An Introduction to HEDCO Company

Hampa Energy Engineering & Design Company

(Jan. 2018)

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HEDCO at a Glance

- HEDCO was founded in 2007 with collaboration of HAMPA Engineering Corporation and a group of highly experienced and innovative engineers working extensively in oil, gas and petrochemical projects as EPC project managers and senior engineers in different disciplines.

- HEDCO is certified as Level 1 Consulting company by the Iran MPO in the field of Oil, Gas & Petrochemical.

- With the available experience, HEDCO in joint with its parent company (HAMPA), which is certified as Level 1 Construction company by the Iran MPO, are capable to handle large scale EPC projects.

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HEDCO Quality System

Compliance of HEDCO quality management system with the requirements of ISO-9001, ISO-14001, ISO-18001 & ISO-29001, ISO-10002 & ISO-10004 have been certified by TÜV Nord CERT GmbH.

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HEDCO National Petrochemical Industries Excellence Award

Five Stars Excellence Award

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HEDCO Organization

HEDCO has a work oriented organization consisting of different directorates:

- **Marketing & Business Development**
- **Financing**
- **Information & Communication Technology (ICT)**
- **Projects**
  - Project Management
  - Planning
  - Procurement
  - QA/QC
- **Engineering**
  - Process
  - Piping
  - Civil
  - Mechanical
  - Machinery
  - Electrical
  - Instrumentation
  - PSM & HSE
- **Site Supervision**

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HEDCO Field of Activities

Based on the priorities and according to the articles written in establishment announcement, the company's field of activities is the industrial projects (mainly oil, gas and petrochemical branch) including:

- Market Study
- Feasibility Study
- Project Management (General Contracting)
- Process Selection
- License & Know How Arrangement
- Plant Optimization
- Engineering
- Procurement services (order issue, expedite, Inspection, delivery)
- Construction Management & Construction Supervision
- Site Technical Assistance
HEDCO Staff (High Education)
(Print Date: Jan. 2018)
Total No. Of Personnel: 318
HEDCO Assigned & Available Man-Hour Status
(Print Date : Jan. 2018)
HEDCO Growth and Personnel Increase

Growth in No. of Personnels

No. of Personnels


166 154 204 249 260 262 287 333 336 318

(Print Date : Jan. 2018)

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## Hardware List

<table>
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<th>Item No.</th>
<th>Hardware</th>
<th>Quantity</th>
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<tbody>
<tr>
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<td>2</td>
<td>Notebook (Laptop)</td>
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<td>3</td>
<td>Display - Additional LCD</td>
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<td>4</td>
<td>Printer A4</td>
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<td>Copier/Scanner A4 /A3</td>
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<td>Color Printer A3, A4</td>
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<tr>
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<td>Layer 3 Switches</td>
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<td>17</td>
<td>Router</td>
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<td>19</td>
<td>IP Camera+ 1 set DVR</td>
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HEDCO MAJOR PROJECTS LOCATION:

1. LORDEGAN AMMONIA & UREA PLANT
2. ZANJAN AMMONIA & UREA PLANT
3. GOLESTAN AMMONIA & UREA PLANT
4. FASA LDPE (BASIC ENGINEERING)
5. PARDIS 3 AMMONIA & UREA PLANT
6. RAZI THIRD AMMONIA STORAGE TANK
7. ABADAN REFINERY DESALTING UNIT
8. PETRO HIDAJ METHANOL PLANT
9. LAVAN AMMONIA & UREA PLANT
10. PARSIAN GAS REFINERY
11. PARS PETROCHEMICAL STORAGE TANKS
12. FAIR KERMAN METHANOL PLANT
13. QESHM HEAVY CRUDE OIL REFINERY
HEDCO Projects

a) Ammonia & Urea Projects

1) Lavan Ammonia & Urea Plants
   - Capacity(each) : 2050MT/D Ammonia - 3250MT/D Urea
   - Client : Lavan Chemical Company
   - Location : Assaluye
   - Scope : Grant of License, Basic & Detail Engineering, Procurement & Supply of Equipment, Construction, Erection, Pre-Commissioning, Commissioning & Start-Up

2) Lordegan, Zanjan Ammonia & Urea Plants
   - Capacity(each) : 2050MT/D Ammonia - 3250MT/D Urea
   - Client(s) : Lordegan, Zanjan & Golestan Petrochemical Companies
   - Location(s) : Lordegan, Zanjan & Golestan
   - Scope : Basic & Detail Engineering, Procurement Services

3) Pardis 3 Ammonia & Urea Plant
   - Capacity : 2050MT/D Ammonia - 3250MT/D Urea
   - Client : Pardis Petrochemical Company
   - Location : Assaluyeh
   - Scope : Basic & Detail Engineering & Technical Procurement Services
HEDCO Projects (cont.’d)

b) Oil & Gas Refinery Projects

1) Parsian Gas Refinery (C2 Recovery & Fractionation)
   - Capacity: 80,000,000 Sm3/day of Natural Gas (Boutane)
   - Client: Palayesh Parsian Sepehr Company
   - Location: Mohr & Assaluyeh
   - Scope: Basic & Detail Engineering and Procurement Services

2) Qeshm Heavy Crude Oil Refinery
   - Capacity: Bitumen and Light Oil Cuts, 35,000 BBL/DAY
   - Client: Pars Behin Paleyesh Qeshm Company
   - Location: Qeshm Island
   - Scope: Detail Engineering

3) Abadan Refinery Desalting Unit
   - Client: Abadan Oil Refinery
   - Location: Abadan
   - Scope: Basic & EPC
c) Methanol Projects

1) Hidaj Methanol
- Capacity: 140,000 MT/D (450,000 MTPY Methanol)
- Client: Hidaj Petrochemical Company
- Location: Zanjan
- Scope: Basic Engineering,

2) Fajr Kerman Methanol
- Capacity: 140,000 MT/D (450,000 MTPY Methanol)
- Client: Fajr Kerman Petrochemical Complex
- Location: Kerman
- Scope: Complex General Engineering, FEED Engineering, Procurement Services

3) Gachsaran Methanol Project
- Capacity: 140,000 MT/D (450,000 MTPY Methanol)
- Client: Tedbir Energy Eram Company
- Location: Gachsaran
- Scope: EPC
HEDCO current Projects (cont.’d)

d) Other Process Projects

3) Fasa LDPE (Low Density Poly Ethylene)
- Capacity: 300,000 TPY LDPE
- Client: Fasa Petrochemical Company
- Location: Fasa - Fars Province
- Scope: Basic & Detail Engineering and Procurement Services

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e) Utilities & Offsite

1) Lordegan Utilities & Offsite Plant
- Client: Lordegan Urea Fertilizer Co.
- Location: Lordegan
- Scope: Extended Basic Engineering and Technical Assistance

2) Zanjan Petrochemical Utility & Offsite
- Client: Zanjan Petrochemical Co.
- Location: Zanjan
- Scope: Basic & Detail Engineering and Procurement Services

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HEDCO Projects (cont.’d)

f) Cryogenic Storage Tanks

1) Razi Third Ammonia Storage Tank
- Capacity: 30,000 Tons
- Client: Razi Petrochemical Company (RPC)
- Location: Bandar Imam
- Scope: EPCC

2) Butane and Propane Storage Tanks for Parsian Gas Refinery
   (4 No.’s)
- Capacity: 26,000 m3 each
- Client: Palayesh Parsian Sepehr Company
- Locations: Mohr & Assaluyeh
- Scope: Basic & Detail Engineering and Procurement Services

3) Lordegan Ammonia Tank
- Capacity: 20,000 Tons
- Client: Lordegan Petrochemical Company
- Location: Lordegan
- Scope: Basic & Detail Engineering and Procurement Services
**HEDCO Projects (cont.’d)**

**f) Cryogenic Storage Tanks (Cont.)**

4) Zanjan Ammonia Tank
- **Capacity:** 20,000 Tons
- **Client:** Zanjan Petrochemical Company
- **Location:** Zanjan
- **Scope:** Basic & Detail Engineering and Procurement Services

5) Kermanshah Ammonia Tank
- **Capacity:** 10,000 Tons
- **Client:** Kermanshah Petrochemical Company
- **Location:** Kermanshah
- **Scope:** Design Review and Construction
g) Ammonia Reformers

1) Pardis Ammonia Reformer Package
   - Client: Pardis Petrochemical Company
   - Location: Assaluyeh
   - Scope: Basic & Detail Engineering and Procurement Services

2) Razi Reformer Package (Ammonia Plant 2)
   - Client: Razi Petrochemical Co.
   - Location: Bandar Imam
   - Scope: Detail Engineering and Procurement Services (Consultant in revamping)

3) Zanjan Ammonia Reformer Package
   - Client: Zanjan Petrochemical Co.
   - Location: Zanjan
   - Scope: Basic & Detail Engineering and Procurement Services and Construction Supervision
HEDCO Projects (cont.’d)

g) Fired Heaters

1) Parsian fired heater
   - Client: Palayesh Sepehr Parsian Company
   - Location: Assaluyeh
   - Scope: Engineering and Supply of equipment

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ICT is not simply a tool but a glorious work media.

HEDCO has installed communication infrastructure (HTMS) in the company which is targeted to be:

- Total Project Task & Phases Coverage (EPC Integrated)
- Work Flow definable (Taylor Made to Best Practice)
- Web Based & Global Access
- Real time & On-Line
- Paperless Document Distribution/Circulation
- Correspondence Control
- Hierarchical Information Access
- Total Users Coverage (Client, Vendors, Inspectors, Contractors, ..)
- User friendly to all users (Designers, Management, Client, Vendors)
- Task Execution Transparency
- Automatic Task Assignment, Expediting, Reporting & Progress Measurement

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HEDCO Platform for Execution of Projects

HEDCO is proud of its unique Integrated Software Platform for:

- Project Execution,
- Project Data Communication,
- & Project Management

HEDCO Total Management System (HTMS)

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HEDCO has improved the quality of its services to the clients by hiring the AVEVA smart P&ID software module.

- P&IDs (Piping & Instrumentation Diagram) are key documents that define the function of any equipment and object in the plant. They are a key part of the design activity and continue to be referenced and developed during the operation and maintenance phases.

- AVEVA Diagrams provides a fast, efficient and effective solution for creating P&IDs diagrams. It has the added value that, as the diagram is constructed, data is created in a schematic model database. The design information can therefore be effectively managed, and easily accessed, by any engineer who requires the information and has the appropriate access rights.
HEDCO uses AVEVA

Smart Design Interference Checking

3D Modeling Design

Materials Take off

AVEVA smart P&ID

Automatic Data Sheet and Index Generation

Construction Work Fronts
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<td>API - American Petroleum Institute</td>
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<td>ICAO - International Civil Aviation Organization</td>
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<td>IEC - international Electrotechnical Commission</td>
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<td>ISA</td>
<td>ISA</td>
<td>ISA - The Instrumentation, Systems and Automation Society of America</td>
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<td>17</td>
<td>NFPA</td>
<td>NFPA</td>
<td>NFPA - National Fire Protection Association</td>
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<td>NACE</td>
<td>NACE</td>
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<td>AWS</td>
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<td>AWS - American Welding Society</td>
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<td>AWWA</td>
<td>AWWA</td>
<td>AWWA - American Water Works Association</td>
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</table>
HEDCO Basic Engineering Experiences

• Basic Engineering of **Urea Unit** for: Lordegan / Zanjan / Golestan Petrochemical Company

• Basic Engineering of **Ammonia Unit** for: Pardis Petrochemical Company (Pardis III Project)

• Basic Engineering of **C2 Recovery Unit** for: Parsian C2+ Recovery & Fractionation Project

• Basic Engineering of **LDPE Unit** for: Fasa Petrochemical Company

• Basic Engineering of **Methanol Plant** for: Hidaj Petrochemical Company, Fajr Kerman and Gachasaran Projects

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HEDCO Ammonia License

- After many times performing the Basic and Detail engineering of Ammonia units, and acquiring complete knowledge about different methods of ammonia production process, HEDCO has developed and registered its specific method for production of Ammonia. Compared to existing Licenses, HEDCO License has advantages in:
  - Plant’s Energy Consumption
  - Installation Cost
  - Operating Cost
  - Ease of Operation
  - Less Proprietary Equipment (Only Reactor Internal)

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HEDCO Technology Division – Cryogenic Storage Tanks

HEDCO has succeeded to achieve the complete know-how and specialties of engineering, material supply, fabrication and construction of cryogenic storage tanks (up to -50 deg. C). The company’s scope of work in this respect will be:

- Mechanical design
- Thermal design
- Boil off rate
- Insulation
- Foundation
- Frost heave
- Roll over
- Cool down
- In tank pump

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HEDCO Technology Division – Ammonia Reformer

HEDCO acts as the vendor for the ammonia primary reformer which is a complex Fabrication on Site, Process-Mechanical Package.

The company’s scope of work in this respect will be:

- **Design**
  - Thermal and Mechanical calculation, design and engineering
  - Preparation of P&ID and PFD
  - Preparation of all necessary documents, drawings, procedures and specification
  - Thermal guarantee
  - Performance Guarantee
  - Site supervision for erection and assistance for start up and commissioning

- **Revamping**
- **Debottlenecking**
- **Construction supervision**

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HEDCO Technology Division – Fired heaters

- The heaters are being designed by the FRNC-5PC which is a Simulation Software especially made for design of fired heaters and is used for majority of heater Vendors.

- The heaters will be supplied prefabricated as maximum as possible in shop, however, Based on final dimensions and transportation limitation the heaters may be delivered in multi-pieces to be assembled at site or final assembly may be done at shop for final bolting of mating flanges at site.

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HEDCO Water Division

HEDCO is able to perform design and engineering for the water and waste water treatment packages and units:

- **Water Treatment Units**
  - Clarification
  - Filtration
  - Disinfection

- **Desalination Units**
  - Reverse Osmosis Unit

- **Oily Water Treatment Units**
  - Induced Gas Floater Separator
  - API Separator
  - Corrugated Plate Interceptor
  - Dissolved air floatation unit
  - Nutshell Filter

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HEDCO – Supplier of Chemicals

HEDCO supplies the following materials to its values customers in Oil, Gas and Petrochemical Plants:

- Corrosion Inhibitors (مواد پازدارنده خوردگی)
- Scaling Inhibitor (مواد ضد رسوب)
- Anti-Foam (مواد ضد کف)
- Demulsifiers (مواد تعیق شکن)
- Parafin Inhibitor (مواد پازدارنده پارافین)
- Asphaltene Inhibitor (مواد ضد آسفالتین)

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HEDCO – Supplier of Chemicals

Production chemicals

PRODUCT RANGES

- **INHICOREP**: Corrosion inhibitors for oil, gas and water. Although under HT& HP
- **CORIDOS**: Dual SI and CI products for gas-lift or sub-sea injection.
- **IDOS**: Anti-scale products for Squeeze and Topside surface treatments.
- **BACTIREP**: Wide-spectrum biocides for SRB, TRB and FAB control.
- **DGP / DWP**: Demulsifiers for the separation of water and oil.
- **REPA**: Inhibitors (PD, PPD) and dissolvents for paraffins.
- **BIREP / TRIREP**: Multiple function products.
- **REPASFALT**: Anti-asphaltene.
- **AMREP**: Anti-foam agents with or without silicon.
- **HYDRAREP**: KHI Anti-hydrates
- **SCAVENREP**: Oxygen, H2S and Mercaptan reducers.
- **REPFLOC**: Flocculants.
- **SQ**: Wetting solvents to prepare reservoir for squeezes

Most of the products are blended for deep sea injection as well.
HEDCO Strategic Partners

HAMPA Engineering Corporation

HAMPA Engineering Corporation, the parent company of HEDCO, is a first grade Construction Company in the field of Oil, Gas and Petrochemical Industries certified as Grade 1 Construction company by the Iran MPO. HEDCO as and Engineering company in joint with HAMPA is able to do the mega scale EPC projects.

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In order to expand its scope of services to clients, HEDCO has established FEPCO its sister company to act as a package integrator for Skid and Site mounted) consisting of rotating and static equipment, piping, instrumentation and electrical equipment and components.

- Catalytic Steam Reformers
- Process Fired Heaters and Incinerators
- Hot Insulation (Engineering & Supply)
- Cryogenic Storage Tanks
- Special Insulating Material
- Hydrogen Units (Production, Purification & Recovery)
- Hydrogen Recovery and Purification Units
- Crude Oil Desalting Package
- Ethylene Glycol Gas Dehydration Units
- Vapor Recovery Units

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HEDCO Strategic Partners

HEDCO OMAN

HEDCO has established its branch in Oman for the purpose of entering to Oman different industry sectors market:

- Oil, Gas and Petrochemical
- New Energies
- Water Sector

HEDCO Oman is an Excellent Grade company.

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In order to play a strong role in the global market, HEDCO has established SARIR, its Turkish sister company, which is active in the same field of activities as HEDCO, concentrating on the procurement activities of EPC projects as well as international marketing of HEDCO Technologies for Catalytic Reformers, Cryogenic tanks, etc.

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HEDCO Strategic Partners

TEEC (Tadbir Energy Eram Company)

For the purpose of doing the projects in EPC form, the TEEC consortium has been founded by gathering the capable and qualified engineering, manufacturing and construction companies. In addition to HEDCO acting as the head of this consortium, the other consortium members are: RAMPCO, FARASUN, FARABARD, FOOLADPAYEH & FARSSCOUT Companies.

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Thank You

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