In the Name of God

An Introduction to HEDCO Company

Hampa Energy Engineering & Design Company

(May 2017)

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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.
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.
HEDCO National Petrochemical Industries Excellence Award

Four 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
  - 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

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HEDCO Staff (High Education)
(Print Date: May. 2017)
Total No. Of Personnel: 336

- Engineer, 156
- M.S. (Engineers), 109
- Diploma, 21
- Tech. Diploma, 30
- B.S., 12
- PHD, 8
HEDCO Staff (Specialists)

(Print Date : May. 2017)

Total No. Of Specialists : 305

- Process : 32
- Piping : 48
- Procurement : 7
- QC/QA : 11
- Planning : 8
- Human Resource : 3
- Document Center : 8
- Project Management Team : 23
- HSE, 4 Technology Division : 5
- Mechanical : 21
- Machinery : 11
- Electrical : 21
- Instrumentation : 26
- ICT : 20
- Marketing, Proposal & Contract : 5

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HEDCO Assigned & Available Man-Hour Status
(Print Date: May. 2017)

Available Man-Hour

Assigned Man-Hour To Current Projects
HEDCO Growth and Personnel Increase

Growth in No. of Personnels

No. of Personnels

166 154 204 249 260 262 287 333 336

(Print Date: May. 2017)
# Hardware List

<table>
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<tr>
<th>Item No.</th>
<th>Hardware</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>1</td>
<td>Personal Computer (PC)</td>
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<tr>
<td>2</td>
<td>Notebook (Laptop)</td>
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<tr>
<td>3</td>
<td>Display - Additional LCD</td>
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<tr>
<td>4</td>
<td>Printer A4</td>
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<td>Copier/Scanner A4 /A3</td>
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<td>6</td>
<td>Color Printer A3, A4</td>
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<td>Plotter B/W A0, A1, A2</td>
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<tr>
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<tr>
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<tr>
<td>12</td>
<td>Layer 3 Switches</td>
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<td>13</td>
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<tr>
<td>14</td>
<td>Wireless Routers</td>
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<td>15</td>
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<td>16</td>
<td>NVR</td>
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<tr>
<td>17</td>
<td>Router</td>
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<tr>
<td>18</td>
<td>PRI Modem (Siemens)</td>
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<tr>
<td>19</td>
<td>IP Camera+ 1 set DVR</td>
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</tr>
</tbody>
</table>
HEDCO Projects

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. FAJR KERMAN METHANOL PLANT
13. QESHM HEAVY CRUDE OIL REFINERY

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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

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b) 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
c) Oil & Gas Refinery Projects

1) Parsian Gas Refinery (C2 Recovery & Fractionation)
   - Capacity: 80,000,000 Sm3/day of Natural Gas (Butane)
   - 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

4) Oman Raysut Terminal Revamp
   - Client: AL-QAEM Petro Projects & Services LLC
   - Main Owner: Oman Ministry of Oil & Gas
   - Location: Oman, Salalah Port
   - Scope: Engineering, Technical Procurement Services
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
HEDCO Projects (cont.’d)

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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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
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
HEDCO Projects (cont.’d)

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
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

- 3D Modeling Design
- Materials Take off
- Automatic Data Sheet and Index Generation
- Smart Design Interference Checking
- Construction Work Fronts

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<thead>
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<th>No.</th>
<th>SECTION</th>
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<td>ISO - International Organization for Standardization</td>
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<td>ANSI</td>
<td>ANSI - American National Standards Institute</td>
</tr>
<tr>
<td>8</td>
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<td>API</td>
<td>API - American Petroleum Institute</td>
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<tr>
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<td>AISC</td>
<td>AISC - American Institute of Steel Construction</td>
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<td>ASCE - American Society of Civil Engineers</td>
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<td>ICAO - International Civil Aviation Organization</td>
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<td>IEC</td>
<td>IEC - international Electrotechnical Commission</td>
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<td>IEEE</td>
<td>IEEE - Institute of Electrical and Electronics Engineers</td>
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<td>NEMA - National Electrical Manufacturers Association</td>
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<td>16</td>
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<td>ISA</td>
<td>ISA - The Instrumentation, Systems and Automation Society of America</td>
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<td>17</td>
<td>SAFETY</td>
<td>NFPA</td>
<td>NFPA - National Fire Protection Association</td>
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<td>NACE</td>
<td>NACE - National Association of Corrosion Engineers</td>
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<td></td>
<td>AWS</td>
<td>AWS - American Welding Society</td>
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<td>20</td>
<td></td>
<td>AWWA</td>
<td>AWWA - American Water Works Association</td>
</tr>
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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

- **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 specially 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.
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 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 an Engineering company in joint with HAMPA is able to do the mega scale EPC projects.

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HEDCO Strategic Partners

FEPCO (Fankavan Energy Pooya Company)

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
SARIR (International Engineering and Trading Company)

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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