

GHODS NIROO ENGINEERING COMPANY

G.N.E.C



1. GNEC Presentation

Core Business 1.1.

We started as a Canadian consultancy company, founded on 1975, whose name changed to GNEC later on 1983, and now we are the most continually operating engineering firms in Iran and The Middle-East.

It's been 38 years that we are working with this new name in different fields of Energy Industry in Engineering and Consultancy projects and we proved to be the most successful and known company in IRAN.

With more than 1250 experts we provide clients with various engineering, management, procurement and construction services in the fields of Power Transmission Lines and Substations, Distribution Networks, Gas, Steam and Combined Cycle Power Plants, Water and Wastewater, Dam and Hydropower, Irrigation and Drainage, Renewable Energies & Energy Optimization, and also Oil, Gas and Petroleum which all summarized in below table:

Brief Description of Business Involved 1.2.

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• More than 500 substations. HV from 63kV to 400kV.

Transmission Lines and **Distribution Networks**

• More than 27,000 Km of power transmission lines and many distribution network. HV from 63kV to 400kV.

Power Plants

• More than 55,000 MW of power plants

Renewable Energy and Energy Management

• More than 100 renewable energy plants and energy management project with a wide variety of services

Oil, Gas and Petroleum

• More than 2000 km of 56" gas pipe lines, pump stations and several fuel storage tanks.

Water, Environment, Social and Structure

• More than 200 projects in dams, water transmission lines, irrigation, drainage, hydropower plants and about of 500 Km Water & WasteWater network.

1.3. **GNEC Services**

- **Project Management**
- **Construction Supervision**
- Consultancy and Engineering
- Managing of Contract
- Feasibility Studies, ESIA & RAP
- Surveying and Studies
- Preliminary and Detailed Design, Redesign and Revision & Review
- Engineering, Procurement and Construction







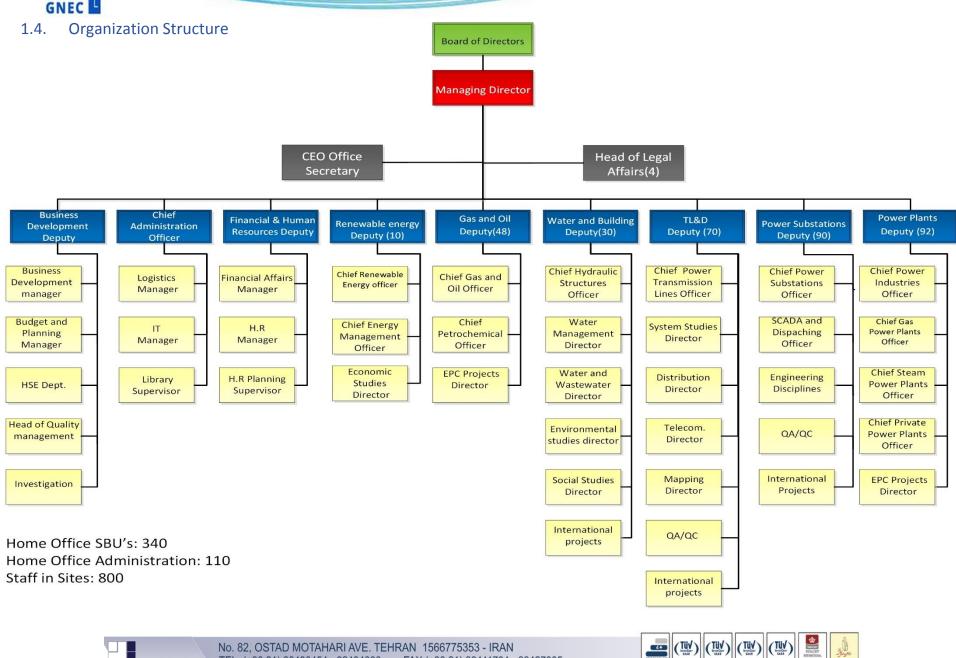




























1.5. Introduction of GNEC SBUs

i. Renewable Energies

Overview

This SBU is going to make GNEC a pioneer in renewable energies and energy optimization fields. The skills that GNEC built up over years were found to be ideally suited to these markets. Our multi-disciplinary and experienced team provides technical, environmental and planning support to developers, communities, industry, utilities and the public sector throughout the entire project life-cycle, from feasibility to implementation. We are known for the quality of our work, our pro-activity and the valuable support we provide clients with.

Recent Experiences

- Construction of a 10 MW wind farm in Arvand free zone
- Small scale power plants operation in guaranteed
- Construction of a 50 MW wind farm in Pakistan
- Construction of 250 MW wind farms (three sites) in Iran
- Photovoltaic system installation in Mazandaran province
- Operation of DG units in Tehran province
- Energy system management based on ISO 50001 in steel making complex
- Wind power site selection
- Energy system management based on ISO 50001 in 100 water wells in Tehran
- Energy system management based on ISO 50001 in steel making complex
- Power generation in Isfahan landfill
- Construction of a 4 MW CHP power plant
- Use of renewable energy in a wastewater treatment plant
- Environmentally compatible energy pilots in Taleghan
- Energy recovery in a steel company
- Energy system management based on ISO 50001
- Power generation in a MSW landfill
- Construction of a 20 MW wind farm in Qazvin province
- Efficiency increasing studies for 4 power plants
- Potential of incineration market study in Iran
- Energy system management based on ISO 50001
- Using municipal solid waste in biomass power plants
- Abu-Musa CHP power plant
- Power generation in Qazvin MSW landfill
- Construction of a 100 MW wind farm in Qazvin province
- Energy system management based on ISO 50001
- Construction of distributed power plants in two sugarcane factories in Ahwaz
- Energy audit of Be'sat power plant
- Energy consumption optimization in Parand and Caspian industrial parks



















ii. Substations SBU

Overview

Offering professional services of more than 250 Engineers and technicians and using sophisticated engineering techniques, our substation team provides multi-discipline engineering designs and construction services from low voltage to extra high voltage substations in E, EP, and EPC contracts. Our staff consists of professionals who have many years of experience with public and private clients in both domestic and international markets as in Uganda, Senegal, Syria and Pakistan.

Scope of work

- Project Management and Site Supervision
- Design of 63- 400 kV substations
- Equipment specification and standards preparation
- Layout and section design
- Grounding system design
- Protection and control design
- Communication and SCADA system design
- Civil and construction work specification

Services

- Project Management and Site Supervision
- Preliminary studies and site selection
- Cost estimation, tender document preparation, tender evaluation and contract award
- Contract management and administration
- Design, review and supervision over erection of HV and EHV substations
- Detail engineering design for refurbishment and extension of substations projects
- Design and construction of substation projects in EPC contracts
- Providing consulting services in highly specialized projects as technology transfer
- Providing specialized support for value engineering teams
- Training

Experiences

GNEC has provided consulting services for more than 270 projects (encompassing more than 500 substations) ranging from 63 kV to 400 kV with different sizes and complexities including AIS (Indoor, Outdoor), GIS, Mobile, modular with conventional or digital control systems. In addition, GNEC has successfully taken the role of Project Management and Site Supervision, E, P, or EPC contractor in several cases and is able to carry out all engineering tasks including conceptual design, detailed engineering, and procurement of material and construction services.

















iii. Transmission Lines and Distribution Networks

Overview

In transmission and distribution business, we provide vast range of services varying from feasibility studies to detail design, supervision, procurement and construction. With more than 35 years of experience, we've always been one of the most continually operating engineering firms in Iran with overseas experience such as in Uganda, Pakistan, Syria and Sri Lanka. We are reliable since we realize customer's satisfaction.

Scope of Work

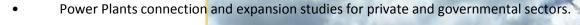
- Project Management and Site Supervision of power transmission projects
- Detail design of different overhead transmission lines from 63 kV up to 400 kV
- Detail design of underground cable projects and optical ground wire
- Cost estimation, tender document preparation, tender evaluation and contract award
- Design and construction of transmission line projects on EPC contract
- Power system studies and distribution network optimization

Services

- **Project Management and Site Supervision**
- Transmission line route selection and surveying
- Tower and foundation design
- Mechanical and electrical calculation and tower spotting
- Factory and site tests of equipment
- Reducing electric loss and energy cost studies in distribution systems
- Load balance, load flow, fault and optimum service restoration analysis
- Network studies and defining the best technical and economic plan

Experiences

- Project management and site supervision, Designing, supervising and commissioning over 27,000km of different high voltage rate transmission lines. HV from 63kV to 400kV.
- Mechanization and optimization of numerous electrical utilities all over the country





















iv. Power Plants

Gas Turbine

Overview

In this field, professional engineers with varied backgrounds and experiences in consultancy, project management and design are responsible for performing engineering and supervision services for the gas turbine power generation projects. Total capacity of the power plants which are already constructed under supervision and consultancy of our experts exceeds 15,263 MW, having more than 12,944 MW under construction.

Combined Cycle

Overview

Professional engineers with varied backgrounds and experiences in consultancy, project management and design are responsible for performing engineering and supervision services for the combined cycle power plants. Total capacity of the power plants which are already constructed under supervision and consultancy of this group, exceeds 1740 MW, and more than 4000 MW is still under construction.

Steam

Overview

GNEC is involved in conventional steam power plant projects for more than 30 years and the majority of the projects in this field has been constructed using the consultancy services and under the supervision of GNEC experts. Professional engineers with varied backgrounds and experiences in consultancy, management and design are responsible for performing engineering services for the projects in head office and many experienced engineers and technicians are responsible for supervision of execution activities at different sites. Total capacity of the steam power plants which are already constructed under supervision and consultancy of this group, exceeds 7,120 MW, and more than 5,650 MW is still under construction.





















Oil, Gas & Petrochemical ٧.

Overview

Since oil and gas industries play an important role in Iran's energy sector, these industries undoubtedly influence the whole country's industrial and economic structure. GNEC's Oil & Gas division, since its relying on professional team of managers, engineers and technicians has played a significant role in some of the biggest oil & gas Projects, such as national and international gas transmission lines, petrochemical and gas refineries, oil reservoirs and etc. in various contractual formats.

Scope of Work

- Gas transmission lines
- Oil reservoirs
- Petrochemical plants
- Health, safety and environment services

Services

- Engineering consulting, Site supervision and Managing of Contract (MC)
- Procurement of oil and gas material and equipment
- Executing projects in EPC and PC contractual frame works
- **Project financing**
- Professional contractual and claim administration services

Experiences

- IIGAT-5 56" pipeline project' s managing of contract (Pipeline, 5 booster gas compressor stat ions, telecommunications and SCADA) from Assalouyeh to Aghajari. (More than 600 km)
- Fair pipeline (42") project's managing of contract from Assalouyeh to Jam refinery.
- Supervision on the construction of IGAT-6 (56") pipeline from Ahwaz to Dehgolan and its relevant branches including the export gas pipeline to Iraq (1000 km in length)
- Supervision on construction and procurement of strategic oil reservoirs in Mahshahr.
- Implementation and supervision on HSE systems in the fifth South Pars Refinery (Phases 9 and 10)
- Supervision on HSE operations of MA TN in 13 Oil Fields.
- Operation and engineering services in the fourth South Pars refinery (Phases 6, 7 and 8)
- Supervision on gas pipeline projects in Bushehr province.
- EPC project of Shahid Madanizadeh-Bidboland (1) refinery 42" Sour gas pipeline Including metering and Pressure Control Stations (In JV with Iran Arvin(
- Engineering consultancy and supervision on construction of P ATAVEH 4 BGCS. (PC Project)













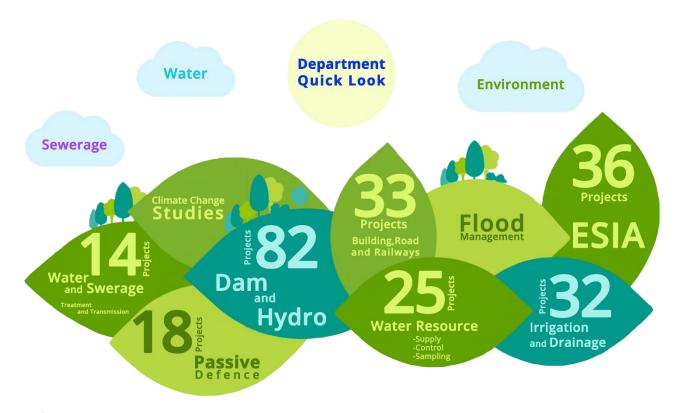




vi. Water, Environment, Social and Structure

Overview

This SBU has a mission to participate in water and wastewater industry besides ESIA studies. Afterwards, the activities related to Dam and Hydropower industry, road construction and tunnel construction have been added to its service portfolio.



Services

- Consultancy and Engineering Services
- Preliminary and Detailed Design
- Project Management
- Feasibility Study, ESIA and RAP Study

Scope of Work

- Dam & Hydropower Plant Building
- Water & Wastewater management and transmission
- Water resources management
- Irrigation & Drainage system and networks
- Road & Tunnel
- Environmental and social impact assessment
- Resettlement action plan

















Some Projects in Water and Wastewater Field:

- 1. Design review and Supervision on construction of Zob Ahan steel factory Wastewater Treatment plant in order to reuse of treated Wastewater in steel industry
- 2. Project Management and Engineering Services (Design and Supervision on construction) for Ghaen city Sewage Collection Network and Wastewater Treatment Plant in order to reuse of treated wastewater in steel industry
- 3. Project Management and Engineering Services (Design and Supervision on construction) for Sarbisheh city Sewage Collection Network and Wastewater Treatment Plant in order to reuse of treated wastewater in Agriculture
- 4. Design of Wastewater Treatment Plant for Ardabil Industrial Park 2
- 5. Design of Wastewater Treatment Plant for Nojedeh Industrial
- 6. Design of 4 wastewater treatment packages for buildings of Khorramshahr Port & Maritime Administration
- 7. Consultancy services for revamping of water supply network in Khorramshahr Port & Maritime Administration
- 8. Construction Supervision of Meshkin Shahr city Sewage Collection Network
- 9. Feasibility study and consultancy services for reuse of Tabriz city wastewater Treatment Plant effluent in agriculture
- 10. Design of Water treatment plant for Khosus Menndez City, Cuba

Some Projects in Environment and Social:

1. Studies of phase 2 of Tajyar dam & social studies of Tajyar downstream lands

2. Studies of phase 1 & Social studies and supervision on water right of Koshksaray reservoir dam

3. Social studies and the exploitation system of popular participation for the phase 1 of Aghbolagh drainage & irrigation network

4. Energetic studies of the environment of the Islamic Republic of Iran

control structures

5. Studies of environmental impact assessment of Aji Chay salinity 6. Studies of evaluation of environmental effects of Vanyar dam

Some Projects in Building Field:

- 1. The consultation services for a number of public and state building with an area of over
- 2. 300,000 square meters demanded by Ministry of Housing and Urbanism.
- 3. Supervising of the executive operations of building industrial towns projects in Tehran, Mazandaran and Markazi provinces
- 4. MC services to 4 region of Tehran municipality
- 5. Site supervision on construction of office building of Kohgiluye and Buyer Ahmad regional water corporation

















Some Projects in Dam Construction Field:

- 1. The Studies of Aji Chai basin project
- 2. The Studies of the second phase of dam in Vanyar dam
- 3. Top & Site supervision on construction in Vanyar dam
- 4. The Studies of preparation in Vanyar dam reservoir
- 5. The studies of the first and second phases of dam and power plant in Rudbar, Lorestan (460 MW)
- 6. The studies of the first phase of the dam and power plant in Bazoft (360 MW)
- 7. The studies of the second phase of dam and power plant in khersan1 (1400 MW)
- 8. The studies of the second and third phases of shirinab and sardasht dams in Khuzestan
- 9. The studies of the first phase of the dam and power plant and water transmission system in Shiveh
- 10. The studies of the first phase of the dam, Pumping and transmission in Aghbolagh



Some Projects in Drainage and Irrigation Networks Field:

- 1. The studies of the first phase of irrigation and drainage networks of Tabriz plain
- 2. Engineering services of EPC project of irrigation and drainage subnetwork (low pressure) and equipping and rehabilitation of first and second development regions of Minoo & Jofeir lands
- 3. Engineering services of EPC project of irrigation and drainage subnetwork and equipping and rehabilitation of first and second development regions of Jofeir lands
- 4. The studies of the first, second and third phases of irrigation networks of Tajyar
- 5. The studies of the first phase of irrigation and drainage of the downstream lands of the dams in Talog, Aghbolagh, cheshmehzaneh and Ajisu















- Environmental and social impact assessment
- Resettlement action plan
- 1.6. Integrated Management System (IMS)

HSEQ in GNEC

GNEC is one of the pioneers that has achieved the integrated management system with knowledge experience and involvement in all company levels.

The quality management system of GNEC from October 1995 coincident with formation of leadership-quality committee and with beginning of education of internal auditing to the representatives of top managers, has been starting its activity and with exact planning and with effort of staff that pursuing to receive ISO 9001:94 & finally in January 1998 achieved to Receive the certificate from S.G.S Co. We are the first Iranian engineering company who has received the Total Quality Management certificate from prestigious European organization for excellence i.e. European Foundation for Quality Management (EFQM).

In March 2001 after adapting the current system with quality management system, based on review requirement of year 2000 and along with a difficult evaluation from the third-party auditing & without any nonconformity the certificate of quality management system ISO 9001: 2000 has been awarded to GNEC by B.S.I Company.

Besides this project establishing of OHSAS 18001 & ISO 14001 standard from the first half of year 2005 was begun & in year 2006 the company received ISO 14001: 2004 the certificate of Environmental management system and OHSAS 18001: 2007 from DNV CO.

These two standards synchronize with quality management standard ISO 9001 and with establishing central structure are prominent context for Development and Excellency of the company and have got success in this regard.

The integrated management performance structure in GNEC is based on involvement and team work , consists of quality & HSE committee in analytical level & organizational decision making and QCT committee in monitoring level & measurement of process performance & internally analysis , among these committee the role of IMS is more outstanding than the others because duty of this committee is verification of macro problems and also for HSE in the company , and presenting of procedures for upgrading and quality improving and also for HSE , and resultant of performance after discussing in reviewing management meetings, will be converted to the macro-quality decision making &also for HSE.







Quality Division:

Duty explanation:

- Preservation of quality management system consists of determination and up-to-dating of process and their indexes
- Editing and document reviewing & documentation of integrated management system.
- Internal auditing & site auditing & corporation in the third-party auditing & pursuing of nonconformity elimination.
- Verification & analysis of polls resultant from customers.
- Identification & authentication of improved actions related to quality of services & project management process & description
- resolving of nonconformities
- Verification & analysis of customer surveys
- Identification of improved actions related with services quality & process of project management description of the quality & definition Objectives for each project.
- Verification & decision related to training course were held and site persons who are needed to training relation to quality management district & project

Objectives of quantitative performance:

- increasing of owner's satisfaction levels
- Success in holding the quality management system certificate -
- Realization of project- improved quantitative goals
- Reduce the numbers of complaints

Quality in GNEC is based on:

According to Integrated management system policy, GNEC is able to serve complete engineering services & with Quality for all stage of projects of owners- party contract in the direction of organizational mission, The Company believes that responsive to all owners that use the engineering management system of G.N.E.C consists of:

- 1. Quality management system designing
- 2. Customer survey and analysis of customers' opinion
- 3. Process management (process identification & documentation)
- 4. Monitoring System and analysis of operation. (Internal auditing, third- party auditing, indexes, quality goals, Management reviewing)
- Staff survey (ESM)
- 6. Complaints handling
- 7. Education

The Verified Indexes of Quality unit In Which Monitoring Annually, Consist Of:

Annually – professional education, Average Days Of Working On Documents, Number Of editing Of Drawings, The ratio Of consuming for Each staff In a month & Computer Extended Network

HSE Division:

Duty Description:

















- Identification & Professional Hazards
- Involvement in Instructions Planning and HSE Procedures From repetitive.
- Presenting Of requirement Adherence in Site and Office in Tehran.
- Involvement in Evaluation Practicing and internal and external auditing related to HSE.
- Verification, decision in relation to non-conformity & Related about HSE.
- Verification, decision about improving the HSE level for beneficiary.
- Analysis resultant of HSE monitoring the same as annually examination and pollutant evaluation and so on ...

HSE in GNEC

GNEC along with similar companies in 2007 has started to use ISO 14001 and OHSAS 18001 With establishing of creative – cultural context and with a new vision and systematic in line of sustained development has stood and by using of efficient-educational system, prominent organization and periodical auditing and evaluating.

with the sustain- improved approach, minimized undesirable effect of industry in personals & environment also such an improvement of health care from inserting of management – controlled procedures and executive engineering in all levels of company was established.

HSE management system of GNEC consists of:

- Planning of HSE management system.
- Operation control.
- Work medicine & health care.
- measurement & performance monitoring
- Education.
- Monitoring of contractors by HSE.
- superior supervision services & HSE site monitoring

The annually indexes that will be verified by HSE unit consists of:

Environmental index-(conformity coefficient of environment) – crimes times and environmental complaints, accident – reputation coefficient, (accident – intensity coefficient), professional hazardous factors – control coefficient development percent, work medicine – (examination times), (heath – conformity coefficient)

Duty description & options

- Identification & evaluation of job hazards
- Analysis of HSE incidents & definition of recurrence prevention strategies
- Provide a report of HSE requirements observation
- participate in the implementation of evaluations & audits in HSE
- Consideration and decision about non-compliances and corrective actions in HSE
- Consideration & decision about trainings held and sites in need of training about HSE
- Consideration & decision about HSE promotion level for beneficiaries
- Analysis of HSE monitoring results such as periodic examinations, assessment of pollutants and so on

Quantitative goals:















- Committee performance
- Reduction of accidents
- Reduction of consequences caused by contractors' accidents
- Increase client satisfaction in HSE field















1.7. International Certificates

















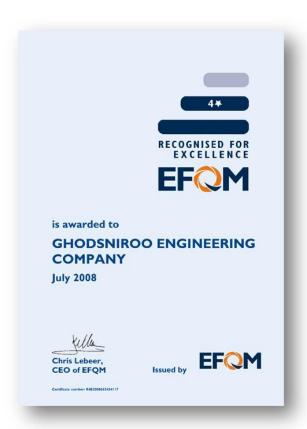


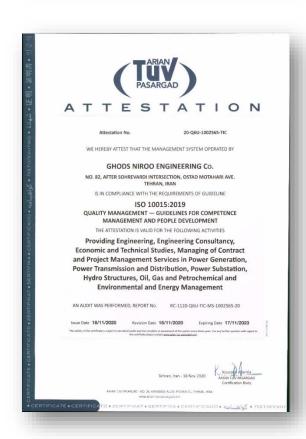


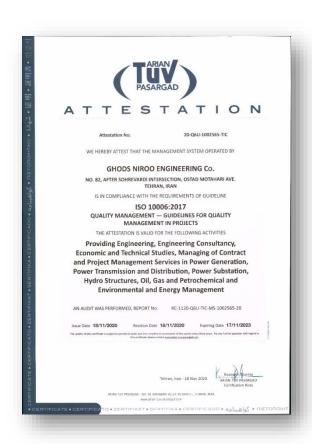


























Memberships 1.8.

Iran - China Chamber of Commerce (ICCC)	Iran - France Chamber of Commerce (ICCC)	Iran - Armenia Chamber of Commerce (IACC)
Iran National Electrical Committee (INEC)	Committee for Iran Electrical system Reliability	Iranian Electrical and Electronics Engineers (IAEEE)
Banking and Credit Investment Consultant Center (BCICC)	Iranian Society of Mechanical Engineers (ISME)	Iran Electric Industry Syndicate
Iranian Institute of Welding(IIW)	Iranian National Committee of Irrigation and Drainage	Iranian Association for Energy Economics (IAEE)
Iran Water & Wastewater Association (IWWA)	Energy Efficiency Committee of Iran	Iranian Hydraulic Association (IHA)
Iran Concrete Institute (ICI)	National Energy Committee	Center of Bank Investment

National Energy Committee







and Credit Consultants









Iran Concrete Institute (ICI)



GNEC Branches 1.9.

We have registered our branch in Uganda since 2015 and also registered our branch in Kenya as GHN Engineering Company since 2017.



















GHODS NIROO ENGINEERING COMPANY















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