NEW Horizons

Summer 2013

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COVER STORY

The Path to Success: Better Customer Service

DEUNG Like Moonlight in the Dark

"The countless lamplights emit glow as beautiful as the silver lining on the cloud." Lee Gyu-bo, a poet of the Goryeo Dynasty, describing a lamp with a beautiful line in his poem "Bongeunsa Yeondeong Doryangmun". The lamplight in this poem refers to the delicate light of a *jaedeung*, the paper lantern that Koreans used to pierce the darkness in times gone by. *Jaedeung* were used for Buddhist religious ceremonies in the Goryeo Dynasty. Their use later changed to lighting equipment or as a ceremonial tool for weddings. The frame of a *jaedeung* is made with wires or bamboo. Because the frame was covered with red or blue paper, silk, or glass, the glow from the lamp was beautiful beyond description. There were different lamps, like *chorong* containing a candle inside and *deungrong* with an oil lamp. The *chorong*, with the combination of red and blue colors symbolizing the balance of yin and yang, was used in wedding ceremonies. HHI

Source - The National Folk Museum of Korea

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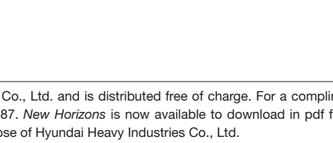

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Turning Challenges into Fresh Opportunities for Growth

Lee Jai-seong, President & CEO

With persisting uncertainties for global economic recovery, businesses around the world are faced with the task of steering through the increasingly adverse business environment. Hyundai Heavy Industries (HHI) has demonstrated consistently that it meets challenges head on and turns them into fresh opportunities for growth and prosperity. We will continue to forge new paths to success by embracing change and taking bold initiatives for innovation.

The Shipbuilding Division has started off on a good note this year by achieving orders worth USD 1.51 billion in the first quarter, out of this year's order target of USD 7.75 billion. The division fared quite well in the field of special-purpose vessels such as offshore construction vessels and accommodation vessels and is buoyed by a stream of new-building inquiries for commercial vessels such as container ships and tankers as well.

The Offshore & Engineering Division has recently signed the contract with Total to build an FPU and a TLP worth a total of USD 2 billion. Aiming to reach the order target of USD 6 billion set for this year, the division has already won orders worth USD 3.31 billion. Furthermore, the division logged one million accident-free hours on the DSO project ordered by Chevron Nigeria, showcasing HHI's excellent technological expertise and high safety management standard.

The Industrial Plant & Engineering Divisions is expected to close the deal on Az-Zour North IWPP within the first half. Moreover, the division has recently received recognition from the Kuwaiti government for its outstanding follow-up services upon completion of the Sabiya Power Station there last year. The Offset Business Venture that the division has set up and run in Kuwait is recognized as one of the most exemplary offset projects.

As part of its efforts to offset the downturn in the shipbuilding markets, the Engine & Machinery Division is actively engaged in expanding its product line and developing environmentally friendly products. The division won type approval for its new 35,300 bhp HiMSEN engine and also developed the environmentally friendly G-type marine engine.

The Electro Electric Systems Division is keeping up its efforts to make products tailored to market needs and further reduce costs through streamlining the production processes. When its plants in Russia and US go into full swing, the division will be able to better meet its clients' requirements with increased global reach.

The Construction Equipment Division opened its Brazilian corporation last April. Despite continued stagnation in the Chinese market, where it has built a strong presence, the division will get a substantial boost in its efforts to reach this year's goal through the foothold in the Latin American market.

We do not foresee the global economic environment changing for the better for the short term. Nevertheless, we remain resolute in our commitment to provide greater value for our clients through continued innovation and technological advancement. Whether the current storm subsides or not, Hyundai Heavy Industries will emerge stronger and better equipped to ride on the next wave of prosperity. HHI

THE PATH TO SUCCESS: BETTER CUSTOMER SERVICE

"It is important for us to recognize what's happening in the global market, share the information, and closely work together to set a common goal to tackle the situation."

By Alex Lee

"Now there are no boundaries for top-tier and other groups in the market. They are engaged in endless competition all over the world."

There are no immediate signs of a quick rebound in the global power-grid market, still hurt by a prolonged economic downturn and a slow demand. Like other global players, South Korea's industrial giant Hyundai Heavy Industries (HHI) is under heavy pressure to seize more orders and lift revenues at the once fast-growing electro electric systems division.

Yet, the world's biggest shipbuilder, whose business portfolio is being aggressively diversified to better cope with business uncertainties, sees its electro electric systems unit as an engine of its future growth. The company is eager to take a bigger market share in the global market to emerge as a strong contender to the traditional electricity systems powerhouses in Europe, such as ABB, Alstom, Schneider, and Siemens.

The 25.5-billion-dollar electro electric systems market is three times bigger than the shipbuilding sector, offering huge growth potential for Hyundai Heavy. The company's market share stood at a mere 1.2% at the end of 2012.

Furthermore, the electro electric systems market is less vulnerable to economic downturns than the shipbuilding sector, making it easier for players to predict what the future holds.

As widely understood, cyclical fluctuations in demand are an inherent characteristic of the shipbuilding industry, but the demand in electric systems industry is relatively steady because the market is basically driven by real demand rather than speculation, said Mr. Kim Hwan-goo, who was appointed the head of Electro Electric Systems Division in January this year.

Only four months into his post, Kim's main challenge this year is to boost declining sales and sagging profits at the division whose profits went into the red last year, mainly affected by depressed prices caused by a severe overcapacity in the industry. US anti-dumping duties imposed last year on transformers from South Korea also weighed on Hyundai Heavy's profits. Finding that the transformers from South Korea are being dumped, or sold below fair value, the US Commerce Department imposed anti-dumping duties of 29.04% on Hyosung and 14.95% on Hyundai Heavy.

Kim's division produces a variety of electric equipment products, including power transformers, gas insulated switchgears, circuit breakers, and rotating machinery. This year, the division aims to win USD 3.2 billion in new orders, significantly higher than last year's USD 2.3 billion.

Winning the hearts of customers around the world is the path to success, says Kim, who has spent most of his 30-year career in planning and sales units at the company. His predecessors all had engineering backgrounds.

With this in mind, Kim overhauled the division's internal operations to focus more on customer

HHI's sales focus will be the oil-rich Middle East and North Africa where many power plant projects are underway

service, a 70-strong team is closely monitoring the needs of customers and actively communicating with them at every stage of product management – from design to production, delivery, installation, and after sales service.

The world's electricity systems market enjoyed an unprecedented boom until 2008, triggering red-hot competition among big and small players to expand production capacity worldwide. "The market's paradigm has changed because of overcapacity. Customer needs have now become more complicated," said Kim.

The era of buyer's market began in 2009 due to a supply glut. The supply is still outpacing demand by about 10% and the buyer's market is expected to last for a long time, Kim said. "Now there are no boundaries for top-tier and other groups in the market. They are engaged in endless competition all over the world."

Kim said prices and delivery time were the most crucial factors for buyers in the past, but now they are also concerned about the quality of products, the 'money value', and post-sale services. He said "It is important for us to recognize what's happening in the global market, share the information, and closely work together to set a common goal to tackle the situation."

To help the division's sluggish business get back on track and achieve its annual sales target of KRW 3.47 trillion for this year, the company is on an emergency footing as it controls costs and streamlines operations of different units by enhancing collaboration between them. The division is also beefing up R&D teams at home and abroad to develop small-and-light user-friendly smart products with multiple functions in a bid to attract more customers.

Top Five

The company has a vision to become a top five maker of electro electric systems by 2020. Kim said the division's revenues increased 3.5 times between 2004 and 2009, and the company will be able to join the big boys if this growth pace is repeated over years to come.

The division's spectacular growth owes much to persistent efforts to develop overseas markets which currently account for 65% of the unit's total sales. It operates five plants outside Korea; in Bulgaria, China, Russia, and two in the United States.

In view of the current worldwide supply glut, the company has no plans to expand facilities or build new plants for the time being. But, the company has been approached by GE and top-tier European companies like Siemens and Schneider for joint projects, but it appears that the challenging market environment is putting a brake on talks.

He dismissed the suggestion that Hyundai Heavy is seeking a joint project with top-tier makers as their superior technology will benefit the company. "Our level of technology is very close to that of the top-tier makers," Kim said.

While the market is grappling with problems of overcapacity, newcomers from China and India are also posing a threat to Korean manufacturers. "Currently, Chinese and Indian firms supply goods to meet huge local demand, but they will turn their eyes outside their countries within one or two years," said Kim. HHI's sales focus will be the oil-rich Middle East and North Africa where many power plant projects are underway.

Despite anti-dumping duties imposed by the United States, Hyundai Heavy also pins high hopes on the American market where there is a huge demand for power transformers and other equipment because of aging power infrastructure needing to be replaced soon.

Hyundai Heavy completed a transformer factory in Alabama in 2011. Last year, the factory produced 52 transformers worth USD 70 million, but this year's production will be doubled, Kim said.

Kim also said the yen's weakness and the rising tension on the Korean peninsula might cast a shadow over business opportunities this year. Looking back on the past four decades, the company has successfully gone through many difficult times, Kim said. The unyielding "Hyundai Spirit" is badly needed right now, he stressed. HHI

The writer is a journalist based in Seoul.

Companywide

GE Executives Visit HHI

Executives from GE, including vice chairman Mr. John Rice, visited HHI to bolster business relations on March 27.

Mr. Visal Leng, president of GE's gas business in Asia-Pacific, Mr. Kang Seong-wook, president of GE Korea, and six other GE executives also attended the meeting and inspected the drydocks and engine & machinery factories.

Over the past few years, HHI's partnership with GE has expanded to plant, electro electric systems, and engine businesses. In 2009, the Company teamed up with GE for the USD 2.6 billion combined-cycle plant in Sabiya, Kuwait.

GE operates businesses in 160 countries through 12 business sectors; power & water, oil & gas, appliances for business, aviation, capital, energy management, healthcare, intelligent platform, lighting for business, mining, software, and transportation.

Companywide

HHI Holds 39th Annual General Meeting of Shareholders

HHI held its 39th Annual General Meeting of Shareholders at Hanmaeum Cultural Center, Ulsan on March 22. In this meeting, the board approved the financial statements; reaffirmed and newly appointed inside directors, outside directors, and the members of the audit committee; and reviewed other issues for investment decisions.

The board reaffirmed Mr. Kim Oi-hyun as a director and appointed Mr. Choe Byeong-ku as a new director. The board also appointed Mr. No Young-bo as a new outside director and member of the audit committee.

Along with approval of new directors, HHI also approved the 2012 consolidated financial statement of HHI Group according to Korea's new commercial laws, and directors' remuneration limit.

Shipbuilding

HHI Wins Offshore Construction Vessel Order

HHI won an order to build a multi-purpose offshore construction vessel (MOCV) from Toisa Ltd. on February 14. The contract includes an option exercisable by the owner for an additional same class MOCV.

With a 900 tonne and a 200 tonne offshore crane, the vessel will be capable of undertaking ultra deepwater installation and construction activities including subsea pipeline and cable laying, and topside construction support work for FPSO and drilling rigs.

The MOCV, measuring 150 m in length, 32 m in width, and 13 m in depth, with a service speed of 15 knots, also features a dynamic positioning system, five 3,350 kW thrusters, and two 2,500 kW thrusters for improved stability while operating.

The Safety for Special Purpose Ships Code-abiding vessel is scheduled to be delivered by the second half of 2015.

Shipbuilding

Hyundai Heavy Unveils Membrane LNG Cargo Containment System

HHI developed a high performance Hyundai Membrane LNG Cargo Containment System on April 15. The shipbuilding giant's new membrane type containment system for liquefied natural gas received Design Approval from classification societies including ABS and DNV.

The containment system useable for LNG carriers, LNG FPSO, LNG fueled vessels, and LNG bunkering systems, features dual metal barrier and high performance insulation systems. The thin STS304L and Invar-alloy barriers optimized to sustain thermal, fatigue, and sloshing loads, are specifically designed to prevent LNG leakage at the welded secondary barrier. New insulation panels with low density polyurethane foam and glass fiber composite material reduce boil off rate by more than 10% of the stored liquefied natural gas in comparison with conventional insulation panels. Moreover, the insulation panels made up of reinforced polyurethane foam and plywood are specially designed for areas prone to sloshing damage such as LNG tank corners.

Hyundai Heavy's LNG technology meets International Maritime Organization standards requiring high level of structural analysis, fatigue analysis, comparative wet/dry drop test, and fluid-structural interaction analysis for membrane type LNG cargo containment system. HHI will commercialize the Hyundai Membrane LNG Cargo Containment System after the final performance test.

In November 2012, the Ulsan, South Korea-based company introduced an independent liquefied natural gas storage tank model, Lobe-Bundle Tank. This model uses ring-shaped plates instead of conventional flat plates to reduce the weight of the tank and building cost, and spray-type insulation to substantially reduce construction time.

With the development of Lobe-Bundle Tank and Hyundai Membrane LNG Cargo Containment System, HHI now is better-positioned to build quality LNG carriers living up to the high standards demanded by the global market.

Shipbuilding

HHI Wins Accommodation Vessel Order from Edda

HHI won an order to build an accommodation vessel from Edda Accommodation on March 11. The vessel will be delivered to the Norwegian firm in June 2015.

Measuring 155 m long, the vessel features a positioning control system to make it stable in the ocean. It will also have its own theater, sports facilities, sauna and swimming pool for about 800 engineers.

Offshore & Engineering

Hyundai Heavy Clinches USD 1.9 Billion FPSO Order

HHI won a USD 1.9 billion order to build a Floating Production Storage and Offloading unit (FPSO) for Chevron North Sea on April 11.

HHI will carry out engineering, procurement, and construction for the floating offshore facility to be deployed in the Rosebank oil & gas field, 175 km northwest of the Shetland Islands.

The 99,750-tonne turret moored FPSO is scheduled to be handed over by the end of November 2016. It will be able to produce 100,000 barrels of oil and 190 million standard cubic feet of natural gas per day. It will also have storage capacity for 1.05 million barrels of oil.

The FPSO, measuring 292 m in length, 57 m in width, and 30 m in depth, will be built under the NORSOK standard, applicable to offshore facilities operating in the harsh conditions of the North Sea. Currently, the Ulsan, South Korea-based offshore facilities contractor is building two other FPSO and one offshore platform specially designed to perform in the North Sea.

Industrial Plant & Engineering

HHI Completes BTX Plant in Record Time

HHI completed Hyundai Oilbank's second BTX plant producing a composite mix of benzene, toluene, and xylene on April 3. The construction period was from April 2011 to November 2012, completed five months ahead of schedule. This makes Hyundai Oilbank's BTX plant the quickest built plant in the world.

The plant covers 85,000 m² and can produce 1 million tonnes of BTX a year, including 850,000 tonnes of p-xylene and 150,000 tonnes of benzene.

Offshore & Engineering

HHI Wins USD 2 Billion Offshore Facilities Order

HHI received a letter of award for a USD 1.3 billion order for a floating production unit (FPU) and a USD 700 million order for a tension leg platform (TLP) from Total E&P Congo on March 26.

HHI will carry out engineering, procurement, supply, construction, and commissioning for the two offshore facilities to be deployed in Moho Nord field, 80 km off Republic of the Congo's coast.

The 14,600-tonne vertically moored floating TLP will be used to extract oil and natural gas, and transport those to the floating production unit. The 62,000-tonne FPU, measuring 250 m in length, 44 m in width, and 18 m in depth, will process the received oil and gas, and send the products to onshore plants via subsea pipelines. The FPU has a production capacity of 100,000 barrels of oil and 2.5 million cubic meters of natural gas per day.

The TLP and FPU will be installed at the Moho Nord field in the first half of 2015 and 2016 respectively.

Engine & Machinery

Hyundai Heavy Wins Approval for New HiMSEN Engine

HHI won type approval for the new 35,300 bhp HiMSEN H46/60V engine from nine classification societies including ABS, BV, CCS, DNV, GL, KR, LR, NK, and RINA on April 2.

The type approval test completion of the IMO Tier III compliant HiMSEN H46/60V expands Hyundai Heavy's medium speed marine engine line-up to cover output from 780 bhp to 35,300 bhp.

The HiMSEN engine (Hi-touch Marine & Stationary Engine) was developed by HHI in 2000. Since then, the Company has churned out 7,200 units for marine propulsion and land-based power plants. The engines can be customized to have anywhere between 5 and 20 cylinders to reflect customers' needs.

"The rated power of medium speed engines varies depending on ship size and power generation capacity. With the development of the high power HiMSEN H46/60V, HHI is well positioned to swiftly respond to the demand for high power marine engines for ship propulsion and power generation," said Mr. Kim Jong-suk, senior vice president of Hyundai Heavy's Engine & Machinery Division.

Engine & Machinery

HHI Completes TAT of G-Type Marine Engine

HHI completed a type approval test of two ultra long stroke marine engines under license with MAN Diesel & Turbo on March 12.

The type approval test of the G (Green)-type marine engines, 7G80ME-C9.2 at 37,900 and 6G80ME-C9.2 at 38,200 bhp, was attended by supervisors from 11 classification societies including ABS, DNV, LR, and shipowners' representatives.

One G-type marine engine was installed on Almi Tankers's 319,000 DWT VLCC. The other other one is scheduled to be installed on Thenamaris Ship Management's 5,000 TEU containership. Since the G-type engines use 7% less fuel and produces 7% less emissions than engines with the same output, the G-type engine will save the respective owners about USD 2.9 million and USD 1.3 million a year.

HHI has a rich experience in developing eco-friendly engines. As the world's No.1 marine engine maker, the Company developed the world's first gas engine package including duel fuel 2-stroke marine engine and 4-stroke HiMSEN engine (H35DF), LNG fuel gas supply system (Hi-GAS), a selective catalytic reduction (SCR) system that reduces NOx emissions by 95%, and LNG-fueled HiMSEN H35/40GV engine that emits 20% less carbon dioxide than diesel engines and reduces NOx emissions by 97%.

Electro Electric Systems

Hyundai Heavy Develops ACONIS-BWTS

HHI announced the development of the ACONIS Ballast Water Treatment System (BWTS) on April 2. This equipment, which is a key component of HiBallast, will be installed on containerships and PCs built by HHI and HSHI respectively.

Demand for HHI's HiBallast system, which disinfects ballast water through electrolysis, is steadily increasing since the International Maritime Organization began tightening environmental regulations last year.

By developing this ACONIS-BWTS, HHI is expected to expand its market share of ballast water systems which will grow to KRW 80 trillion market in 2017.

Electro Electric Systems

HHI Holds Completion Ceremony for Low-voltage Motor Facility

HHI held a completion ceremony for Large Size Low-voltage Motor Testing/Painting Facility, at its Low-voltage Factory in Ulsan on March 14.

By installing this facility which has a testing capacity of 1,000 bhp and 6.6 kV, the production capacity of the factory will be expanded to 1,200 units of large size low-voltage motors. The factory's annual sales are set to reach KRW 30 billion.

Construction Equipment

HHI Wins USD 216 Million Orders at Bauma 2013

HHI won orders for 2,071 excavators and 382 wheel loaders worth USD 216 million at Bauma 2103 in Munich on April 20.

Bauma is the world's largest construction equipment exhibition, with over 3,300 exhibitors from all over the world presenting their wares.

At this exhibition, HHI released 23 brand new products including R220LC Excavator, which improves fuel-efficiency by 20% through the HiPOSS next-generation power system.

Construction Equipment

Hyundai Heavy Expands into Compaction Equipment Business

HHI signed a strategic partnership with German construction equipment manufacturer Atlas Weyhausen for the supply of compaction equipment on April 18.

Under the partnership, four models of single rollers ranging from 7 tonnes to 14 tonnes, and 2.5-tonne and 3-tonne tandem rollers to be built by Atlas Weyhausen will be released in emerging markets including Middle East, Turkey, and Russia under Hyundai Heavy's brand from the second half of this year.

The partnership enables HHI to expand its construction equipment line, and Atlas Weyhausen to boost its sales via Hyundai Heavy's 500-plus dealer network in 150 countries worldwide.

"We expect this win-win partnership diversifying our construction equipment portfolio will not only boost our existing product sales but will also make HHI the one-stop shop for construction equipment." said Mr. Ji Sang-pyo, senior vice president of Hyundai Heavy's Construction Equipment Division.

Mr. Helmut Lorch, managing director of Atlas Weyhausen said, "For Atlas Weyhausen, this long term strategic partnership is a milestone in the worldwide distribution of its proven compaction equipment line, and will enable us to further accelerate our developing efforts in this line of business."

Green Energy

HHI Wins 40 MW Wind Turbine Order

HHI won an order to supply 20 sets of 2 MW wind turbines from DaeMyoung GEC. on February 26 for Yeongam Wind Farm in South Jeolla Province, South Korea. The work scope also includes installation, supervision, and commissioning. Additionally, a long-term maintenance service agreement is in discussion for signature soon.

Featuring its reliable performance with proven technology and low cost of energy in low wind conditions, HHI's 2 MW turbines are scheduled for delivery in July this year. Upon completion in November, the 40 MW Yeongam Wind Farm, which is Korea's largest onshore wind farm built with wind turbines supplied by a South Korean company, will generate enough electricity for approximately 30,000 households annually.

With its total annual production capacity of 600 MW, HHI, South Korea's biggest wind turbine supplier, has also recently installed 24 MW wind turbines in Taebaek Wind Farm and Changjuk Wind Farm in Gangwon Province, South Korea.

HHI plans to install a 5.5 MW prototype offshore wind turbine northwest off the coast of Jeju Island by the end of this year.

Beautiful View, Prosperous Country, Great Future!

Built between the two major cities of the country (Rio de Janeiro and São Paulo), Hyundai Heavy Industries Brazil not only has at its front overlooking the beautiful scenery of Serra das Agulhas Negras (the highest peak in the state of Rio de Janeiro) but also prosperous future in their business throughout Brazil.

The choice of the small city of Itatiaia with only 35,000 residents was made with tax incentives in mind, which added to the tax benefits and exemptions from the state government of Rio de Janeiro.

On the other hand, the state of Rio de Janeiro hosts several infrastructure construction projects which makes it attractive for its proximity to potential customers. The consolidation of Brazil as a major emerging economic power is evident. Proof of this is that the country will be the stage of the next World Cup in 2014, followed by the Olympic Games in 2016. Investments in infrastructure, urban mobility, and ease of trade with Latin American countries allowed, after long studies, Hyundai Heavy Industries to deploy in Brazil its first construction equipment factory outside Asia.

Crossing seas is not easy, so say the first group of Korean managers who landed in Brazil amid many difficulties and day after day is doing an excellent job of adapting. One of the biggest difficulties pointed out by them was transforming the Korean way of thinking to the Brazilian way of thinking and through that understanding employees and the system of laws and taxes. "One of the hardest things to understand is the taxes and rate changes," explains Mr. Oh Byung-su, general manager of HHI, living in Brazil since January 1, 2012.

The general manager also said that the most difficult phase faced so far was the rain and climatic adversities, which delayed the construction schedule of the plant by two months. Another situation pointed out was the change in the importation rates of three items HHI used to import: excavators, wheel loaders, and backhoe Loaders. This measure taken by the Brazilian government makes the Korean team work even harder spending several sleepless nights to find a way to keep Hyundai products competitive in the market.

Despite the difficulties, the memories of this group of managers are not only made up of setbacks. Amid much work they have adapted to Brazilian culture and today feel like they belong to this tropical country. "One of the best feelings I have here is the interaction with people. It makes me very happy to see the Brazilians' will to learn, the positive thinking style, happiness, and enjoyment of life, plus the ease of assimilating the culture and learning our technology. Brazilians are a very receptive people and want to make Hyundai number one in our industry segment," says Mr. Oh. He also shows with humor that the only aspect he does not understand is

The key to the survival and recovery growing of construction equipment market are directly linked to investment trends, financing plans, and government actions

the amount of holidays in Brazil.

Cultural exchange is something exciting for both sides, although it does not decrease distance from home, friends, and native culture. Adaptation of families is a challenge to be overcome on a daily basis. It was not easy for the 12 team leaders sent to be trained by head office; many of them had a hard time with cold weather and food adaptation. Other employees, such as Guilherme Gleidersonda Silva, said they would like to go back to Korea soon. “I fell in love with Korea. It is a country example in education. Streets and sidewalks are clean, but what moved me the most was the passion for the good of the country. There, they do not work for money like most people in the world but for the development of the Korean nation. They are proud to be part of that,” he said.

Further, he stated that there was no difficulty on his side to adapt with the language. Today Silva reads, writes, and speaks Korean. Considering food, he has already chosen his favorite Korean dish and drink.

“My favorite dish is the kimchi, the flavor is very tasty. The pepper from Brazil only burns, but the Korean besides burning has a lot of flavor.” His favorite drink is soju.

Hyundai Heavy Industries in Brazil

The path of Hyundai Heavy Industries in Brazil began a few years ago, before even thinking about bringing the Korean giant to the country. In fact, the brand began to be traded in Brazil in 2003 through the company Comexport. First line of equipment to arrive in Brazil were the Hyundai forklifts. Thereafter, the company won over customers with a diverse range of quality and versatile products. With growth and branding, as well as increasing sales, Hyundai has also brought construction equipment that quickly gained market share; this made possible, in 2007, the creation of the Brazilian company, BrasilMáquinas de Construção (BMC), Hyundai Heavy Industries distributor in Brazil. After four years of an excellent job as distributor, BMC made Hyundai a huge name in Brazil. The sustainable increase in the market share throughout the years allowed HHI to establish a factory in Brazil is affectionately called HHIB.

Growth Perspectives

Hyundai’s market share of construction equipment in Brazil has averaged around 15% since 2010. In some states it is 25% of the market, especially for excavators. With the beginning of production, the Sales & Marketing team’s goal is to increase sales according to real economic world scenario.

The key to the survival and recovery of the construction equipment market is directly linked to investment trends, financing plans, and government actions such as investments in infrastructure, protectionist measures such as increased tariffs (which Hyundai was victim of in 2012 for construction equipment and in 2013 for forklifts), technical standards that restrict the importation of certain categories of equipment, and others when it comes to keeping the continuous economic growth of the country.

In return, HHIB will benefit from some of these measures that previously were seen as protectionist, when HHIB was just an importer. Today the company has important partnerships with city, state, and the federal governments. Becoming a national company allows the company to take part in public bids as well as seek government loans for future expansions. With nationally available machines, HHIB can offer more attractive finance programs to customers, with reduced rates of up to 3% per year. This should increase competitiveness and sales.

An aspect HHIB can take for granted: market growth in 2013 is evident; even though it might not reach the most optimistic predictions made in a scenario after the 2009 crisis. As we can see, the economic environment changes all the time across the globe; however, one must admit the good momentum of emerging economies like Brazil, always seeking innovation and excellence, practices already adopted as Hyundai Heavy Industries’s philosophies. HHI

2003
First Machine Sold:
Hyundai Forklift

2005
Start Selection of Dealers

2007
BMC Becomes HHI Distributor

2010
Good Year for CE Sales. HHI hit 35% market share in southern Brazil for excavators

2011
07/10 : Foundation Stone Ceremony for Itatiaia HQ

2012 May
30/05 First Column Erection

2012 June
First HHIB Sales

2012
First Assembled Machines H940 and SL633 in SKD System

2013 March
First Assembled Excavator R480 in SKD System

Christ the Redeemer, Embracing the Nature of Rio de Janeiro

Rio de Janeiro, the old capital of Brazil, is regarded as one of the most beautiful ports in the world after Sydney and Naples. The city was designated a UNESCO World Heritage Site for its historical significance and special scenery. It is the first city in the world to receive this title, under the category ‘cultural landscape’. The city is in perfect harmony with the white sandy beach surrounded with the granite cliffs and the dense forest of skyscrapers. The Tijuca National Park, the biggest forest area in Brazil, is one of the elements comprising the unique scenery of Rio de Janeiro. The location of this park is very noticeable from the other side of the city, because of the huge statue Christ the Redeemer in the middle of the park. The statue sits on top of Mount Corcovado, stretching its arms out as if it embraces everything in Rio de Janeiro. The statue is 30 m tall, 28 m wide, and weighs over 635 tonnes. It is the fifth largest statue of Jesus Christ ever made.

The plan for the construction was suggested by the priest Pedro Maria Boss in the 1850s, but was dismissed in 1889. A second proposal was tendered in 1920 by the Catholic Circle of Rio with the help of donations and signatures from the public. Most donations were from Brazilian Catholics. The statue was designed by Hietor da Silva Costa and sculptured by Paul Landowski. The large construction project took over 5 years to complete at a cost of USD 250,000 (USD 3,200,000 in 2013) from 1926 to 1931. Christ the Redeemer, covered with white soapstone, has a beautiful harmony with the view of surroundings like Copacabana, Ipanema, and Sugarloaf Mountain. The scale and fine view overpower beholders.

Hyundai Heavy Industries Engineering College : Nurturing Talent for the World's Largest Shipbuilder

Year-round Educational Training Courses

On the evening of April 30, 2012 at HHI's Human Resources Development Institute, Mr. Kim Jeong-hwan gave a lecture to 100 HHI employees about the competitiveness of Hyundai Heavy's HiMSEN engines (Hi-touch Marine & Stationary Engine), one of the most popular 4-stroke marine engines. The speaker was not an outside instructor or a senior engineer, but a senior executive vice president and the COO of Hyundai Heavy's Engine & Machinery Division. That was the second of seven lectures in the Hyundai Heavy Leadership Conference series to transfer knowledge and experience from top veterans to junior staff. This year, HHI also plans to invite its COOs and senior management to speak at the conferences scheduled from the end of May to mid July. The Hyundai Heavy Leadership Conference is just part of Hyundai Heavy's year-round comprehensive educational programs for training its employees.

Last year, there were 517 Voluntary Work-related Educational Courses planned, organized, and implemented by a superior within each participating department. More than 8,500 students learned job-specific know-how by the designated lecturers from the courses. If we count 45,000 students who took 880 online educational courses, it isn't hard to see how serious Hyundai Heavy is about training their human resources. Of course, a similar number of educational programs have been in place this year as well, but with focus shifting from just training to 'nurturing' its human resources.

Shifting From Training to Nurturing

One evening in April 2013 at the Technical Education Institute of the world's largest shipbuilder, a group of 'freshies' majoring in shipbuilding & offshore and mechanics & electricity was taking classes. What makes this otherwise mundane scene different is that the 'students' are on average 35 years old, and they are not full-time students but all current Hyundai Heavy employees. These opsimaths are the first enrolled students at Hyundai Heavy's 2-year corporate college, Hyundai Heavy Industries Engineering College opened on March 4 this year.

The Ulsan-based shipbuilding giant got the green light for the establishment of its engineering college from the Ministry of Education, Science, and Technology in October 2012. Graduates of this junior college will receive the Bachelor of Science degree, recognizing educational achievement equal to those of a vocational college. 20 full-time teachers with master's degrees and doctorates will teach more than 2 hours of classes per week. Starting with 30 students for shipbuilding & offshore department and mechanics & electricity department each, the engineering college plans to attract 120 students by next year.

A corporate university can be broadly defined as 'an educational entity set up as a strategic tool of the company to better achieve its goals by not just training but nurturing its employees through organizational job and company-specific learning courses. Corporations in Korea have recognized their responsibility to provide employees education that can live up to ever changing business circumstances for continued success. Many corporations believe that through continuing employees' education, they can achieve strategic goals and performance targets. Against this backdrop, the number of corporate universities is in the upward trend. Educational organization of companies has been around for decades. Two of the most famous examples are McDonald's Hamburger University and GE's John F. Welch Leadership Development Center (more commonly known as Crotonville). The huge success of these two corporate universities can be attributable to their complete focus on their human resource needs. The same might be said of the numerous other institutions that have popped up in Korea in recent years run by Sam-

Corporations in Korea have recognized their responsibility to provide some employees with education that can live up to ever changing business circumstances for continued success

"We will make Hyundai Heavy Industries Engineering College the best corporate educational institute with fruitful courses and pleasant education environment."

sung Electronics (2005), Samsung Heavy Industries (2007), SPC (2011), Korea Development Bank (2013), Korea Land and Housing Corporation (2013) and Daewoo Shipbuilding and Marine Engineering (2013).

Hyundai Heavy employees with more than two years of employment and high school graduates are eligible to apply to the college. Tuition fees are 100% supported by the Company, and students are required to complete a total of 80 credits in engineering, liberal arts, and foreign languages over 4 semesters. Through organized educational courses, the Company will be able to reap students that grow as valuable human resources who have both on-the-job training and theoretical background.

Prior to establishing this corporate college, Hyundai Heavy Industries had been operating the 1-year course 'Hyundai Heavy Technical College' to educate employees as specialists tailored for hands-on jobs. From the course, Hyundai Heavy turned out 1,200 graduates, with 111 becoming team leaders and 15 moving on to become department heads.

Hyundai Heavy Industries Engineering College laid out phase-based development plans to grow into a leading exemplary corporate university. In the Introduction phase (2013-2014), the engineering college formed TFT and will set up education management system in May 2013 to synchronize matters related to classes among students, professors, and teaching staff. In the Settlement phase (2015-2016), the college plans to introduce new departments related to new business in an effort to nurture customized human resources best suited for the new business. In the Development phase (2017-onwards), Hyundai Heavy plans to create 4-year bachelor degree courses and an environment that can help students with the bachelor's degree continue to pursue master's degrees.

In the entrance ceremony, Mr. Kim Oi-hyun president and COO of the Shipbuilding Division and first dean of the college said "We will make Hyundai Heavy Industries Engineering College the best corporate educational institute with fruitful courses and pleasant education environment." He went on to ask the freshers to develop themselves as core engineers of pioneering spirit, creative wisdom, and unwavering drive.

As one of the most prominent academies of shipbuilding and offshore engineers, Hyundai Heavy is now gearing up for not just training but nurturing its own emerging contributors. What new products that can amaze the world the college-educated students can make remains to be seen. HHI

Banker-Turned-Manufacturer CFO Finds Ways to Support

By Grace Choi

Eleven months into his new job at Hyundai Heavy Industries, chief financial officer Mr. Kim Jee-won is seen by the employees as a respectful "soft lander" in the giant manufacturer; adapting easily to his new industry. Mr. Kim was a banker who spent his 30-year career at Korea Exchange Bank until June last year when he moved to the Ulsan-based shipbuilder as its financial chief. He served his last three and half years at KEB as CFO.

"I was concerned as to how I would settle into the manufacturing industry at first but I found it rather comfortable in adapting to the new system," the 57-year-old executive said. "I especially liked the company's mission statement and its culture, and I hope my knowledge and past experience could bring some changes to the company in a positive way."

Looking back a year ago, Mr. Kim said his first impression of employees was that they were so passionate in their job.

"When I first came here, I thought I could make a big change at first, but soon I realized that my team members were already doing very well. Now I believe my role is to combine my decades-long experience and know-how in the finance industry with these excellent human resources to create synergy," he said.

Mr. Kim portrays himself as someone who is always trying to get along well with everyone. On his first day at Hyundai Heavy, he took some time to have a talk with his team members as he aims to be a better listener than a speaker. "I do not talk much when I meet junior colleagues, because once I start talking they stop giving out their ideas. Sometimes, my colleagues come up with brilliant ideas which turn out to be very helpful."

In a yard tour in Ulsan, the former banker was deeply impressed by the huge size of the ships and offshore facilities lined up along the dock. He felt their significance as a major export item in the country's economy.

"I found the shipbuilding industry different from the financial industry as the former creates massive jobs by building ships in local plants and as a major exporter contributes to the nation's sustainable growth," said the CFO.

The global shipbuilding industry has gone through very tough challenges since the financial crisis back in 2009. Hyundai Heavy also experienced a slowdown of shipbuilding demand.

For the whole of 2012, its consolidated net profit fell 63% to KRW 1.02 trillion (USD 908 million) from a year earlier. The goal was USD 30.55 billion in fresh orders but its actual achievement was only 64%, or USD 19.57 billion. The company aims to win orders worth USD 29.7 billion this year.

The company has already achieved more than half of its target of USD 6 billion in offshore facilities. The industrial plant sector and the construction equipment market are in a relatively good situation as well. Still, Mr. Kim expects the shipbuilding industry downturn to continue for a while, given tough challenges ahead. He hopes that demand from non-shipbuilding sectors could make up for the slowdown of the shipbuilding demand.

He said people may judge Hyundai Heavy as having the highest debt level among the top three shipbuilders, reaching 6.5 trillion won as of the end of 2012, but it runs the lowest debt-to-equity ratio among them, and this proves its financial soundness.

Last year, the company issued a total KRW 1.2 trillion in corporate bonds to deliver operating capital and repay maturing debts. But this year it doesn't have such a plan. Instead, if needed, it will diversify its financial methods such as pre-shipment credits or trade finance to meet its capital needs.

Currency volatility is a major worry for exporters like Hyundai Heavy. The strengthening of the won hurts the competitiveness of Korean-made products abroad and decreases the value of overseas earnings when they are brought back to Korea.

Hyundai Heavy has interests across seven business sectors that include building offshore facilities and power plants. "In January when the dollar fell to KRW 1,050, I was so concerned about the competitiveness of our products overseas. In order to cope with the strengthening of the won, we need to focus more on reducing costs in the manufacturing process as well as increasing the quality of our products," he said.

Given all this, he faces an uphill battle as CFO in the world's biggest shipbuilder but he believes he will be able to show his leadership with the help of his passionate colleagues.

Mr. Kim knows the importance of family life as well. He always tries to balance family life and his professional career in a cogent and fulfilling fashion. He has been married to his wife for 28 years and has a son who is working as a public health doctor and a daughter preparing for a university entrance examination.

"I go jogging or take a walk every morning to clear my thoughts, and love to go out with my better half on weekends to enjoy a cup of coffee and have a friendly chat." These are Mr. Kim's pleasant ways to relieve stress.

Mr. Kim studied economics at Seoul National University and earned his MBA from University of Washington.

Leaving aside his professional career, Mr. Kim has his own bucket list: to do social work for underprivileged people; to make a trip for a few months with his family members; to learn how to sing a song playing the guitar; to give lectures to share his knowledge and experiences with others.
What else is on his bucket list? HHI

The writer is a journalist based in Seoul.

The New Standard in Offshore Facilities

By George Deftereos

Looming over Hyundai Heavy's offshore yard in Ulsan like silent witnesses to the engineering marvels being built below, the two orange Goliath gantry cranes have seen the construction of their namesake in Eni Norge's Goliat FPSO, the world's largest circular floating production storage and offloading facility.

Mr. Dean Knowles has been leading the Eni Norge team in Ulsan since May 2012. He has been working at Eni since 2003 when he joined Eni Australia. One of his projects in oil & gas was Woodside's Goodwyn A Platform in 1992, which supported the first LNG project in Australia's North West Shelf. Goliat FPSO can also claim many firsts: the first FPSO to be deployed in the Goliat oil field (the first oil field to be developed in the Barents Sea); the first circular FPSO of this size; the first FPSO to be owned by Eni Norge; and the first FPSO built by HHI under the NORSOK standard as an engineering, procurement, and construction project.

Mr. Knowles explains that the NORSOK standard is similar to other industry standards from around the world but is linked to the regulations set by Norway's Petroleum Safety Authority. "The main differences between NORSOK and other standards are technical safety, working environment, and certification" he says. Unlike traditional FPSO projects, there is no class certificate before sail away because Norwegian authorities focus more on the total process rather than individual parts (hulls, topsides, etc). Instead, a license to operate is issued when the unit is ready to operate and third party certification is used to increase the certainty that the unit is compliant. The onus is on the builder and the operator to demonstrate that the unit is in compliance with Norwegian regulations.

Goliat FPSO

Process deck diameter : 107 m	Extended bilge box diameter : 112 m	Topside weight : ~27,000 tonnes
Elevation of process deck : 50 m	Normal loaded draft : 30 m	Hull weight : ~31,000 tonnes
Main deck diameter : 102 m	Ballast draft 20.5 m	Future/spare capacity : ~6,000 tonnes
Elevation of main deck : 44 m	Fully PSA/NORSOK compliant	
Main hull diameter : 90 m	No class or flag state	

Goliat FPSO concept consists of a circular facility containing a processing plant, oil storage capacity, and accommodation facilities. The Sevan 1000 is designed and built both to withstand icing and to ensure that rain and snow drain naturally from the walls and roofs. It is specially-tailored to the Arctic climate. Produced water will be re-injected into the reservoir. Produced oil will undergo interim storage on the facility prior to onward transport by shuttle tankers to the market. This FPSO will have an oil production capacity of 100,000 barrels per day, gas production of 3.9 million cubic metres per day, and storage capacity for 1 million barrels of oil.

Goliat FPSO is nearly twice as big as the next largest circular FPSO. It has a diameter of 112 m at its widest point. When HHI won the tender to build the unit in 2009, the company had just completed the world's first drydock specifically for FPSO in the Offshore & Engineering Division, measuring 490 m long and 115 m wide. For a while there was discussion on building the hull at HHI's Gunsan Shipyard and the topside in Ulsan. To make sure both hull and topside were built in Ulsan, Eni contributed to removing H-Dock's gate and extending the drydock.

There are many advantages to using the Sevan 1000 design for FPSO. Regarding stability, the circular design promotes easier wave flow in rough seas. This eliminates the need for the FPSO to turn and face oncoming waves to minimize wave impact. The design forgoes the traditional turret for mooring in favour of being secured to the seabed by 14 heavy anchors. The turret is used to secure the FPSO to the seabed but comes at the price of being difficult to effectively use and limiting expansion and growth possibilities. Instead, Goliat FPSO takes up the 20 risers and flowlines without turning because they come up through the centre of the unit. This also lets operators expand operations to accommodate new oil discoveries.

The Goliat field is located in the Barents Sea, 85 km northwest of Hammerfest, Norway in Production Licence 229 (PL229). The first oil discovery was made through the first exploration well in 2000. A total of five wells have already been drilled. The licensees are Eni Norge (operator, 65%) and Statoil Petroleum (35%). Production start-up at Goliat is planned to take place in the third quarter of 2014. Because Goliat is the first oil field to be developed in the Barents Sea, it sets the industry standard as activity migrates ever further north.

Returning to Korea several times since his first visit in 1992, Mr. Knowles has seen the country and HHI go through many changes. Back then, the Goodwyn A platform was built in the Shipbuilding Division and HHI only had the one foreigners' compound in Seobu-dong. As Chung Juyung's motto emblazoned in the shipyard goes "When we get better, the country gets better. When the country gets better, we get better," Ulsan has changed from an industrial city isolated from the rest of the country to a modern metropolis.

HHI and the shipbuilding industry have also changed since the early 1990s, moving from Japanese quality to Korean quality. "Back then, shipyards would struggle to do the outfitting for big facilities. Now, companies are looking for complete packages," Mr. Knowles says. During his recent visit to Korea, together with his wife and son, he has taken the opportunity to visit many places. In March this year whilst all the cherry blossoms were in bloom, he took time to spend one week on Jeju Island. He says, "This is just an amazing place for all ages, varying from hiking, museums, nature, and the tranquility that allows you to relax but take in the real beauty of this country." HHI

The writer is a copy editor of New Horizons.

Hyundai Heavy Completes Construction Equipment Factory in Brazil

Hyundai Heavy Industries completed its first construction equipment factory in Brazil on April 25.

The completion ceremony for the factory in Itatiaia, Rio de Janeiro state, was attended by Mr. Sergio Cabral, Rio de Janeiro state governor; Mr. Luis Carlos Ferreira Bastos, mayor of Itatiaia; and Mr. Choe Byeong-ku, president & COO of Hyundai Heavy Industries's Construction Equipment Division.

With an investment of USD 175 million, the 562,000 m² factory has an annual production capacity of 3,000 units including excavators, wheel loaders, and backhoe loaders, and plans to increase the capacity to 4,000 units by 2014.

Hyundai Heavy has already won orders worth USD 60 million for 500 construction equipment from eight projects in Brazil including the construction of a hydroelectric power plant in Pará state and a railway project in Brazil's northeast.

The Ulsan, South Korea-based company expects the new Brazilian plant will serve as the South and Central America base helping Hyundai Heavy secure market share, and provide better service to clients in the region. "We believe our construction factory can make contributions to, and grow together with the Brazilian economy which continues to grow as a center of the global economy," said Mr. Choe Byeong-ku. HHI

Construction Equipment Markets to Pick up

By Chris Sleight

The global market for construction equipment more or less came to a standstill last year. The Yellow Table, a ranking of the world's 50 largest construction equipment manufacturers, published in International Construction magazine, showed revenues grew just 2.6% in 2012 to USD 186 billion. Hyundai Heavy Industries was ranked 16th in the league table, unchanged from the previous year.

Although USD 186 billion was a new record for the industry, the low growth figure made it a disappointing year. Over the last decade, the sector has consistently seen gains of 10% per annum or better, and some years it was higher than 30% annual growth. The exception of course was 2009, when the global downturn translated to a -35% collapse in revenues. But sales have recovered since then and are now well above the previous pre-recession high.

To understand what 2013 holds for the industry, one must consider the trends from last year. What growth there was came from US manufacturers, which seemed to reflect general buoyancy in the Americas. The downside was in China. Last year was the first time in more than a decade that China's construction equipment manufacturers saw their revenues fall, and this reflected weakness in their domestic market.

Europe is also an important part of the equation for the construction equipment industry, but as a sales region it is not as influential as it once was, having not achieved much of a recovery since the recession. With little or no economic growth expected in Europe this year, the fortunes of the region's construction equipment markets are not likely to have much of a bearing on changes to the global market.

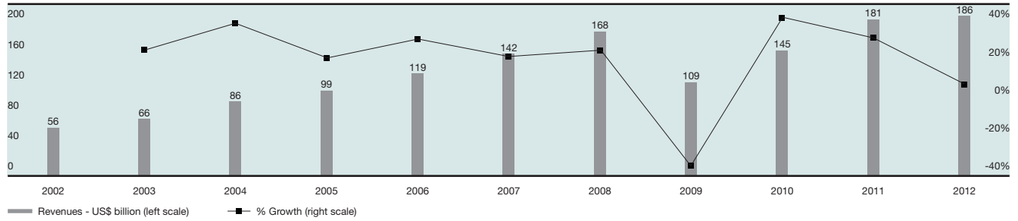
On the whole, industry prospects for this year look better than 2012. Global GDP is expected to increase by 3.5% in 2013, compared with 3.2% last year (source: IMF), and the acceleration to 4.1% growth in 2014 should help business confidence, encouraging construction contractors and equipment rental companies to invest in their fleets.

But the key factor for the construction equipment industry is what will happen in China. Despite the downturn last year, China still accounts for more than 40% of the global market in unit terms.

The good news is that China's GDP is also forecast to accelerate next year, with a rise of 8.2%, from 7.8% last year. That sounds like a robust performance compared to developed countries, many of which will be lucky to achieve 1% or 2% growth this year, but in Chinese terms it is still relatively lacklustre. It may not be enough to turn the tide in a country where there is a huge fleet of relatively young machines available for construction projects, and where production of construction equipment has clearly far out-stripped demand since about mid-2011.

So barring any economic catastrophes, 2013 should be a better year for the global construction equipment industry than 2012. But it will not be a spectacular year. The acceleration should be more pronounced in 2014 as global GDP growth gains momentum, and all being well, the positive cycle should continue for several years beyond that. HHI

The writer is the editor of International Construction magazine



Order Taking in Uncertain Market Conditions

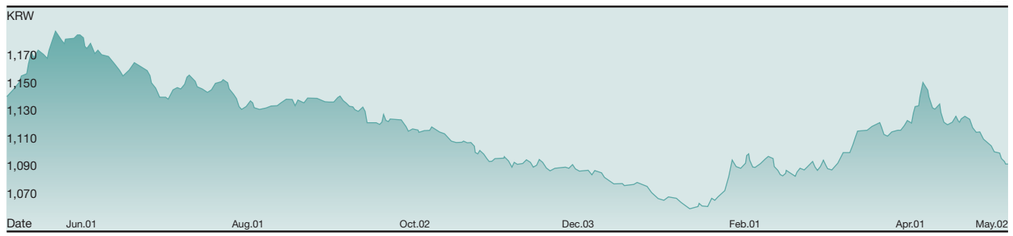
New Orders & Backlog

(unit: USD million, as of the end of March)

Divisions	2013 Plan	2013 Mar. (YTD)	2012 Mar. (YTD)	Achievement (%)	YoY (%)	Backlog (Delivery basis)
Shipbuilding	7,750	1,507	1,134	19.4	32.9	20,044
Offshore & Engineering	6,000	3,311	123	55.2	2591.9	17,849
Industrial Plant & Engineering	6,000	121	40	2.0	202.5	6,015
Engine & Machinery	3,100	689	758	22.2	-9.1	3,560
Electro Electric Systems	3,160	490	780	15.5	-37.2	2,605
Construction Equipment	3,272	733	844	22.4	-13.2	-
Green Energy	394	75	78	19.0	-3.8	135
Total	29,676	6,926	3,757	23.3	84.3	50,208

USD Exchange Rate

Source: KEB



First Quarter Orders Result

By end of March, HHI posted a total of USD 6.93 billion in orders, up 84.3% compared to the same period of last year. This accounts for 23.3% of the annual order target of USD 29.7 billion.

The Shipbuilding Division received orders worth USD 1.51 billion including LNG carriers and special purpose vessels such as accommodation vessels and offshore construction vessels. The Offshore & Engineering Division has already achieved 55.2% of its annual order target of USD 6 billion in 2013.

The Industrial Plant & Engineering Division won orders worth USD 121 million, just shy of 2.0% of its annual target of USD 6 billion. However, the division was selected as preferred bidder for Az Zour North project and will secure large projects soon.

Under gloomy circumstances in the global market, the Engine & Machinery Division and Electro Electric Systems Division are having difficulty in achieving their order targets. The divisions received orders worth USD 689 million and USD 490 million, respectively. Both divisions expect more growth in Q2 due to a revival in new buildings and replacement of equipment in the US and other emerging markets.

The Construction Equipment Division has taken USD 733 million in new orders, achieving 22.4% of its annual goal. The sluggish demand from China has dragged the division's performance for quite a long time.

Stock Metrics

	2009	2010	2011	2012	May. 9, 2013
High for the Year (Closing, KRW)	250,000	456,500	554,000	345,000	284,000
Low for the Year (Closing, KRW)	148,500	171,000	235,500	195,500	187,000
Closing, KRW	173,500	443,000	257,000	242,000	203,500
Market Cap. (Closing, KRW billion)	13,186	33,668	19,532	18,392	15,466
Foreign Ownership (%)	17.38	20.20	16.91	18.89	17.63
PER (H/L)	7.0/4.2	9.8/3.7	17.2/7.5	19.1/10.8	N/A
EPS (KRW)	35,705	46,594	31,751	18,031	N/A

Stock Performance

Stock Price Changes

The KOSPI plummeted to 1900.06 points on April 18 on geopolitical risks but bounced back to 1975.45 points backed by inflows of foreign investment on May 9. HHI's share price showed constant downward movement due to skeptical market trends. However, it is expected that investors will accumulate shipbuilder's shares due to underestimated value. Therefore, in the first half, HHI shares are expected to show robust growth.

General Meeting of Hyundai Heavy Industries Shareholders

HHI held its 39th annual General Meeting of Shareholders on Friday, March 22, 2013 in Ulsan, South Korea.

Resolutions of the Meeting

The followings are issues addressed during the General Meeting of Shareholders: approval of FY2012 financial statement, amendment to the Articles of Incorporation, appointment of directors, selection of auditors, and approval of limitation on remuneration for directors.

The FY2012 financial statement was announced with revenues of KRW 25.1 trillion, operating profit of KRW 1.28 trillion, and net profit of KRW 1.1 trillion. HHI's 2012 total current assets totaled KRW 30.6 trillion. HHI resolved cash dividends of KRW 2,500 per share. HHI

Safety Assessment Procedure for Offshore Facilities under Explosion Accidents

The possibility of explosion accidents always exists in offshore facilities in the oil & gas industry. In the design of those structures, safety assessment is necessary to prevent loss of life or catastrophic failure of structures. Hyundai Heavy Industries has successfully developed the safety assessment procedure for offshore facilities to prevent explosion accidents. It is different from previous assessment methods in the way that complete probabilistic approach and reliability concept are introduced to reflect the randomness of accidental events and sensitivity of structural response. The procedure developed is mainly comprised of two phases; the design load assessment with risk-based probabilistic approach and structural assessment with reliability concept.

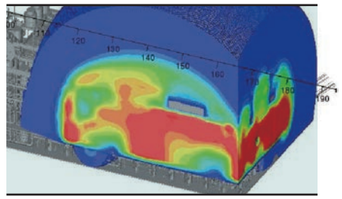


Fig.1 Explosion Load Analysis

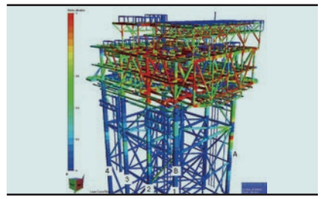


Fig.2 Strength Analysis

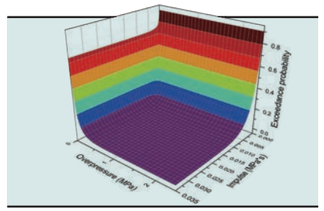


Fig.3 Exceedance Surface

In the design load assessment phase, probabilistic approach is used for selecting accidental scenarios. The data sets for hydrocarbon leakage, ignition, and environmental condition are treated as random variables and used with LHS (Latin Hypercube Sampling) technique. From this probabilistic sampling method, only dozens of accidental scenarios could be chosen and reduce calculation time for hundreds of whole accidental cases in the conventional methods. These selected scenarios are applied in CFD (Computational Fluid Dynamics) simulation for load calculation. With the results of simulations, the response surface of accidental load can be determined by regression analysis, and finally load exceedance surface is generated by MCS (Monte Carlo Simulation) considering the correlation between magnitude and duration of the load. This probabilistic representation of load could be used in determining design accidental load with risk acceptance criteria, and also, to calculate structural reliability in the next phase.

In the phase of structural assessment, different structural analysis methods are provided for the basic and detail design stage. One is the simplified theoretical method to give an outline of structural response in a short period of time, and the other is the non-linear FEM (Finite Element Method) for specific analysis results consuming more calculation time. Selecting the appropriate method which suits the object of each design stage makes structural safety assessment more accurate and efficient leading to a reduction of design cost.

With the properly determined load cases and structural analysis, structural response surface could be generated in the same way as the design load assessment phase. Once the structural response surface is generated, iso-damage diagram is calculated using the probabilistic load distribution. This reliability-based safety assessment gives the total frequency of inacceptable response.

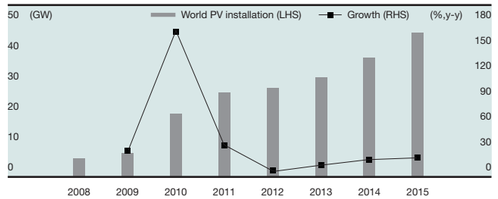
The procedure developed is more innovative than existing practices as the computational effort is considerably smaller and the design load is more precise. Furthermore, reliability-based approach could be useful to new concept design that has no historical database. This procedure presents, therefore, quick and consistent design method in accidental cases. With the increasing demands for safety assessment against accidental events, the developed procedure has been applied partially to some previous offshore projects, and further application for overall design process is expected to improve the safety and reliability of our products. HHI

Global Solar PV Market Outlook

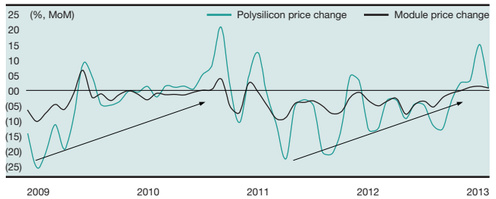
By Park Ki-yong

Why Solar?

Will photovoltaic (PV) industry continue to grow? It has been and the outlook is also undoubtedly positive. PV installment should grow at 18% AAGR to 46 GW by 2015. PV uses limitless and safe energy source at almost zero cost. PV does not require high initial setup cost anymore, which makes this more economically feasible than other energy sources. Also, PV does not require safety control, fuel disposal, or closedown cost for obsolete plants like thermal or nuclear plants. For investors, PV plants have visible profit structure. Consider PV as an asset that collects initial cost with fixed profit through the plant's life time. PV module's life time is guaranteed for 25 years. That is, it earns fixed income without additional cost for 25 years. This is similar to holding a bond to maturity and receiving interest.



World PV Installation Forecast Source: IHS Research, Korea Investment & Securities



Polysilicon and Module Price Trend Source: PV Insight, Korea Investment & Securities

No More Price Plunge in Solar Value Chain

Since the beginning of this year, prices are increasing for polysilicon to PV modules. Polysilicon and module prices rose 21% and 3%, respectively. We see it as an important inflection point for two reasons. First, aggressive restructuring has occurred after all products in value chain posted loss. Second, PV companies cleared inventories while going through a harsh industry cycle. Companies unlikely to recover sold stock to cash and closed business while companies in a better situation also had to lower utilization to avoid oversupply. As such, now stock levels are low and industry capacity has decreased. That is, from now on, demand growth will drive restructuring survivors' utilization.

End of Oversupply

Many PV component makers in China dominated the market with mass production and low price. Currently, 24.6 GW out of 50 GW of PV module capacity worldwide and 6 out of 10 top companies are from China. The bankruptcy of Suntech, a major Chinese PV player, is a symbolic event. More companies are likely to fall behind or liquidate. Companies that have technical strength and solid financial structure will grow while surviving competition. We believe the Chinese government should shift policy direction to encourage a harsh restructuring. European countries including Germany may see Chinese players benefited from European subsidies as earning profits by bargain sales while ruining European players' profitability. As a result, trade conflicts may occur and affect industry cycle. We expect some obstacles for Chinese players as EU, following US, also launches anti-dumping PV investigation.

Growing Markets, US and Asia

While PV industry outlook has not been positive after European financial crisis, we believe now sun-belt countries will drive PV industry growth. In PV industry, the term expands to include all areas between 35 degrees south and north latitude that have long sunshine hours. The sun-belt region's demand can increase without subsidies and should trigger industry growth when electricity generation cost is low as it is today. Bloomberg new energy finance expects combined demand of 19.5 GW from China, US, Japan, and India. We expect a PV boom as the market doubles from last year's installations of 9.7 GW. HHI

The writer is an analyst at Korea Investment & Securities Co.

ANSAN VALLEY ROCK FESTIVAL

ENJOY SUMMER WITH ROCK MUSIC

THIS ROCK FESTIVAL IS THE UNFAILING OPPORTUNITY TO MEET ALL KINDS OF MUSIC FROM A LEGENDARY MUSIC OF THE FAMOUS ROCK BAND TO A YOUNG INDIE BAND.

Korean proverb says, '*yi yeol chi yeol*', which means 'fight fire with fire'. It's hard to become acclimated to the hot and humid Korean summer. However, there is a wise way to fight the summer heat; with the heat of youthfulness by going to the rock festival. The Ansan Valley Rock Festival is the representative rock festival in Korea, and also is one of the best fifty world rock festivals for lighting and acoustics.

Nature-friendly Rock Festival

The Ansan Valley Rock Festival is already in its fifth year. It was previously known as the Jisan Valley Rock Festival. Fans of rock music can get out of the dark and damp clubs of the city and enjoy diverse music at a gorgeous spot in nature. This rock festival is the unfailing opportunity to see all kinds of music from the legendary music of a famous rock band to a young indie band. There are three or four stages and the concerts are also scheduled at different times. It holds a fascination for the audiences with people choosing the stage by time and place rather than going at a fixed time and place. It is another privilege that people also enjoy camping in nature. While enjoying the strong rhythm of rock music with a sip of beer in nature, all kinds of stresses from tough career and study can be banished.

From Jisan to Ansan, the Legend Goes on

The festival this year will be held in a bigger and more pleasant environment, moving from Jisan to Ansan. The new stage will be at Ansan Daebu Bada Hyanggi Theme Park. This theme park, twice as big as Jisan, is located near Daebudo Beach. Daebudo is considered an outstanding

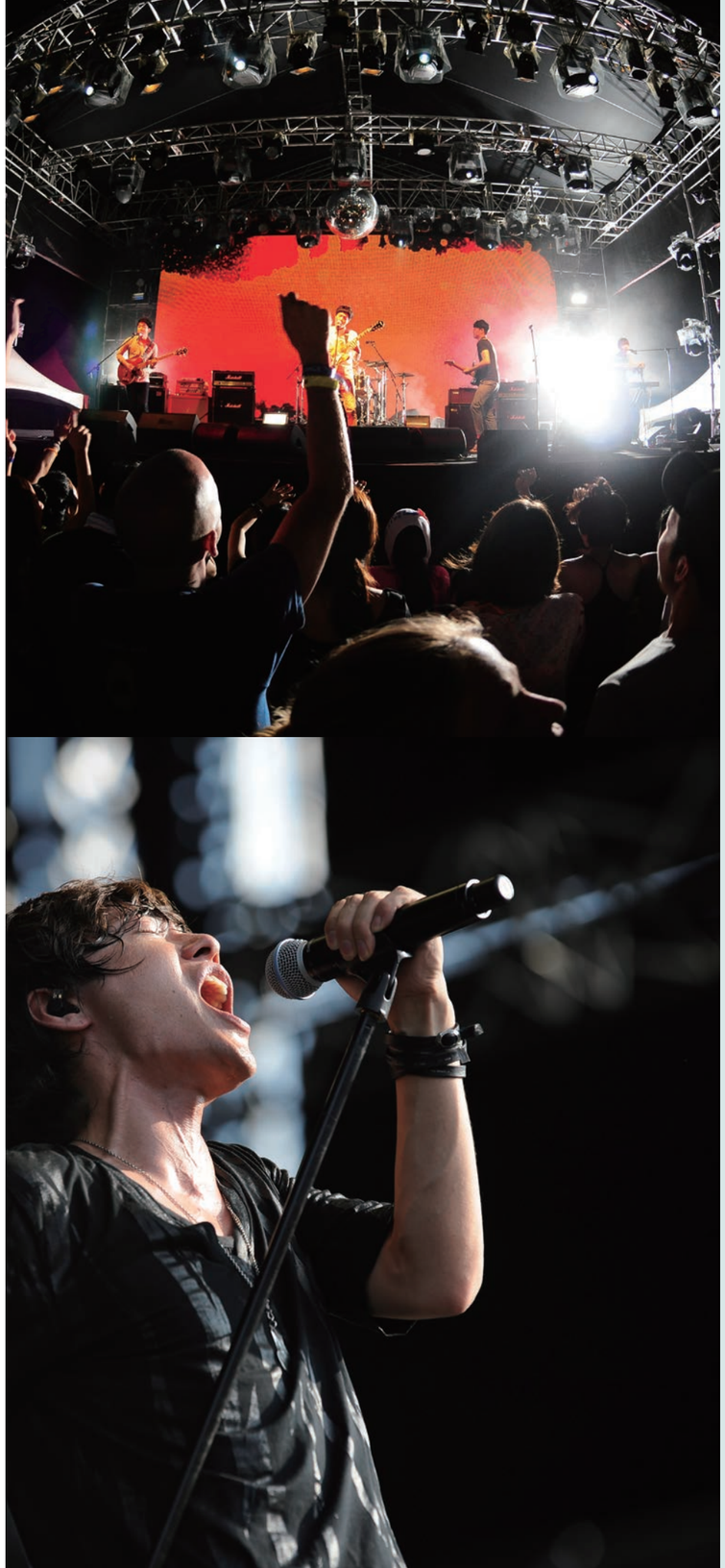
tourist attraction for the great beach and the beautiful natural environmental. There are several attractions and break areas such as the 15 m high windmill, the flower way, and the natural form water way which is a habitat for migratory birds. Also, there are many things to see and do, including strolling down alleys in the theme park and the pine way of Gubongdo around the park. There are additional facilities for camping as well.

Summer Carnival, the Pilgrim of Korean Rock Music

In this summer carnival, there is the feast of diverse music from the legendary rock music to the music of indie band. It is the biggest interest of Korean rock music fans who participate in the next rock festival. Since early March, people talk about who will be the headliner for this year's festival, checking the lineup of Summer Sonic or Fuji Rock Festival in Japan. The world famous group Oasis visited Valley Rock Festival right after their concert in Korea. Muse and Chemical Brothers came to this festival as well. Last year, Radiohead made an appearance on the stage of Valley Rock Festival, and they deeply touched Korean fans' hearts by passionately singing 27 songs. In the 2013 Ansan Valley Rock Festival, Nine Inch Nails and The XX will appear, as well as Korean bands Guckkasten and 3rd Line Butterfly. HHI

Source
CJ E&M

Basic Information
www.valleyrockfestival.com



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