POSCO E&C has made it a habit to succeed challenges amid rapid changes in business environments based on its people-oriented value and technologies with competitiveness, maintaining its sustainability as a Global E&C Company leading the 21st century.

In an endeavor to smoothly communicate the same with its customer across the globe, POSCO E&C has started a quarterly communication platform to ensure its 40 years of expert engineering technologies, know-hows, and man power with skills and capabilities reaches its client.
Building South East Asia’s First Integrated Steel Mill

With its successful first heat on 23rd December 2013, the first integrated steel mill in Southeast Asia has officially begun its operations.

The PT KP Integrated Steel Mill which consists of six main factories: blast furnace, sinter plant, coke plant, steel making plant, continuous casting machine and plate mill is a joint venture between Indonesian steelmaker PT Krakatau Steel and POSCO, Korea’s largest steelmaker. The project in Cilegon is Indonesia’s biggest investment project to date in the steel industry.

The landmark project was carried out by POSCO E&C at the helm leading the array of companies involved in the project. Since the project’s inception in 2009, POSCO E&C was appointed to do the task of performing feasibility studies and risk evaluations to ensure the integrated steel mill’s success and profitability. After the subsequent green lights by the investors, POSCO E&C began engineering and construction of the integrated steel mill in 2010.

With its extensive experience in turnkey steel mill projects, POSCO E&C was able to complete construction and delivery of the steel mill within the planned schedule. This was also achieved thanks to the cooperation with Krakatau Steel’s engineering subsidiary, PT Krakatau Engineering; and excellent labor-management and contributions to local communities at Cilegon. To achieve optimal value delivery, POSCO E&C managed to decrease significantly the overall cost of the project through innovative value engineering and localization maintaining the utmost quality in construction and operations. With the completion of the first integrated steel mill in Southeast Asia, POSCO E&C has once again proven its technological prowess in the steel industry.

Since its foundation, POSCO E&C has quickly become a total solution provider for EPC turnkey services from planning to commissioning in integrated steel mill.

Successful completion of Second Continuous Galvanizing Line in Mexico

On 28th January, 2014 POSCO E&C has completed construction of POSCO-Mexico No.2 CGL with an annual 500,000 ton capacity, in Altamira, Tamaulipas state, Mexico.

POSCO E&C has provided “Total Engineering Solution” as an EPC contractor to establish the second CGL, which produces galvanized steel plates used in the exterior panels of high end automobiles.

In particular, the ‘GI Ace’, which has improved coating and processing capabilities, and the ‘780MPa class AHSS steel’, premium grade steel plate which is lighter yet more resistant to external impact are increasingly in demand by leading automobile companies and expected to offer high added value to the local automobile industry.

Win-Win Cooperation for Rolling Mill Plant in Brazil

Local developer Fabrica, construction company Moura Dubex and POSCO E&C as a strategic investor as well as the EPC contractor have jointly developed a project for the market of Hot Rolling Coils in Suape industrial Complex, Pernambuco, Brazil. The project is to build a Flat Rolling Mill plant with an annual output of 0.8 million tons of steel sheets (hot-rolled 0.2 million tons and cold-rolled 0.6 million tons) on EPC basis. The main facilities to be supplied include hot rolling machines, cold rolling machines, auxiliary equipment and installation and construction works. Moreover, this project will be carried out using POSCO E&C’s own technology, leveraging its experience and capabilities acquired through the building the 4th hot rolling plant of the Gwangyang steel works, POSCO.
Great Step Forward : 2 Million TPA
FINEX® plant commenced operation

At the Pohang steelworks of POSCO, FINEX, the innovative iron-making process commenced operation with blowing-in on 14th January, 2014.

The newly built No.3 FINEX plant will produce 2.0 million metric tons of hot metal per annum. POSCO is targeting to ramp up the productivity and reach design level quality of molten pig iron by the end of first half of this year. Especially, by applying 3 stage fluidized bed reactor system, mixed charging system, eliminating reduction shaft and adopting pneumatic injection system and so on, the facility of 2.0Mt FINEX became much simpler. Moreover, the construction volume has decreased by approximately 20% which led to a huge investment cost reduction. Currently, POSCO operates two FINEX plants of 600,000 and 1.5 million tonnes per year respectively. The new plant will help the POSCO’s total FINEX iron making capacity to reach 4.1 million tonnes per year. “Thanks to the FINEX plants, our estimated running cost saving effect of overall steelworks will amount to 160 million dollars a year” said a senior official from POSCO.

It is truly remarkable that a plant produces 2.0 million tons of hot metal by smelting reduction processes since other similar technologies have never achieved this capacity level other than blast furnace process before.

The innovative Iron-making technology

FINEX®, one of the most successful alternative iron-making technologies, is based on the direct use of ore fines and non-coking coal. FINEX® eliminates cokemaking and sintering processes which are the most critical to the conventional blast furnace iron-making process.

The key technologies of FINEX® are fluidized bed reduction of ore fines, hot DRI fines compaction to HCl (hot compacted iron), briquetting of coal fines, and melting of HCl into hot metal.

POSCO has been operating the world’s first commercial FINEX plant, with 1.5 Mt of annual capacity, since April 2007. Recently, No.3 FINEX plant with the capacity of 2.0Mt/y commenced its operation.

Eco-friendly solution
Since FINEX® eliminates coking and sintering processes unlike the conventional blast furnace route, it is simple, eco-friendly, and cost competitive. It also has great potential for future CO2 mitigation, thanks to the use of pure oxygen for coal gasification and the in-situ CO2 removal system. Through on-going developments, FINEX® will contribute to the sustainable growth of the green steel industry.

Utilization of FINEX® Export Gas
Another astonishing advantage of FINEX® is re-use of its by-products. As a valuable by-product, export gas from FINEX® can substitute natural gas, oil, coke and coal for numerous applications, including:

- electrical power generation
- DRI production
- heating purposes
- steam generation
- raw material drying
- pelletizing plant
- production of synthesis gas

Synergy effects with brown field steel works
Under-size coke and sinter fines which are hard to use in a blast furnace can be utilized in FINEX, and also coke dust can be recycled in the coal briquetting facility. So the size of coke used in a blast furnace can be increased and coke and sinter yield can also be improved. Therefore, an improvement in the operational efficiency and productivity of a blast furnace could be expected.
Expand Your Horizon with PEPCOM Solution

This issue of the POINT will provide the insight of PEPCOM Strategy of POSCO E&C and its unique offerings to its clients worldwide. This section will be continued with the detailed description of PLANNING, EPC and OPERATION & MAINTENANCE in the next three editions respectively.

To begin with, here is what PEPCOM all about. POSCO E&C has emerged as the only global contractor in the world which provides end to end solution through its “PEPCOM” Strategy.

POSCO E&C has developed a comprehensive range of advanced project management capabilities from Planning, Engineering, Procurement, Construction to Operations & Maintenance (PEPCOM) in an effort to satisfy the different requirements of the client. It offers customized services from Planning including Feasibility Study to Operation & Maintenance based on the client's expansion plan and investment requirements.

Feasibility Study is conducted by the top-notch experienced engineers and project management personnel through evaluation and analysis of the proposed project based on extensive investigation and research to support the process of decision making.

Through PEPCOM Strategy, POSCO E&C ensures global standard by operating high-level management systems for quality, safety and environment in addition to the state of the art technology. POSCO E&C provides greater satisfaction and services to its customers around the world by further strengthening its core technologies and expertise through evolving continuously. In addition, over 40 years of project management know-how combined with optimized operational capabilities makes POSCO E&C one of the most efficient and economical contractor in the world, which offers Operation & Maintenance expertise to client's who are aiming for higher productivity and/ or venturing into new market.

The R&D Conference, 2013

The 2013 Research Performance Conference on technology for engineering and construction aiming to enhance the theory utilization by sharing the result and promote the internal and external interchange of technology in E&C sector was held at Song-do POSCO Global R&D Center. During the conference, around 100 staffs and board members from R&D center and E&C sector listened attentively to the four lectures on Civil Engineering & Architecture, Environment, Plant and Energy which were selected for excellent thesis.

In addition, 80 panels explaining the research results and core technologies were exhibited at Song-do POSCO E&C office. The main subjects were “Structural Safety Assessment of Shell Opening for Iron making Plant Structures”, “A risk management of BFG/COG flare stack and surrounding facilities by CFD model with radiation” and “Mathematical Model for the Prediction of Work Roll Thermal Profile in Hot Strip Rolling” etc.

PEPCOM Strategy of POSCO Group

Optimized Project Planning
- Provide customized proposal
- Assist in Client’s Feasibility Study as Technology Provider

On Demand, On Schedule, On Budget with the finest technology
- Innovative Engineering and State-of-the Art Equipment
- Steel Business oriented Engineers
- Competitive Procurement through Global Networks of POSCO Group
- On-time Project Completion
- Effective Cost Control
- Global Standard For Quality & HSE (Health, Safety & Environment)
- Single Accountability for EPC Project

Early Production Stabilization
- Over 20 years experienced Manpower in POSCO
- On & Off Job Training
- Early Involvement of Experts from Commissioning stage
- Supply of Operation & Maintenance Manual

For a Better World
Opening of the welder training center in Vietnam.

With investment in training facilities, POSCO E&C operates a training center at NhonTrach 1 Industrial Zone equipped with modern apparatus and highly practical curriculum. It is expected to provide underprivileged and unemployed local youths with opportunities of training and employment. Since its beginning of business in Vietnam, POSCO E&C has been providing housing, nursery school and endowing scholarship to the local schools as part of an effort to contribute to welfare of Vietnamese society.

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