



CHAGALESH CONSULTING ENGINEERS

MORE THAN 30 YEARS OF
CONTINUOUS PRESENCE IN THE OIL,
GAS AND PETROCHEMICAL INDUSTRIES



No.2, Madjlesi St., Larestan St.,
Ostad Motahari Ave.,
Tehran 1595934615, Iran
Tel: + 98 21 - 88 80 47 70
-77
Fax: + 98 21 - 88 80 47 78
E-mail: info@chagalesh.com



www.chagalesh.com



WWW.CHAGALESH.COM

CHAGALES

CONSULTING ENGINEERS

YOUR DEPENDABLE PARTNER
IN ENGINEERING, PROCUREMENT
& CONSTRUCTION



CONTENTS

Company Profile	2
Our Mission and Core Values	3
Organization Chart	4
Our people	5
Fields of Activities	6
Scope of Services	7
A Selection of Accomplished Projects	8
List of Recently Completed Projects	14
Innovation	15
Quality Management System	16
HSE Management System	17
Lessons Learned System	18
Engineering Software and PMIS	19
Training	20



chagalesh.com



COMPANY PROFILE

Chagalesh Consulting Engineers is a private company founded in Iran, in 1981, by a group of professional managers and engineers with extensive experience in the oil, gas, and petrochemical industries.

In 1997, Chagalesh was qualified by "**Iran Management and Planning Organization**" as a design-build contractor in the oil, gas and petrochemical fields and since then has successfully completed several projects in these fields through various types of contracts including **EP, EPC, EPCC**.

ENGINEERING



PROCUREMENT



CONSTRUCTION



COMMISSIONING



The main clients of **Chagalesh** have been:

- National Iranian Oil Company (NIOC)
- National Iranian Gas Company (NIGC)
- National Petrochemical Company (NPC)
- National Iranian Oil Engineering & Construction (NIOEC)

Chagalesh has completed numerous joint projects with internationally renowned companies, such as:

- Foster Wheeler
- JGC
- Daelim
- BP
- ABB
- Lurgi Oel Gas Chemie
- Shell
- Axens
- Zimmer
- MHI
- Idemitsu

As a nationally renowned design-build contractor in the oil, gas and petrochemical industries, our mission is to successfully complete any project we undertake, through excellence in project management and continual improvement in our organization's performance.

OUR MISSION



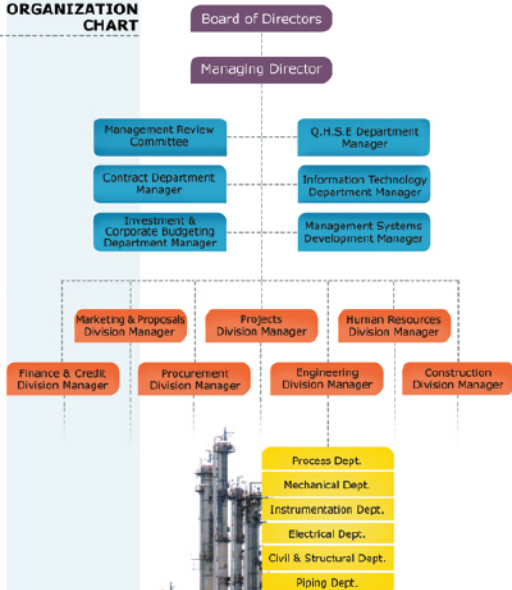
We develop our organizational culture and strategies based on the following core values:

- **Integrity:** Acting with honesty and in an ethical manner
- **Quality:** Committing to high quality services and products
- **HSE:** Ensuring occupational health and safety, and protecting the environment
- **Clients:** Satisfying clients' needs and expectations
- **Employees:** Treating employees with dignity and respect
- **Society:** Contributing to society, and behaving in socially responsible ways
- **Innovation:** Encouraging creativity, innovative ideas and value engineering
- **Improvement:** Pursuing continual learning and performance improvement

OUR CORE VALUES



ORGANIZATION CHART



Highly qualified managers, specialists, engineers, technicians and support personnel interact and cooperate with each other to drive any project we undertake to success.

OUR PEOPLE



We are capable of expanding our expert work-force capacity as required and have access to our affiliated companies, subcontractors, freelance specialists, when needed, to meet our commitments.

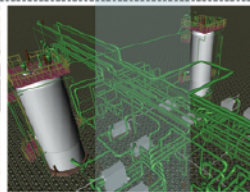
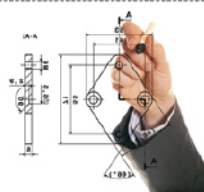


FIELD OF ACTIVITIES

- Oil and gas Upstream Surface Facilities and Field Development
- Oil and Gas Treatment Plants
- Desalting Plants
- Petrochemical Plants
- Chemical Plants
- Mobile Oil Treatment package (MOT)
- Gas Injection Plants
- Pump/Compressor Stations
- Oil and Gas Gathering & Transmission Pipelines
- Storage Tank Farms
- CNG Refueling Stations

- Feasibility Studies
- Basic Engineering
- Front End Engineering & Design (FEED)
- Detail Engineering
- Procurement
- Construction Management/Supervision
- Field Engineering
- Pre-commissioning/Commissioning
- Training
- Project Management Contractor (PMC) Services

SCOPE OF SERVICES



6



7



A SELECTION OF ACCOMPLISHED PROJECTS



MOBILE OIL TREATMENT M.O.T.



AGHAJARI GAS INJECTION



MARUN KHAMI GAS FIELD DEVELOPMENT



POLYETHYLENE TEREPHTHALATE PLANT

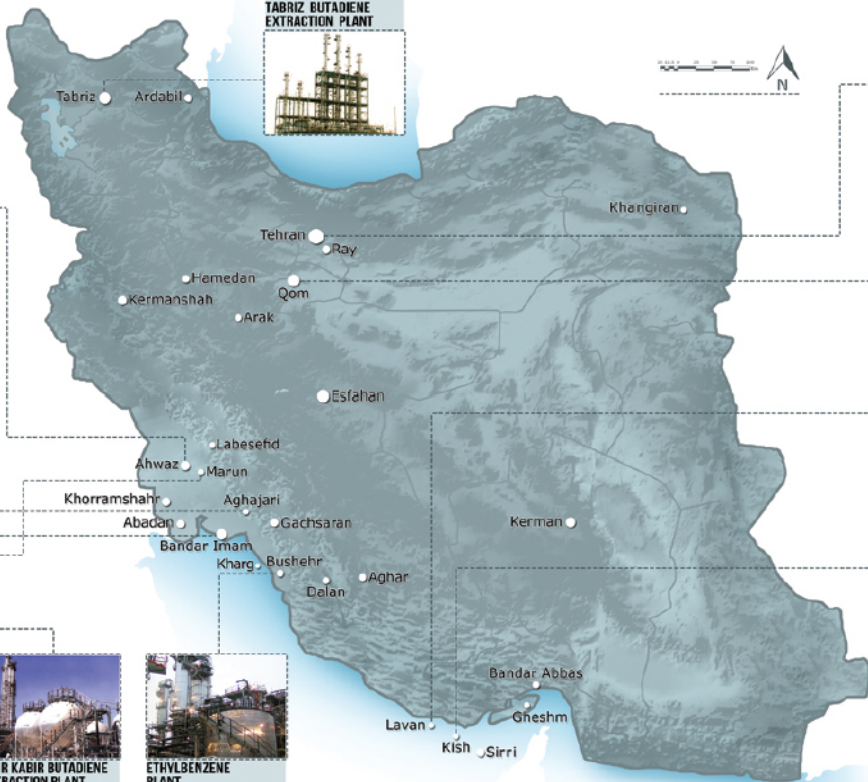


AMIR KABIR BUTADIENE EXTRACTION PLANT



ETHYLBENZENE PLANT

TABRIZ BUTADIENE EXTRACTION PLANT



LIGHT NAPHTHA HYDRO TREATMENT & ISOMERIZATION



SARAJEH GAS FIELD EARLY PRODUCTION SURFACE FACILITIES



LAVAN LPG RECOVERY TREATMENT STORAGE & DUAL PURPOSE JETTY



KISH GAS COMPRESSOR STATION



**A SELECTION OF
ACCOMPLISHED
PROJECTS**

Project Polyethylene Terephthalate (P.E.T. - 1) Plant
Client Shahid Tondgooyan Petrochemical Company (S.T.P.C.)
Location Bandar Imam - IRAN
Objective Production of approximately 420,000 ton/year of PET-1 (textile grade and bottle grade)
Scope of Services Engineering - Procurement - Construction Supervision- Technical Assistance - Training
Partner Zimmer AG
Contract Date November 1998



Project Ethylbenzene Plant of 9th Olefin Complex
Client Pars Petrochemical Company
Location Bandar Assaluyeh -IRAN
Objective Production of 545000 ton/year Ethyl Benzene
Scope of Services Engineering - Procurement - Construction - Commissioning and Startup
Partner Dailem
Contract Date May 2003

Project Purified Terephthalic Acid (P.T.A.-2)Plant
Client Shahid Tondgooyan Petrochemical Company (S.T.P.C.)
Location Bandar Imam - IRAN
Objective Production of 350,000 ton/year P.T.A.
Scope of Services Grant of License - Basic Engineering - Detail Engineering - Procurement - Construction Supervision - Technical Assistance - Training
Partner Mitsubishi Heavy Industries (MHI) & Tomem Corporation
Contract Date December 2000



Project Butadiene Extraction Plant
Client Tabriz Petrochemical Company (T.P.C.)
Location Tabriz - IRAN
Objective Extraction of 17000 ton/year of Butadiene
Scope of Services License Arrangement - Basic Engineering- Detail Engineering - Procurement - Construction Supervision- Technical Assistance - Training
Partner LURGI OEL-GAS-CHEMIE
Contract Date July 1999



A SELECTION OF
ACCOMPLISHED
PROJECTS



Project **Marun-Khami Gas Field Development**
Client **National Iranian South Oil Fields Company (N.I.S.O.C.)**
Location **Marun - IRAN**
Objective **Gathering wellhead products from five wellheads to Marun 5; separating gas and oil to supply the gas to a gas injection plant and the oil to a production plant.**
Scope of Services **Engineering Services - Procurement - Construction- Pre-commissioning & commissioning**
Partner **---**
Contract Date **November 2002**



Project **Aghajari Gas Injection**
Client **Petroleum Engineering and Development Company (P.E.D.E.C.)**
Location **Aghajari - IRAN**
Objective **Pressurizing the South Pars Field's gas in order to inject the gas to Aghajari oil reservoir.**
Scope of Services **Engineering - Procurement - Construction**
Partner **Two Iranian Companies**
Contract Date **January 2002**



12

Project **Light Naphtha Hydrotreating and Isomerization**
Client **Shahid Tongdooyan Tehran Oil Refining Company**
Location **Tehran Refinery - IRAN**
Objective **Light naphtha hydrotreating & isomerization (18000 BPSD capacity) for gasoline upgrading**
Scope of Services **Engineering - Procurement - Construction**
Partner **--**
Contract Date **October 2007**



Project **LPG Recovery Treatment, Storage & Dual Purpose Jetty**
Client **Lavan Oil Refining Company**
Location **Lavan Island**
Objective **LPG production, storage and exporting (through constructing a dual purpose jetty)**
Scope of Services **Engineering - Procurement- Construction**
Partner **- -**
Contract Date **January 2005**



13



LIST OF MAJOR COMPLETED PROJECTS IN THE PAST 10 YEARS

PROJECT	CLIENT	LOCATION	SCOPE OF SERVICES	PARTNER
Mobile Oil Treating I	National Iranian South Oil Fields Company N.I.S.O.C	Ahwaz IRAN	E, P, CS	-
Polyethylene Terephthalate Plant	Shahid Tohidgoyan Petrochemical Co. S.T.P.C	Bandar Imam IRAN	E, P, CS	ZIMMER AG
Tabriz Butadiene Extraction Plant	Tabriz Petrochemical Company T.P.C.	Tabriz IRAN	E, P, CS	LURGI OEL-GAS-CHEMIE
Amir Kabir Butadiene Extraction Plant	Amir Kabir Petrochemical Company A.K.P.C.	Bandar Imam IRAN	E, P, CS	LURGI OEL-GAS-CHEMIE
Pure Trepht. Acid Production Plant	Shahid Tohidgoyan Petrochemical Co. S.T.P.C	Bandar Imam IRAN	E, P, CS	M.H.I & TOMEN Co.
Marun Khami Gas Field Development	National Iranian South Oil Fields Company N.I.S.O.C	Marun IRAN	E, P, C	-
Mobile Oil Treating II	National Iranian South Oil Fields Company N.I.S.O.C	Ahwaz IRAN	B.O.O	-
Ethylbenzene Plant	Pars Petrochemical Company	Assaluyeh IRAN	E, P, C	DAELIM
Aghajari Gas Injection	Petroleum Engineering & Development Co. P.E.D.E.C	Aghajari IRAN	E, P, C	-
C.N.G. Refueling Station	Gas Khodro Company	Various Cities IRAN	E, P	Dresser Wayne Pignone
Kish Gas Compressor Station	Iranian Oilfields Oil Company I.O.G.C.	Kish & Shirz IRAN	E, P, C	-
Mobile Oil Treating III	National Iranian South Oil Fields Company N.I.S.O.C	Ahwaz IRAN	E	-
L.P.G. Recovery Treatment Storage & Dual purpose Jetty	Lavan Oil Refining Company	Lavan IRAN	E, P, C	-
Light Naphta Hydro Treating & Isomerization	Tehran Oil Refnig Company	Tehran IRAN	E, P, C	-
Sarajeh Gas Field Early Production Surface Facilities	National Iranian Oil Gas Company	Sarajeh Iran	E, P	-

E:Engineering P:Procurement C:Construction CS:Construction Supervision BOO:Built Own Operaton

INNOVATION

What was the problem?

In many cases, the crude oil that flows out of a newly drilled or a workover-performed oil production well is initially too much sandy and/or acidic. Prior to 1999, this sandy and acidic crude oil used to be burnt in the burn pits and thus wasted for the first few days until crude oil with properties acceptable for feeding to production units was produced. However, while the crude oil was being burnt in the burn pits the resultant smoke caused serious air pollution, environmental damage and local aviation problem.



Innovative solution

In 1999, we designed and built the first Mobile Oil Treating (MOT) package to solve the problem. Since then, through producing several MOT packages, our achievements have been the following:

- Protection of the environment
- Elimination of the aviation problem
- Saving thousands of crude oil barrels annually

Chagalesh received 2005 Kharazmi Scientific Festival Award for Innovation



What is MOT?

Each MOT package is a complete-compact treating unit mounted on four tractor-trailers. The tractor-trailers can be easily and quickly positioned at a production oil well, when required, to treat sandy and acidic crude oil.



QUALITY MANAGEMENT SYSTEM

Brief History:

- In 1999 and 2000, Quality Management System for engineering and design was established and ISO9001:1994 certificate was obtained.
- In 2005, ISO 9001 and ISO/TS29001 certificates of engineering, design, procurement, construction and supervision services for the oil, gas, petrochemical and chemical industries were acquired.
- Since 2006, the Quality Management System (QMS) has been continually upgraded and implemented based on the latest version of relevant QMS standards.
- Based on the annual audit conducted by AFNOR (Association Française de Normalisation), the QMS certifications have been continually updated up to the present.



HSE Certification History:

- In 2005, OHSAS 18001 certificate for occupational health and safety management system was obtained.
- In 2007, ISO 14001 certificate for environmental management system was acquired.
- In 2013, the above mentioned certificates were updated based on our upgraded HSE Management System.



HSE MANAGEMENT SYSTEM

CHAGALESH INTEGRATED MANAGEMENT SYSTEM POLICY

Chagalesh Consulting Engineers Company (CHCE) implements an integrated management system policy in accordance with ISO 9001, ISO 14001, OHSAS 18001 and ISO 45001 standards. CHCE continually improves its processes and procedures while ensuring the compliance to comply with legal requirements as well as other engineering, contractual, safety, occupational health and environmental requirements throughout its projects. This policy also includes the following approaches to ensure continuous improvement of CHCE's performance.

- Enhancement of the employees engagement.
- Improvement of the employees/professionals knowledge, expertise and product quality.
- Enhancement of the stakeholders satisfaction.
- Safely, occupational health and environmental/risk management improvement.
- Optimization of natural resources utilization.

QHSE Manager has committed to monitor and evaluate each department's performance and suggest practical solutions for improvement.

QHSE Manager reports directly to the Managing Director and within limit of any potential consequences due to deviations from the integrated management system policy.

During the annual management review meetings, CHCE's objectives and goals are re-evaluated in case of deemed necessary.

M. Alshar
Managing Director



Our Commitment to HSE Standards:

We are committed to meet the above-mentioned occupational health, safety and environmental management standards and relevant contractual obligations throughout all aspects of our activities to protect human life and the environment.

Furthermore, we endeavor to implement effective methods to achieve our Zero-Incidents-Performance objective. The following table indicates examples of the projects we accomplished without serious incidents:

PROJECT	NO. OF MAN-HOURS ON SITE
Marun-Khamsi Field Development	1.200.000 +
Lavan LPG Recovery Treatment Storage & Dual Purpose Jetty	1.370.000 +
Ethylbenzene Plant	1.750.000 +
Light Naptha Hydro Treating & Isomerization	5.000.000 +



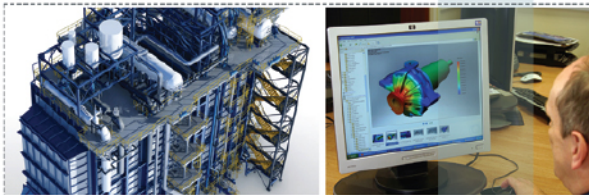


Engineering Software

We utilize numerous advanced software packages for plant design and simulation. Prominent among these in each engineering department are:

- **Process:**
HYSIS, PROII, HEXTRAN, DATACON, INPLANT
- **Mechanical:**
TANK, PV ELITE, ASPEN B-JAC, NOZZLE PRO, CARRIER (HAP)
- **Piping:**
PDMS
- **Electrical:**
ETAP, CALCULUX, DIALUX, WINSIZE
- **Instrumentation:**
INTOOLS, CONVAL
- **Civil and Structural:**
SAP2000, ETABS, SAFE

Furthermore, our engineers have developed a number of software to improve quality and efficiency of their engineering practice.



Project Management Information System

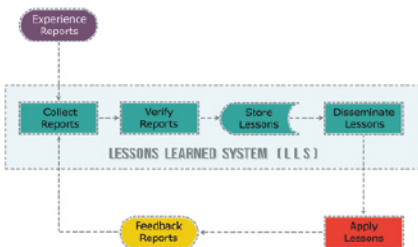
Project Management Information System (PMIS) is a comprehensive web-based project management software that has been developed by our professional staff to support the engineering, procurement and construction activities of a project from its initiation phase to the end.

This in-house developed software enables our staff to:

- Input a project WBS and list of documents in XML format
- define a project work cycle
- define a project progress calculation method
- define the method of user access
- store and retrieve all versions of all project documents
- obtain reports of each document progress based on a project WBS
- obtain reports of project delays based on the project schedule
- obtain latest version of each project documents at the end of the project
- export information of each project as well as the actual work hours of each activity (or document) to Primavera software
- register actual hours spent on each document by users (timesheet)

LESSONS LEARNED SYSTEM (LLS)

At Chagelesh, we learn from our experience to improve our management systems, processes and practices in various areas including project management, engineering, procurement, construction, quality management and HSE. The following diagram briefly depicts the concept of our lessons learned system.



TRAINING

As a knowledge-based company, we consider "Training" as a crucial component of our organizational development process. Our main training objectives are to:

- adopt advances in technology
- update specialists' expertise
- enhance employees' performance
- promote employee engagement
- Improve quality of deliverables and services



A Prominent Example of Chagalesh In-house Training

National Iranian Oil Refining and Distribution Company (NIORDC) sponsored a training program in 2008. The main objective of the program, conducted by **Chagalesh**, was to empower unexperienced new engineering graduates in the shortest time possible to meet the human resource needs of the national oil, gas and petrochemical industries.

The program was tailored to meet the exact needs and requirements of the industries. It consisted of various courses related to the following fields:

- Piping engineering
- Process engineering
- Civil and Structural engineering
- Electrical engineering
- Mechanical engineering
- Instrumentation and Control engineering
- Quality, Health, Safety and Environment Management
- Entrepreneurship

At **Chagalesh**, we categorize "Training" in three general groups: "In-house training", "On the job training" and "External training" as indicated in below.

IN-HOUSE TRAINING	ON-THE-JOB TRAINING	EXTERNAL TRAINING
Inter-departmental training Workshops/Seminars	Learning while working on projects using coaching, internship, job instruction and job rotation methods	Workshops/Seminars
Technical/Skill training courses		Technical/Skill training courses
Project Management training		Project Management training
Internal seminars		English courses

20

In cooperation with the engineering departments and other departments, the training department identifies and responds to the training needs of the staff.



21

