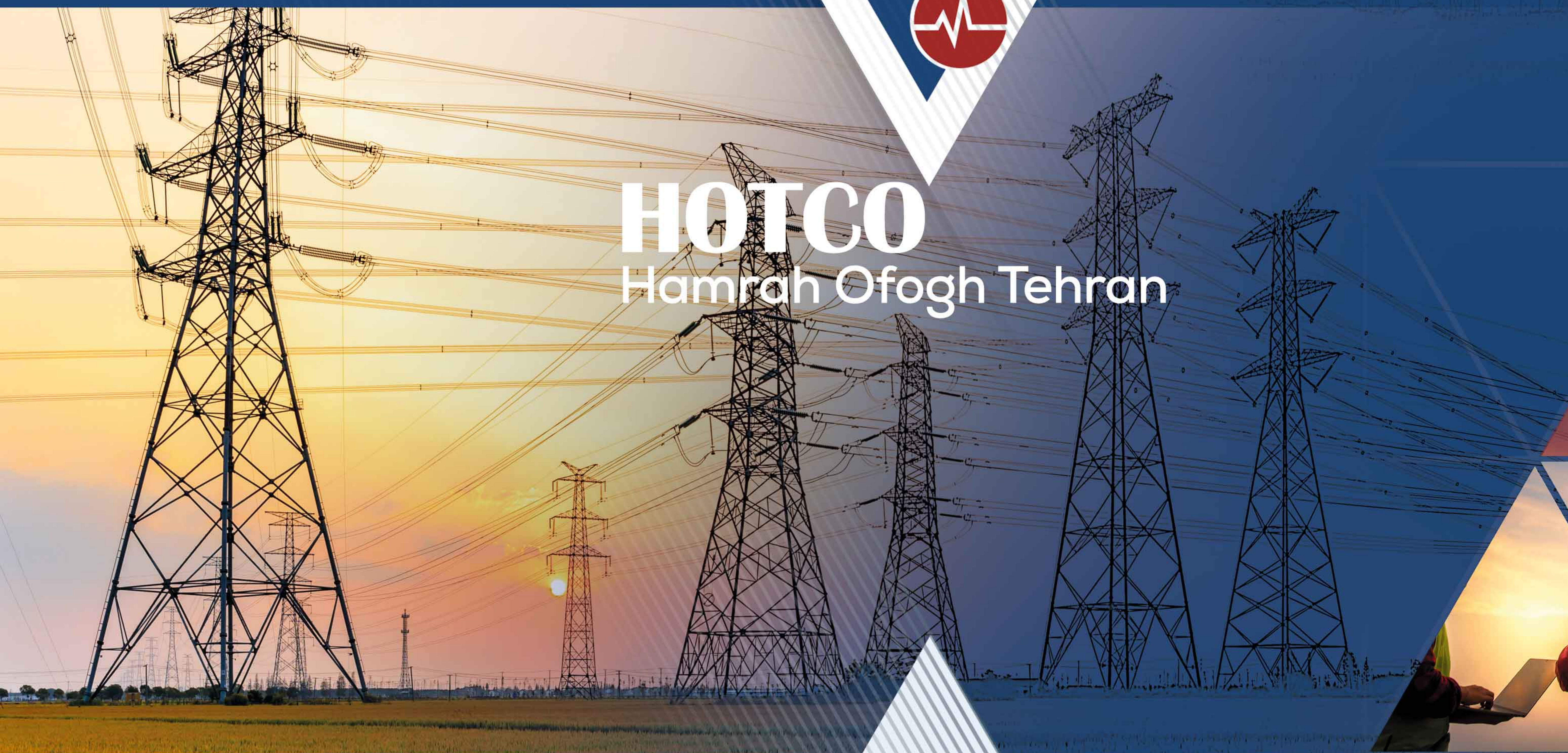

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Hamrah Ofogh Tehran

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HOTCO
Hamrah Ofogh Tehran

HOTCO power

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About Us

Hamrah Ofogh Tehran Company (HOTCO) was founded in 1999 in Tehran, Iran, to manage and implement turnkey (EPC) projects as a general contractor in the energy industries (e.g. petroleum, gas, and petrochemicals) and the power industries with a focus on electrical power transmission and distribution. HOTCO started operating in the following sectors:

1. Electrical sector (power plants, power transmission lines, HV and MV substations, distribution grids, renewable energy, protection and control, automation, etc.)
2. Mechanical sector (setting up power generation units, installing equipment and machinery, piping, etc.)
3. Civil and construction sector (undertaken by Hamrah Negin Tehran, a HOTC subsidiary)

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Holding the national first-grade license in electrical power granted by the Government of Iran, HOTCO has managed to implement and complete various projects both domestically and internationally for more than two decades of activities in energy industries. Having valid international certificates, HOTCO has also employed technical and engineering potential and benefited from specialized and competent manpower in addition to state-of-the-art specialized equipment, machinery, and software.

Hamrah Negin Tehran Construction Company is a HOTCO engineering subsidiary in the civil and construction section. Having an ISO ٩٠٠١, HNTC is the executive and civil arm of HOTCO in many projects such as road construction, earthworks, buildings, and light or heavy structures.

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Areas of Activities

HOTCO has been acting as a general contractor to mainly perform the following EPC activities:

- Power transmission and distribution lines at all voltage levels
- Distribution, transmission, and switching substations at all voltage levels
- Construction and installation and overhauling of power plants
- High-voltage cable grids
- Smart power distribution grids and optimizing of older grids and loss reduction
- Optical fiber and telecommunication networks
- Design, supply, and installation of photovoltaic units and battery stations

Outlook:

A well-known and reputable company at the level of EPC general contractors in the region in the electricity industry, a pioneer in the field of smart grids and optimization of electrical networks and has international recognition in the field of electricity and construction industry while maintaining environmental standards. And observing social issues.

Missions and Objectives:

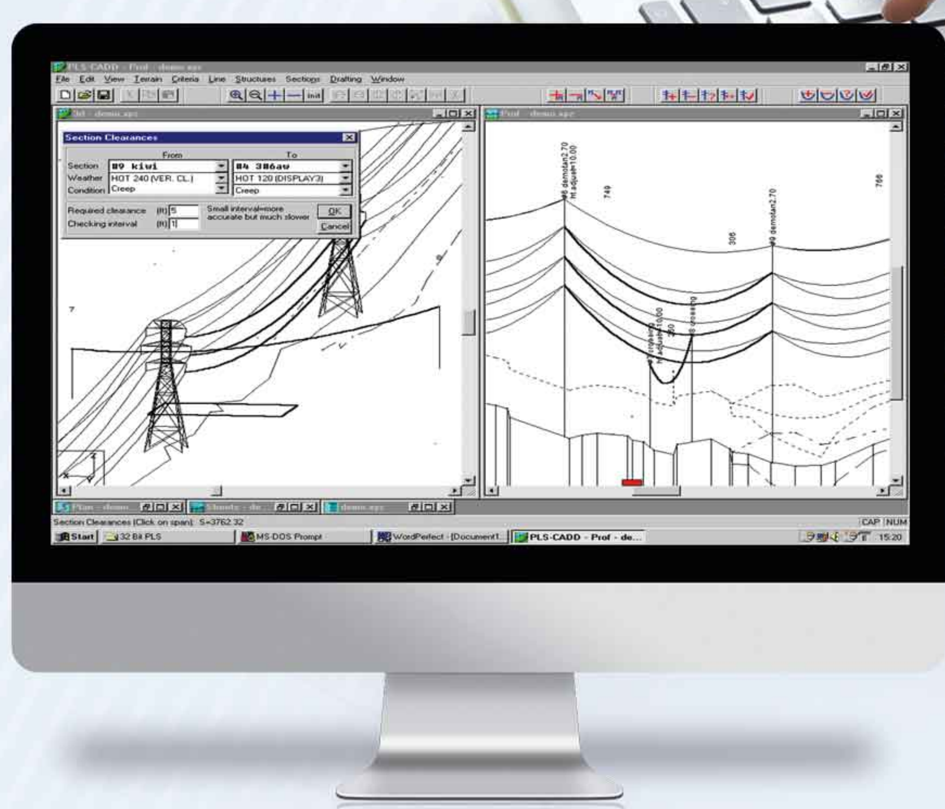
Known as an innovative company and a pioneer of the energy industries, HOTCO pursues the following missions:

1. Engineering, supplying, and executing projects of the electric power industry at the highest levels possible
2. Maintaining and improving value creation and company achievements in the energy industries
3. Maintaining and improving reputability among clients
4. Satisfying all project stakeholders
5. Establishing appropriate mechanisms for entering new technology and novel markets
6. Creating a supply chain of labor and technical knowledge acquisition in new energy fields including smartification and optimization of networks
7. Taking an in-depth insight into energy-saving systems and using up-to-date knowledge and technology for work
8. Being committed to social responsibilities
9. Complying with the rights of employers at the highest level
10. Being committed to protecting the environment

Services

HOTCO has been organized to provide employers and clients with all the necessary services to maximize satisfaction with the execution of turnkey projects in accordance with modern standards.

- Project management and control services
- Goods and equipment supply services
- Executive operation services including construction, installation, and implementation
- Operation and maintenance services
- Contract management services



(PLS-Cadd)

01 Designing, Engineering, Research, and Development Services

For more than two decades, HOTCO has managed to provide proper services for project execution by employing high technical and engineering capacities of managers and expert teams and benefiting from modern engineering knowledge and relevant software suites.

- Initial designs to determine transmission power, voltage levels, voltage drop criteria, losses, etc.
- Locating substations and routing transmission lines
- Surveying and conducting geological analysis
- Optimizing the cost and other aspects of projects
- Providing technical and engineering services to purchase goods and select optimal equipment
- Providing detailed design services such as technical specifications of equipment and selecting equipment, arranging the formation of substations, creating single-line diagrams (SLDs) and schematics, spotting transmission lines, designing foundation for equipment and metal structures, and etc.
- Providing supplement engineering services, preparing technical reports, and as-built documents

02 Project Management and Control Services

Project management is an indispensable phase in the contract execution process. In fact, all generalities and details of project phases are managed and directed through the work scope and the contract terms.

At HOTCO, there is a project department aimed at managing and executing contracts.This department is responsible for controlling, managing, and completing projects until the substantial and final completion date and within the contract time schedule and terms. The project department has so far been efficient in performing relevant tasks and achieving project goals. The advantage of this method is that project management can be centralized; therefore, the project department can perform contract or project management by analyzing the original contract and using project management standards such as PMBOK-PRINCE.

The project management department covers the following activities:

- Making arrangements to acquire and deliver the necessary bank guarantees.
- Identifying, evaluating, introducing, and making arrangements with project equipment suppliers and sub contractors.
- Identifying and interacting properly with project stakeholders until project completion
- Making the necessary arrangements and managing the correct execution of contracts based on the time schedule and activity descriptions provided by the project WBS
- Providing the necessary technical documents to obtain the required approvals
- Analyzing and controlling risk in different project execution steps
- Controlling the project and providing reports of different managerial levels to present the work status at predetermined intervals
- Managing the project account settlement process at the end

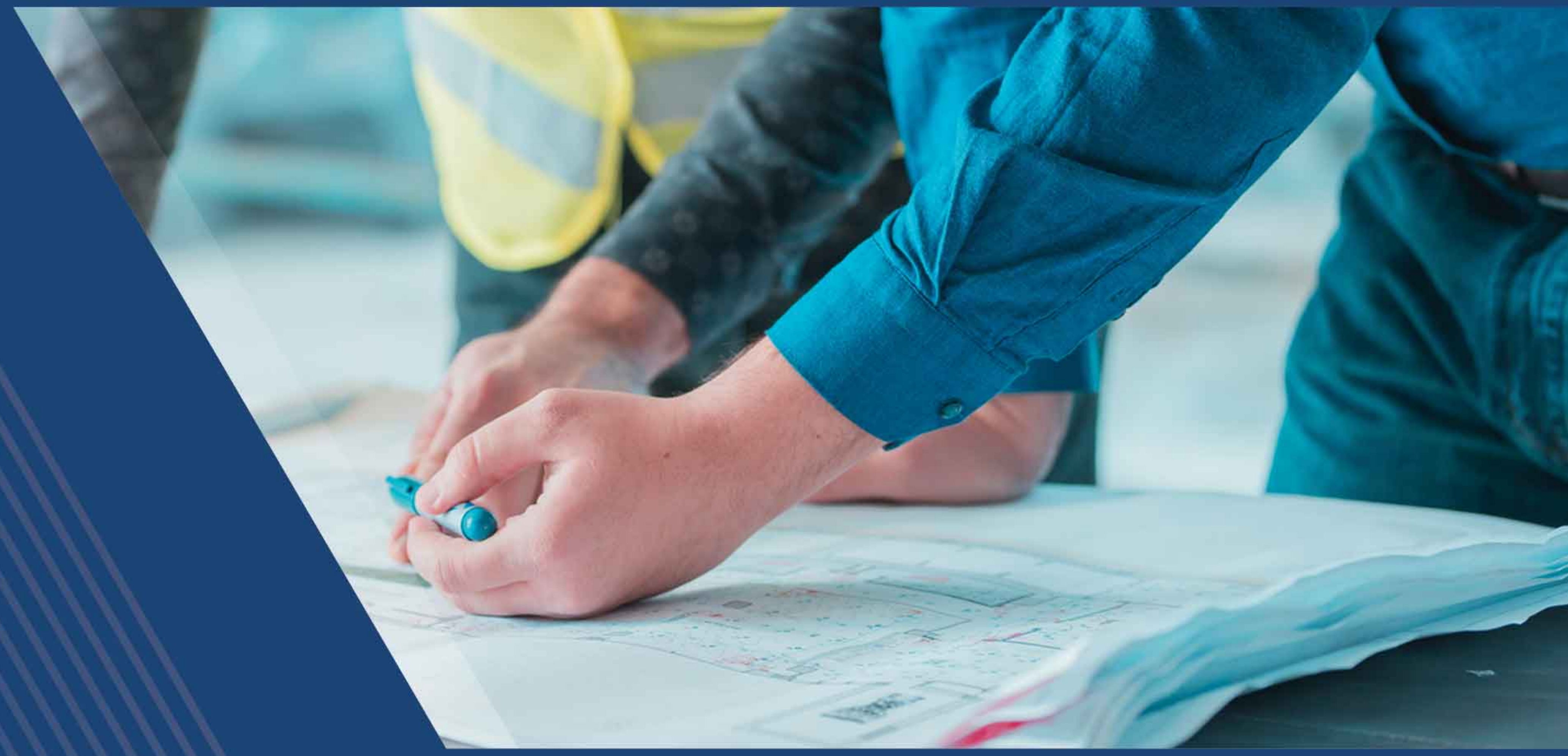
Based on the PMBOK standard, the project management department benefits from state-of-the-art software suites such as Microsoft Project and Primavera to analyze contractual obligations and provide a list showing the sequence of jobs. The above standard and project control software suites can be adopted to monitor, control, and identify relevant problems and activities. The primary tasks of project management and control include identifying weaknesses and setbacks and bottle-necks that could keep the project away from contractual goals and employer requirements. In addition, timely decisions should then be announced and made.

03 Procurement and Supply Services

Having been executing EPC projects for years, HOTCO has managed to reach long-term cooperation agreements with the most reputable equipment manufacturers and suppliers both domestically and internationally and has benefited from their services based on the clients vendor lists in different projects to supply the necessary equipment exactly according to the required technical specifications within the scheduling framework of a specific project.

04 Executive Operation Services for Construction, Installation, and Implementation

HOTCO has become one of the most competent Iranian companies in both domestic and regional markets for executive operations by organizing specialized executive groups and employing trained and experienced supervisors accompanied by an engineering department in formulating instructions and using efficient and state-of-the-art equipment. Many brilliant records back HOTCO's reputation.



Projects

Some of Hotco Projects

- Full Implementation of Armenia's Third Line of 400 kV Electrical Transmission Line - Part 4
- Full Implementation of Armenia's Third Line of 400 kV Electrical Transmission Line - Part 5
- Full Implementation of Armenia's Third Line of 400 kV Electrical Transmission Line - Part 6
- Implementation and Construction of 20/220/400 kV Noravan Substation of Armenia's Third Electrical Transmission Line
- Implementation and Construction of 400 kV BOO of Asaluyeh Gas Power Plant Substation (Carried out by HOTCO Subsidiary, HNTC)
- Geotechnical Studies and Full Routing of Gwadar 220 kV Transmission Line in Pakistan
- Implementation and Construction of Kish Gas Power Plant Substation and Switcher (Carried out by HOTCO Subsidiary, HNTC)
- Implementation and Electrical Connection of 400 kV Transmission Line Single-Circuit 3- Bundles Ahvaz 4 Power Plant to Gotvand
- Implementation of 400 kV Transmission Line of Fasa - Assaluyeh
- Implementation of 400 kV Transmission Line in Ahvaz - Masjed Soleyman
- Management Services of Shazand (Arak) – Vardavar 400 kV Single-Circuit Transmission Line
- Implementation and Construction of 10 Distribution Substation in Assaluyeh (Carried out by HOTCO Subsidiary, HNTC)
- Full Implementation of Mehran-Dehloran 230 kV Two-Circuit Transmission Line (EPC)
- Implementation of 230 kV Four-Circuit Transmission Line of Pareh Sar Power Plant
- Implementation of 230 kV Transmission Line Ramin Substation to Ahvaz
- Implementation of 230 & 63 kV Four-Circuit Transmission Line in Rasht-Anzali
- Electrification of 230 kV Two-Circuit Power Transmission Line to NGL 1200 plant
- Implementation of 132 kV Transmission Line of 400 kV Bostano (Asaluyeh) Gas Power Plan Substation (PC)
- Electrification of Isfahan 50 kV Photovoltaic Systems (EPC)
- Ge F6 Turbo Generator Installation and Commissioning Unit 6 of Kish 40 MW Power Plant
- Gas Turbine Overhaul, Test and Commissioning Unit 5 of Kish 40 MW Power Plant
- Full Implementation of 63 kV Lordegan Four-Circuit Transmission Lines (PC)
- Electrification of 63 kV Transmission Line of Tarom Copper Mine (PC)
- Electrification of 63 kV Transmission Line of Iran's Homa-Shanol Gas Field (EPC)
- Electrification of 63 kV Transmission Line of Chehel Koure Copper Mine (PC)
- Full Implementation and Electrification of 63 kV Transmission Line of Neyzar Qom Cement Factory (EPC)
- Full Implementation and Electrification of 63 kV of Ghaed Basir Petrochemical Plant (EPC)
- Full Implementation and Electrification of 63 kV Transmission Line of Peyvand Golestan Cement Factory (PC)
- Electrification of 63 kV Two-Circuit Transmission Line of Shahrekord Cement Factory (PC)
- Full Implementation and Electrification of 66 kV Two-Circuit Transmission Line of Bushehr-Dashtestan Cement Factory (EPC)
- Electrification of 66 kV Two-Circuit Transmission Line of Darab Cement Factory (PC)
- Full Implementation and Electrification of 63 kV Two-Circuit Transmission Line of Chaharmahal & Bakhtiari Vehicle Steel Sheet Factory (EPC)
- Full Implementation and Electrification of Aghar Dalan Gas Refinery (EPC)
- Full Implementation and Electrical Connection of 33 kV Transmission Line Between Phase 1 To Phases 9 and 10 of South Pars Gas Development (EPC)
- Electrification of 230 kV Two-Circuit Power Transmission Line to NGL 1300 plant
- Electrification of 132 kV Transmission Line Phases 9 and 10 of South Pars Gas Field (EPC)






Projects

Armenia's Third Line of 400 kV Transmission Line

Electrification of NGL 1200/1300

400 kV Substation of BOO Asaluyeh Power Plant

400 kV Transmission Line of Gotvand- Ahvaz

230 kV Overhead Line of Pareh Sar Power Plant

Electrification of NGL 1200/1300

Armenia's Third Line of 400 kV Transmission Line

Armenia's Third Line of 400 kV Transmission Line

Achievements and Outstanding Projects:

Prominent projects in the field of design and engineering services and supplying equipment for power transmission lines

- Optimization, Design and engineering of more than 2,000 km of power transmission lines.
- Design and procurement of more than 68,000 tons of power transmission equipment and materials.

01 Electrification of Natural Gas Liquids complex NGL1200/1300

- Optimization of the line design and tower quantity (10% reduction in total cost).
- Design and procurement of lighter towers (20% reduction in total tower weight).
- Design of a variety of foundations specially developed for rocky/runny areas.

02 Electrification of Homa / Shanol gas field

- Optimization of power line design including a reduction in total numbers of towers (42 towers were deducted).
- Geotechnical investigations and rout optimization along the transmission line terrain (reduction of about 3km of the T/L).

03 Electrification of Bushehr, Darab, Shahrekord, Peyvand Golestan and Neyzar Qom Cement factories

- Route selection and surveying and optimized design resulted in significant decrease in project costs.
- Full Spotting Lines Using PLS-CADD Software.
- Detailed design of foundations according to the conditions of each project.
- Preparation of Stringing tables (flash/tension).
- Execution of four-circuit 132 kV transmission line for the first time in harsh winter with weather condition by means of specific preparation at a temperature below minus 20 degrees (Shahrekord cement factory).

04 Electrification of the phases 9 & 10 of south pars gas field development (132 kV T/L Steel-Pole Type), Aghar Dalan gas refinery and Ghaed Basir petrochemical company

- Detailed design, procurement of telescopic towers, composite insulators, foundations and other project equipment for complete implementation of the line.

05 Electrification of "vehicle steel sheet factory" in Chahar Mahal & Bakhtiary

- Optimized route selection and detailed design of power line.
- Semi-heated double-circuit Stringing operations.

06 Gwadar Pakistan 220 kV Line

- Routing, surveying, spotting and route implementation.
- Geological and Geotechnical Studies.

Prominent Projects in The Field of Construction and Implementation of Power Transmission Lines:

- Carrying out more than 340,000 cubic meters of concrete operations.
- Carrying out than 3,000,000 cubic meters of earth work operation.
- Installation of more than 52,000 tons of tower of power transmission lines.
- Stringing more than 2,500 km of power transmission lines.

01 400 kV Single Circuit Overhead T/L of Asaluyeh Power Plant – Fasa

- Carrying out more than 15,000 cubic meters of earth cut in solid hard rock texture integrated with heavy fireworks operations.
- Construction of 11^km access roads in impassable cliffs and valleys with negative slope via carrying out more than space between 170,000 cubic meters of cutting trenches in rocky lands.
- Construction of foundations in difficult places without access roads through innovative and novel procedures.
- Optimized route selection and surveying in remote rocky mountains.

02 Armenia's Third Line of 400 kV Transmission Line

- Carrying out more than 100 kilometers of road access construction on the hard roads and rocky mountains of the Caucasus.
- Carrying out more than 40,000 cubic meters of concrete under unfavorable weather conditions and mountainous lands.
- Carrying out more than 200 tons of tower assembly and installation operations according to Armenia's special mountainous conditions.

Achievements and Outstanding Projects:

03

Four-Circuit 230 kV Overhead Line of Pareh Sar Power Plant:

- Carrying out of more than 9,000 cubic meters of foundations.
(In swampy lands and submerged areas in the vicinity of the coast of Gilan province).
- Carrying out more than 7,0000 cubic meters of earth work and backfill operations.

04

400 kV Line of Masjed Soleyman Dam- Ahvaz:

- Construction of more than 11,000 cubic meters of foundations.
(In submerged, poor soil and boggy terrain).
- Carrying out more than 40,000 cubic meters of earth works and backfill operations.
- Carrying out more than 7,000 cubic meters of concrete operations in less than 3 months.

Prominent Projects in The Fields of High Voltage Substations and Power Plants:

Installation of more than 1,600 units of substation equipment and high voltage power plants.
- Carrying out more than 1,100,000 earth work of high voltage substations and power plants.
- Construction of more than 3,000 foundations and concrete structures of substations and power plants

01

Construction of 400/220 kV Noravan Substation in Armenia

02

Ge F6 Turbo Generator Installation and Operation Project
Unit 6 of Kish 40 mw Power Plant.a

03

Construction of Substation and Switching Buildings of Kish Gas Power Plant
(Carried out by HOTCO Subsidiary, HNTC)

04

Supply, Installation and Commissioning of Photovoltaic Systems.

05

Ge F6 Turbo Generator Installation and Operation Project Unit 6
of Kish 40 mw Power Plant.

06

General Repairs, Testing and Operation of Gas Turbine Unit 5 of Kish
40 mw Power Plant.

HOTCO
Hamrah Ofogh Tehran

Certificates, Memberships and Licenses:

1- National qualification certificate grade 1 in the field of electrical power from the government of Iran
2- Technical and Engineering License from Ministry of Industry, Mine and Trade
3- Leading member and chair of Iran Electrical Industry Syndicate
4- Membership of Chamber of Commerce, Industries, Mines and Agriculture
5- Member of Association of Sharif University of Technology Alumni
6- Member of Iranian Association of Electrical and Electronics Engineers (IEEE Iran)
7- Member of Association of Power Transmission Lines and Substations Companies
8- Member of Association of Petroleum Industry Engineering and Construction Companies
9- Member of Export Committee of Iran Electrical Industry Syndicate
10- Member of Transmission Lines Committee of Iran Electrical Industry Syndicate
11- Member of Renewable Energy Committee of Iran Electrical Industry Syndicate
12- Member of Financing Committee of Iran's Electrical Industry Syndicate
13- Member of the Employers' Association of Procurement and Execution Companies for Transmission Lines and Substations
14- Approval of Construction of Transmission Lines and Substations from Tavanir and Iran Power Development Companies
15- Contracting Approval from National Iranian Oil and Gas Companies
16- ISO 9001:2008 Quality Management System Certificate
17- ISO 14001:2004 Environmental Management System Certificate
18- ISO OHSAS 18001:2007 Occupational Health and Safety Management System Certificate
19- ISO HSE-MS Safety, Health and Environment Management System Certificate
20- Letters of appreciation/consent from all former clients

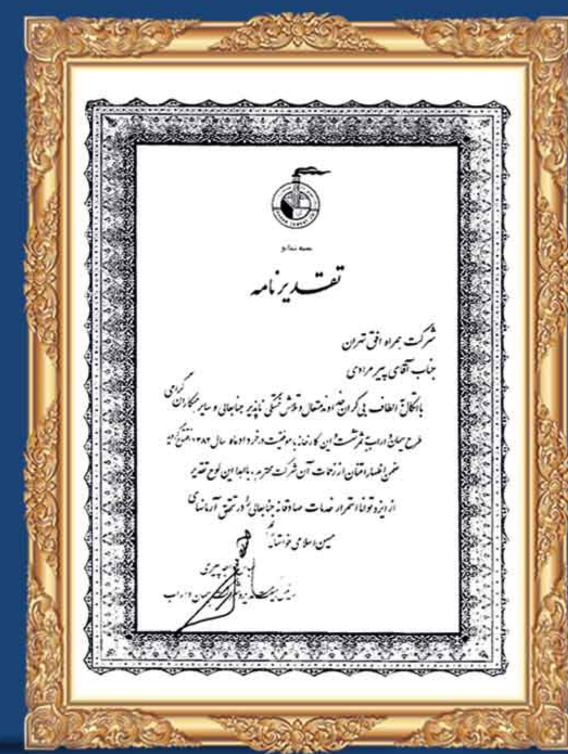
Memberships

Mining Machinery










History

Cooperating with a couple of esteemed electrical engineers, some of the alumni of Sharif University of Technology decided to establish a technical and engineering company in the energy industry. Therefore, they founded Hamrah Ofogh Tehran Company (HOTCO) in 1999 and started working in the electric power and energy industries.

A year after HOTCO became operational, it also founded an engineering subsidiary called Hamrah Negin Tehran Construction (HNTC). HOTCO and subsidiaries achieved outstanding successes in early years and as a private general contractor, executed the earliest turnkey and EPC projects in the electrification of large industrial and petrochemical complexes in Iran. Integrating the alumni's up-to-date technical knowledge with the well stablished engineers' experiences, HOTCO has employed innovation and novel methods to successfully design electric power transmission lines and towers, which used to be designed mainly by foreign companies in Iran. Therefore, HOTCO did secured a good market share in the electric power industry.

In addition to completing a large number of prominent Iranian projects in the electric power, petroleum, and other industries, HOTCO benefits from its key and competent subsidiary, HNTC, to have executed numerous projects in civil and construction areas of industrial buildings including full civil works of substations and power plants.

The key advantages of HOTCO include qualifying and obtaining the national first-grade power license, granted by the government of Iran, and implementing up-to-date quality management systems as well as paying special attention to the rapid and high-quality project completion. As a result, HOTCO has won the clients trust and gained a growing share of the market in major areas of activities over the years.

Believing in social responsibilities and specialized syndicates and unions, HOTCO has been admitted to reputable associations such as the Iran Electrical Industry Syndicate (IEIS). It has also initiated the specialized committee for power transmission lines, managed to provide services in other specialized committees and finally with its outstanding reputation started to chair the Iran Electrical Industry Syndicate (IEIS) who is the main representative of private electrical industries in Iran. HOTCO has also been granted membership in the board of directors in Iran's Cigre due to its scientific and technical qualities and active participation in scientific communities of electrical engineering.

Relying on many years of experience and completion of prominent and innovative national projects, HOTCO has finally managed to enter the international market and tenders and awarded with project contracts and now has a couple of international projects under construction.