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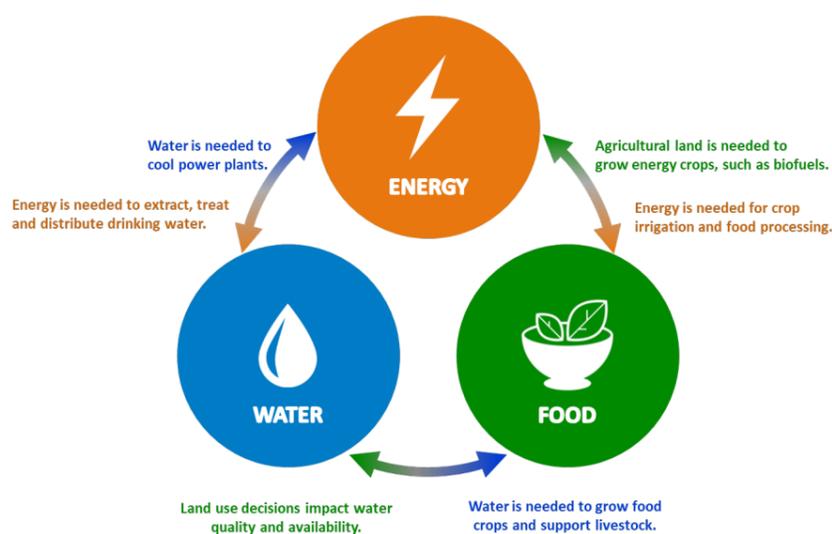
### Message From Market

#### The Water-Energy-Food Nexus



Water, energy and food are essential for human well-being, poverty reduction and sustainable development. The Water-Energy-Food Nexus describes the complex and inter-related nature of our global resources systems. Nexus interactions are complex and dynamic, and sectoral issues cannot be looked at in isolation from one another.

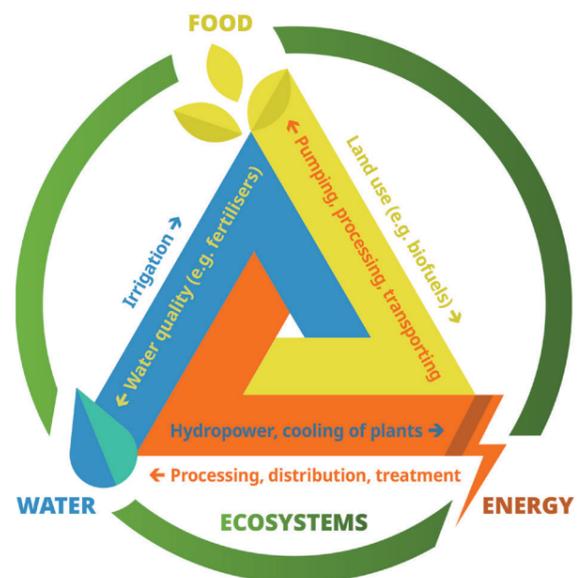
The ultimate goal of this study is to determine whether the concept of NEXUS for a greenhouse in a power plant in Iran has technical and economic value or because of the very low price of energy (heating and electricity) and lack of attention to water and environmental problems, it is not economically viable. Also in this study, the favorable effects of agricultural cultivation in promoting the social responsibilities of MAPNA Group to the environment, reducing greenhouse gases, increasing food security, optimal use of limited water resources, etc. will be investigated. If it is found that the project is economically viable, the project will be proposed as a pilot due to its positive effects on promoting the social responsibilities of the MAPNA Group.



The method of project implementation is as follows:

- 1) The concept of NEXUS is very complex and it encompasses a variety of subjects. The concept of NEXUS can be discussed in context of a factory, a village, a small town, a large city and even a country.
- 2) At least in the case of "Water, Food, Energy and Environment (NEXUS)" MONENCO is looking for an immediate plan whose engineering details are much more important than its academic aspect.

The aim of this project is to establish a greenhouse for production of agricultural products in the unoccupied parts of the MAPNA fossil fueled combined and / or gas power plants (for example, part of a power plant that is destined for future construction and is currently vacant). Note that a sophisticated optimization is needed to strike a balance between the greenhouse's capital investment and economic benefits.



- In this optimization, the following should be considered (priority is given to equipment that are available and manufactured locally):
- i. Agricultural product selection that are native to the site location (as far as possible the product and the agronomic needs of the product should be provided from within), the climatic conditions of Iran and the selected site and the economics of selling the product nationally and internationally
  - ii. Vertical or horizontal farming
  - iii. Hydroponics or soil cultivation
  - iv. The amount of heating required and the supply of heating (whether from the power plant or a separate system, this section requires a separate economic and technical study)
  - v. The amount of water required (use of power plant effluent or greenhouse effluent or a combination of the two, treatment systems and its engineering requirements, this section requires a separate technical and economic study)
  - vi. Area of the greenhouse
  - vii. Greenhouse crop requirements (fertilizer, amount and type of pesticide, use of beneficial insects to eliminate pests, etc.)
  - viii. The amount of electricity required and the supply of electricity (whether from the power plant or a separate system such as a photovoltaic panel on the greenhouse, this part requires a separate technical and economic study)
  - ix. The amount of CO<sub>2</sub> required for injection into the greenhouse (whether from the power plant or a separate system, this section requires a separate technical and economic study).

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### Railways Electrification

#### Introduction

According to the features of electrified railways for passenger and freight displacement such as safety, reliability, and rapidity, this network is extending all over the world. Besides, the lower cost of operation and maintenance of electric locomotives along with their higher power and capacity compared to the diesel electric ones intensify the courage to use electrified railways. Another issue that should be cared is that the diesel electric locomotives have so many pollutants which have destructive effects on the environment, while the electric ones are clean, pollutant free and environment friendly. Totally, the share of electrified railways is growing compared to the other options for passenger and freight transportation.

#### Electrification studies of Tehran – Hamadan – Sanandaj railway

Following the Tehran – Hamadan – Sanandaj electrification tender results, the project awarded to Monenco as its highest technical score. This plan consists of two parts, Tehran – Hamadan part with 260 Km length which is constructed and Hamadan – Sanandaj part which is 150 Km and is under construction. The project is very important because this project is the first in the country which its power supply system is going to be designed by Iranian Company and local experts.

Along with the technical and economic clarification of electrical railways, the main topics of this study are:

- Simulation of railway power supply system with E-Trax software
- Specifying the location of traction substations
- Technical specification of traction substations and Overhead Catenary System (OCS)
- Technical specification of Scada system
- Connection of traction substations to the national electricity transmission network
- Preparing investment packages for the project

It is expected that such studies would lead to the first executive project for railway electrification in the country.



### Sample Projects



#### Monenco Iran Signed a Contract of “Consultancy & Engineering Services for Re-design and Construction of G3 Station in Tehran Metro, line 3”

**Start date:** 2020

**Client:** Tehran Urban & Suburban Railway Company

**Location:** Iran

● **Description:** Monenco Iran Consulting Engineers has recently signed a contract of “Consultancy & Engineering Services for Re-design and Construction of G3 Station in Tehran Metro, line 3” with Tehran Urban & Suburban Railway Company. The G3 station is located in the center of Tehran which is a populated and business area. According to this matter, implementing this project would be very helpful for people to use public transportation system. The historical monuments and old buildings in this area are another aspects of the project in terms of technical and execution concerns. This project is the first experience in the country in the field of designing and constructing a station with normal train traffic in metro lines as well as connecting two stations which could be a valuable reference for other similar projects in the region. The client has assigned the project based on the highest technical score and valuable records of Monenco Iran. Therefore, the result of the project can be developed and extended the activities of Monenco Iran in the country and overseas.



### Superior supervision on advanced metering infrastructure project (FAHAM) in Teheran electric distribution company

**Start Date: 2020**  
**Client: Tehran Electric Distribution Company**  
**Location: Iran**

● **Description:** Due to electricity consumption increase in Iran, Tavanir Company and Iran Ministry of Energy decided to implement the advanced metering infrastructure (FAHAM Project) Plan in order to optimize energy consumption. Accordingly, Electric distribution companies have a key role to achieve the defined goals by implementing smart metering, electronic technologies, advanced telecommunications equipment and consumer awareness and collaboration. Smart meters are a clear demonstration of the new ICT infrastructure that has been developed to improve energy efficiency. Smart metering for consumers enables them to play a vital role in the performance of the electricity market. FAHAM system has a great role in creating the necessary platform for the future implementation of the smart grid. Monenco Iran is responsible for Superior supervision on the installation, commissioning and activation of all smart meters in eight distribution companies, supervision on operation of data centers, supervision on the performance of application systems, supervision on operation of the telecommunication network and IT system, supervision on The process of supplying, delivering and installing smart meters, supervision on the process of producing smart meters at the factory, verifying the contractors' invoices and etc.

## Sample Projects



### Infrastructure Plans in National Petrochemical Company (NPC)

**Start Date: 2021**  
**Client: National Petrochemical Company (NPC) – Ministry of Petroleum**  
**Location: Iran**

● **Description:** The management of the infrastructure projects of the National Petrochemical Company (NPC) has been assigned to MONENCO Consulting Engineers Company under the 1-3 / 1110 / 235 hunting contract.

This contract includes the implementation of infrastructure projects and infrastructure capital projects.

The importance of this project is: Contributing Engineering/ Procurement/ Construction Services for Infrastructure Plans in petrochemical industries including: Civil works, Roads, Break Water, Control Barrier, water Barrier, Surface Drainage, Lighting, etc. at Pars Economic Special Zone (Assaloyeh) and Development works on Storage Tanks and ports. In this project Monenco Iran is responsible for Contributing Managing Contracting Services (MC) for infrastructure Plans.



### Engineering & Design Services for Rumaila Combined Cycle Power Plant (Phase 4)

**Start Date: 2021**  
**Client: SHAMARA Co.**  
**Location: Iraq**

● **Description:** Rumaila plant as one of the largest power plants in the Middle East, is located near Basra in Iraq and has a particular importance among MAPNA Group projects. Rumaila power plant consists of 4 phases and includes 12 gas units, 6 steam units and a total of 6\*500 MW combined cycle blocks with a nominal production capacity of 3,000 MW after the completion of all phases. This contract includes the steam section of second 6 gas units and the design work started in early 2021 in various disciplines of Monenco Consulting Engineers. The main client is SHAMARA Company in Iraq and Monenco participates in this project to design the architectural & Structural, electrical and mechanical installations, civil works, piping for steam portion, BOP, main and auxiliary cooling systems.



### “Feasibility Study of Interconnection of Azerbaijan, Iran, and Russia (AIR Interconnection)”

**Start date: 2020**  
**Client: Azerenergy, Tavanir, Russeti**  
**Location: Azerbaijan, Iran, Russia**

● **Description:** Recently, “Feasibility Study of Interconnection of Azerbaijan, Iran, and Russia (AIR Interconnection)” was awarded to Monenco Iran by Azer Enerji. The unique geographical conditions of Azerbaijan, Iran, and Russia creates a special opportunity for electricity interconnection providing a valuable potential for trade of electricity and share of generation resources helping to create north to south corridor and a strategic local hub along the way. Different load patterns among these countries, availability and future possibilities of exporting electricity to neighboring countries of Iran with similar load patterns such as Iraq, Afghanistan, Pakistan, and GCCIA as well as decrement of operation cost, and increment of stability and reliability of involved countries are the potential benefits of this project. In this project, Monenco will be responsible for feasibility study consisting of technical and economic studies for different interconnection capacities and methods including synchronous (AC) and non-synchronous (HVDC) interconnection. As a result, the best scheme will be determined to be used for the interconnection.

## Sample Projects



### Identification of investment opportunities in the field of smart city of Yazd and preparation of investment package for 3 priority opportunities

**Start Date: 2021**

**Client: Information and Communication Technology Organization of YAZD Municipality**  
**Location: Iran**

● **Description:** Smart City is an integrated and strategic approach to developing cities to solve existing problems and take advantage of emerging and widespread opportunities for innovation and creativity. Promoting quality of life and citizen satisfaction, sustainable city development, reducing city costs, increasing the synergy of city elements and stakeholders, improving urban management decisions, and developing innovative businesses are among the most important goals of the smart city. Realizing a smart city requires two important things: 1-Identify opportunities and smart and realistic urban management planning to prioritize needed urban systems and projects, with the help of experienced internal and external consultants. 2-Investing in the implementation of selected urban systems through the informed participation of the public and private sectors, through the definition of appropriate and reliable cooperation mechanisms. With the implementation of this project, the opportunities of Yazd Smart City will be identified and also the projects that need investment will be introduced.



### Consulting Engineering for Design the Distribution Control & Management Center (DCMC) of Fars Electricity Distribution Company

**Start date: 2021**

**Client: Fars Electricity Distribution Company**  
**Location: Iran**

● **Description:** Visibility and controllability are critical to the optimal operation of a distribution network. In this project, in addition to the distribution dispatching design, the connection of all systems & software with the distribution control and management center as well as Tavanir dashboard will be designed. Furthermore, tender documents will be prepared accordingly. Also interior design of dispatching building will be done.



### Engineering and design services of intelligent buildings of Information and Communication Technology Organization of Zahedan Municipality along with data center

**Start date: 2021**

**Client: Information and Communication Technology Organization of Zahedan Municipality**  
**Location: Iran**

● **Description:** In recent decades, with the decline in the price of computer equipment and the possibility of easy and comprehensive access to high-speed Internet, as well as the growing dependence of businesses on information technology, the demand for data center services has greatly increased. Currently, data centers play a key and very important role in the field of digital economy and support a wide range of important activities of governments, society and businesses. The purpose of this project is a different presence from others in the design of functional buildings. We want to present a different work in this field by considering the local cultural patterns that govern the spirit of the people of that region in the architecture of this building.



### Designing and Site Supervising Services for Construction of Capital Projects, Distributed Generation, and also Site Supervising on Customer Services and GIS Updates in the Fars Province Power Distribution Network

**Start date: 2021**

**Client: Fars Electricity Distribution Company**  
**Location: Iran**

● **Description:** In this project, engineering and site supervision services for construction of capital projects, distributed generation and also supervision on customer services and GIS updates as well as approving contract modification invoices of contractors and purchase of electric power distribution materials in different regions and cities of Fars province, are provided by employing highly skilled and committed designers, supervisors and experts. Preparation of projects plan based on the executive method of Fars Power Distribution Company and the standards of the Ministry of Energy, as well as technical, quantitative and financial supervision on projects and also monitoring the adequacy and accuracy of GIS information in all development projects of construction, improvement and optimization are the most important tasks of Monenco Iran.





**“Contract for Consultancy Services for Engineering Design, and Contract Documentation, Soil Investigation and Engineering Survey for Transmission Lines and Substations”**

**Start Date: 2020**

**Client: Kenya Electricity Transmission Company Limited (KETRACO)**

**Location: Kenya**

● **Description:** According to Kenya Electricity Transmission Company 2030 vision, the company decided to implement network development including 132 kV and 220 kV transmission lines and substations. The network expansion will lead to supplying demand, expanding transmission capacity, reducing losses, and providing reliability and stability of electricity network. In this project, Monenco Iran will be responsible to render engineering and supervision services for construction of abovementioned network development. The network expansion includes 220 kV and 132 kV transmission lines with the length of 570 km and associated substations including 400/220/66 kV, 220/132 kV, 220/33 kV and 132/33 kV.



**Engineering Services of 25MW Mianrood Gas Power Plant**

**Start date: 2021**

**Client: Nasb Niroom Company**

**Location: Iran**

● **Description:** Mianrood Power Plant is placed in Khuzestan Province, and because of its warm climate, shortage of electricity and so on, designing the documents and construction of this power plant has a special priority in clients point of view. In this project Monenco Iran is responsible for Engineering services of Mianrood Power Plant consisting of all parts such as power block, buildings, layout, transmission lines and H.V.A.C .



**Performance Test Startup of NHT (Naphtha Hydro Treating Unit) and CRU (Catalytic Reforming Unit) at Rashidpur Gas Condensate Refinery – Bangladesh**

**Start date: 2021**

**Client: SGFL – Petro bangla– Banglades**

**Location: Bangladesh**

● **Description:** After successful commissioning of CFF, NHT, CRU, Performance test of NHT & CRU have been started on Friday , 21th May , 2021. The main purpose of this project is to produce high octane gasoline, Kerosene, Diesel oil. The Feed comes from BIBYANA gas field of Chevron which contains Gas Condensate. This line goes to 4000 bbl /day Condensate Fractionation plant to Fractionate Condensate to Naphtha (Motor Spirit), Diesel oil, and Kerosene. Then Naphtha (Motor Spirit) will go through the pipe to 3000 bbl /day catalytic reforming unit including Naphtha hydro treating unit (NHT). Final products of this stage are Reformate, and LPG. Reformate will have a minimum RON 99 (Research Octane No.) that will be blended with other hydrocarbon stream (light naphtha) to reach an acceptable octane no for gasoline product, based on Bangladesh government standards and market demand. The client is SGFL – Petro bangla – Bangladesh. In this project, according to the valuable experiences of Monenco Iran, Top Supervisory Consultancy Services has been awarded to Monenco Iran.and proper solutions in the normal and emergency conditions were presented. With the start of the Rashidpur Refinery performance test in Bangladesh, the sale of fuel started in this refinery.





## Update the Comprehensive Coal Plan of Iran and Perform Market Studies for Domestic and Regional Potential Markets

Start date: 2020

Client: Iranian Mineral Production and Supplying Co. (IMPASCO)

Location: Iran

● **Description:** The primary purpose of this project is to update the comprehensive coal plan of the country and conduct market studies in the country and the region. Considering the existence of coal mines in Iran, especially in the provinces of East and West Azerbaijan, Mazandaran, South Khorasan and Kerman and also the importance of coal and its products in the domestic and foreign markets, cognizance of resources and production rate of each coal mine plays a vital role in mining plan and development.

### Events

#### Opening the execution phase of CASA-1000 project in Kyrgyzstan

● Opening the execution phase of CASA-1000 project in Kyrgyzstan in presence of Mr. Sadyr Nurgozhoevich Japarov, the president of this country along with the Minister of Energy, Deputy Minister of Energy, CEO of NESK, Mltas group and Monenco's technical team in BATKAN, Kyrgyzstan.

Monenco provides consulting services for design supply and installation of HVAC transmission lines and associated substations in the Kyrgyz Republic.



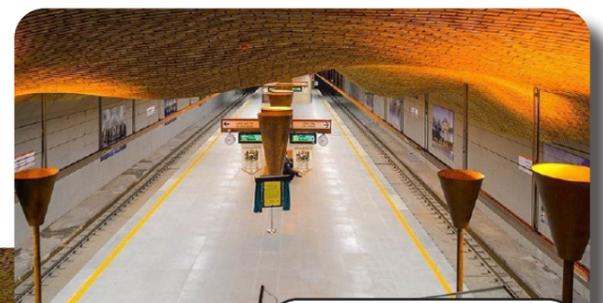
#### Signing a Long-term Engineering Services Contract with the World Food Program (WFP)

● Monenco Iran has won a long-term engineering services contract with the World Food Program (WFP) which is the UN subsidiary. The World Food Program is a leading humanitarian organization operating in more than 88 countries focusing on emergency aids, rehabilitation, developmental supports and special operations.

In this contract, Monenco Iran is responsible for engineering and consulting services to provide the necessary infrastructure to fulfill the missions of the WFP organization. These services include infrastructure of warehouses and food storage, road and air and maritime transport networks, health and water recovery, residential buildings, Irrigation and improvement of agricultural industry, soil protection, etc. In this contract, while developing the activities of Monenco Iran in overseas projects, we will take more effective steps towards achieving the social responsibility goals of these consulting engineers.

#### Obtaining a record from Iran National Records Institute for designing and supervising the construction of Vakil Metro Station of Shiraz

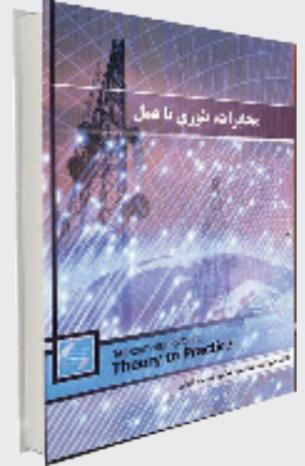
● Monenco Iran obtained a national record from Iran National Records Institute, which is a unique achievement in the field of engineering and design services in the country and the region, for Vakil Metro Station of Shiraz in the field of construction of the largest suspended metal structure of Iranian subways with the length of 844.5 meters. In this project, the engineering services of designing and supervising the construction of Vakil Metro Station of Shiraz have been awarded to this consulting engineers company.



## Events

### “Telecommunications, Theory to Practice” Book published by Monenco Iran Consulting Engineers

● Monenco Iran has published a book concentrating on Telecommunication infrastructure and ICT, utilizing many years of successful expertise in this field, titled: “Telecommunications, Theory to Practice”, in addition to the other several previously published books in various fields in order to constant development of the country. The book “Telecommunication, Theory to Practice” contains a comprehensive description of specialized and applied fields of communication and information technology within seven chapters for the readers to get acquainted with the raised technologies in the telecommunications industry, as well as practical examples of scientific projects.



### CASA 1000 Representatives from Tajikistan Visited Monenco Iran

● On April 12, a meeting with presence of the representative of CASA 1000 project from Tajikistan was held at Monenco Iran which fruitful discussion took place in this meeting.

In addition, another meeting took place with Mir Engineering and Technology Management Company (Member of Monenco Group), which is active in the field of training, information technology and management consultancy, with the aim of development of Tajikistan education sector. In this meeting the capabilities of MIR company were presented and the possibilities of future collaboration were discussed.



### Attendance of Monenco Iran in the meeting of knowledge-based companies of Union of Exporters of Iran Telecommunication Industry and Iraq - Kurdistan Trade Board

● A meeting of knowledge-based companies of Union of Exporters of Iran Telecommunication Industry and the Region Business Board of Iraq- Kurdistan was held on May 16. In this meeting the knowledge-based companies which are active in the field of communications and information technology, managers of Iran National Innovation Fund and the Trade Board were attended, in addition, more than 140 knowledge-based companies, attended virtually in this meeting.

In this meeting, Monenco Iran, as a Knowledge-based company which is active in the field of communications and information technology, presented its capabilities in this regard, and as a result, useful technical negotiations were held with the Trade Board.



## Certificates

### Monenco Iran Consulting Engineers Membership in CTCN

- Monenco Iran Consulting Engineers, as the sixth Iranian member, has joined the Center Technology Network and the United Nations Climate Technology Network (CTCN). CTCN is the operational arm of the UNFCCC Technology Mechanism, hosted by the UN Environment Program and the UN Industrial Development Organization (UNIDO) to promote and accelerate transfer of environmentally sound technologies for low carbon and climate resilient development at the request of developing countries.



### Monenco Iran Membership Renewal for Federation of Consultants from Islamic Countries (FIDIC)

### Monenco Iran has been awarded Rank 297 of Top 500 Iranian Companies from Industrial Management Institute (IMI-100-ranking)



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