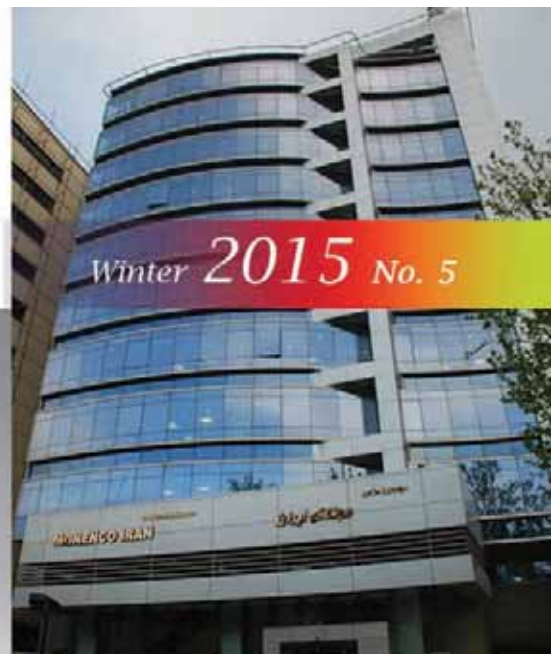




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Message from Market

1. Petrochemical Trend



The global petrochemicals market was \$558.61 Bn in 2013 and is anticipated to reach \$885.07 Bn by 2020, expanding at a CAGR of 6.8% from 2014 to 2020.

Petrochemicals are used in various end-use industries, ranging from manufacturing to consumer goods. Hence, growth in the end-use industries, availability of raw materials in the Middle East (which is one of the largest producers and exporters of crude oil and natural gas in the world) and establishing petrochemical complexes in India and China are the major factors driving the global petrochemicals market. However, shift towards bio-based chemicals coupled with environmental issues due to usage of various petrochemicals is projected to slow down the market growth during this period. Ethylene was the leading petrochemical product for over 25% of the global petrochemicals market in 2013 which was followed by propylene and is primarily used in the manufacture of polypropylene and propylene oxide. Methanol is projected to be the fastest growing segment from 2014 to 2020. Growth of methanol is directly related to its increasing usage in gasoline blending and methanol to olefins (MTO) processes. Other petrochemicals such as butadiene, benzene, xylene, toluene, vinyls and styrene are accounted for a significant portion of the global petrochemicals market share in 2013. China was the leading consumer of petrochemicals for over 25% of the global forecast market share in 2013. Initiatives taken by the

government of China to boost the petrochemicals market coupled with growth in end-use industries in the region is likely to drive the market during the period. Rapid development of shale gas as an alternative feedstock for petrochemicals is reshaping the chemicals industry in North America. Europe emerged as the third-largest petrochemicals market in 2013. High demand for petrochemicals in the Middle East & Africa is primarily ascribed to rapid capacity additions in the region.

Hydrocarbons, as feed of petrochemical plants are always being affected by fluctuations happening in oil and gas market as mentioned above. To compensate these fluctuations and increase added value of raw feeds consumed in this branch of industry, more complicated processes are developed. However, Monenco intends to have a share in generation and transfer of such sophisticated know how.

Monenco started penetrating into oil and gas market by Package "C" of Isfahan refinery followed by proprietary engineering of process plants including Pentaerythritol, Acetaldehyde, Bioethanol and Bangladesh mini refinery. The successful execution of engineering of such advanced process plants has given such confidence to the top clients involved in this Industry that they have selected Monenco for study of mega projects such as MTP/MTO.

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New Field



2. E-Health

Today's life styles, increased population, long distances and the need to empower patients to play a greater role in their own health and wellness, require sustainable health services in every country. Such services should provide integrated health infrastructures and systems together with concerning about the cyber security to help patients and medical staff benefit from the speed, integrity and accuracy of the health system. Benefiting from information and communication technologies (ICTs), electronics and computer science, it has become possible to facilitate national e-Health infrastructures to meet today's needs from prevention to diagnosis, treatment, monitoring and management. Align with the fifth development program of Islamic Republic of Iran in the health sector, Mapna group had proposed a protocol to the Ministry of Health and Medical Education for implementation of this scheme. By signing this agreement, Monenco as the Engineering and Consultancy Company of the group, has become involved in this national project.

At this stage, Monenco Iran has commenced its studies in formulating the feasibility study (Phase 1) of the project. Our vision is to be the pioneer Iranian consultancy company in this area in the next three years. The importance of this project for Monenco is to have the experience of another national project together with entering into a new field of studies.

Sample Projects



3. Rendering Preliminary Feasibility Study for Increasing of Capacity of Abadan Petrochemical Plant based on Receivable Feed from Abadan Refinery

Start date: 2014

Client: Abadan Petrochemical Company

Location: Abadan, Iran

Description:

Abadan petrochemical company intends to perform feasibility study based on two scenarios:

1. To indicate feed price with consideration rate of 25% IRR
2. To indicate rate of interest based on feed price at present

However, Monenco scope of works are as follow;

- Updating cost estimation for performing the project
- Cost – Revenue analysis of performing the plan and priorities
- Sensitivity analysis of the plant versus price changes and product quantities
- Extraction of all data regarding capital investment of the plant, fixed – variable cost, production parameter and analysis by Comfar software
- Final report, acceptable for credit and financial organizations



4. Comprehensive Technical & Financial Feasibility Study, Business Plan for GTP (Gas TO Propylene), GTO (Gas to Olefin) Plant

Start date: 2014

Client: Iran Industries Development and Renovation Organization (IDRO)

Location: Tehran, Iran

Description:

Market saturation due to excess production of methanol in recent years on one hand and the importance of olefin production as a feed which is required as substantial material for petrochemical productions chain that lower the price of natural gas in the country on the other hand, also increasing the added value are the major factors that have caused the direction of Iranian petrochemical industries to be changed to installation of GTO, GTP, MTP, MTO plants. However, Monenco is responsible for the following scope of works;

- Marketing study report
- Technical study report
- Economical study report
- Business plan report



5. Design of West Karon Combined Cycle Power Plant

Start Date: 2014

Owner: National Iranian Oil Co.

Location: Azadegan Oil Field Development, Iran

Capacity: 484 MW (2 GTG *162 MW + 1 STG * 160 MW)

Description:

The plant is located in Azadegan Oil Field Development 55km far from Ahwaz City. This power plant is implemented by investment of Mapna IP Consortium. Produced power will be sold to the national Iranian Oil Company via electricity grid for urban and industrial demand. At this stage of project 2 GTG and 1 STG with common utilities will be installed and second phase including 2 GTG and 1 STG will be developed in future. In addition, the system of cooling type is Air Cooled Condenser. However Monenco is responsible for Basic Design, Detail Design, 3D Modeling of Plant and Overall Engineering.





6. Engineering Design and Consultancy Services of two 63/20kV GIS Substations and Transmission Lines of 7th Line of Tehran Metro

Start date: 2014

Client: Taban Water Development Engineering Co.

Location: Tehran, Iran

Description:

As the 7th line of Tehran Metro is under construction, these two substations will feed all loads, HVAC system, electrical equipment, etc. of 7th line. In this project Monenco is responsible for Conceptual Design, Basic & Detail Design, preparing contactor's scope of work, tendering and selecting contractors and manufacturers, contractor's design inspection, FAT Inspection, Site Supervision, project and contract management as well as Engineering of HV, LV, Civil, Electrical and Mechanical required documents. However, Monenco scope of works are as follow;

- Design and supplementary studies
- Detail design of whole documents
- Preparing technical specifications of equipment & systems and designing executive drawings
- Preparation of tender documents for each substation
- Cooperation in floating tender
- Contract Negotiation



7. OETC LDC Consultancy Framework Service Level Agreement

Start date: 2015

Client: OETC (Oman Electricity Transmission Company)

Location: Muscat, Oman

Description:

As preferred consultant for all operating requirements in 3 years of OETC and wide projects in operating fields show the capabilities of Monenco in system studies. However, Monenco scope of work are as follow;

- Dispatch scenario when any new power plant connect to the system
- Time period required for the total study and submission of results
- Operational effects of new major loads connected to the system
- Economic Dispatch requirements
- Spinning reserve management
- Under frequency settings
- Islanding procedures
- Black start procedures
- Preparation and modification of System Operation Procedures
- System operation studies
- Study the system behavior for any new connection
- Study the difficulties in the international connection
- Study the voltage issues in winter time
- Study the major incidents and partial blackouts
- Study the major incidents and partial blackouts
- Help to prepare the contingency plan
- Advice for real time operation
- Study n-1 criteria by modeling the network system
- Study the PDO-MIS and PDO-Dhofar connections
 - Risks of the interconnection
 - Risk of inter-area oscillations
 - Specific issues linked to energization (overvoltage, resonance)
 - Tuning of system protections to face emergency conditions like loss of synchronism, evaluation of maximum power transfer



8. Design of Sabalan Combined Cycle Power Plant

Start Date: 2014

Owner: Bargh-e-Omid Sabalan Co.

Location: Ardebil, Iran

Description:

The plant is located at 25Km far away from Ardebil City. This power plant is implemented by investment of private sector based on BOO scheme. Produced power will be sold to the national authority and transfer via electricity grid for urban demand. This plant is consisting of 3 steam portions of combined cycle power plant each consisting of two (2) HRSGs and one steam turbine generator set & main and auxiliary cooling system including 400 AIS substation for the existing simple cycle V94.2 gas turbine power plant including 5 GTG units, version 1 & 3 GTG unit, version MAP+2 to be converted to the combined cycle power plant in "1+2" configuration for the Sabalan site. In addition, the system of cooling type is Heller. However, Monenco provides Basic Design, Detail Design, Vendor Design Review, 3D Modeling of Plant and overall engineering.



9. Event

7th Power Plants Exhibition and Conference

Seventh Power Plants Conference and Exhibition as one of the largest and most important exhibitions in power industry was held at the University of Bandar Abbas – Iran from 17 till 18 February with the participation of 45 domestic and foreign companies in power industry. The purpose of this exhibition was to show the latest technology and achievements in power industry to the consultants and vendors including potential talents, agreements, business development, investment, contracts, and participation of foreign and domestic investors as well as optimal use of resources in the power industry.

Monenco by having its own stand at the show was active during this exhibition in order to discuss, exchange ideas and present Monenco resume to employers, experts and other visitors for further cooperation.



10. Clients Perspective Public Authority for Electricity and Water, Oman



Oman is at the cross-roads of the development of its energy sector. Abundant, cheap energy has underpinned our rapid development over the last 45 years but this is likely to be unsustainable in the longer term as demand continues to rise and new resources become more difficult to find. Consequently, we will need to move to a much greater focus on efficiency in all aspects of energy from the thermal efficiency of our power plants through to energy conservation by the final customer and to develop the electricity transmission and distribution networks in order to accommodate new sources of energy like renewables and much more distributed sources of energy. In all these areas there will be a need for high quality support from experienced consultants as our energy economy changes over the coming years.

Monenco is a highly respected consultancy with a long and successful track record in many sectors which I am sure will be able to play an important role in the transformation of our energy sector over the coming years.

Public Authority for Electricity and Water (PAEW) - Oman

Mohammed Al-Mahrouqi
Chairman

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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