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Message From Market

1. European Power Market



The current development of European power market is strongly influenced by the existing laws and regulations of the EU regarding reduction of greenhouse gas emissions. Currently, the electricity production in the EU is mainly based on coal, nuclear energy, natural gas, hydropower and renewable energy (mainly solar and wind power). In 2015 EU produced approx. 3057 TWh electrical power. About 48 % on this production was based on fossil fuels, 26 % on nuclear energy, 12 % on hydropower and 14 % on renewable energies. The expected future growth rate of electricity production is relatively low. Until 2014 the average increase rate is assumed to be about 0.6 % per year only. With the further expansion of renewable energy sources and the priority for supply of power from such sources in the grid, the economical operation of the existing conventional power plants will create more problems due to existing uncertainties in connection to annual plant utilization. This will cause high economic risks for operators of such plants, since the annual operational hours and consequently the annual Revenues of power sales cannot be planned and calculated in advance. Taking into account the above discussed aspects, the future development of the EU power market could be explained as follows:

* Little investment in the field of new fossil power plants, particularly for coal power plants due to the environmental aspects (high CO₂ emissions) and uncertainties and economic risks. Regarding the existing fossil power some of them will be decommissioned. But most of the them will be improved in order to achieve higher efficiencies and better environmental conditions:

* Little investment for construction of new nuclear power plants due to the high security risks, high capital needs, long times requirements for planning, approval and construction. In addition, some EU countries (e.g. Germany and Switzerland) have decided to decommission the existing plants and do not build any new plants

* The strong increase of wind and solar power plants will require high power plant reserve capacities for supply security and grid regulation. The future decommissioning of nuclear plants in some EU countries will need also additional plants capacities

* It can be expected that new power capacities will be mostly based on gas-fired power plants (CCPP). Extra capacities will also be required for short-term pick-supply and grid stability. For this purpose, mainly efficient gas turbines will be used. The construction of new decentralized co-generation plants will become also more importance

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New Field



2. Smart City

Fiber to the x (FTTx) is a generic term for any broadband network architecture using optical fiber to provide all or part of the local loop used for last mile telecommunications.

* AON (Active Optical Network)

* PON (Passive Optical Network- based on ITU-T G.984)

Because of using passive component in the ODN (Optical Distribution Network) Layer of network, PON network Capex is

lower than AON network. Therefore, it is selected as popular solution for integration of triple play services (Video-Data-Voice) for customers and designers.

In other point of view, there are different FTTx network Architectures based on fiber optic penetration rate as below:

* FTTH (Fiber To The Home-highest speed to the customer is available)

* FTTB (Fiber To The Building-appropriate for Dense household building)

* FTTC (Fiber To The Curb-Based on existing facility, last mile is based on Copper cable)

* FTTW (Fiber To The Wireless-as a backhaul network for wireless equipment) Monenco, based on achieved experience on designing national level FTTx network has been involved in Yazd Kowsar Complex project. The complex is a residential/businesses also an entertainment complex that selected to roll-out FTTx network. Under study area is about 20 km², but region of interest in the first phase is about 6 Km² (regarding 2000 demand point in design). In this project, at the first step, Monenco has to gather information about number of classified users (residential, businesses and public centers) as well as geographical information. FTTH architecture based on PON Technology is proposed as best optimum solution to reduce network roll-out Capex as well as triple play service integration on customer side. Conceptual and basic design will be done on GIS based map to calculate real capital expenditure due to evaluating/selecting best network scenario. It is noticeable that after finalization of basic design phase, technical specification of whole network component/LOM and preparation of tender documents are Monenco responsibilities in this project.

Sample Projects



3. Site Supervision Services for Construction of 400/132/20 kV Substations at Bam & Shahmaran

Start date: 2008

Client: Kerman Regional Electric Company (KREC)

Location: Kerman - Iran

Description:

Kerman Regional Electric Company decided to supply the required electricity for its development plans by construction of 400/132/20 kV DCS Substations at Bam and Shahmaran. The main intention of this project is due to;

- the importance of power supply to various industries
- the necessity of reliable power energy after the terrific earthquake on 2004
- the crucial necessity for modern irrigation of vast cultivated farms by the wells

In this project, Monenco is responsible to render site supervision services for construction of 400/132/20 kV Substations at Bam & Shahmaran including civil works, installation, test and commissioning.



4. Steam Portion Assaluyeh combined cycle power plant

Start Date: 2016

Main Client: MAPNA Assaluyeh Power Generation CO.

Location: Assaluyeh, Iran

Description:

Mapna Group as an IPP intended to upgrade its existing combined cycle power plant (6*160 MW) in Asalouyeh, Boushehr Province.

The main intention of this project is to Increase the efficiency and capacity of the existing power plant to a combined cycle power plant using 3 additional steam turbines (3*170 MW).

In this project, Monenco is responsible for Basic and Detail Design, 3D Modeling of the Plant and Overall Engineering.



5. Engineering and Supervision services on Civil, Electrical and Mechanical Systems for Vakil Substation of Shiraz subway

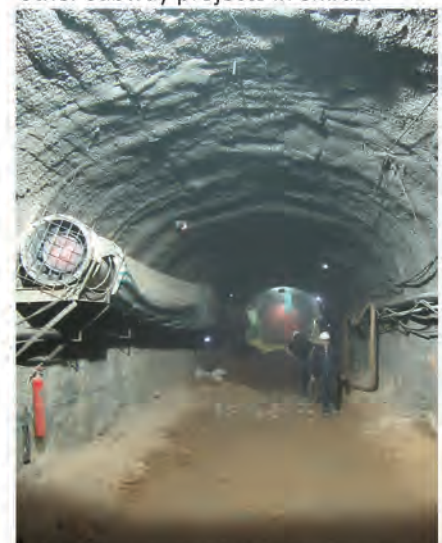
Start Date: 2016

Client: Shiraz Urban Railway Organization

Location: Shiraz - Iran

Description:

Since the Vakil Station of Shiraz Urban Railway Line One is located in the narrow street and due to traffic difficulties for the construction of the station through cut and cover method, Shiraz Urban Railway Organization decided to eliminate this station from line one. In order to prevent that matter, Monenco suggested the underground method (Russian Method) which was welcomed by the client and selected Monenco as the designer and consultant of this station. It is worth mention that Vakil Station is located near the historical area and will be the first station of Shiraz Urban Railway that is going to be constructed through the underground method and has the highest importance among other subway projects in Shiraz.





6. Engineering Services and Site Supervision On Operation and Maintenance of Shahid Rajaei Port Telecommunication Equipment and Preparation of O&M Instructions

Start date: 2016

Client: Shahid Rajaei Port Complex

Location: Hormozgan, Iran

Description:

The importance of this project is the business plan preparation for international data transit services which can be considered as one of the most profitable areas of investment and strategic plans in the future.

In this project, Monenco is responsible for engineering services and supervision on marine telecommunication equipments including mobile equipment, marine telecommunication systems, PABX and cable communication systems and VTS & microwave systems and preparation of O&M instructions for Shahid Rajaei Special Economic Zone.



7. Consulting Services to Provide Construction Supervision Services for Design supply and Installation of HVAC Line and Associated Substation Works in Tajikistan and Kyrgyz Republic under CASA 1000 project

Start date: 2016

Location: Kyrgyz Republic, Tajikistan, Pakistan and Afghanistan

Description:

A new electricity transmission system to connect four countries (the Kyrgyz Republic, Tajikistan, Pakistan and Afghanistan), called CASA-1000, would help make the most efficient use of clean hydropower resources in the Central Asian countries by enabling them to transfer and sell their electricity surplus during the summer months to the deficient countries in South Asia.

This project is divided into two parts: owner engineer's for 500 kV HVAC transmission line and ± 500 kV HVDC transmission line which Monenco was selected as the consultant of the HVAC part.

The HVAC part consist of bellow transmission lines and associated substations:

- 500 kV Transmission line from Datka to Khujand (475 km) and extension works for associated substations (The Kyrgyz Republic).
- 500 kV Transmission line from Regar to Sangtudeh (115 km) and extension works for associated substations (Tajikistan).

In this project, Monenco is responsible for design review, preparation of project Implementation plan, monitoring scheme and cost control, supervision on project construction activities, assist client in implementation ESMP, RAP and HSE Plan and reviewing As-Built documents.



8. Business Plan Preparation Of Fiber Optic Infrastructure Deployment In The Vicinity Of Iran Roads

Start date: 2016

Client: MAPNA Group

Location: Iran

Description:

The customer value proposition of this project is the preparation of a business model for national and further international data transit businesses.

Rather than that, studies show the financial and economic feasibility and profitability of this business model for the project owners.

In this project, Monenco is responsible for technical and financial feasibility study of fiber deployment along Iran roads to cover customer needs for more bandwidth and solving the problems related to bandwidth shortage.

It must be noted that Monenco enters into a new market field by this project.



9. Events

■ 21st International Exhibition of Oil, Gas, Refining and Petrochemical

The 21st Oil, Gas and Petrochemical Exhibition as one of the biggest oil exhibition in Middle East and significant exhibition worldwide was held on 5th till 8th of May which 1900 companies from Iran and 38 world countries at Tehran International Exhibition. The exhibition has official support of Iran Ministry of Petroleum. Monenco, also attended in this exhibition in which the presence of well-known companies provided a good chance for mutual cooperation in view of signature of contracts, investments, exchanging the information on the latest cutting-edge technology and etc.



■ 21st Iranian Electrical Power Distribution Conference

The 21st Iranian Electrical Power Distribution Conference (EPDC) was held on 26-27 April 2016 in Karaj, Iran, hosted by Alborz Electricity Province Distribution Company while sponsored by Iranian Association of Electrical and Electronic (IAEEE). Monenco Iran attended in the exhibition of the conference as well. During the exhibition, Monenco had fruitful and effective negotiations with different companies and other visitors. In addition, Mr. Falahatian, Deputy to Energy Minister visited the exhibition on the first day of the conference.



10. Clients Perspective Bangladesh Power Development Board



Choosing an engineering firm for a project can have far-reaching implications.

How a project is designed, engineered and supervised can affect its costs, performance and quality throughout the entire project. Accordingly, BPDB is very satisfied working with Monenco as its consultant due to Monenco proper experiences in the field of power plants as well as its qualified experts with up-to-date knowledge. This is an expatriate service Monenco renders to Shahjibazar 330MW CAPP, BPDB. Therefore, I appreciate the experts of Monenco about their knowledge and skills. I also understand that Monenco faced some troubles but our management is trying to overcome the matter. I hope that Monenco will deliver extra-ordinary technicality for the next expected project. We, the BPDB, are looking forward to see Monenco's performance in the next project.

Abul Baser Khan
Member of Planning &
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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.

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