metals industry
TRENDS & EVENTS
MIRDC
January - April 2014
vol. 28 no. 1 - issn 1908-9988

The AGT Assumes Central Focus Among the DOST Flagship Projects

DOST Sec. Mario G. Montejo with UP President Alfredo Pascual as he arrives at the ICTO office in UP Diliman.

The Metals Industry Research and Development Center (MIRDC) proudly participated in the Tour and Presentation of the Department of Science and Technology (DOST) Flagship Projects held on 12 March 2014 at the University of the Philippines, Diliman, Quezon City.

The event aimed to present to the members of the S&T Committee of the House of Representatives the various projects being implemented by the DOST. Included in the Flagship Projects presentation are the following: Intelligent Operations Center, presented by USec. Louis Napoleon C. Casambre, Executive Director of the Information and Communications Technology Office (ICTO); the S&T Scholarship Programs, presented by Dr. Aura C. Matias, Dean of the UP College of Engineering; and the Extraction Technologies for Sustainable, Efficient, and Safe Mining, by Dr. Herman D. Mendoza and Dr. Leslie Joy L. Diaz of the BetterMIne and MINERS Program. The S&T Scholarship Programs and the Extraction

Continuation on p3

MIRDC Holds Focus Group Discussion on CNC Training Curriculum Design

Dr. Danilo N. Pilar presents the projects accomplishment during the CNC Training Curriculum Design forum.

The Metals Industry Research and Development Center (MIRDC) recently conducted a focus group discussion on CNC Machine Tool Programming and Operations Training Program. It aimed to develop the most appropriate training curriculum design fully matched to the needs and requirements of the M&E sector. This initiative of improving the CNC training curriculum design based on inputs from the industry and other stakeholders is under the DOST-GIA project "Human Resource Intervention for Sustainable Growth and Competitiveness of the M&E Sector: Development and Implementation of Appropriate Training Curriculum Design for CNC Machine Tool Programming and Operations."

Representatives from industry and other stakeholders attended the said event. The MIRDC's Deputy Executive Director for Technical Services, Dr. Agustin M. Fudolig,

Continuation on p3

In this issue

From the Officer-In-Charge .....

Accomplishing milestones for the metals and engineering industries is a very challenging feat, one that entails hard work. It is a task that surely cannot be completed overnight. As we carry on with our mission of supporting the growth and competitiveness of the M&E industries, the MIRDC remains attuned to the demands of the times. The Center involves itself in activities that are meant to bring long-term benefits to the industry it is mandated to serve.

Early this year, the Center invited industry association presidents and officers for the conduct of the Focus Group Discussion (FGD) on CNC Machine Tool Programming and Operations Training Program. We want to develop the best curriculum for the training program to provide the industry with the most competent and competitive workforce. The MIRDC participated in the Asia Pacific Drive Tourism Conference and Exhibition and showcased its technologies under the Advanced Transport Systems. A Demo Run of the Automated Guideway Transit (AGT), as well as a presentation of other DOST Flagship Programs, was offered to the S&T Committee of the House of Representatives at the University of the Philippines, Diliman.

These activities, among others, are some of the undertakings of the MIRDC in the beginning months of 2014. Relevant to the conduct of the CNC Training Program is the MIRDC's link-up with Partner Support Organizations. The Center continuously nurtures these linkages to better serve the need of the industry for highly-skilled CNC workers. In addition, the establishment of the Die and Mold Solution Center (DMSC), which is implemented in cooperation with the Philippine Die and Mold Association, is now on its final leg. We will soon be able to cater to the demands of the die and mold sector when the DMSC reaches full completion very soon. The MIRDC

seriously finds ways to strengthen its support to the M&E industries and make its presence felt by its public and private partners.

Meeting targets is a way to measure the success of our endeavors. Being able to beat deadlines and keep up with deliverables is our primary objective at the end of the day. But what is more important is the impact that our efforts create for the M&E industries because we are taking the necessary initiatives to help it become a very dependable contributor to economic growth.

I believe that if we remain focused in fulfilling our mission, we will surely help secure the future of the metals and engineering industries.

Robert O. Dizon
Officer-In-Charge, MIRDC

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Metals Industry Trends and Events is a triply newsletter of the Metals Industry Research and Development Center (MIRDC), an agency of the Department of Science and Technology (DOST).

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Printed in-house

The AGT Assumes...from cover

Engr. Robert O. Dizon talked about details of the AGT (left) and Scene from the AGT Demo Run, with SMGM and VIP guests.

Technologies are under the National Graduate School of Engineering. The NOAH-LiDAR Project, which focused on Flood Modeling and disaster preparedness including a discussion on storm surge was presented by Dr. Enrico C. Paringit, Director of the UP Training Center for Applied Geodesy and Photogrammetry; the Philippine Genome Center (PGC), highlighting Genomics and Bioinformatics for Healthcare, Forensics, and Agriculture, was presented by Dr. Cynthia P. Saloma, Director of the UP National Institute for Molecular Biology and Biotechnology and Dr. Carmencita Padilla, Executive Director of the PGC; and of course, the Automated Guideway Transit (AGT), presented by Engr. Robert O. Dizon, Assistant Secretary of the DOST and Officer-in-Charge of the MIRDC.

ASec. Dizon's presentation, which came after the Demonstration of the Intelligent Operations Center, was held at the ICTO Seminar Room at the Ground Floor of the ICTO Building. Mentioned during the presentation are details about the AGT including features, technical specifications, estimated cost of the system's establishment in the Philippines, and project milestones. The audience was very interested to learn about the locally-designed and developed track and coaches of the AGT. Discussion about the cost and how the system can affect the riding public transpired during the presentation. ASec.Dizon also revealed that a 120-passenger model is being constructed along Bicutan and will soon undergo test runs and performance evaluations.

The guests were then invited to the AGT-UP Project Site along Lakandula St., near the UP Diliman Fine Arts Building. Like the previous AGT Demo Runs, the guests were given Smart Cards which served as their entry to the passenger station. The AGT took the passengers from Station 1 to Station 2 and back. Among the prominent figures who joined the Demo Run were: Sen. Cynthia A. Villar; Hon. Victor J. Yu; Hon. Peter M. Unabia; Hon. Jose F. Zubiri III; and Hon. Marie Ann S. Pernes.

It was a great opportunity for the DOST-MIRDC to present to the invited guests the AGT technology. Their familiarization with this alternative mass transportation solution will open windows for enhancement of capabilities and widening of business network. As the AGT project carries on with Phase III, the local M&E industries is definitely gearing up for significant advancement in the coming years.

MIRDC Holds Focus...from cover

welcomed the participants, while Dr. Danilo N. Pilar, Project Leader, presented the framework and accomplishments of the project.

To kick-off the FGD, Dr. Pilar showed the Philippine Star Editorial article entitled "Importing Skills" which was published in its Jan 19, 2014 issue. The article stated that "Now the government has announced plans to ease requirements for the entry of foreign workers in 15 occupations where there are shortages of the required skills." One of the lacking skills mentioned is the computer numerical control machinists. The guests were asked to give their reactions and comments on the article.

In the course of the discussion, related issues were uncovered. One of these issues is the problem on the lack of skilled workers, also experienced by other countries, hence, importing talents might be a problem at this point. It was also discussed that budget must be made available for training institutions so that they can conduct training for CNC workers. The industry partners revealed that there are a lot of employment opportunities for Computer Numerical Control operators/programmers/machinists in the country, they only need to be promoted properly.

The participants themselves were able to identify issues for improvement and immediate action through healthy interaction and suggestions. Some very important matters were taken into consideration. Plan of action includes, among others, looking into the possibility of having vouchers for training purposes released; strengthening promotion/advertising initiatives so that information on CNC-related opportunities are disseminated properly; bringing in imported talents to train local CNC workers; changing the number of hours of each module considering their corresponding impact to the training program; and looking into the qualification of the trainees. The industry suggests that technical/vocational graduates with machining experience be used as basic qualification, have a list of all the training/facilities that the MIRDC, TESDA, and the industry can provide so that gaps will be identified and bridged, and carefully study the possibility of conducting Basic Machine Shop Training, because TESDA trainers have a lot of requirements.

In his closing remarks, Engr. Reynaldo L. dela Cruz, Jr. expressed his outmost gratitude to the industry partners and collaborators. Their support and valuable inputs are very useful in the development and implementation of appropriate training curriculum design for CNC.

MIRDC Promotes its Programs and Services to the M & E Sector in Laguna

Engr. Adonis T. Marquez discusses the various projects of the MIRDC

The Metals Industry Research and Development Center (MIRDC) was invited by the Department of Science and Technology (DOST) Region IV-A to join in the seminar entitled, "Training on the Productivity Improvement for Small Enterprise Technology Upgrading Program (SETUP) Core/None-Core Beneficiaries" on March 27, 2014 to promote the Centers' programs and services to the M & E Sector in Laguna. The whole-day event was held at the DOST-CALABARZON Regional Office, RFSQAC Building, Los Baños, Laguna.

The Regional Tripartite Productivity Board of the Department of Labor and Employment (DOLE) conducted the training course in the morning. The course aims to instill a culture of positive change in the behavior of people to initiate productivity improvements in the organization in pursuit of higher quality and productivity levels. It was attended by the following companies in Laguna: (1) Prov 3 Metal Fabrication; (2) VN Industrial Tooling Services; (3) Raigo Metals; (4) J.A. Honrado Grasslands Farm; (5) Blairwin Tech; (6) Index, Inc.; (7) Cervera Technoservices & Industrial Supply; (8) Lopez Machine Shop; (9) Mariñas Technologies, Inc.; (10) Young Chef's Kitchen; and (11) YCK San Pablo City. Most of the firms are enrolled under the SETUP, while the others are target SETUP beneficiaries for fiscal year 2015 in the province of Laguna.

Since the training participants are from the Micro, Small and Medium Enterprises (MSMEs) who are involved in the metals and engineering industries, the MIRDC was given the opportunity to share to the participants the programs, services, and facilities of the Center. The slide presentations on the advanced technologies were given by Engr. Adonis T. Marquez of the Technology Advisory and Business Development Section (TABDS) and Ms. Zalda R. Gayahan, OIC-Technology Information and Promotion Section (TIPS). Among the technologies discussed were: Advanced Transport System; Advanced Food Production Technology; Advanced Manufacturing Technology; and the CNC Training Program. The MIRDC facilities and services were also discussed. To give the participants more information about the MIRDC programs and services, MIRDC brochures, list of training programs/seminars conducted, and other related documents were distributed to the participants.

Furthermore, Engr. Marquez also discussed the features of SETUP. He emphasized that it is one of the strategies to enhance productivity and competitiveness of MSMEs through technical assistance, innovations and upgrading of products and processes towards progress and growth in the countryside.

An open forum was conducted at the end of the session. It was facilitated by Engr. Marquez together with Ms. Amor Chozas of DOST IV-A. Most of the participants were interested in and appreciative of the developed technologies of the Center. Prov 3 Metal Fabrication in Sta. Rosa, Laguna, one of the participating companies in the training/seminar, is willing to adopt the technology/equipment such as CNC Router and the Sweet Sorghum Juicer/Sugar Cane Crusher.

The session was indeed a successful endeavor. Positive reactions from the participants have been received. Participants are all encouraged and expressed gratefulness to the programs of the government, more specifically to the programs of the DOST for all the constructive inputs and necessary interventions that are provided to them. They are optimistic that with these technologies and services of the DOST, the M & E industries will continue to prosper.

MIRDC Participates in the Asia Pacific Drive Tourism Conference and Exhibition

The MIRDC participated in the Asia Pacific Drive Tourism Conference and Exhibition held on January 31-February 2, 2014 at the Subic Bay Exhibition and Convention Center, Subic Bay Freeport Zone in Olongapo City. The conference and exhibit provided an avenue for an engaging dialogue between the leaders of the private and public sectors on how innovations on road safety and land transportation help spur the growth of tourism and promote safe and pleasurable land travel. It also showcased the latest innovations on the automobile industry, road safety, mobility, and motorsports from both local and international exhibitors.

With the theme, "Saving Lives, Saving Costs, and Saving the Planet," the event is supportive of the United Nations Decade of Action for Road Safety (2011-2020) aimed at saving 5 million lives and preventing 50 million road injuries.

A prototype of the AGT displayed at the MIRDC booth.

Adhering to the event objective and the development of national competence in research and development to address the severe lack of environmentally- sustainable transport alternatives, the Department of Science and Technology (DOST), through the MIRDC, and in cooperation with the Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) and the Project Management and Engineering Design Services Office (PEMEDSO).

The first day of the training highlighted the topics on Metallurgy of Iron, Specialized Ductile Iron, Melting of Iron, and other Metallurgical Treatments. During the forum, attendees raised their concerns regarding castings, like ductile iron, melting temperature, riser, etc.

On the second day, the topics discussed were Calculating and Design of Pouring Systems and Calculating Risers. Questions and comments were likewise entertained. Afterwhich, the speaker and the participants toured the foundry facilities of the Center.

At the closing ceremonies, participants were awarded Certificates of Completion by Engr. Rodnel O. Tamayo, Officer-In-Charge of the Materials and Process Research Division (MPRD) and Mr. Staf Henderieckx. Likewise, Mr. Staf Henderieckx was also awarded a Certificate of Appreciation for his valuable contribution to the successful foundry seminar.

PMEDSO featured the Advanced Transport System: the Automated Guideway Transit (AGT) System, the Centrally-powered Hybrid Electric Road Train, and the Electric Multiple Unit Retrofitting for PNR Railway System. Also featured is the project entitled "Revitalization of MIRDC's Testing Facility in Support of the Automotive Components and Parts Manufacturing Sector."

The event was successfully organized by the Department of Tourism (DOT) and the Automobile Association Philippines (AAP), the Philippine affiliate of the prestigious Federation Internationale de I'Automobile which grants international driving permits to foreign countries, with the Department of Interior and Local Government (DILG) and the Subic Bay Metropolitan Authority as partners and with AAP Travel and International School of Sustainable Tourism (ISST).

Ethiopian Delegates Visit MIRDC

The Federal Technical and Vocational Education and Training Institute (FTVETI) of Ethiopia, a newly established Institute for Technical and Vocational Education and Training (TVET) teachers and leader's development and training by virtue of the Council of Ministers Proclamation 245/2011 visited the Metals Industry Development Center (MIRDC) last April 29, 2014. Their mission is to benchmark best practices of the MIRDC in terms of improving their services and also to discuss collaborations and partnership arrangement, as well as enhancement of technology that will be beneficial to both countries.

The Ethiopian delegates who visited the Center were: Dr. Kebede Yadetie Hawas, Director General, Federal TVET Institute; Mr. Workneh Delelegn, Director General, Metals Industry Development Institute (MIDI); Mr. Tsegay Gebrihiwet, Department Head, Construction, TVET Institute; Dr. Ricardo J. Mejia, Outcome Based Training, Assessment and Certification, Federal TVET Agency and Academic Coordinator, TVET Institute, Federal Coordinator for Filipino Experts in Ethiopia; and Mr. Antonio C. Aspecto and Ms. Vilma J. Sugay of the TVET team.

A courtesy call to Engr. Robert O. Dizon, Asst. Secretary of the Department of Science and Technology (DOST) and Officer-In-Charge of the MIRDC, was done upon arrival of the delegates. It was followed by a program which started at 10:00 a.m. held in the new training room at the 3rd floor of the Laboratories Building.

Asec. Dizon laughs together with the Ethiopian delegates during their visit at his office.

The highlights of the program are:

- Welcome Address/Responses were given by Dr. Agustin M. Fudolig, Deputy Executive Director for Technical Services and Dr. Danilo N. Pilar, Chief of the Technology Diffusion Division.
- MIRDC Institutional Video was played and MIRDC services were also presented by Engr. Lina B. Afable and Engr. Reynaldo dela Cruz to give the guests a clear overview of the programs, interventions, and services of the Center.
- The open forum was conducted after the presentation. The discussion made the delegates very optimistic when they learned about the possibilities of the future collaboration with the MIRDC.
- The delegates, were toured to the different facilities of selected divisions such as Materials & Process Research Division; Prototyping Division; and Analysis and Testing Division. Through the plant tour, the guest had a better appreciation and understanding of the different facilities and processes of the Center.
- Certificates of Appreciation were given to the delegates.

Beneficial discussions were undertaken during the day. Positive reactions from the guests were heard. They were grateful for the warm accommodation they received from the Center. Further, the delegates also expressed their strong desire to be our future collaborator and partner.

MIRDC Participates in World Record Attempt

The whole country celebrated the National Women's Month in March. This year, the celebration comes with the theme, "Juana, Ang Tatag Mo ay Tatag Natin sa Pagbangon at Pagsulong."

In consonance with the Civil Service Commission (CSC) Announcement No. 05, Series of 2014, all government agencies were encouraged to participate in the said event.

One of the highlights of the celebration is the Human Women's Symbol Formation held last March 8, 2014 at the Quirino Grandstand in Luneta. The Women's Symbol is a circle with a cross underneath. The activity's objective is to raise awareness of gender issues and recognize women's role in their overall contribution to progress. The Metals Industry Research and Development Center (MIRDC) sent 12 employees who participated in the formation.

According to the Philippine Daily Inquirer, 10,168 participants joined in the Human Women's Symbol Formation. The activity was properly documented and video-recorded. The Philippine Commission on Women (PCW), who spearheaded the activity, believed that the human formation would make it to the Guinness World Records for the highest number of participants forming the human symbol.

In view of the celebration, the Department of Science and Technology (DOST) community conducted a number of activities last March 24, 2014. The first activity was the Juana Walk-"Walk for a Cause" whose proceeds will go to the Yolanda typhoon victims in DOST Region VIII. The MIRDC group was headed by Ms. Jelly Ortiz of the FAD. Other activities were held at the DOST Compound such as: Juana Dance and Beauty Session, both sponsored by Slimmer's World; Juana Talk-Forum on Women's Resiliency, Strength and Contributions to Progress; Free Haircut and Make Up by Ricky Reyes Learning Institute; and Trade Fair.

MIRDC Goes to Sea

MIRDC employees share the fun and excitement of the 2014 teambuilding at Sariaya, Quezon.

As part of the Management's continual effort to build a more productive, engaged, and well-balanced human capital, the 2014 MIRDC Teambuilding was held on April 24-25, 2014 at the Monte Vista Resort, Sariaya, Quezon.

Inspired by this year's theme, "MIRDC Goes to Sea," several teambuilding activities were prepared such as management games, group games, division chant, and the most anticipated of all, the MIRDC...Reyna pageant. Participated in by the most beautiful male employee of each division, the pageant proved to be the most enjoyable portion of the program that definitely brought the house

Continuation on p12

Enhancing Philippine Competitiveness: The K To 12 Basic Education Program

K to 12 Basic Education Program

The implementation of the K to 12 Basic Education Program stirred different reactions from Filipinos. Simply put, K-12 means "Kindergarten and the 12 years of elementary and secondary education." Kindergarten points to the five-year old child who undertakes the standardized curriculum for preschoolers. Elementary education refers to six years of primary school (Grades 1-6), while secondary education pertains to the four years of junior high school (Grades 7-10 or HS Year 1-4). In addition, two years are now allotted for senior high school (Grades 11-12 or HS Year 5-6). Prof. Lorina Calingasan of the College of Education in UP Diliman explains that "K-12 means extending basic education by two years."[1]

In line with the provision in the 1987 Philippine Constitution, we need to add two years to our basic education. President Benigno S. Aquino III himself said "I want at least 12 years for our public school children to give them an even chance at succeeding."

Rationale

There is an urgent need to enhance the quality of basic education in our country as seen in the education outcomes of Filipino students and the comparative disadvantage of the Philippines with regard to other countries.

At present, the Philippines is the only country in Asia and among the three remaining countries in the world that uses a ten-year basic education cycle. According to a presentation made by the South East Asian Ministers of Education Organization (SEAMEO-INNOTECH) on Additional Years in Philippine Basic Education (2010), the comparative data on the duration of Basic and Pre-University Education in Asia shows that the Philippines allots ten (10) years not just for the basic education cycle but also for the pre-university education while all the other countries have either 11 or 12 years in their basic education cycle.

The Significance of K to 12 Curricula to the Metals and Engineering Industries

Curriculum exits were defined upon the addition of two years in the K to 12 program and are meant to produce holistically-developed Filipino with 21st century skills. Students can choose to take any one among the following eight (8) categories:

- Information, Media and Technology Skills
- Learning and Innovation Skills
- Communication Skills
- Life and Career Skills
- Higher Education
- Employment
- Entrepreneurship
- Middle Level Skills Development

The Contextualized Track Subjects for Academic, Technical Vocational Livelihood, Sports, Arts & Design Tracks include Research 1 and 2, Empowerment Technologies (E-tech) ICT for Professional Tracks, Entrepreneurship and Research Project/Culminating Activity.

As presented in the Trade and Industry Development (TID) Updates last Jan. 30, 2014 held at the Asian Institute of Management in Makati City, only three of the nine Techvoc Tracks subjects were defined, namely: Beauty Care, Nail Care and Hairdressing. Specializations based on TESDA Training Regulations are divided into the following categories, namely: Home Economics, Information and Communications Technology, Agri-Fishery Arts and Industrial Arts. The M & E is concerned in the Industrial Arts category which includes: 1) Automotive Servicing; 2) Refrigeration and Airconditioning; 3) Consumer Electronics Servicing; 4) Electrical Installation, and Maintenance; 5) Shielded Metal-Arc Welding; 6) Carpentry; 7) Plumbing; 8) Masonry; 9) Tile Setting. 80 hours are allocated for each subject per semester.

The points of interest of MIRDC-DOST in this program are the contextualized track subjects for technical vocational livelihood. Two are related to metalworking: Automotive Servicing and Shielded Metal-Arc Welding (SMAW). Enhancing Philippine competitiveness requires majority of the manufacturing industries to align their programs. For the metalworking industry to become more competitive locally and globally, the need for more skilled metalworkers to produce quality products is of prime importance. As such, more technical courses related to metalworking (Additional technical subjects be added) such as Machining, Welding (MIGMAG & TIG other than SMAW)[2], Tool and Die, Metalcasting, Electroplating, Heat Treatment and Forging courses need to be added to the curriculum. This need has been identified in the various industry studies conducted by the MIRDC.

Department of Education Undersecretary Dina S. Ocampo was the event's resource speaker. A participant from the Philippine Institute for Development Studies commented that increasing the number of years of basic education does not guarantee that the quality of education will improve. According to the same participant, the quality of basic education of key people and all its workers dictates the fate of any industry, including that of the M and E industry. A comment from Hitachi Global Storage Technologies (HGST) Philippines Corporation, a company under the manufacturing industry, mentioned about public-private partnership program. The HGST Human Resource Director shared that the HGST develops the Philippine youth by means of on-the-job training as well as employment selection process.

[1] K to 12 Dep Ed Primer,2011.

[2] Gas metal arc welding (GMAW), sometimes referred metal inert gas (MIG) welding or metal active gas (MAG), Tungsten Inert Gas (TIG).

Iron ore pellets with increased iron content

New iron ore pellets with a higher iron ore content have recently been launched by OAO Karelsky Okatysh, an iron ore processing plant belonging to Severstal. Producing high quality iron ore pellets through separate ore processing is one of Severstal's key initiatives to improve efficiency in production. The new technology for producing high quality iron ore pellets underwent pilot testing in February and June 2013. In the past, fluxed pellets were produced with an iron ore content of up to 63.2%. Meanwhile, the iron content has been raised to 64.3%. It is expected that by the end of 2014 pellets with a 66% iron content can be produced by separately processing free-milling and refractory ores. The Cherepovets steel mill, part of Severstal's Russian steel division, will be a key customer for the product. Using iron ore pellets with higher iron content increases the profitability of blast furnaces and helps to decrease raw material consumption.

Source: MPT International 2/2014, p. 99

PWS Holds its Annual Convention and General Assembly

The Philippine Welding Society (PWS) held its Annual Convention and General Membership Meeting on 11 April 2014 at the Tandang Sora Hall, TESDA Women's Center, East Service Road, SLEX, Taguig City.

In his opening remarks, Dir. Eric J. Montes, President of the PWS, emphasized this year's theme, "Empowerment and Development for a Successful National Registry Towards ASEAN Integration 2015." This opens a great opportunity for the Philippine welding industry practitioners to enhance their skills and push for competitiveness.

The participants were inspired by the talk of Mr. Ang Chee Peng, Secretary General of the Asian Welding Federation (AWF). His talk, entitled "Welding Industry-ASEAN Integration 2015," discussed better opportunities for local practitioners to have easy access to ten (10) Asian countries. He encouraged the participants to improve their skills. The key is for the PWS to keep on training people and put system into its training. Mr. Peng, through the AWF, is very much willing to share his expertise and knowledge regarding certification in conformance with International Standards. The conduct of training with awarding of certificates, an initiative seen in collaboration with the government and TESDA, result to the local welding industry practitioners to be recognized in the Asian region and other foreign markets as well.

The four important topics discussed during the event were: 1) the "Carpal Tunnel Syndrome in the Welding Industry" given by Dir. Reynaldo L. dela Cruz Jr., Board of Trustee & Corporate Secretary of the PWS. Dir. Dela Cruz shared this informative topic to raise awareness so that the welding practitioners may know how to prevent such disease; 2) "Jumpstart your Design Workflow with AutoCAD 2015," by Engr. Dennis S. Castillo, Applications Engineer Supervisor, and "Bring Real World Designs in AutoCAD," by Dir. Kelly Chong, Regional Sales Manager for Platform Solutions & Emerging Business, Autodesk Asia Pte. Ltd. The topics are about a software that can be used for design and application to the industries; 3) "Avoiding Failure of Assets & Facilities using Positive Metal Identification," by Dir. Gerald S. Gallardo, Board of Trustee & Treasurer, PWS; and 4), "Asian Welding Federation Common Welding Certification Scheme and Manpower Optimization Scheme" delivered by Mr. Ang Chee Peng.

In his closing remarks, Dir. Isidro D. Millo, Board of Trustee & Chair, Education and Training, thanked the participants and the guests. Likewise, he congaratulated the newly-certified welding engineers who were awarded their certificates during the program.

The Center is behind the PWS as it continuously enhances the skills of welding personnel through the conduct of trainings. The Metals Industry Research and Development Center (MIRDC) supports the Association in developing the metalworking industry.

Direct access to metal alloy database

Users of the mobile metal analyzer Spectrotest now not only save time conducting metal assessment, but also no longer need to purchase various catalogs of metal standards, because Spectro Analytical Instruments now offers direct access to its metal database. Specifications according to international standards for more than 150,000 metal alloys are stored in the Spectro metal database. The database serves as a universal tool for providing detailed information about metal alloys and their mechanical properties. Among its strengths is the ability to search for suitable alloys, to identify unknown materials based on the chemical content and to export material-specifications for use on a particular spectrometer.

For rapid inspections of incoming and outgoing goods, it is often sufficient to know whether or not the tested metal corresponds to given specifications, the delivery note is correct or the steel accurately identified. With the new database, this is made easier. With unknown alloys, it is possible for users to search for materials. Pressing key starts the extended material search from the measuring screen. It is possible for users to search for materials. Pressing a key starts the expanded material search from the measuring screen. It is then possible to determine within which material specifications the analysis fits. By importing materials from the list of results, the alloy can be quickly and simply entered into the library.

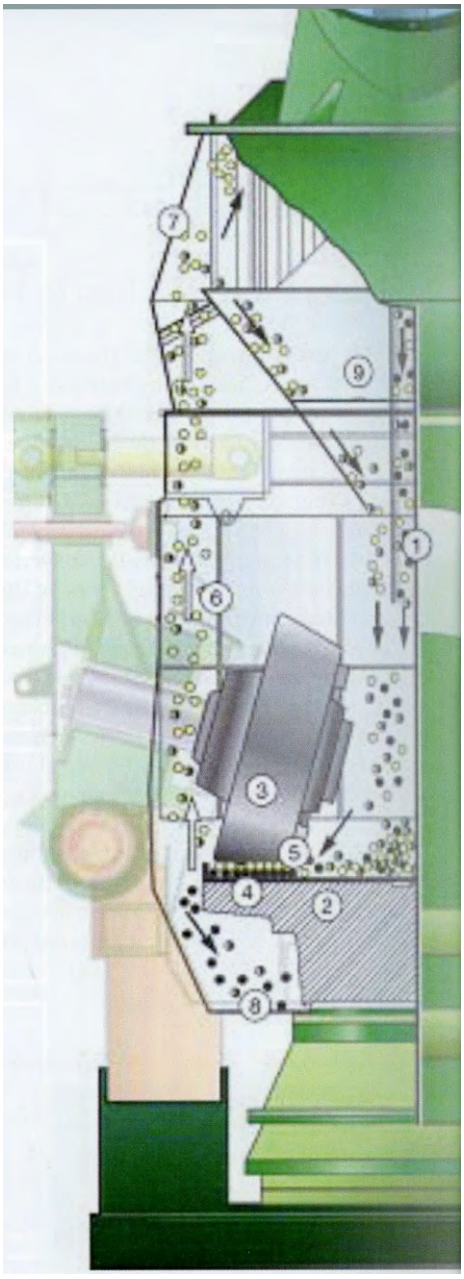
Source: MPT International 2/2014, p.96

Dry-processing plant for stainless steel slag

The Belgian company Recoval is part of a consortium with Recmix and Carbstone Innovation, specializing in the recovery of construction material from slag. Recoval commissioned Loesche with the engineering and delivery of a turn-key processing plant primarily for stainless steel slag. Loesche will implement a dry-refining process for stainless steel slag developed together with CALA Aufbereitungstechnik. This process is capable of obtaining a high purity metallic portion and a valuable metal and mineral-free filler material at the same time. Alone by the addition of CO2 to the stainless steel slag, this recovery process provides finished components with structural properties comparable with those of concrete, effectively reducing the CO2 footprint compared to components made of concrete.

The Loesche vertical mill of the LM 15.2M type will be at the center of a newly built processing plant in Charleroi, Belgium. Around 20 t/h of stainless steel slag will be processed in the mill. The slag will be selectively ground to free the metallic particles which will then be extracted as a high-density fraction. Simultaneously, the mineral fraction will be separated in the integrated dynamic classifier to the desired fineness and collected in the filter unit. In the second part of the plant, the metallic, high-density product of the mill will be further processed. Using a combination of magnetic separators of varying field strengths and a novel, dry, density based separation unit for the fine fraction, the pure metallic portion will be recovered and the intermediate residue feedback to the mill. The silo installation is accessible from below by truck and additional silos will be part of the third complex. Here, the filler products will be stored. A separate storage and filling system is planned for the metallic portion. Loesche is responsible for the engineering, the delivery of the hardware and installation and commissioning of the equipment. The complete electrical equipment and technology will be supplied by Loesche Automatisierungstechnik.

Source: MPT International 2/2014, p.110



Dry metal recovery and filter production from stainless steel slag

Fully automatic ladle gunning

A Finnish stainless steel producer recently installed a fully automatic gunning installation for the maintenance of standing ladles. The gunning system, supplied by Velco, is designed for a total of four ladles which are transported by a rail carriage into a gunning hall. The robot works according to different programs for automatic bottom, side wall and spout gunning. All programs can be started sequentially without interrupting the gunning process. Two different gunning materials are used, one for the repair of the permanent lining and one for the wearing layer. The operator selects the gunning position, the gunning program and the material type. Then the gunning process is carried out automatically. However, the operator may override the fully automatic process to manually control the gunning via joystick to repair selected spots. This gunning installation provides high cost efficiency, as the gunning time can be significantly reduced.

This is achieved as a result of the higher gunning capacities and due to the fact that the gunning equipment must no longer be changed when a different gunning material is to be used. Moreover, the burden and dust exposure on the operator are considerably reduced.

Source: MPT International 2/2014, p.100

Ladle gunning station

Ladle gunning machine in operation

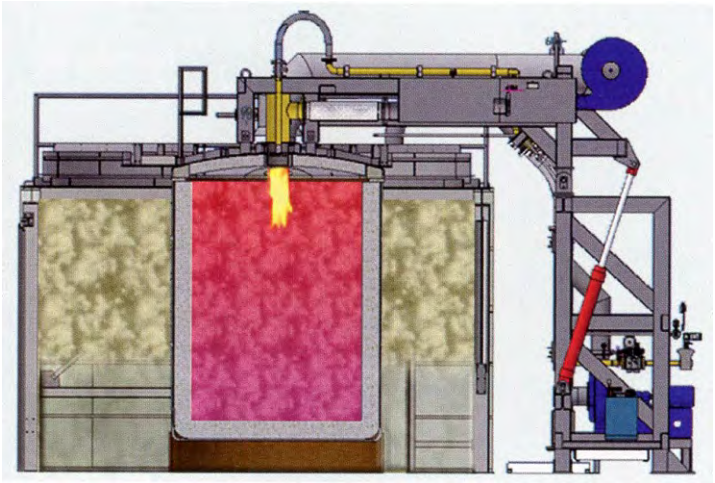
Direct thermal combustion system for ladles

During the first heat treating of a ladle in a steel meltshop, hazardous components like benzo (a) pyrene and phenol evaporate from the ladle lining due to pyrolytic decomposition of organic binders. These components are considered cancerogenic. With traditional and conventional ladle heaters, these gases are released, unfiltered, via the exhaust gas to the atmosphere. In order to destroy the hazardous components, a post-combustion chamber to heat the off-gas up to 800 degrees C would be needed, however involving the drawback of additional energy requirements.

Mapeko has recently developed a direct thermal combustion process to burn these hazardous gases emitted during lining heating. With the assistance of added oxygen, the components of the emitted gases are burnt and combusted inside the ladle and not released to the environment. The ladle is completely enclosed and sealed by a dual-purpose cover. Gases escaping through the evaporation holes are sucked back and injected into the ladle by a special technique. Combustion of these gases will take place inside the ladle.

According to official emission measurements, carried out by the expert organization Dekra, almost all dangerous components are burnt. For benzo (a) pyrene, the measured value is below the measuring limit of <0.030 mg/h. This direct thermal combustion system thus guarantees permanent, consistent and efficient combustion of hazardous components, complying with all applicable environmental protection requirements. The disposal of any toxic waste is no longer necessary.

Source: MPT International 2/2014, p.105



Arrangement of the direct thermal combustion equipment

PEZA Registers 104% Growth in Investments at P35.4B in 2 Months

Investments registered with the Philippine Economic Zone Authority (PEZA) in the first two months of the year jumped 104.39 percent over the same period last year as investors, who failed to register in the last two months last year because of the Yolanda tragedy finally made it early this year.

PEZA Director-General Lilia B. De Lima told reporters at the "Idea Global Entrepreneurship Symposium 2014" in Mandaluyong City that investments in the January-February period this year went up to P35.437 billion as against P17.338 billion in the same period last year.

According to De Lima, the surge in investments in the first two months of the year was largely due to the registration of projects which were supposed to come in the last two months last year but had been postponed because of the Yolanda tragedy and the succeeding relief efforts.

"These are the strugglers but failed to register in November and December last year because all efforts were focused on the Yolanda relief efforts," said De Lima. The Yolanda tragedy even slightly pulled down PEZA's overall investments in 2013 by a negative 11 percent.

"But they finally made it early this year," De Lima reported.

De Lima further said the agency will continue to maintain its 10 percent investments growth target for the year. In terms of exports, De Lima reported that exports for the entire year of 2013 went up 7.12 percent to $42.873 billion from $40.024 billion.

PEZA exports account for 76 percent of the country's total commodity exports.

PEZA's exports were accounted for by its 3,183 operating ecozone locators in its 300 ecozones across the country.

Employment has also breached the one million mark to 1,048,351 or 14.94 percent higher than the 912,047 in the entire year of 2013.

Cumulative PEZA investments for the period 1995 to December 2013, already reached P2.617 trillion while exports hit $519.97 billion.

Meantime, De Lima reported that her recent investment mission to Japan has yielded positive results in new investments in manufacturing sector particularly electronics, automotive parts, shipbuilding and aerospace.

The Japan mission, which was organized by the Sumitomo-Mitsui Banking Corp., has brought De Lima to meet with various Japanese businesses in Tokyo, Osaka, and smaller prefectures in Japan, which accounts for the huge amounts of manufacturing investments in the Philippines.

Source: Manila Bulletin – March 17, 2014

Local Aerospace Industry Seen to Boost Revenues, Jobs

The Department of Science and Technology (DOST) is hopeful that the aggressive development of the local aerospace industry will generate revenues and employment similar to those produced by the information technology-business process outsourcing (IT-BPO) sector.

Science Secretary Mario G. Montejo told reporters recently that the country has a large pool of trainable workers who can work for multinational aircraft parts manufacturers if they decide to open their business here.

Montejo said Moog Inc., a multinational aerospace company that operates in Baguio City, has expressed desire to expand their operations here if the government will establish the necessary support, testing and other facilities.

Moog Inc. is a designer and manufacturer of aircraft and missile components.

"They have been pleased with Baguio. And lately, they have decided to change their business model wherein they will go into more aircraft components manufacture," Montejo said.

He said there were certain "small gaps" that need to be addressed to encourage the company to push through with its plan. Specifically, he said these include the lack of facilities to allow the conduct of non-destructive testing, coating, quality assurance and heat treatment systems. But Montejo said the government is addressing most of the gaps, adding that these entailed investments worth millions of pesos.

"The potential is huge. It is comparable to IT-BPO," Montejo said. He said if the government will be able to convince Moog, other aerospace players may follow suit.

He said currently, the aerospace industry contributes around $1 to $1.5 billion revenues to the Philippines' gross domestic product.

Montejo said a growth in the aircraft components manufacturing industry could generate revenues of up to $6 billion in a few years.

The local IT-BPO industry reportedly delivered around $20 billion revenues in 2014, and plans to increase this by $5 billion more in two years.

Montejo said aerospace components manufacture has low energy requirement.

He said manufacturing operations could be located outside Metro Manila.

Source: The Philippine Star - March 31, 2014

January Exports Rise 9.3%

The country's merchandise exports grew by 9.3 percent in January due to the double-digit increase in the shipments of electronic products.

According to the Philippine Statistics Authority, export earnings in January went up to $4.38 billion from the $4.01 billion registered a year ago.

On a monthly basis, receipts from merchandise exports went down by 4.7 percent from the $4.6 billion recorded in December last year.

"In terms of total volume of outward shipments, total exported goods decreased compared to the same month a year ago," the PSA said.

Electronic products, which account for more than 40 percent of total export receipts, saw a growth of 22.1 percent to $1.79 billion.

The PSA said that the volume of outward shipments of electronic products also increased compared to the same period last year.

Meanwhile the National Economic and Development Authority said that exports growth in January was buoyed by the manufacturing sector.

"The upward trajectory of Philippine exports as a result of the buoyant export performance of manufactured products clearly proves the significance of the manufacturing sector as one of our growth drivers," NEDA director general Arsenio Balisacan said.

Export earnings from manufactured goods posted a year-on-year increase of 15.3 percent to $3.79 billion, as outbound shipments of electronic products, machinery and transport equipment, electronic equipment and parts, garments, and miscellaneous manufactures registered significant gains.

Balisacan said that the growth in manufactures also added a buffer against the reductions in export earnings from other major commodity groups such as total agro-based products, mineral products, petroleum, and forest products.

"Despite the setbacks in some commodity groups and other sectors, the Philippines' merchandise export growth in January 2014 is one of the fastest among selected trade-oriented economies in the East and Southeast Asian region, trailing behind PR China," the NEDA chief said.

Japan remains as the top destination of Philippine exports in January 2014, accounting for 26.3 percent of the country's total overseas merchandise sales receipts, with a total value of $1.15 billion.

Other top markets for Philippine exports, were USA (13.8 percent), PR China (9.9 percent), Singapore (8.8 percent), and Hong Kong (7.5 percent).

Source: Malaya Business Insight - March 12, 2014

MIRDC Goes to Sea...from p6

down. Emerging as the newly-crowned MIRDC...Reyna is Mr. Osric Primo Bern A. Quibot of TDD. Other participants are Engr. Pablo Q. Acuin of MPRD, Engr. Emerito V. Banal of PD, Mr. Galicano M. Enerlan of FAD, and Mr. Karl Andrew Chavez of ATD. Most employees agreed that the 2014 teambuilding can be ranked as one of the best teambuilding activities ever hold by the MIRDC.

The Analysis and Testing Division (ATD) bagged the Best in Costume Award, while the Prototyping Division (PD) got the Best in Chant Award. The Finance and Administrative Division (FAD) received the Juan on Time award for being the first team to arrive and convene at the assigned venue throughout the program. The Orange Team, headed by Engr. Rodnel O. Tamayo, OIC of the MPRD, is the group dynamics/games winner.

The *MIRDC...Reyna* pageant candidates don their eccentric costumes.

Winners of best in group attire pose on camera.

MIRDC Collaborates with Quezon City Local Government on the Flood Control Facility Project

A Memorandum of Agreement (MOA) of the Center's R & D project entitled, "Improvement of Flood Control Facility through the Development of Automatic Trash Rake" was signed last March 31, 2014 at the Bulwagang Amoranto, Quezon City Hall Compound.

The MOA was signed by Hon. Herbert Constantine M. Bautista, City Mayor, and Engr. Robert O. Dizon, Assistant Secretary of the Department of Science and Technology (DOST) and Officer-In-Charge of the Metals Industry Research and Development Center (MIRDC). Present during the event were representatives from the Quezon City Local Government Unit and two Barangay Captains of Quezon City. The witnesses during the MOA signing were: Joselito B. Cabungcal, Quezon City Engineer; Virgilio S. Regala, Jr., Quezon City Architect; Ciceri B. Ada, Barangay Captain of Manresa; Ramon G. Veloso, Barangay Captain of Masambong; and Atty. Trixie Hazel C. Veluz of the MIRDC.

Standing from left: Ms. Patricia Orante, Ms. Catherine Bolido, Brngy. Captain Ramon Veloso, Engr. Fred P. Liza, Engr. Gharry Bathan, Mr. Nestor Colibao, Engr. Lemuel Apusaga and Mr. Manny Rois.

This project is in line with the rehabilitation of the polluted San Juan River caused by excessive garbage coming from upstream creeks. A Flood Control Facility will be put up on Balingasa Creek along Araneta Avenue, corner Mauban St., Quezon City where the Automatic Trash Rake will be installed to collect the garbage before the water goes to adjoining major creeks leading to the San Juan River.

The automated trash rake is an inclined conveyor-type garbage collection mechanism intended to improve garbage collection compared with the manual method which is currently used in Quezon City. The use of this technology will make the collection of waste in waterways faster and easier. The equipment is designed by a group of engineers from Quezon City's Department of Engineering (DOE), Special Design Group (SDG), Environmental Protection and Waste Management Department (EPWMD), Task Force Waterways (TFW), the DOST-MIRDC and the DOST's Project Management and Engineering Design Services Office (PMEDSO).

The project team is composed mostly of technical personnel from the Research & Development Directorate of the MIRDC. Engr. Gharry M. Bathan leads the team composed of Engrs. Lemuel N. Apusaga, Allan John S. Limson, Ryan C. Clavecillas, Ms. Catherine E. Bolido and Nestor Q. Colibao, Jr. Also, Engrs. Jorge Arbie V. Garcia and Godfredyson Nardo of DOST-PMEDSO are part of the project team. Ms. Blesilda P. Cabaña, Rommel G. Adame and Juan V. Azucena composed the project team's support staff.

Seated from left: Engr. Joselito B. Cabungcal, Architect Virgilio S. Regala, Jr. , Brgy. Capt. Ciceri B. Ada, Mayor Herbert Constantine Bautista, Asec. Robert O. Dizon, Atty. Trixie Hazel C. Veluz, Engr. Fred P. Liza and Engr. Gharry Bathan.

KEA Industrial Corporation: A Tale That Inspires

Mr. Edmund A. Araga - V.P. Manufacturing strikes a pose during an interview.

KEA Industrial Corporation's story is one that truly speaks of hard work, hope, and rewards. It has faced challenges, experienced downfalls, and most important of all, survived and rose above the competition.

Originally named E.A. Metal, after the name of its owner, Mr. Edgardo V. Araga, the shop was put up in the 70's with the objective of providing its clients with fabricated metal products such as household appliances, electronic parts, automotive and motorcycle parts. The company was first established at 10 Luna St., Bangkulasi, Navotas, Metro Manila and eventually transferred its operations at Paso de Blas, Valenzuela City.

Business went well. In fact, they supplied parts to famous clients such as GM, Isuzu, and Ford, among others. The company started encountering problems and issues that affected their operations in the early 1980s. Due to unavoidable circumstances, E.A. Metal shut down in 1984. Mr. Araga migrated to the United States, but the dream of reopening the business some day was not completely forgotten.

A decade later, E.A. Metal was reborn as KEA Industrial Corporation. KEA is a closed family corporation, with Mr. Araga as President, and his children as Board Members.

Operations continued as usual in Navotas while a new property was being acquired portion by portion in Bacoor, Cavite. In 1997, KEA relocated. It was a fresh start for the company. In Cavite, they no longer needed to worry about flooding and they have a more effective networking. Loyal employees stayed with KEA and were shuttled back and forth to Navotas. Electrolux, Suzuki Philippines, Inc., Honda Philippines, Inc., and Kawasaki Motors Phils., Inc., were added to their list of clients. Business was indeed picking up!

In 2000, the company was in need of certain trainings for the improvement of its services. KEA then got to know about the Metals Industry Research and Development Center (MIRDC). Mr. Edmund A. Araga, the youngest among the three children and currently the VP Manufacturing, sent his employees to the MIRDC to attend trainings such as PPC, Plating and Metrology. Mr. Araga even invited all the trainees in the Plating Seminar to KEA so that they will see the actual machineries in operation. This, it turned out, was just the beginning of KEA's partnership with the MIRDC.

Mr. Araga is a highly respected member of several industry associations and is currently the Vice President Internal of Motorcycle Parts Producers and Exporters Association (McPPEA), Vice President of Motor Vehicle Parts Makers Association of the Phils. (MVPMAP), Board of Director of Electric Vehicle Association of the Philippines (EVAP). He is also part of the Metalworking Industries Association

KEA's sample parts on display in their Bacoor office.

The people and equipment behind the success of KEA.

Dr. Danilo N. Pilar (left), and Ms. Lina B. Afable and Ms. Linda G. Rivera (right) of the MIRDC conducted the Internal Quality Audit seminar and document review as part of its technical assistance to KEA's application for ISO 9001:2008 Certification.

of the Philippines, the Society of Manufacturing Engineers, and the Philippine Die and Mold Association, to name a few. His interaction with the MIRDC, through his active involvement in the industry, became frequent. He has come to regard the MIRDC as an institution that KEA can partner with when it comes to programs for upgrading and enticing continuous improvement of its employees and the company itself.

Acquisition of the new property was completed and their land area, which totaled to 3,600 sq. meters, was fully utilized in 2009. All things falling into place, the company's next move was to seek ISO certification. The MIRDC, once again, became part of this endeavor.

KEA caters to various clients who have established their own systems and methodologies, thus, they are exposed to external audits. Everything in KEA's operations is aligned with the ISO 9001. The only thing missing is the certification. Applying for an ISO 9001 certification was not an easy decision. Two reasons that made the Board Members agree to proceed were: perfect audit score; and prepare for 2015 AFTA Application.

The industry recommended that KEA seeks the assistance of the MIRDC, which was implementing the project "Support to the Establishment and Implementation of the Quality Management System for the Metals and Engineering Sector's Beneficiary Firms." The MIRDC at that time was in the process of assisting eight (8) selected firms. Application was made in March 2012. The ISO certificate was awarded in December of the same year, making KEA the first to be ISO 9001 certified among the MIRDC-assisted companies. Mr. Araga gives much credit to the MIRDC whose intervention led to a faster ISO certification.

The ISO certificate assured KEA of continuity. Documentation of processes makes turn-over easy. Employees themselves were upgraded and empowered. They became more systematic and can work with minimal supervision. Management decided to rotate employees to various departments to help them learn how it is to multi-task. KEA's products are sent outside the country through their clients. Achievements and awards came after the other, which speak highly of the company's quality service.

KEA's newest project is the e-trike. Based on electrically-powered motor technology, the e-trike does not emit carbon. It has no fuel or gasoline cost. It is economical. It does not contribute to noise pollution. KEA prides itself in being the producer and manufacturer of this green alternative transportation technology.

They conceptualized the e-trike in 2012. Part of the company's mind-setting about the project's success is the acquisition of a new property where the e-trike assembly line will be housed. KEA eyed a new location for this purpose. Finally, the e-trike was launched in 2013. The 8,000 sq. m lot in Silang, Cavite was acquired. This added to the P70 million-worth of KEA's assets. Four (4) new companies added to their list of clients. All these came after the ISO initiative.

The company's successes are shared to the employees. They are given free trainings. People are treated fairly. Recognition is given to deserving employees. Celebrations bond them during birthdays and when deadlines are met. A cooperative was put up for their needs. Career growth is offered by the company. Those who started as rank and file employees are now managers. This motivates staff to perform well and stay with KEA. As a matter of fact, several personnel spent their productive years and chose to retire with the company.

KEA's future plans are primarily focused on pushing for the productivity of the e-trike, as well as continuing to serve their long-time clients. An MOU with the City of Bacoor has already been signed. A complete route with seven terminal/charging stations will be in place. KEA will pursue a widespread promotion for a nationwide adoption of this technology. Part of the grand plan is the eventual export of the e-trike. This is KEA's major contribution to the 2015 ASEAN Economic Community.

"May advantage na tayo as Filipinos. Ang kulang lang sa atin e yung break," shares Mr. Araga. As an impact of the Free Trade Agreement, KEA already feels threats from other suppliers. In spite of this, KEA is

confident that it can meet the demands of the market because it never stopped sharpening its competitive edges.

From five to ten employees in 1991, KEA reached an all-time high of 185-190 employees in 2012. They had to down-size, however, when some parts they supplied to a client were phased out. To date, KEA is home to between 110-120 employees.

Mr. Araga has gathered important lessons from KEA's experiences. He said that continuous improvement is a must because a company's business style is not going to be effective at all times. It is a necessity to have other options. Alternatives are needed in order for a company to maintain effective business setting. "Kailangan may iba ka pang pwedeng i-offer in case na ito ay mag-sunset, may sunrise ka pa." Also, he believes in the value of giving employees the opportunity to grow because they are the assets of the company.

To those who are starting to put up a company, Mr. Araga advices that they know the ins and outs of the business. He says, "Familiarization is very important." He also shares that it is important for them to identify their market and competitors because "competitors are there to help you establish market stability." He is coming from such a positive perspective and he would like to spread the optimism. "Lahat ng tao pwedeng magnegosyo. Ang importante lang naman e yung dedikasyon at yung oras na ibibigay mo. At tsaka tyaga. You have to be patient."

Things are indeed looking bright for KEA. This company truly makes the MIRDC and the whole M&E industries very proud. KEA is one company that gives hope to the country because its journey has proven that the manufacturing sector never gives up. This sector creates jobs and continually upgrades people. "We create not only a laborer, but also a business entrepreneur," says Mr. Araga.

KEA designs and builds e-trikes that are durable, functional, and safe.

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metals industry TRENDS & EVENTS
MIRDC
January - April 2014 vol. 28 no.1 - issn 1908-9988

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