manufacturing division.
- In the past acquired a UK-based engineering firm having expertise in design, manufacturing and fabrication of heavy and complex engineering components and assemblies.
- HDO is part of a large business conglomerate which is currently under stress, due to the slowdown of the Indian economy during 2012-2014.
- HDO is listed on National Stock Exchange of India and Bombay Stock Exchange. The Promoter Group holds 55% equity stake and the balance is with the general public.

**Infrastructure**

- HDO has pan India presence with offices in major cities such Mumbai, Chennai, Kolkata, Delhi and Ahmedabad supported by 850+ employees.
- Manufacturing facility in Ahmedabad spread across 16 acres, with built up area of 160,000 sq. ft. The facility is among the top five leading engineering manufacturing facilities in the country.

# Executive Summary (2/2)

**Future Strategy**

- ➔ Company's Debt was restructured in 2013. The cash flow mis-match, however, continues and the company is still facing some financial stress as the Debt/Equity structure is skewed. In order to be back on a growth trajectory HDO has now chalked out a revival plan with clear cut strategies.
- ➔ HDO has recently bid for several projects and is expected to win projects of around INR 6,000 mn (USD 100 mn) shortly.
- ➔ HDO would now like to partner with a global strategic player who can leverage on the company's Brand and diversified capabilities in Design, Engineering and Execution, to scale up operations and become a world player of quality and substance.

**Financial Snapshot - Consolidated**

| (USD mn) | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | FY15 E | FY16 E | FY17 E |
|---|---|---|---|---|---|---|---|---|---|
| Revenue | 87 | 145 | 160 | 142 | 55 | 54 | 114 | 184 | 229 |
| EBITDA | 10 | 18 | 18 | 1 | (19) | (7) | 6 | 21 | 27 |
| *EBITDA %* | *11%* | *12%* | *11%* | *1%* | *(34%)* | *(13%)* | *5%* | *11%* | *12%* |

**Investment Opportunity**

- ➔ Promoter group intends to exit as HDO's business is not part of the Group's core activity.
- ➔ The investor can have a clear majority stake in HDO.

USD = INR 60

# 2. Organization Overview

# Overview

- Incorporated in 1974, Hindustan Dorr Oliver Ltd (HDO) was acquired by IVRCL Group in 2005.
- Over the last few years, HDO has transformed itself from a reputed equipment manufacturer to a leading provider of Engineering focused turnkey EPC projects and solutions
- Recognized as a global engineering company, HDO undertakes complete spectrum of activities from feasibility study, design and planning of the project to its execution.
- HDO has been able to provide its clients the best and most cost effective integrated solutions due to is in-house Engineering & Manufacturing capability
- It operates through three business divisions – Design Engineering, Manufacturing and Turnkey EPC Project divisions. The first two activities are carried out by HDO's wholly owned subsidiary - HDO Technologies Private Limited
- It has a pan India presence, with offices in every major city in India - Mumbai, Bangalore, Chennai, Kolkata, Delhi and Ahmedabad.
- It has a talented workforce of about 850 people of which more than 80% are engineers or hold an equivalent degree
- The manufacturing facility at Ahmedabad follows international codes and standards and employs world reputed third party inspection agency
- Company has obtained international certifications for Quality, Safety and Environment Management Systems.
- HDO works as **"Engineering for Sustainable Growth of the Global Community"** and is committed towards contributing positively to the society at large.

# Business Segments

**HDO Technologies Private Limited (100% subsidiary of HDO)**

## Design Engineering

## Manufacturing

**Hindustan Dorr Oliver Limited**

## Turnkey EPC

**Concept to Commissioning**

Project Management | Engineering Design | Fabrication | Machining | Shop Assembly | Site Installation | Reconditioning | After Sales

## *2A. Design Engineering Division*

# Design Engineering - Overview

Design Eng. | Manufacturing | Turnkey EPC

- HDO has over 60 years of top notch engineering expertise.
- It has a multi discipline engineering team with expertise in critical industrial sectors like minerals, water, chemicals, Petrochemicals, fertilizers, oil & gas .
- The engineering services are offered through HDO Technologies Limited, the wholly owned subsidiary of HDO
- The project designing is done on softwares such as as Bentley Autoplant, Solid Works, Staad Pro, Autocad Inventor, PV Elite, Microprotol, Autocad Mechanical, HTRI etc.

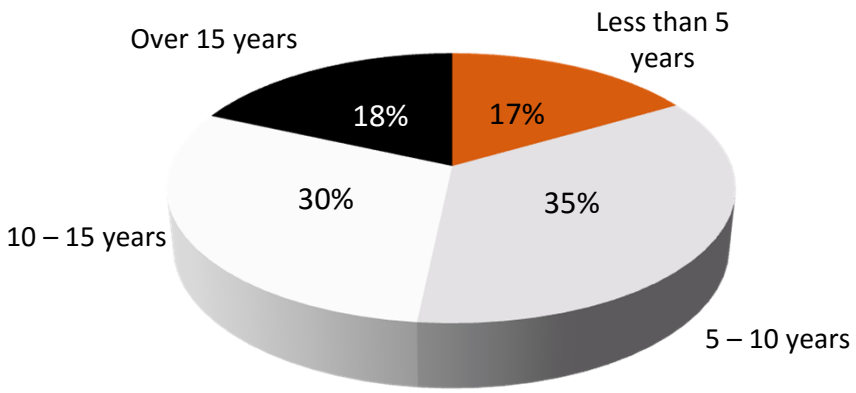
## Design Engineers Team Size

| Location | Design Engineers |
|---|---|
| Mumbai | 70 |
| Ahmedabad | 30 |
| Chennai | 20 |
| **TOTAL** | **120** |

**Annual Engineering Capacity**

250,000 - 300,000 Man Hours

## Design Engineers – Experience wise



# Engineering Capabilities

**Design Eng.** | Manufacturing | Turnkey EPC


## Industry Focus

- Mineral Beneficiation
  *(Alumina, Uranium, and other Minerals)*
- Environmental
  *(RWTP, ETP, STP, RO, DM, UF)*
- Fertilizers & Chemicals
- Oil and Gas
  *(Heat Exchangers and Pressure Vessels)*
- Power
  *(Balance of Plant)*
- Pulp and Paper
- Material Handling

## Other Engineering Services

- Feasibility Study & DPR / DTR
- Technology Evaluation
- Plant Layout
- FEL / CAC reports
- Hazop study
- Project management and scheduling
- Relocation of plants worldwide

# Select Completed Projects (1/2)

Design Eng. | Manufacturing | Turnkey EPC

| | Name of Client | Design Engineering Details | Order Value (USD mn) | Completion Date |
|---|---|---|---|---|
| Minerals & Metals | HDO In-house Project : Uranium Corporation of India, Kadappa, Andhra Pradesh | Basic design and Detail Engineering for 3000 TPD Uranium Ore Processing Plant | 2.25 | Dec 2009 |
| | HDO In-house Project : Vedanta Aluminium Ltd , Lanjigarh, Orissa | Basic design and Detail Engineering for 3.0 MTPA Alumina Refinery Project. | 1.8 | July 2009 |
| | HDO In-house Project : NMDC Ltd., Donimalai, Karnataka | Basic design and Detail Engineering for 1.8 MTPA Iron Ore Beneficiation Plant. | 1.0 | Mar 2010 |
| | Gold and Mineral LLC, Saudi Arabia | Extended Basic Engineering Design and Budget Estimate for 1.5 Million TPA Gold Processing plant. | 0.1 | Feb 2014 |
| Fertilizers & Chemicals | HDO In-house Project : Rashtriya Chemical & Fertilizer, Mumbai, Maharashtra | Basic design and Detail Engineering for 900 MTPD ANP Granulation Plant | 0.6 | Dec 2008 |
| | Green star Fertilizer Ltd., Chennai | Extended Basic design and Detail Engineering for Revamping of Phosphoric Acid Plant. | 0.5 | Oct 2013 |
| | Paradeep Phosphate Ltd., Orissa | Extended Basic design and Detail Engineering for Gypsum Pond - II | 0.12 | Apr 2014 |

USD = INR 60

# Select Completed Projects (2/2)

Design Eng. | Manufacturing | Turnkey EPC

| | Name of Client | Design Engineering Details | Order Value (USD mn) | Completion Date |
|---|---|---|---|---|
| Water & Waste Water Treatment | HDO In-house Project :HPCL Mittal Energy Ltd., Bhatinda , Punjab | Basic design and Detail Engineering for 130 MLD Raw water Treatment plant, 12 MLD Effluent treatment Plant, 20.4 MLD RO-DM and 3.6 MLD Condensate Polishing unit | 2.4 | Nov 2009 |
| | HDO In-house Project :Indian Oil Corporation Ltd., Paradeep, Orissa | Basic design and Detail Engineering for 1540 M3/hr Demineralization Plant and 1100 M3/hr Condensate Polishing Unit. | 1.1 | Mar 2013 |
| | HDO In-house Project :ONGC-Petro Additions Ltd, Dahej, Gujarat. | Basic design and Detail Engineering for 150 m3/Hr Oily Effluent, 1150 M3/hr RO Based tertiary plant and RO based DM Plant of 160 m3/hr. | 0.9 | Aug 2010 |
| | HDO In-house Project : Hindustan Petroleum Corporation Ltd., Mumbai, Maharashtra | Basic design and Detail Engineering for 8 MLD Integrated Effluent Treatment plant . | 0.6 | Nov 2008 |
| | HDO Project :CIDCO, Navi Mumbai, Maharashtra | Basic design and Detail Engineering for 25 MLD Sewage Treatment plant | 0.4 | Dec 2007 |

USD = INR 60

## *2B. Manufacturing Division*

# Manufacturing - Overview



- HDO is one of the reputed manufacturers for fabricated process plant equipment, specifically for Oil and Gas, Fertilizer, Refinery, Petrochemical sector & Power Industry
- The manufacturing activity is carried out under HDO Technologies Ltd, a wholly owned subsidiary of HDO
- The manufacturing plant is located in western part of India at GIDC, Vatva in Ahmedabad, Gujarat
- The facility is among the top five leading engineering manufacturing facilities in the country.
- The plant primarily manufactures pressure vessels, heat exchangers and other proprietary equipment for HDO's captive consumption as well as sales to third party
- HDO is recognized amongst the top ten manufacturers of pressure vessels and Heat Exchangers in India
- On an average one fourth of total production goes for captive EPC consumption and balance three fourth is supplied to clients directly.
- HDO is approved with major operating consultant/PMC/EPC in India i.e. EIL, UHDE, TOYO, Jacobs, Samsung, Technip, SNC Lavalin, Lurgi, Bechtel, Foster Wheeler, PDIL, Technimont etc.


## Codes & Standards Followed

- American Society Mechanical Engineers
- American Society of Testing Materials
- Tubular Exchanger Manufacturers Association (TEMA)
- American National Standard Institute (ANSI)
- American Welding Standard (AWS)
- Indian Standard (IS) Indian Boiler Regulations (IBR)
- PD 5500 SMPV RULES (For Explosive Applications)
- GAS CYLINDER RULES (For Explosive Application)

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# Product Range

Design Eng. | **Manufacturing** | Turnkey EPC

**Mineral Beneficiation**

- Conventional Thickners
- Hi-Rate Thickners
- Super Thickners
- Clarifiers
- Belt / Pan Filters
- Kelly Filters
- Red Mud Filters
- Drum Filters
- Disc Filters
- Autoclaves
- Screw Classifiers
- Flotation Cells

**Environment**

- Clarifiers
- Thickners
- Digesters
- Detritors
- Trickling Filter Distributor
- Clariflocculator
- Pretreator
- Surface Aerators
- Monorake
- Multimedia Filters
- Completreator

**Pulp and Paper**

- Pulper
- Aqua Seperator
- DSM Screens
- Continuous Digester
- Brown Stock Washer
- Bleach Washer
- Shredder Repulper
- Recausticizing System
- Classifiers
- Clarifiers

**Hydro-Carbon Sector**

- Heat Exchangers – all types
- Pressure Vessels
- Tank Spheres
- Reactors
- Columns
- Storage Tanks
- Desalters
- Indirect Fired Heaters
- Air Cooled Condensers
- Evaporators

**Fertilizers & Chemicals**

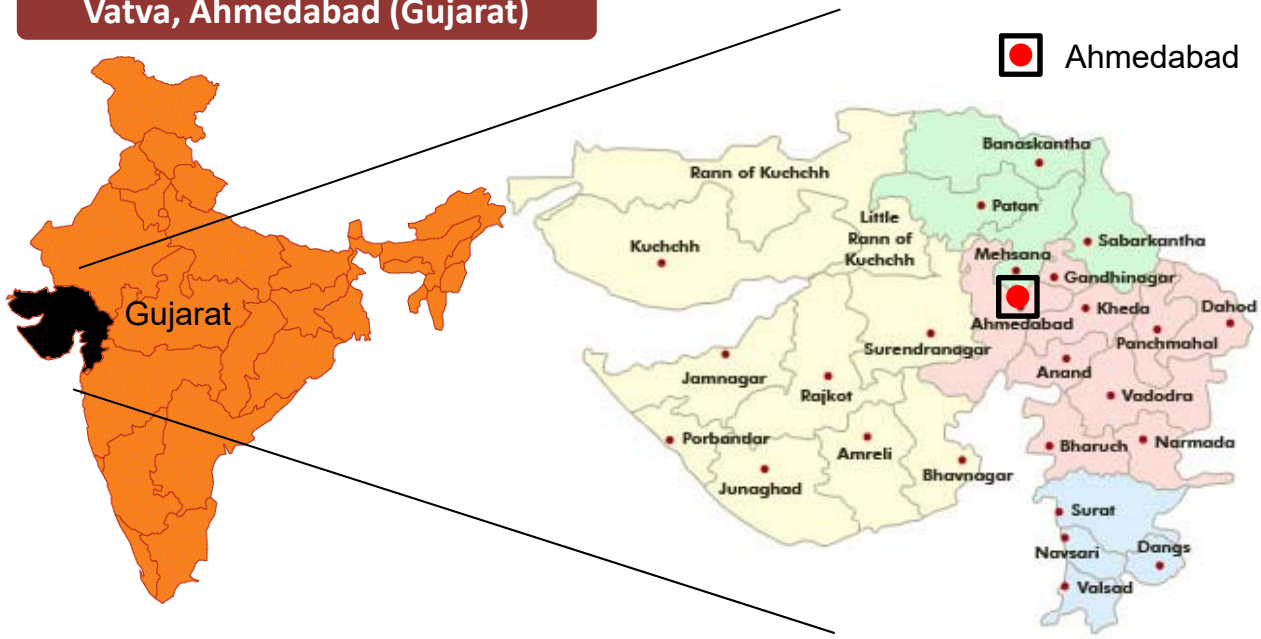
- Granulator
- Pulverizer
- Dryers
- Coolers
- Scrubbers
- Rapidorr Clarifier
- OC Filter
- Brine Clarifiers and Filters
- Jet and Mono Sizer

# Infrastructure

Design Eng. | **Manufacturing** | Turnkey EPC

- HDO has established state of the art manufacturing facility spread across 16 acres, with built up area of 160,000 sq. ft. for manufacturing heavy and complex engineering components and equipments for various industry segments.
- The facility is accredited with U-stamp certification from ASME (USA) and National Board of Boiler & Pressure Vessel Inspectors (USA) and ISO 9001:2008 certification
- **The facility is capable to manufacture & fabricate equipment up to 350 tons**

**Vatva, Ahmedabad (Gujarat)**




## Key Facilities

- Clean room facility
- Heat treatment facility
- X ray Room
- Automated painting shop
- 400 tonnes of cranes capacity in a Bay
- State of Art Equipments at site
  - Plate sheering machine
  - Submerged Arc welding machine
  - CNC Plasma Cutting machine
  - CNC Tube sheet drilling machine
  - Tube Expansion machine
  - 5 parallel bays 60 x 300 ft
  - Crane facility of 50 + 50 and 20 + 20 MT

# Certifications & Approvals



- ISO 9001:2000/ISO 14001:2004/ OHSAS 18001:2007 Certification
- "U" Stamp Certification
- National Board Certificate
- IBR Certification
- Explosives Department certification
- EIL Registered
- UDHE India Certification
- PDIL Certification
- GNFC Certification
- ONGC Certification
- TDC Certification


# List of Major Completed Orders (1/2)

Design Eng. | **Manufacturing** | Turnkey EPC

| | Name of Client | Equipment Name | Weight (MT) | Delivery Span |
|---|---|---|---|---|
| Oil & Gas | Oil & Natural Gas Corp Ltd | LPG Dryer | 111 | 12 months |
| | HPCL-Mittal Energy Ltd | Water Seal Drum | 229 | 18 months |
| | HPCL-Mittal Energy Ltd | Spent Cyclist Hoppers | 220 | 18 months |
| | Bharat Oman Refineries Limited | HP Air Receiver | 140 | 12 months |
| | Reliance Industries Ltd | Reaction Blow Down Drum | 20 | 9 months |
| | Reliance Industries Ltd | BRF Absorber Column + Deflouridation Column | 83 | 12 months |
| | Reliance Industries Ltd | Cladded Stripper vessels | 110 | 9 months |
| | EIL – GAIL (India) Ltd | Drier Feed Chiller | 49 | 14 months |
| | EIL – GAIL (India) Ltd | Acetylene Reactor Feed | 42 | 14 months |
| | EIL – GAIL (India) Ltd | Lean/Rich Amine Exchanger | 140 | 14 months |
| | EIL – GAIL (India) Ltd | Quench Water Column | 180 | 14 months |
| | EIL - GAIL (India) Ltd | C3 Splitter Condenser | 46 | 11 months |
| | EIL - GAIL (India) Ltd | Propylene Refrigerant | 37 | 12 months |
| | EIL - Gail (India) Ltd | C2 / C3 Column Condenser | 70 | 14 months |
| | EIL - Gail (India) Ltd | Demethaniser column condenser | 50 | 12 months |
| | EIL - Gail (India) Ltd | C2 Splitter Reflux Drum | 50 | 13 months |
| | HPCL | DAO product cooler, DAO mix exchanger | -- | 6 months |

USD = INR 60

# List of Major Completed Orders (2/2)

Design Eng. | **Manufacturing** | Turnkey EPC

| | Name of Client | Equipment Name | Weight (MT) | Delivery Span |
|---|---|---|---|---|
| Mineral | Nuclear Power Corp of India Ltd | ECCS Light water Accumulator | 89 | 24 months |
| | Uranium Corporation of India Ltd | Pressure Leach Autoclave | 350 | 24 months |
| | Anrak Aluminium Ltd | Settler & Washers | 30 | 12 months |
| Fertilizers | Rashtriya Chemical & Fertilizers | Tail Gas Preheater | 25 | 8 months |
| | Rashtriya Chemical & Fertilizers | Process Condensate Stripper | 58 | 12 months |
| | National Fertilizers Limited | Co2 Booster Compressor | -- | 8 months |
| | Brahmaputra Crackers & Polymer Ltd | Cold Blowdown Cum Methanol Vaporiser | 58 | 9 months |
| | Brahmaputra Crackers & Polymer Ltd | Tertiary Refrigerant Condenser | 102 | 11 months |
| General Engineering | Tecnimont ICB | Purge Column | 120 | 12 months |
| | Tecnimont ICB | Reactor Gas Cyclone | 53 | 11 months |
| | Tecnimont ICB | CO2 Absorber | 120 | 12 months |
| | Alaqua Inc, USA | Falling Film Evaporator | 36 | 8 months |
| | Kirloskar Pneumatic Co. Ltd. | Chiller, Condenser, Economiser, Lube Oil Cooler | -- | 7 months |
| | Larsen & Tourbo Ltd | Stripper Reboiler, LPB Col condenser, LPG Col Reboiler, NGL Cooler, LPG Cooler | -- | 7 months |

USD = INR 60

# Select Prestigious Orders (1/3)



| | | |
|---|---|---|
| Equipment | : | Pressure Leach Autoclave (2 nos) |
| Design Pressure | : | 12.33 Kg/cm2 |
| Design Temp | : | 140 degree Celsius |
| Shell Dia. | : | 5262 mm |
| Length | : | 36123 mm |
| Shell Thickness | : | 50 + 6 mm |
| Weight | : | 350 MT each |
| Client | : | Uranium Corporation of India Ltd |
| Completion Year | : | 2010 |

| | | |
|---|---|---|
| Equipment | : | Water Seal Drum |
| Design Pressure | : | 3.5 Kg/cm2 |
| Design Temp | : | 220 degree Celsius |
| Shell Dia. | : | 7700 mm |
| Length | : | 12500 mm |
| Shell Thickness | : | 20 mm |
| Weight | : | 229 MT |
| Client | : | HPCL-Mittal Energy Ltd |
| Completion Year | : | 2012 |

# Select Prestigious Orders (2/3)

Design Eng. | **Manufacturing** | Turnkey EPC

| | | |
|---|---|---|
| Equipment | : | Spent Cyclist Hoppers |
| Design Pressure | : | 5.27 Kg/cm2 |
| Design Temp | : | 427 degree Celsius |
| Shell Dia. | : | 6400 mm |
| Length | : | 25600 mm |
| Shell Thickness | : | 34 mm |
| Weight | : | 200 MT |
| Client | : | HPCL-Mittal Energy Ltd |
| Completion Year | : | 2012 |

| | | |
|---|---|---|
| Equipment | : | HP Air Receiver |
| Design Pressure | : | 34 Kg/cm2 |
| Design Temp | : | 65 degree Celsius |
| Shell Dia. | : | 4500 mm |
| Length | : | 17850 mm |
| Shell Thickness | : | 50 mm |
| Weight | : | 140 MT |
| Client | : | Bharat Oman Refineries Ltd |
| Completion Year | : | 2011 |

# Select Prestigious Orders (3/3)



| | | |
|---|---|---|
| Equipment | : | CO2 ABSORBER |
| Design Pressure | : | 0.20 Kg/cm2 |
| Design Temp | : | 100 degree Celsius |
| Shell Dia. | : | 4800 mm |
| Length | : | 41600 mm |
| Shell Thickness | : | 20 mm |
| Weight | : | 120 MT |
| Client | : | Tecnimont ICB Pvt Ltd |
| Completion Date | : | 2013 |

| | | |
|---|---|---|
| Equipment | : | Purge Column |
| Design Pressure | : | 4.4 Kg/cm2 |
| Design Temp | : | 125 degree Celsius |
| Shell Dia. | : | 6000 mm |
| Length | : | 29380 mm |
| Shell Thickness | : | 23 mm |
| Weight | : | 120 MT |
| Client | : | Tecnimont ICB Pvt Ltd |
| Completion Date | : | 2013 |

# Current Order Book

Design Eng. | **Manufacturing** | Turnkey EPC

| Name of Client | Product | Order Value | Completion Date (Est.) |
|---|---|---|---|
| Nuclear Power Corporation of India Ltd | Passive Decay Heat Removal System, Emergency Condensers, Inventory Addition & Recovery System Heat Exchangers | USD 9 mn | 2015 |
| Bharat Petroleum Corporation Ltd | Knockout Drums, Regenrator, Reboiler, HWB Exchangers, Stripper reboiler | USD 9 mn | 2014-15 |
| Nuclear Power Corporation of India Ltd | Distillation Columns | USD 2 mn | 2016 |
| Shree Shyam Pulp and Board Mills Ltd | Brown Stock Washer & Bleach Washer | USD 1 mn | 2015 |
| Gujarat State Fertilizer & Chemicals Ltd | Dryer & Granulator | USD 0.4 mn | 2015 |
| ONGC Petro Additions Ltd | Clarifiers, SS Tanks, Vessels, Pressure Sand Filters etc. | USD 0.2 mn | 2014 |
| | **OTHERS** | USD 3.4 mn | -- |
| | **TOTAL** | **USD 25 mn** | |

USD = INR 60

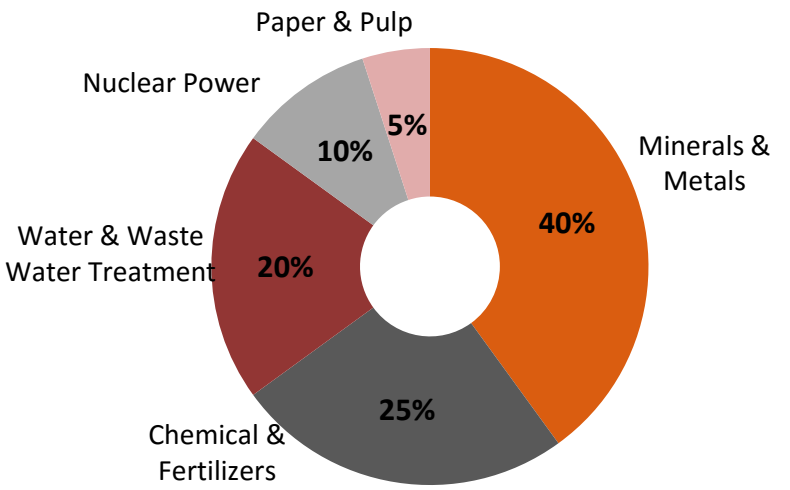
## *2C. Turnkey EPC Division*

# EPC - Overview

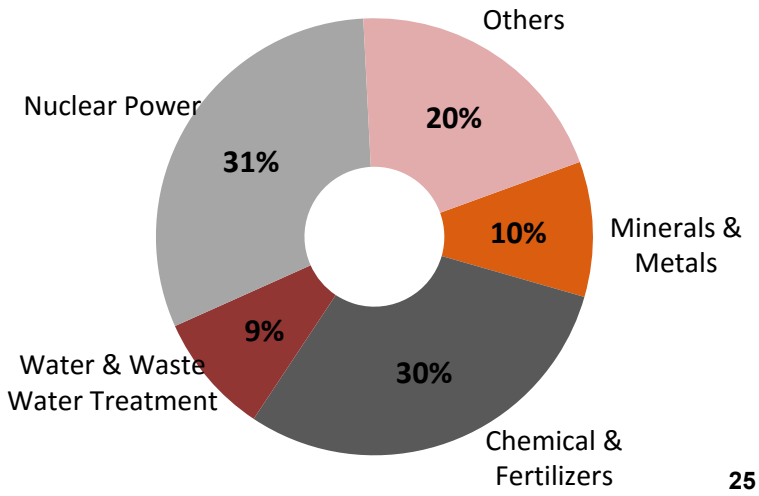
Design Eng. | Manufacturing | **Turnkey EPC**

- HDO has emerged as a major Engineering EPC player, assimilating new technologies and providing the best, most cost effective and integrated turnkey solutions for the process industries
- Company offers single source for everything it requires to design, build, commission & operate world class process plants
- It has been involved in major industrial projects in areas of Mining and Minerals, Water and Wastewater, Fertilizers and Chemicals and Pulp and Paper.
- It has done water management and effluent treatment for all major refineries in India
- Company has an excellent presence in Uranium ore processing from supplying equipment to the first uranium mill in Jagududa to now providing the complete uranium ore processing plant at Tummalapalle in Andhra Pradesh.
- 90% of phosphatic fertilizer plants in India are installed by HDO.
- It has the capability of providing the entire pulp mill which none of the Indian EPC company possess even today.
- HDO has strategic Tie-ups with global players to add on to its EPC capabilities
- HDO has an outstanding track record of completing each and every project undertaken by it and all its created facilities are operating smoothly

## FY14 EPC Revenue Breakup




## Current EPC Order Book Breakup



# Strong Technical Expertise

Design Eng. | Manufacturing | **Turnkey EPC**

## Minerals and Metals

- Uranium Ore Processing
- Alumina Refinery & Smelting
- Iron ore Beneficiation & Pelletisation
- Copper Refinery
- Chrome Ore Beneficiation
- Sand Washing and Gradation

## Environmental

- Industrial Process water treatment plants
- Sewage treatment plants
- Industrial Effluent plants
- Desalination plants
- Zero Liquid Discharge
- Demineralisation Plant
- Condensate Polishing Plant
- Raw Water & Drinking water treatment plants

## Fertilizer & Chemicals

- Complete EPC execution of DAP Plants
- Rotary Equipments viz. Granulator, Dryer, Cooler
- Scrubbers & Cyclones
- Over size Pulverizer

## Paper & Pulp

- Raw material wet cleaning plant
- Continuous digesters
- Brown-stock washers
- Oxygen delignification system
- Bleach washers
- Recausticizing plant
- Pulp mill effluent treatment plants

## Nuclear Power

- Primary Piping Package
- Common Services Package
- Field Instrumentation Package
- Balance of Turbine Island Package

- **Apart from above industry verticals, HDO has the capabilities to undertake and execute EPC projects for any process industry such as oil & gas, petrochemicals, breweries, textiles, paints, etc**
- **HDO is recognized for adopting any technology as desired by the client and executing the project based on that technology effectively**

## Success Ratio in winning bid orders

- Fertilizer & Chemicals : ~70%
- Minerals & Metals : ~50%
- Water Treatment : ~25%
- Paper & Pulp : ~90%
- Nuclear Power : ~20%

# Marquee Clients

Design Eng. | Manufacturing | **Turnkey EPC**


# Technology Partners Globally

Design Eng. | Manufacturing | **Turnkey EPC**

## Minerals and Metals

- ✓ **Outotec, Germany** (Settler & Washer Package for Alumina Refinery)
- ✓ **Alfa Laval, Sweden** (Evaporation Plants in Alumina Refinery)
- ✓ **Baateman, - Tenova South Africa (**Alkai Leach Process for Uranium Ore Processing & Iron Ore Beneficiation)
- ✓ **Fives Solios , France** (Fume Treatment Technology for Alumina Smelter)
- ✓ **MCC, China (**Iron Ore Beneficiation / Pelletisation)
- ✓ **FLSmidth & Co, Germany** (Settler & Washer Package)
- ✓ **PRAXAIR, USA/India** (Oxygen Plants)

## Paper & Pulp

- ✓ **GLV Inc., USA/Indis** (pulp mill projects with capacity greater than 250 TPD)
- ✓ **Dewa, Finland** (sludge belt press filters)

## Fertilizer & Chemicals

- ✓ **Incro S.A., Spain** (Pipe reactor technology)
- ✓ **Prayon Technologies, Belgium** (Phosphoric acid)
- ✓ **Kemira, Finland** (Formic Acid Plant, Inorganic Coagulant)
- ✓ **Espendasa, Spain** (Pipe Reactor Tecnology)

## Water & Waste Water

- ✓ **GE Water, Canada/India (**MBR/UF technology)
- ✓ **Aquatech, USA (**RO and Ultra-filtration technologies)
- ✓ **SFC, Austria (**SBR technology)
- ✓ **Dewa, Finland (N**on-metallic API mechanism and GBT)

# Major Projects Executed (1/3)

Design Eng. | Manufacturing | **Turnkey EPC**

| | Client Name /Project Location | Project Details | Project Value | Completion Year |
|---|---|---|---|---|
| Minerals & Metals | Uranium Corporation of India<br>Kadapa, Andhra Pradesh | Uranium Ore Processing Plant. Project Capacity : 3,000 TPD.<br>The major operations involved Alkali Leaching, Thickening, Filtration, Lime Handling System and Product Packaging system. | USD 75 mn | 2010 |
| | Vedanta Aluminium Ltd<br>Lanjigarh, Orissa | Alumina Refinery Project. Project Capacity : 3.0 MTPA<br>The major Package involved Settler and Washers Package, Evaporation and Milk Of lime packages | USD 55 mn | 2010 # |
| | Bharat Aluminium Company Ltd<br>Korba, Chhattisgarh | Fume Treatment Plant. Project Capacity : 3.6 MTPA | USD 25 mn | 2012 |
| | Anrak Aluminium Company<br>Vizag | Alumina Refinery Project. Project Capacity : 1.5 MTPA<br>The major Package involved 1.4 MTPA Settler and Washers Package and Milk Of lime package | USD 17 mn | 2014 |
| | NALCO<br>Damanjodi, Orissa | Settler & Washer Plant.<br>Project Capacity : 0.7 MTPA HRD and DCW Package | USD 14 mn | 2010 |
| Fertilizers | RCF<br>Mumbai, Maharashtra | ANP Granulation Plant. Project Capacity : 900 MTPD<br>The major operation involved Granulation with Pipe Reactor technology, Drying, Cooling, Screening, Coating and Product packaging system | USD 14 mn | 2008 |
| | Coromandel Fertilizers<br>Secunderabad, Andhra Pradesh | Horizontal Belt Filter System<br>The major operation involved Filtration system. | USD 8 mn | 2009 |

# 97% complete. Project on Hold

USD = INR 60

# Major Projects Executed (2/3)

Design Eng. | Manufacturing | **Turnkey EPC**

| | Client Name / Project Location | Project Details | Project Value | Completion Year |
|---|---|---|---|---|
| Water / Waste Water treatment | HPCL Mittal Energy Ltd<br>Bhatinda, Punjab | Total Water Management System. Project Capacity : Raw Water (130 MLD), ETP (12 MLD), RO-DM(20.4 MLD), CPU (3.6 MLD). The major operation involved Primary treatment - Oil removal system, Secondary Treatment System - SBR & MBR. Plant also included VOC Treatment system and Bioremediation Plant | USD 55 mn | 2011 |
| | Hindustan Petroleum Corporation Ltd<br>Mumbai, Maharashtra | Integrated ETP. Project Capacity : 8 MLD (300 m3/hr.).<br>The major operation involved Primary treatment - Oil removal system, Secondary Treatment System - SBR & MBR & Tertiary treatment - Reverse Osmosis. Plant also included VOC Treatment system and Bioremediation Plant | USD 20 mn | 2010 |
| | Indian Oil Corporation Ltd<br>Haldia, West Bengal | RO based ETP. Project Capacity : 30 MLD (600 m3/hr.)<br>The major operation included Primary treatment- Oil removal system. Secondary Treatment system - Bio tower, Activated Sludge process, Tertiary Treatment- Reverse osmosis system of 1250 m3/hr and DM unit of 150 m3/hr consist of MB Exchanger unit | USD 18 mn | 2009 |
| | Bharat Oman Refineries Ltd<br>Bina Etawa, Madhya Pradesh | Effluent Treatment Plant. Project Capacity : 9 MLD (375 m3/hr)<br>The major operation involved Primary treatment - Oil removal system, Secondary Treatment System - SBR & MBR. Plant also included VOC Treatment system and Bioremediation Plant | USD 11 mn | 2008 |

USD = INR 60

# Major Projects Executed (3/3)

Design Eng. | Manufacturing | **Turnkey EPC**

| | Client Name / Project Location | Project Details | Project Value | Completion Year |
|---|---|---|---|---|
| Water / Waste Water treatment | Brahpmaputra Cracker & Polymer Ltd<br>Dibrugarh, Assam | Effluent Treatment Plant<br>The major operations involved Primary treatment- Oil removal system, Biological treatment System & VOC System | USD 13 mn | 2014 |
| | CIDCO<br>Navi Mumbai, Maharashtra | Sewage Treatment Plant. Project Capacity : 25 MLD<br>The major operations involved waste water treatment using SBR technology | USD 13 mn | 2008 |
| | Bharat Petroleum Corporation Ltd<br>Kochi,Kerala | Effluent Treatment Plant. Project Capacity : 220 m3/hr<br>The major operation included Primary treatment- Oil removal system, Biological treatment System & VOC System | USD 11 mn | 2013 |
| Paper & Pulp | GAP INSAAT(Çalik Holding)<br>Yaslik, Turkmenistan | Bleached Paper Mill. Project Capacity : 100 TPD<br>The major operations consisted of two production lines designed to use two local raw materials – wheat straw and cotton linters to provide feed pulp to the paper machine | USD 8 mn | 2005 |
| | Yash Papers Ltd<br>Faizabad, Uttar Pradesh | Unbleached Paper Mill. Project Capacity : 158 TPD. The plant was designed to have the flexibility of using two local raw materials – wheat straw and baggase as feed to the pulp mill. In addition, a pulp bleaching street was required to supply pulp to a 70 TPD paper mill producing specialty paper and white & coloured poster paper | USD 1.2 mn | 2008 |

USD = INR 60

# Select Prestigious Projects - Alumina

Design Eng. | Manufacturing | **Turnkey EPC**

## LANJIGARH 1.4 MMTPA GREENFIELD REFINERY PROJECT

In 2004, Vedanta Aluminium Limited started work on a major Greenfield Alumina Refinery with ore processing capacity of 1.4 MTPA at Lanjigarh, Orissa. HDO successfully delivered its first complete EPC project in Alumina industry within agreed performance guarantees. HDO was awarded the EPC for following three packages:

1. **Settler-Washer package**
   HDO used the latest technology hi-rate thickeners for mud settling and washing circuits. Causticization package and Oxalate Removal System were part of this package as side streams. HDO did onsite fabrication of ten deep cone thickeners of 20 meter diameter for the Settler-Washer package. These are the largest deep cone thickeners ever used in any alumina refinery in India. Nearly all equipment sourced in-house from HDO manufacturing facility at Vatva, Ahmedabad

2. **10 TPH Milk of Lime package**
   This is the auxiliary plant of an Alumina Refinery that produces the reagent Milk of Lime. HDO used its tried and tested in-house technology and proprietary equipment for this plant

3. **Hydrate Seed Thickener Package**
   HDO utilized state-of-art technology for efficient handling of hydrate fines in the spent liquor emanating from the overflow of the secondary cyclones. Cable torque thickeners of 35 meter diameter specially suited for handling heavy duty conditions were used for the hydrate settling circuit.

| | | |
|---|---|---|
| **Project Name** | : | **Mineral Beneficiation Plant** |
| **Location** | : | **Lanjgiarh, Orissa** |
| **Client** | : | **Vedanta Aluminium Ltd** |
| **Project Value** | : | **USD 25 mn** |
| **Completion Year** | : | **2008** |
| **Technology Partner** | : | **Dorr-Oliver Eimco Germany** |

USD = INR 60

# Select Prestigious Projects - Alumina

Design Eng. | Manufacturing | **Turnkey EPC**

## LANJIGARH 3.0 MMTPA REFINERY EXPANSION PROJECT

In 2008, Vedanta Aluminium Limited awarded contract for the expansion of its refining capacity from 1.4 MTPA to 5.0 MTPA, based on HDO's successful execution of the packages for Greenfield 1.4 MTPA Plant. HDO was awarded the EPC for following three packages:

1. **Settler-Washer package**
   The Settler Washer Package for the project consisted of 20 Nos. of Deep Cone Hi-rate thickeners. It is the biggest Settler Washer Plant in the Alumina Refinery in India. HDO received the letter of appreciation from the client for highest level of erection in a single day (185.2 Mt) for settler-washer package

2. **30 TPH Milk of Lime package**
   The package consisted of 2000 MT storage godown, Handling, storage & slaking facilities. HDO designed and manufactured 15 TPH Drum Slakers, which are the biggest ever supplied by the company till date

3. **3 x 300 TPH Evaporation Plant**
   HDO built a compact evaporation plant consisting of Six Stage Falling Film Evaporators. The major erections include 3 X 6 Falling Film Evaporators each weighing 120 MT. This is the biggest evaporation plant for aluminate liquor built in India.

| | | |
|---|---|---|
| **Project Name** | : | **Mineral Beneficiation Plant** |
| **Location** | : | **Lanjigarh, Orissa** |
| **Client** | : | **Vedanta Aluminium Ltd** |
| **Project Value** | : | **USD 55 mn** |
| **Completion Year** | : | **2010** |
| **Technology Partner** | : | **FLSmidth DOE, Germany**<br>**Alfa Laval, Sweden/India** |

USD = INR 60

# Select Prestigious Projects - Uranium

Design Eng. | Manufacturing | **Turnkey EPC**

## 3000 TPD URANIUM ORE PROCESSING PROJECT

HDO has executed its largest order for 3000 TPD ground uranium ore processing plant which included 17 sub packages. For the first time in India, HDO has built the Uranium ore processing plant with "Alkaline Leaching" technology.

**Scope of the Project :**

- Detailed Engineering, Procurements, Supply, Erection & Performance Testing of 3000 TPD ore processing plant
- Procurement and installation of major packages like Boilers, Evaporation plants, Spray Drying Plants and many more.
- In-house production of Autoclaves, Proprietary equipments etc. at the Vatva, Ahmedabad manufacturing facility

| | | |
|---|---|---|
| **Project Name** | : | **Mineral Beneficiation Plant** |
| **Location** | : | **Tummalapalle, Andhra Preadesh** |
| **Client** | : | **Uranium Corporation of India** |
| **Project Value** | : | **USD 75 mn** |
| **Completion Year** | : | **2010** |
| **Technology Partner** | : | **Bateman Engineering, SA** |

USD = INR 60

# Select Prestigious Projects - Total Water

Design Eng. | Manufacturing | **Turnkey EPC**

## TOTAL WATER MANAGEMENT BHATINDA REFINERY PROJECT

In 2009, HMEL awarded the contract to HDO for Total water management system on lump sum turnkey EPC basis which comprised of following three major packages:

1. **Raw Water Treatment Plant Package (130 MLD )**
   This packages was built incorporating advanced technology with Reactor Clarifier
2. **Effluent Treatment Plant Package (12 MLD)**
   This package was built using Sequential Batch Reactor (SBR), Membrane Bioreactor (MBR), Volatile Organic Control (VOC), Wet Air Oxidation (WAO) and Sludge Bio-remediation technologies
3. **RO-DM & CPU Plant package (RO-DM 20.4 MLD, CPU 3.6 MLD)**
   This package was built with High Efficiency Reverse Osmosis Plant (HERO) Technology for DM water generation. The CPU plant was constructed with Oil Coalescer and MB for DM water generation. UPS grade resins were used for MB & HRU units.

For this project, HDO made technology tie-ups with following renowned global companies:

- SFC Austria for SBR technlogy
- GE Zenon Canada for , MBR technology
- Aquatech USA for , High Efficiency Reverse Osmosis

| | | |
|---|---|---|
| **Project Name** | : | **Total Water Management System** |
| **Location** | : | **Bhatinda, Punjab** |
| **Client** | : | **HPCL Mittal Energy Ltd** |
| **Project Value** | : | **USD 55 mn** |
| **Completion Year** | : | **2010** |
| **Technology Partner** | : | **SFC Austria, GE Zenon Canada, Aquatech USA.** |

USD = INR 60

# Select Prestigious Projects - Waste Water

Design Eng. | Manufacturing | **Turnkey EPC**

## CIDCO 25 MLD SEWAGE TREATMENT PROJECT

- For the first time HDO utilized advanced Cyclic Activated Sludge process / Sequential Batch Reactor (SBR) for biological treatment of the sewage
- The entire plant is automated (PLC based) requiring minimum manual intervention.

| | | |
|---|---|---|
| **Project Name** | : | **Effluent Treatment Plant** |
| **Location** | : | **Mumbai, Maharashtra** |
| **Client** | : | **HPCL** |
| **Project Value** | : | **USD 20 mn** |
| **Completion Year** | : | **2010** |
| **Technology Partner** | : | **SFC Austria, GE Zenon Canada, Aquatech USA, Dewa Finland** |

| | | |
|---|---|---|
| **Project Name** | : | **Sewage Treatment Plant** |
| **Location** | : | **Navi Mumbai, Maharashtra** |
| **Client** | : | **CIDCO** |
| **Project Value** | : | **USD 13 mn** |
| **Completion Year** | : | **2008** |
| **Technology Partner** | : | **SFC, Austria** |

## HPCL 8 MLD INTEGRATED EFFLUENT TREATMENT PROJECT

- This project required constructing Integrated ETP utilizing the latest SBR, MBR and RO technologies
- HDO built the first Volatile Organic Control (VOC) system for refinery ETP in India
- First time non-metallic API separator was used in any ETP in India

USD = INR 60

# Select Prestigious Projects - Waste Water

Design Eng. | Manufacturing | **Turnkey EPC**

| | | |
|---|---|---|
| **Project Name** | : | **Effluent Treatment Plant** |
| **Location** | : | **Bina Etawa, Madhya Pradesh** |
| **Client** | : | **Bharat Oman Refineries Ltd** |
| **Project Value** | : | **USD 11 mn** |
| **Completion Year** | : | **2008** |
| **Technology Partner** | : | **SFC Austria, GE Water, USA** |

## HALDIA 30 MLD RO WASTEWATER TREATMENT PROJECT

- HDO was awarded for Wastewater treatment and re-cycling plant by IOCL for their Haldia Refinery on turnkey basis.
- This is biggest recycling plant using Reverse Osmosis Technology in any refinery in India

## BINA 9 MLD EFFLUENT TREATMENT PROJECT

- This project was constructed based on requirement of Zero liquid effluent discharge
- It's the first integrated ETP in India that includes Sequential Batch Reactor (SBR), Membrane Bioreactor (MBR) and Volatile Organic Control (VOC) technology

| | | |
|---|---|---|
| **Project Name** | : | **DM & CPU Plant** |
| **Location** | : | **Haldia, West Bengal** |
| **Client** | : | **Indian Oil Corporation Ltd** |
| **Project Value** | : | **USD 18 mn** |
| **Completion Year** | : | **2009** |
| **Technology Partner** | : | **Doshion, India** |

USD = INR 60

# Select Prestigious Projects - Fertilizers

Design Eng. | Manufacturing | **Turnkey EPC**

## RCF ANP Granulation PROJECT

- Through international competitive bidding, HDO along with Incro Spain as technology partner, was awarded this project on a complete EPC turnkey basis.
- Till 2005, client was using prilling tower to manufacture Ammonium Nitro Phosphate (ANP). But due to the hazardous nature of this process it decided to replace the prilling tower with a granulation plant
- This is the first ANP granulation plant in India
- Most equipment for the granulation plant including rotary equipment like granulator, cooler, dryer and static equipment like cyclones, scrubbers and pre-neutralizer were manufactured HDO manufacturing facility in Vatva, Ahmedabad

| | | |
|---|---|---|
| **Project Name** | : | **ANP Granulation Plant** |
| **Location** | : | **Mumbai, Maharashtra** |
| **Client** | : | **Rashtriya Chemicals & Fertilizers** |
| **Project Value** | : | **USD 14 mn** |
| **Completion Year** | : | **2008** |
| **Technology Partner** | : | **Incro S.A., Spain** |

USD = INR 60

# Select Prestigious Projects - Paper

Design Eng. | Manufacturing | **Turnkey EPC**

## TURKMENISTAN 100 TPD BLEACHED PAPER MILL PROJECT

- The project consisted of two production lines designed to use two local raw materials – wheat straw and cotton linters to provide feed pulp to the paper machine.

- HDO was responsible for the entire the wheat straw based pulp fiber line and recausticizing plant on turnkey basis comprising of:
  - ✓ Raw material wet cleaning plant
  - ✓ Continuous digester system
  - ✓ Brown stock washing system
  - ✓ Screening and cleaning system
  - ✓ Oxygen delignification system
  - ✓ Oxygen preparation plant
  - ✓ Total chlorine free (TCF) bleaching system
  - ✓ Recausticizing plant

- HDO was able to provide major cost savings to the client as 80% of the equipment supplied was proprietary HDO equipment and was manufactured and transported from the HDO manufacturing facility at Vatwa, Ahmedabad.

- All the equipment had to undergo rigorous testing in order to withstand the extreme climatic conditions (from +45 to -15 degree C) at Yaslik

| | | |
|---|---|---|
| **Project Name** | : | **Paper Mill Plant** |
| **Location** | : | **Yaslik, Turkmenistan** |
| **Client** | : | **GAP INSAAT(Çalik Holding)** |
| **Project Value** | : | **USD 8 mn** |
| **Completion Year** | : | **2005** |
| **Technology Partner** | : | **--** |

USD = INR 60

# Ongoing Projects (1/2)

Design Eng. | Manufacturing | **Turnkey EPC**

| Client Name / Location | Location | Project Details | Project Value | Unexecuted Order Value | Completion Year (Est.) |
|---|---|---|---|---|---|
| Nuclear Power Corporation of India Ltd | Kota, Rajasthan | Field Instrumentation - Supply, Erection/Commissioning | USD 30 mn | USD 29 mn | 2015 |
| Nuclear Power Corporation of India Ltd | Kakrapar, Gujarat | Heavy Water Upgrading (UGP) & Waste Management Plant (WMP) Package | USD 8 mn | USD 8 mn | 2015 |
| Gujarat State Fertilizer & Chemicals Ltd | Sikka, Gujarat | 1650 MTPD DAP/NPK D-Train with pipe reactor technology | USD 40 mn | USD 35 mn | 2015 |
| Gujarat State Fertilizer & Chemicals Ltd | Vadodara, Gujarat | 60 MTPD Water Soluble Fertilizer Plant. | USD 6 mn | USD 4 mn | 2015 |
| Gas Authority of India Ltd | Vijaipur Madhya Pradesh | Special Project – Civil Works | USD 18 mn | USD 4 mn | 2015 |



USD = INR 60

# Ongoing Projects (2/2)

Design Eng. | Manufacturing | **Turnkey EPC**

| Client Name / Location | Location | Project Details | Project Value | Unexecuted Order Value | Completion Year (Est.) |
|---|---|---|---|---|---|
| NMDC Ltd | Donimalai Karnataka | Mineral Beneficiation Plant | USD 21 mn | USD 6 mn | 2015 |
| ONGC Petro Additions Ltd | Dahej, Gujarat | Effluent Treatment Plant . (Oil separation process , Activated Sludge process and Ultra Filtration Technology ) | USD 29 mn | USD 4 mn | 2015 |
| CIDCO | Mumbai, Maharashtra | 70 MLD Sewage Treatment Plant (Activated Sludge Process by using SBR Technology) | USD 11 mn | USD 2 mn | 2015 |
| **Other Ongoing Projects** | | | USD 137 mn | USD 33 mn | -- |
| | | **TOTAL** | **USD 300 mn** | **USD 125 mn** | |



USD = INR 60

# Select Ongoing Projects

Design Eng. | Manufacturing | **Turnkey EPC**

## GSFC DAP/NPK Plant (Fertilizer)

1. The first order is for supply of water soluble fertilizer plant having capacity of 60 MTPD is worth USD 6 mn. The project is coming up at GSFC's Vadodara complex. The Major operation involves the Raw material handling, Mixing and Product Bagging system.
2. The second order is for supply of 'D' Train DAP/NPK Plant having capacity of 1,650 MTPD valued at USD 40 mn. The project is coming up in GSFC's existing complex in Sikka near Jamnagar. The Major Operation involves the Raw material handling, Granulation by using Pipe Rector Technology, Drying, Cooling, Screening and Product Bagging system.

| | | |
|---|---|---|
| **Project Name** | : | **1) Water Soluble Fertilizer 2) DAP / NPK Plant** |
| **Location** | : | **1) Vadodara in Gujrat 2) Sikka in Gujarat** |
| **Client** | : | **Gujarat State Fertilizer & Chemicals Ltd** |
| **Project Value** | : | **1) USD 6 mn 2) USD 40 mn** |
| **Technology Partner** | : | **1) None 2) Espindesa, Spain.** |

## NPCIL Field Instrumentation Package (Nuclear Power)

| | | |
|---|---|---|
| **Project Name** | : | **Field Instrumentation Package** |
| **Location** | : | **Kota, Rajasthan** |
| **Client** | : | **Nuclear Power Corporation of India Ltd** |
| **Project Value** | : | **USD 30 mn** |
| **Project Completion** | : | **2015 (Estimated)** |
| **Technology Partner** | : | **None** |

- In 2012, HDO bagged an order from Nuclear Power Corporation of India Ltd for the supply of 'field instrumentation package' for the 2x700 MW 'pressurized heavy water reactors' for the Rajasthan Atomic Power Plant at Kota, Rajasthan.
- Field Instrumentation package covers design, supply, installation, testing and commissioning of field instruments, analytical instruments, special instruments and equipment for the complete 2 x 700 MW nuclear power plants at Kota.

# Intellectual Capital

## Human Assets (as on 30th Sept 2014)

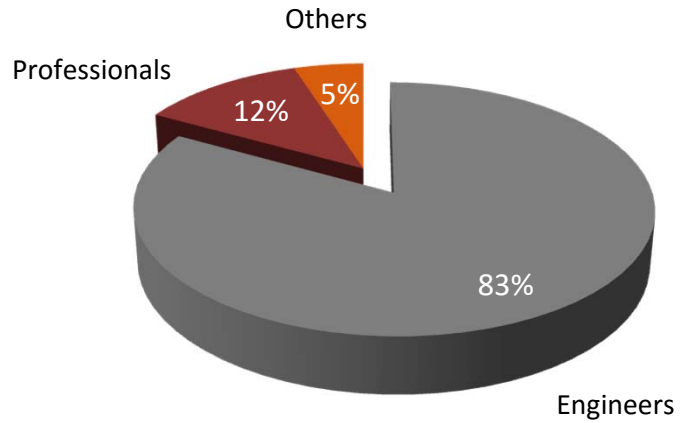
| | | |
|---|---|---|
| Design Engineering | | 120 |
| Manufacturing | | 230 |
| EPC | | 300 |
| Services | | |
| *Marketing / Business Dev* | *20* | |
| *Finance* | *35* | |
| *Supply Chain* | *20* | |
| *Quality Assurance* | *12* | |
| *HR / Admin* | *25* | |
| *Information Techonlogy* | *5* | |
| *Others* | *33* | 150 |
| **TOTAL EMPLOYEES** | | **800** |

- In addition to above, HDO hires construction workers at site on contract basis for project execution, on case to case basis.

### Attrition Rate

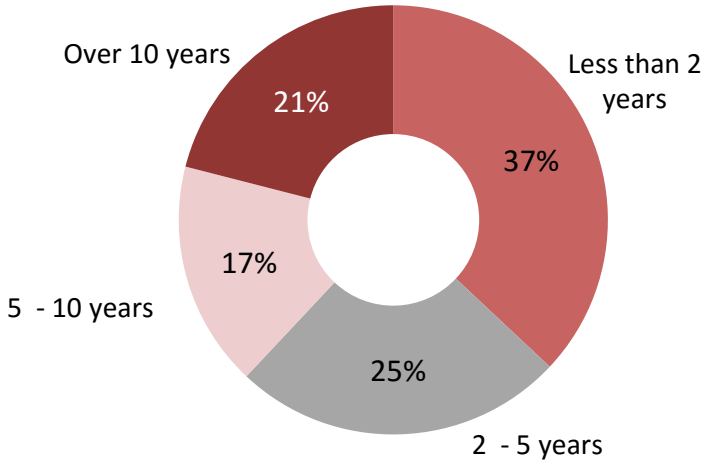
- Senior Level : 2 - 3%
- Mid Management Level : 6 - 7%
- Labor / Workforce : 8 - 10%

## Employee Strength Qualification #

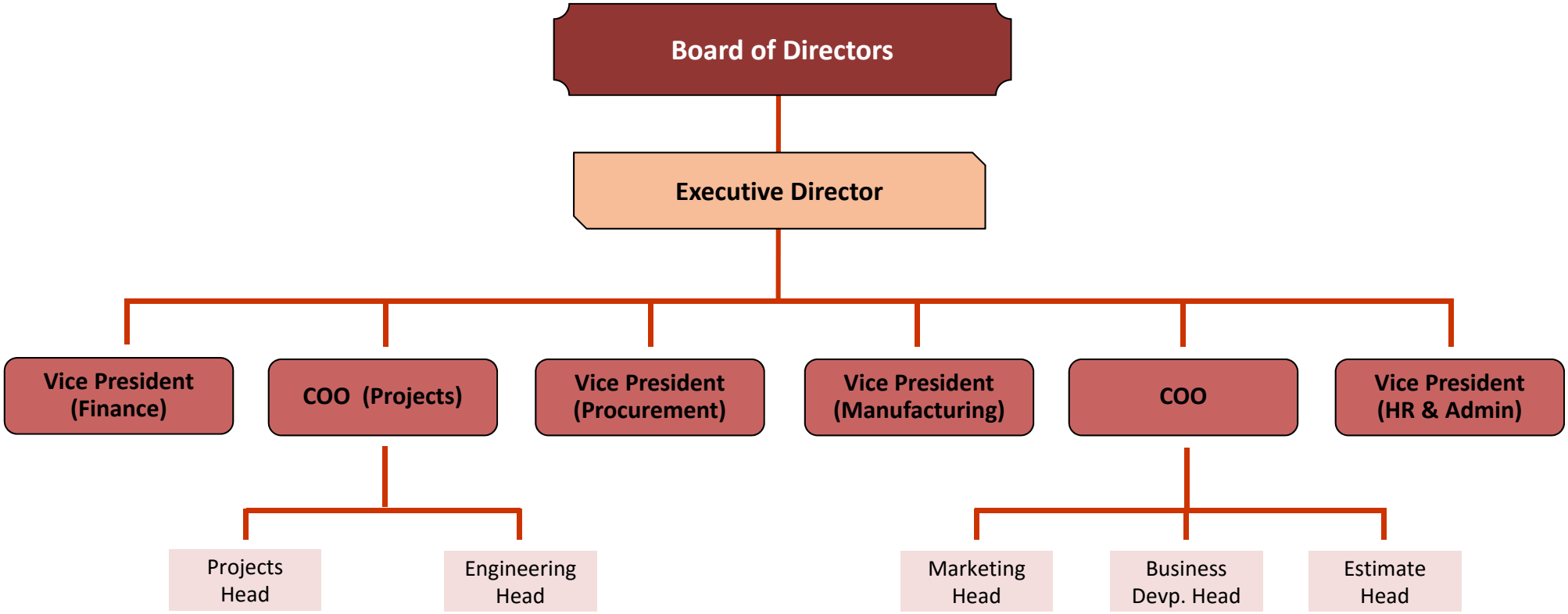



# excluding Workforce

## Experience with HDO



# Organization Structure



# Key Management Personnel (1/2)

**Prabhakar Ram Tripati**
Chairman

- Has more than 45 years experience in the field of mining and related activities
- Recognized as a leading management practitioner in India
- Earned honors in Bachelors of Science in Mining Engineering from Indian School of Mines, Dhanbad, Bihar.

**E Sudhir Reddy**
Vice Chairman

- A charismatic and visionary business leader.
- Chairman & Managing Director of IVRCL Infrastructures & Projects Ltd
- Under his able guidance, the IVRCL group has emerged as one of the fastest growing infrastructure companies in India.

**S C Sekaran**
Executive Director

- More than 25 years of experience in marketing, commercial, project and corporate affairs.
- Holds a masters degree in statistics

# Key Management Personnel (2/2)

**P K Mishra**
COO

- Has been with HDO for last 20 years
- Responsible for the complete marketing activities and various EPC jobs executed by the Company
- Chemical Engineer from Birla Institute of Technology and Science, Pilani

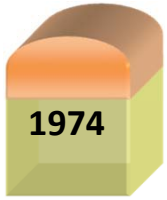
**A K Gupta**
Vice President – Process Engineering

- Associated with company since last 35 years
- Rich experience in the fertilizer industry vertical and heads the process engineering division
- Chemical Engineer from Harcourt Butler Technological Institute, Kanpur

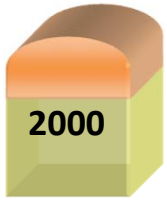
**D P Mishra**
Vice President (Finance)

- Associated with company since last 15 years
- Manages HDO's finance, accounts & audit
- Chartered Accountant by qualification

# Milestones




Incorporated as a private limited company




Executed Asia's 1st plant for recovery of water from 2.5 MGD secondary treated sewage, for industrial application using HDO's advanced technology including RO de-salting system


Bought over by IVRCL Infrastructures Projects


SAP implemented, ISO 14001:2004 certified for environmental management system & ISO 18001:2007 certified for occupational, health & safety management system


ISO9001:2008 certified for Quality Management system


Made an overseas acquisition. Acquired Davy Markham Ltd based out of UK


De-merger of Manufacturing Division into its subsidiary HDO Technologies Limited


Completed Asia's largest Uranium Processing Plant for UCIL of 3000 TPD capacity which is also worlds 4th Alkali leached plant.


Underwent a Corporate Debt Restructuring


Plans to have a strategic partnership with a global multinational

# Shareholding Pattern (as on 30th Sept 2014)

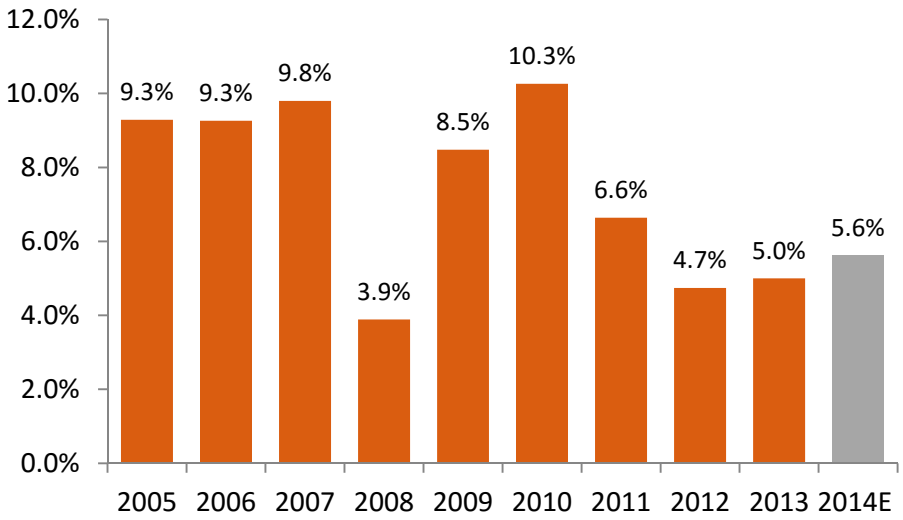
| Shareholders | No of Shares | % Stake |
|---|---|---|
| **Promoter & Promoter Group** | | |
| IVRCL Ltd | 39,804,430 | 55.28% |
| **Public Shareholding** | | |
| Mutual Funds | 5,872,500 | 8.16% |
| Foreign Institutional Investor | 2,591,057 | 3.60% |
| Corporate Bodies | 4,249,541 | 5.90% |
| Individuals | 18,654,050 | 25.91% |
| Directors & their Relatives & Friends | 130,700 | 0.18% |
| Non Resident Indians | 630,903 | 0.88% |
| Others | 72,627 | 0.09% |
| **TOTAL** | **72,005,808** | **100%** |

# 3. Indian Market Overview

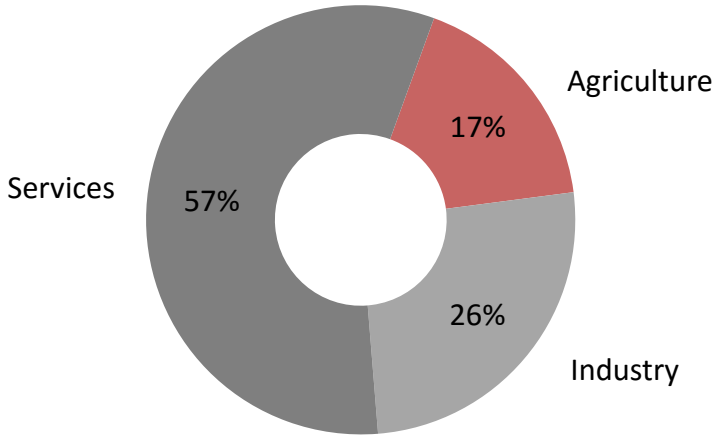
# Indian Economy

- India's economy is the world's third largest by purchasing power parity (PPP) and 11th largest by nominal gross domestic product (GDP). India holds a 6.4% share of global GDP on PPP basis
- The country is one of the G-20 major economies, a member of BRICS and a developing economy that is among the top 20 global traders according to the WTO
- India is the second-fastest growing economy, after China
- India is fast becoming one of the prime industrialized nations in the world, on the back of rapid technological advances
- India is the world's 3rd most attractive investment destinations. FDI into India increased by 8% year-on-year to USD 24.3 billion in FY 14.
- The country has a very favorable demographic profile with around 65 % of population in the age group of 15 – 64 years and a median age of about 26.7 years
- India's government has targeted over USD 1 trillion in infrastructure investment during the 12th Five-Year Plan. The goal is for half of this money to come from the private sector, up from almost 37% during the 11th Five-Year Plan

**India GDP Growth Rate**




**GDP Composition by Sector (2013 Estimates)**



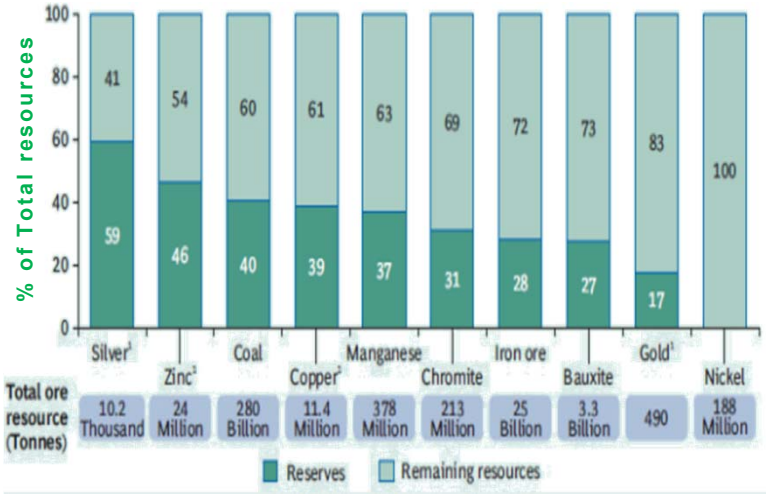

Source : Industry Research

# Minerals & Metals - Industry Overview

- India is ranked 4th amongst the mineral producer countries, behind China, United States and Russia, on the basis of volume of production
- The country produces as many as 87 minerals, including 4 fuel minerals, 10 metallic minerals, 47 non-metallic minerals, 3 atomic minerals and 23 minor minerals
- India's spend on mineral exploration is less than 0.5% of the global spending on exploration in 2010, much below its fair share given the size of mineral resource potential
- The Mining sector contributed about 2% to the GDP in 2012-13. Given the availability of mineral wealth in India, the Ministry of Mines, Government of India aims to increase share of mining and quarrying in GDP to 5% of GDP over the next 20 years

## Untapped mineral Potential

Unproven 'resources' are more than twice the proves 'reserves'




## Forthcoming Project Opportunities

- Many industrials like Anrak, Nalco, Hindalco, Vedanta, JSW etc have lined up huge investments in Alumina Projects
- Uranium Corporation Of India has plans to have additional facility for increasing Uranium production
- Similarly SAIL, NMDC, Jindals, Tatas have major plans for Iron Ore Beneficiation and Pellet plants
- Coal India Ltd and other private players are coming up with coal handling and washery project.

## Expected changes in Government Policies

- The new government is expected to take steps for clearing pending proposals, give environmental clearances and take decisions on land acquisitions and restrictions on mining.
- Policy decisions is expected to be taken for mining mineral ore, iron ore and utilization of down-stream power from coal, against costly imported coal.

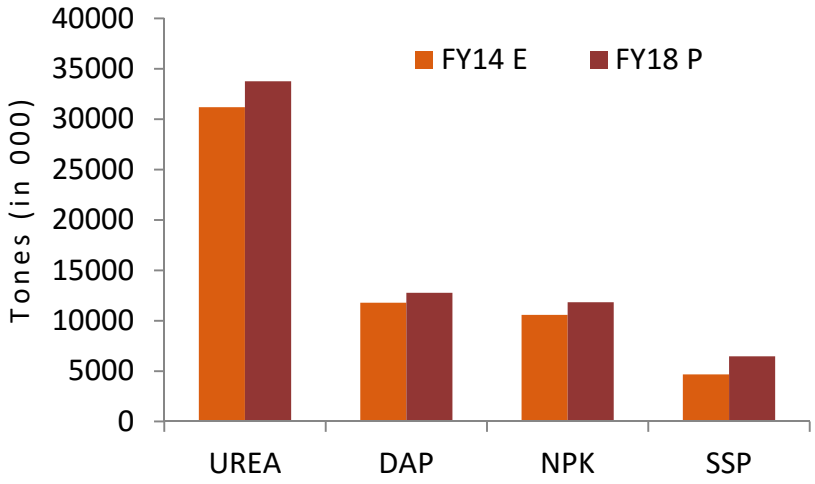
Source : Industry Research

USD = INR 60

# Fertilizers & Chemicals - Industry Overview

- India is the third largest producer and consumer of Fertilizers in the world . India primarily being an agriculture based economy, over half of country's workforce is engaged in agriculture as principal occupation
- There are 57 large and 72 medium and small fertilizer production units manufacturing extensive range of phosphatic, nitrogenous and complex fertilizers.
- Indian fertilizer industry has reached international levels of capacity utilization by adopting various strategies for increasing the productions of fertilizers

## Demand Forecast of Fertilizer Products




## Forthcoming Project Opportunities

- Transparent fertilizer policy and clarity on gas price is expected to give a boost to fertilizer industry in India in coming days
- Many fertilizer companies such as RCF, IFFCO, Indo Gulf, GNFC, GSFC, KRIBHCO etc are looking for capacity expansions and have plans for Ammonia, Urea and phosphatic fertilizer projects

## Expected changes in Government Policies

- The new government is working on to have a effective and long-term policies pertaining to gas allocation and reducing price gap between urea and NPK fertilizers
- Focus is have a stable policy framework to minimize the uncertainties and help the industry plan their investments better

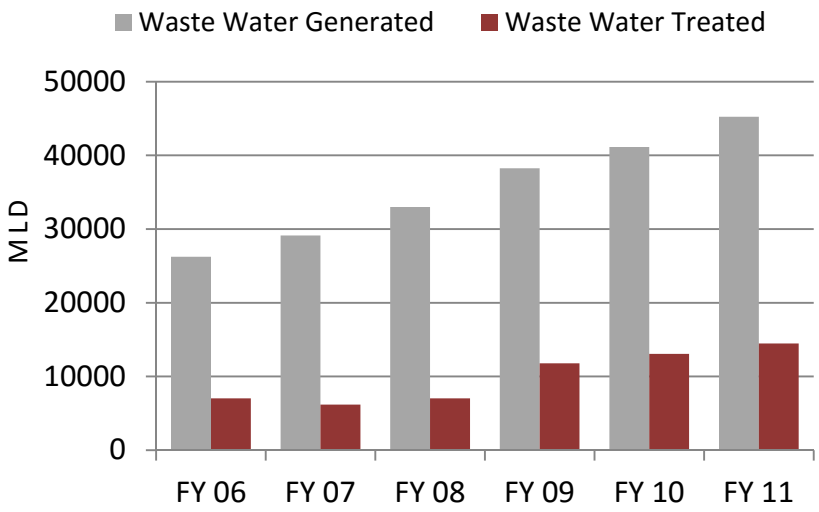
Source : Industry Research

USD = INR 60

# Water & Waste Water Treatment - Industry Overview

- Industrial and municipal segments account for almost 90% of the USD 2 trillion water treatment market in India.
- As per estimates, 22,900 MLD of domestic wastewater & 13,500 MLD of industrial wastewater is generated every year. Against this treatment capacity available for domestic wastewater is only 5,900 MLD and for industrial wastewater is 8,000 MLD
- Municipal and domestic water demand is projected to double by 2030, to 108 billion m3 while demand from industry is projected to quadruple to 196 billion m3
- India has a long coastline of 7,600 kilo meters and is poised to witness high growth ratios in desalinating water in the future.

## Waste Water Generation & Treatment




## Forthcoming Project Opportunities

- Municipal bodies in most of the Tier II cities in India have realized the importance of clean water and are now opting to set up water treatment and sewage treatment plants
- CLEAN GANGA project which is planned to run for 18 years will call for massive investment
- Expansion by refineries and other process industries offers huge opportunity for ETP, STP, DM plants and water treatment plants

## Expected changes in Government Policies

- The New government has recently established a special Fund and is executing CLEAN GANGA Project at a fast pace which requires setting up ETP / STP plants in over 118 towns
- Regulations for disposing waste water by polluting industries is expected to become more stringent

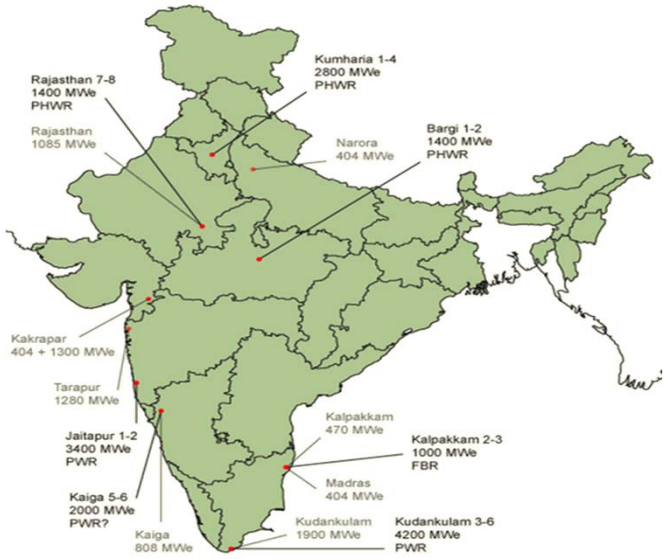
Source : Industry Research

USD = INR 60

# Nuclear Power - Industry Overview

- India has 21 nuclear reactors in operation in 7 nuclear power plants, having an installed capacity of 4780 MW that contributes ~2% of the country's total energy generation.
- The Government of India intends to draw 25% of its energy from nuclear power by 2050. This plan includes 20,000 MW of installed capacity from nuclear energy by 2020, and 63,000 MW by 2032
- Industry body Federation of Indian Chambers of Commerce and Industry has called for an investment of more than USD 100 billion in nuclear power over a 25-year period.
- Prime Minister Narendra Modi has recently secured Japanese Prime Minister Shinzo Abe's pledge for a nuclear agreement. He has also brought on board Australian Prime Minister Tony Abbott for a deal for uranium sales to India

## Planned Nuclear Power Plants in India




## Forthcoming Project Opportunities

- As per the XII Five Year Plan (2012 - 17), Nuclear Power Corporation of India Ltd has proposed to launch 8 new projects across 8 states with cumulative capacity of 16,100 MW. These comprise of four projects (5600 MW) of twin units of 700 MW indigenous PHWRs and four LWR projects (10,500 MW) of twin units of 1000 MW or higher unit sizes.

## Expected changes in Government Policies

- The new government has recently signed a nuclear cooperation agreement with Australia to sell uranium to India
- The government is contemplating of amends the Civil Liability for Nuclear Damage Act (CLNDA), 2010 which has not impacted sales of nuclear reactors from the US, but from other major suppliers as well

Source : Industry Research

USD = INR 60

# 4. Future Strategy

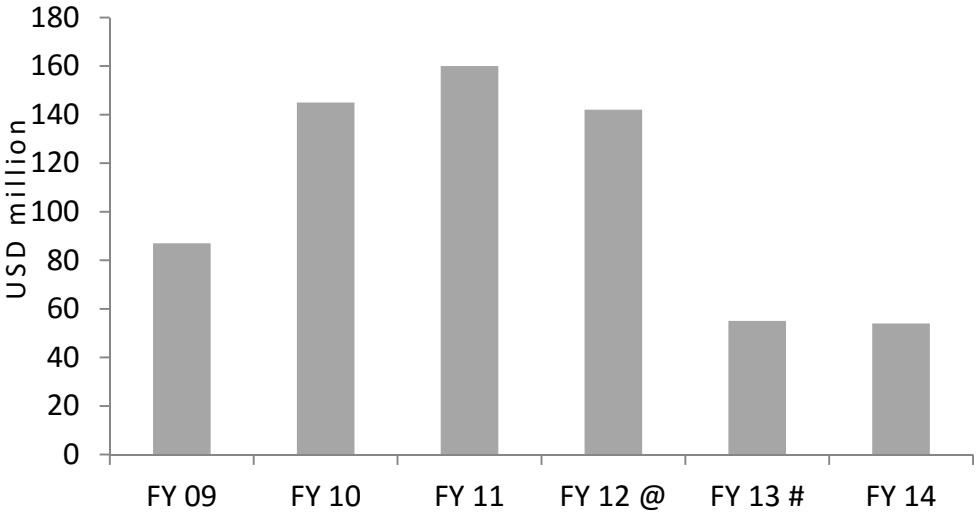
# 2011 – 13 Tough Years

- ➔ The GDP growth rate in India fell from 10.26% in 2010 to 6.64% in 2011, and to 5.00% in 2013.
- ➔ The infrastructure sector was impacted due to lower government spending, regulatory challenges, limited availability of finance etc.
- ➔ Fresh orders dried up with no large projects being floated in the market due to negative market sentiments.
- ➔ HDO's problems were compounded during the last three calendar years as some large clients of ODH faced regulatory issues leading to cancellation of orders and payment delays.

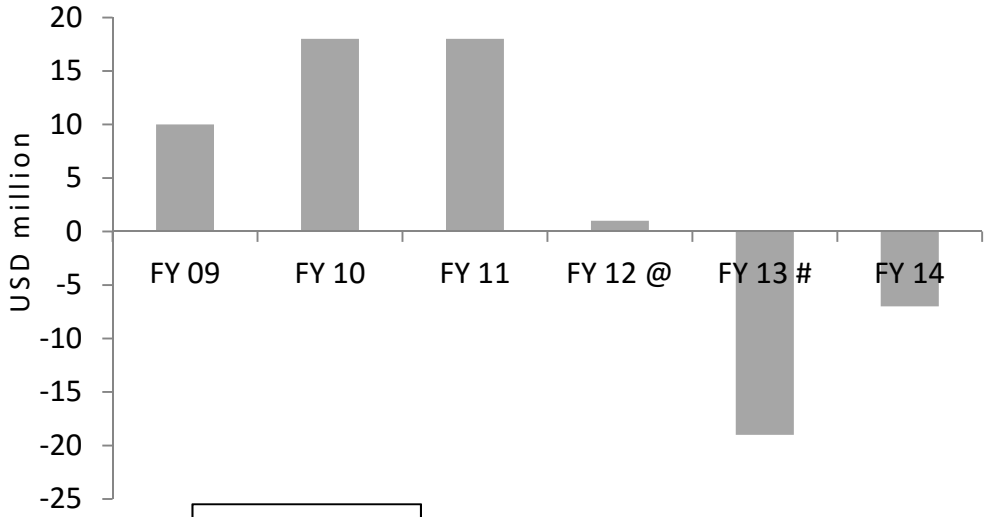
**Corporate Debt Restructuring**

- HDO's debt got restructured in 2013.
- Under the restructuring scheme company got following benefits :
  - ✓ Reduction in Interest Rate on Working Capital facility
  - ✓ Conversion of partial Working capital loan to Term Loan
  - ✓ Moratorium Period of one year

**Total Income (Last 6 years)**




**EBITDA (Last 6 years)**




USD = 60 INR

@ 15 months

# 9 months

# Future Strategy

- ❖ Implement a business revival plan to turnaround the company and make it profitable again
- ❖ Focus on project execution and completion of existing projects on priority basis
- ❖ Manage the cash flows more effectively
- ❖ Selectively bid and win EPC projects with good profit margins
- ❖ Undertake more orders for design engineering job and manufacturing equipment business vertical
- ❖ Enter into a strategic partnership with a global major

## Design Engineering

- Put special thrust in getting orders specifically for design engineering work
- Increase the share of revenue from design engineering vertical to at least 10% of total revenue in next 3 years

## Manufacturing

- Leverage on its business relationship and network to bag orders for complex engineering equipment manufacturing.
- Enhance capacity utilization and aims to generate revenue of Rs 2,000 million form manufacturing vertical in next 3 years

## Turnkey EPC

- Focus on industry verticals such as nuclear power, fertilizers, minerals & metals etc. where the profit margins are better
- Opt for Consortium bidding and partner with other larger EPC companies to bid for big projects. Also bid for large private tenders

# Select Projects Bid For

Design Eng. | Manufacturing | **Turnkey EPC**

| Client Name | Location | Project Details | Project Value | Expected Award Date |
|---|---|---|---|---|
| **Water** | | | | |
| Oil and Natural Gas Corporation Ltd | Uran, Maharashtra | Modernization of ETP Plant | USD 25 mn | Feb 2015 |
| Nagaland Pulp & Paper Co. Ltd | Tuli, Nagaland | WTP – DM & ETP Plant | USD 15 mn | Dec 2014 |
| Towell Engineering | Sohar, Oman | 125 MLD WTP with 10 Years O&M | USD 25 mn | Feb 2015 |
| Khulna Water Supply & Sewage # | Khulna, Bangladesh | Surface WTP & Impounding Reservoir | USD 100 mn | Mar 2015 |
| **Fertilizers** | | | | |
| Gujarat Narmada Valley Fertilizers | Dahej, Gujarat | 50,000 MTPA PAC Plant | USD 25 mn | Jan 2015 |
| **Minerals** | | | | |
| NMDC Ltd | Jammu, J&K | 100 TPD Dead Burnt Magnesia Plant | USD 50 mn | Dec 2014 |
| Steel Authority of India Ltd # | Bhilai, Chhattisgarh | 1 MTPA Beneficiation & Pellet Plant | USD 120 mn | Mar 2015 |
| **Paper & Pulp** | | | | |
| Nagaland Pulp & Paper Co Lltd | Tuli, Nagaland | 95 TPD Pulp Mill & Recovery Boiler | USD 55 mn | Dec 2014 |

# Under Bid submission

USD = INR 60

# Thank You

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