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### Message From Market

#### 1. Low-and Zero-Energy Buildings



Buildings are one of the society's greatest energy consumers. The energy used in buildings, typically, represents about 40% of the total energy used in the society. Therefore, retrofitting existing buildings, introducing intelligent components and energy management as well as careful planning of new building construction are all different ways to capture the vast energy savings potential and to reduce Co2-emissions. Low-energy buildings typically use high levels of insulation, energy efficient windows, low levels of air infiltration and heat recovery ventilation in order to lower the heating and cooling energy. In addition, intelligent energy-efficient buildings are expected to be an important part of future energy systems. These buildings not only demand very little energy for heating, cooling and electricity but also waste almost no heat or air through leakage. So as to reduce energy needs, renewable technologies such as wind turbines and solar panels have been used in such buildings.

A zero-energy building (ZEB), also known as a net-zero energy building (NZEB) is a building with zero net energy consumption; meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of renewable energy created on the site by renewable energy sources. At the heart of the ZEB concept is the idea that buildings can meet requirements from low-cost, locally all their

energy available, nonpolluting (lower environmental impacts) and renewable sources. At the strictest level, a ZEB generates enough renewable energy on site to equal or exceed its annual energy use so that the building consequently does not increase the amount of greenhouse gases in the atmosphere.

According to NBI (New Building Institute), the number of buildings that are net zero energy or working toward net zero energy has doubled since 2012 in US. Also according to most relevant federal legislation, by 2030, 100% of all new federal buildings will achieve zero net energy in US. In addition, according to European Commission's Energy Efficiency Plan, from 2019 onwards all new public buildings, and from 2021 onwards all new buildings, will have to reach a 'nearly zero-energy' performance level in Europe. Also, Navigant Research predicts that global ZEB revenue will grow from \$629.3 million in 2014 to \$1.4 trillion by 2035. Also, Iran Construction Engineering Organization asked Monenco to prepare the required rules and regulations as well as training courses for ZEB of tomorrow buildings. To put it briefly, the reasons for choosing a low-and zero-energy building are clear: who could resist a great indoor climate, significantly lower energy bills, reduced noise pollution and Co2-emissions reduction?

Faramarz Ghelichi  
Transmission and Distribution Deputy  
Ghelichi.faramarz@monenco.com

### New Field



#### 2. Metro Industry & Electric Railways

With the rapid development of industry and urbanization, the energy crisis, environmental pollution and traffic congestion have become serious problems facing the world today. City electrified transportation vehicles specifically Rapid Transit (or Metro) can alleviate the city increasingly serious traffic congestion, reduce the limited fossil fuel consumption and ease air pollution. The electrified transportation will be the main transportation in the future; thus, developing Metro lines in big cities aiming at the development of a greener, safer and more competitive transport system is a must.

In this regard, Shiraz Urban Railway Organization (SURO) started to run the first line of Metro in Shiraz (one of the largest and most important cities in Iran) in 2006. The first phase of this project was finished in 2012 and the second phase including 14 Stations commenced from the last year. Thus, Monenco was selected as the consultant company and is responsible for Engineering services and site supervision, contractor's design inspection, tendering and selecting contractors and manufacturers, supervision on the equipment procurement along with the commissioning of all Civil, Mechanical, Architecture and Electrical parts of the project.

## Sample Projects



### 3. Engineering Service and Technology transfer of Tarasht Power Plant Repowering

**Start date:** 2015

**Client:** Tarasht Power Plant Operating Co.

**Capacity:** 25 MW

**Location:** Tehran, Iran

#### **Description:**

Nowadays, due to high price of oil as well as low efficiency of steam turbines, mostly those came into operation in early 1980s, repowering is a way to be used in order to increase the efficiency of these steam turbines. In this technology a gas turbine equipped with HRSG will be placed in front of existing steam turbines; sometimes with total replacement and sometimes with modifications of the existing boilers.

Tarasht Power Plant Repowering Project will be the first repowering project in Iran. The project will be executed by using Hot Wind Box method. In this 25 MW steam turbine project, a new gas turbine will be installed and its outlet heat will be used for heating in existing boiler and organize a combined cycle power plant. In this project, Monenco is responsible for engineering, and construction supervision of the selected EPC contractor.



### 5. Engineering Consultancy Services of 132kV Transmission Line

**Start Date:** 2015

**Client:** Kerman Regional Electric Company

**Location:** Rafsanjan, Iran

#### **Description:**

Passing through urban areas and the need to comply with all the public and environmental requirements in addition to the approved standards is the most important fact in this project. However, in order to transfer 200 MW power at 132 kV voltage level, it is required to use telescopic towers in the project. Therefore, Monenco Iran is responsible for basic design (routing and surveying), detail design (electrical, mechanical and civil) and preparing tender documents.



### 6. Consultancy Services and Supervision of Converting Oil Fired Utility Boiler to Use Natural Gas

**Start date:** 2015

**Client:** Montazer Qaem Power Generation Management Co.

**Capacity:** 4\*156.3 Mw

**Location:** Karaj, Iran

#### **Description:**

The main purpose of this project is to prevent the production of sulfur, vanadium and sodium toxic oxides into the environment. By reducing the power plant environmental pollutants, the air pollution will be reduced consequently. Industrialized corrosion will be extremely reduced due to acid rains owing to the sulfur in the combustion products coming out from the power plant chimney. With the substitution of the natural gas fuel, costs and problems due to the supply, storage and use of heavy fuel oil will be reduced. By using the natural gas, the formation of sediment and corrosion of internal components of the boiler such as super heaters, re-heaters, economizers as well as other ducts and channels will be reduced.

The replacement of fossil fuels with clean fuel, in addition to reducing the environmental pollution problems, will reduce the costs of power plant repairs and maintenance.





## 7. Transmission Lines Surveying Methods Comparison Studies

**Start date:** 2015

**Client:** Sistan & Balouchestan Regional Electric Co.

**Location:** Sistan and Balouchestan

**Description:**

Sistan & Balouchestan Regional Power Co. has a mission to develop a report that compares transmission line's surveying methods (old method & LiDAR). Therefore, in this project Monenco is responsible for:

- Spotting one single transmission line with two different surveyed data
- Describe the advantage and disadvantages of every methods of surveying
- Develop the comparison report



## 4. Extension of SCADA Interface Systems of Azerbaijan Regional Electrical Company Transmission and Sub transmission substations

**Start date:** 2015

**Client:** Azerbaijan Regional Electrical Company (AREC)

**Location:** East Azarbaijan, West Azarbaijan and Ardabil

**Description:**

In order to establish a new SCADA system, it is necessary to construct the following parts as prerequisite: SCADA control building, SCADA interface system, Remote Terminal Unit(s) (RTU), telecommunication system and control center (hardware and software).

Following the previously performed feasibility studies of subtransmission dispatching system of Azarbaijan Regional Electric Company (AREC), some projects have been planned and implemented, resulting in establishment of Ardabil and Uromieh Regional Dispatching Centers (RDC).

This project has been defined in order to construct the SCADA interface system of 37 new and extended transmission and subtransmission substations, required by existing RDCs and new East Azarbaijan RDC.



## 8. Engineering Services of West Karoon Combined Cycle Power Plant

**Start Date:** 2015

**Main Client:** National Iranian Oil Company

**Capacity:** about 492 MW

**Location:** khoozestan , Iran

**Description:**

Mapna Group intended to install a combined cycle power plant in Azadegan Oil Field Development in Khuzestan Province. The plant consists of one block combined cycle in the first phase with the capacity of 492 MW. However, the second and third phases which consist of 2 combined cycles will be done afterward. The main intention of this project is to sale the electricity to the main client, National Iranian Oil Company. Therefore, Monenco is responsible for Basic Design, Detail Design, 3D Modeling of Plant and Overall Engineering as well as Basic and Detail Design of BOP and WTP and Cooling System.

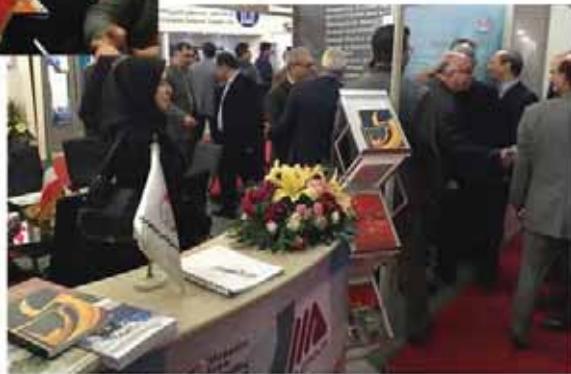


## 9. Event

### ■ Monenco Iran attendance in the exhibition of 30th International Power System Conference

Monenco Iran attended in the exhibition of 30th International Power system Conference which was held at Niroo Research Institute from Nov 23th till 25th while having its own stand. During the exhibition, Monenco had fruitful and effective negotiations and meetings with reputable local and international companies to facilitate mutual cooperation.

In addition, Mr. Falahatian, Deputy to Minister of Energy as well as other senior managers in electricity industry visited Monenco Iran in this Exhibition.



## 10. Clients Perspective Iran Gas Engineering & Development Company



The most important fact that is expected from an engineering consulting firm is achieving to its previously defined development plans as well as continual improvement of such plans. In this manner, it is expected to consider attention to clients' needs and stakeholders' satisfaction as essential which ends in maintaining the market share. Such an approach shows the strategic vision of such an organization. A consulting firm should identify the work-related risks and manage them by maximizing the commitment of its staff. The firm should enhance the performance of its staff member by supporting the human resources, creating opportunities for them to grow in the organization, recruiting right people and maximizing the chances for them to learn and train. Respecting these factors will help the firm to service its clients more effectively and achieve its existence philosophy. Monenco Iran has capacity to be among top international consulting firms in the future because of the special attention of its top management on sustainable success, continual improvement and effective collaboration with the clients. Effective and continuous exertion of its staff members on gaining customer satisfaction is remarkable. The mission of Monenco has to be set on achieving its professional targets. So that it is expected that its project managers are selected in a way that they are in line with the top management on reaching the goals, conserving the company profits and maintaining the client-satisfaction.

Mohammad Akhavan Kharrazi  
Executive in charge of Gas Transmission Pipelines Projects

### Reader Support

If more information is required about the topics, easily indicate the number of the title in the following table and send it to the address below or [info@monenco.com](mailto:info@monenco.com).

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**Monenco Iran  
Consulting Engineers**

No.12, Attar St., Vali Asr Ave .,  
Vanak Sq., Tehran, Iran  
Tel: +98-2181961 Fax: +98-2188771206



**MONENCO  
CONSULTING ENGINEERS**  
مونتكو والهندسة والبناء

P.O. Box: 1139, P.C. 133, Al Khuwair,  
Muscat, Sultanate of Oman  
Tel: +968 24495610  
[Oman.Info@monenco.com](mailto:Oman.Info@monenco.com) [oman.monenco.com](http://oman.monenco.com)



**Monenco Engineers  
Limited**

No. 52, Yedserma St., off IBB way,  
Maitama, Abuja, Nigeria  
Tel: +234 8085060261- +234 8067391390  
[Info@monenco.co](mailto:Info@monenco.co) [www.melconsult.com](http://www.melconsult.com)