

**worldsteel**  
ASSOCIATION



**STEELIE AWARDS 2019**

## Introduction



The Steelie Awards recognise World Steel Association (worldsteel) member companies or individuals for their contribution to the steel industry over a one-year period.

The selection process for nominations varies between awards. In most cases, nominations are requested through the appropriate membership committee and the worldsteel extranet. Entries are then judged by selected expert panels using agreed performance criteria.

The winners of the 2019 Steelie Awards will be announced during the worldsteel Annual Dinner in Monterrey, Mexico on Monday, 14 October.

## Nominations overview

### Excellence in digital communications

Metinvest Holding LLC  
POSCO  
Tata Steel Limited  
Tenaris  
Ternium

### Innovation of the year

Ansteel Group Corporation Limited  
China Steel Corporation (CSC)  
HBIS Group Co., Ltd.  
POSCO  
POSCO

Reducing emissions through new double layer pre-sintering process  
Improving steel quality with residual stress technologies  
Continuous casting thick plate slab heavy reduction (TPSHR)  
Development of inkjet-printed steel (PosART\*) and its manufacturing technology  
World's first autonomous blast furnace operation by industrial AI

### Excellence in sustainability

ArcelorMittal  
BlueScope Steel Limited  
JSW Steel Limited  
Tata Steel Limited

Climate Action Report 2019  
Australian Steel Products Power Purchase Agreement  
Conveyor system for iron ore transportation  
Recycling and reusing Jamshedpur township water for industrial application

### Excellence in Life Cycle Assessment

Baotou Iron & Steel (Group) Co., Ltd.  
HYUNDAI Steel Company  
Tata Steel Europe  
Tata Steel Europe  
Tata Steel Limited

Supporting production improvement and product marketing  
Creating a by-product resources recycling network  
Developing an LCA tool to assess the sustainability of new product developments  
Developing demountable composite floor deck (CFD) in the construction sector  
Promoting hollow tubular steel sections in the construction market

## Nominations overview

### Excellence in education and training

Gerda S.A.  
Tata Steel Europe  
Tata Steel Limited  
Tenaris  
Ternium  
TMK (PAO)

G.Makers  
Leading Safety Excellence (LSE)  
Contractor competency building  
The Essential Knowledge Strategy  
Roberto Rocca Technical School in Pesquería (Nuevo León, Mexico)  
Corporate professional skills championship: Games of Masters

### Journalist of the year

Hongmei LI  
Paul LIM  
Elena MAZNEVA  
Maria TANATAR

Mysteel Global  
Fastmarkets  
Bloomberg  
Fastmarkets

### Excellence in communications programmes

POSCO  
Nippon Steel Corporation  
Tata Steel Limited  
Ternium

#SteelSaveEarth  
Promoting the sustainability of steel to every generation  
#WeAlsoMakeTomorrow  
Acero para Hacer (Steel to Make)

Excellence in digital communications

Metinvest Holding LLC



POSCO



Tata Steel Limited



Tenaris



Ternium





### Innovation of the year

**Reducing emissions through double layer pre-sintering process**

**Ansteel Group Corporation Limited**

Huge amounts of nitrogen oxides (NO<sub>x</sub>) are discharged during sintering and pelletising. In China, the concentration of NO<sub>x</sub> in sintering exhaust gas is generally between 200 - 400 mg/m<sup>3</sup>, although the Ministry of Ecology and Environment is to put forward measures stipulating that the concentration of NO<sub>x</sub> in sintering exhaust gas should not exceed 50mg/m<sup>3</sup>.

Knowing that a deeper sinter bed can lead to a reduced environmental impact, Ansteel has developed a new double layer pre-sintering process quite distinct from the conventional single layer process. It distributes the first (lower) layer on the sinter machine pallet and ignites it, allowing the sintering process to take place for between 10 and 20 minutes. The second (upper) sinter feed layer is then distributed over the lower layer and the sintering process continues.

This approach significantly reduces the concentration of NO<sub>x</sub>. The industrial-scale pilot results show that the height of sinter-mix bed can be increased from 700 mm in the conventional single-layer sintering process to 1,000 mm in the double layer process without oxygen enrichment and with constant air flow. The output of the double layers pre-sintering new process is more than 16% higher than the conventional single-layer sintering process, so the environmental and productivity gains are clear.

## Innovation of the year

### Improving steel quality with residual stress technologies

#### China Steel Corporation (CSC)

Residual stress is an invisible property locked inside a material, which often damages dimensional accuracy. Efforts have been made to control residual stress on the production line, but little can be achieved due to insufficient information. To overcome the problem, CSC has devoted itself to developing residual stress technologies.

Due to CSC's research efforts, numerous tools have been developed to observe and control residual stress, including effective means to provide reliable measurement of data, simulation techniques to reconstruct stress fields, and detailed documentation of the reasons for each successful case. With the help of these tools, we better understand how plastic deformation is introduced in a variety of production processes so that the correct adjustments can be adopted to control residual stress. The painstaking research has had beneficial impacts throughout the entire manufacturing industry.

More than 10 cases or products have seen benefits from this research; CSC has, among other things, made possible the minimisation of camber deflection of the thermo-mechanical controlling process (TMCP) of steel plate, the correction of C-bow deformation (a challenging task for coil production lines), and digital image correlation (DIC) to provide a powerful way of acquiring multi-axes roll displacements through image analysis.

As a result, the minimised residual stress in plates and sheets greatly support our customers by improving flatness and accuracy.



## Innovation of the year

### Continuous casting thick plate slab heavy reduction (TPSHR)

**HBIS Group Co., Ltd.**

In order to break through the reduction ratio limitation of conventional steel rolling, the thick plate slab heavy reduction (TPSHR) project was developed based on the existing continuous casting slabs for thick steel plate production. Through the project, alleviation of slab segregation, elimination of shrinkage cavity and porosity and homogenisation of slab microstructure and composition were achieved.

In terms of theoretical research, precise descriptions of steel hot deformation behaviour were established, taking into account the new characteristics of thick plate slab heavy reduction, such as large temperature span and high strain rate.

The core equipment of the TPSHR project—ECS (enhanced compact segment) was developed and applied successfully. For the first time, a break-through single point reduction greater than 18mm for heavy plate slab solidification ends and a maximum reduction larger than 40mm were achieved.

During the project, a process named dynamic sequential heavy reduction) was developed, which realises several functions including but not limited to relieving central segregation, shrinkage porosity, increasing slab core strain rate and suppressing spring-back. The first thick plate slab continuous casting production line capable of realising DSHR was completed and put into operation. For the first time anywhere in the world, HBIS made possible continuous and stable heavy reduction for fully solidified slabs. Large-scale stable production of 150mm-thick high-strength construction steel plate was achieved, complying with the third-level flaw inspection requirement with a relatively low rolling reduction ratio of 1.87:1.

## Innovation of the year

### Development of inkjet-printed steel (PosART\*) and its manufacturing technology

POSCO

The surface treatment products of the steel industry have been focused on corrosion resistance for material protection. Recently however, the steel markets for construction and home appliances have been trying to use steel as a substitute material for wood, plastic, and stone, etc. rather than concentrating only on anti-corrosion. POSCO has combined inkjet printing technology with steel to create high-end products with real color, texture and new functions. The innovative steel manufacturing process replaces conventional roll-printing and silkscreen coating technologies.

In conventional printed steel, the quality deviation of the product such as colour overlap, colour deviation, and design overlap, etc. are subject to variations in quality depending on the operator. However, by combining inkjet printing technology with the steelmaking process, POSCO has solved the problem of quality deviation and has diversified its products.

There are substantial benefits to the new inkjet printing technology, which uses UV curing at room temperature to eliminate the need for curing, water cooling and drying, thus saving energy, time, space and money. There are additional environmental benefits as well; conventional roll printing or silk screen printing uses thermal curing with a heat source of 200-250 °C and the ink contains 50-60% organic solvent. Additional regenerative thermal oxidiser (RTO) equipment is required to treat these organic solvents. Moreover, when incinerating the solvent in the RTO, a large amount of CO<sub>2</sub> is generated. PosART uses ultraviolet curable inks, which make it possible to achieve an eco-friendly CO<sub>2</sub> reduction. This technology does not use any organic solvents, eliminating the need to collect or incinerate solvents after production.

PosART is currently in production at POSCO C&C, POSCO's specialised manufacturer of colour coil coating and some POSCO partners are considering mass production.



## Innovation of the year

### World's first autonomous blast furnace operation by industrial AI

**POSCO**

The large size of a blast furnace makes it difficult to predict and measure its inner workings while it is in operation. In the 1980s, physical model development based on operator experience was first attempted to automatically control the blast furnace, but success was limited due to limited data and lack of computer power.

The POSCO Ensemble AITM enables autonomous operation of blast furnace through data-driven AI and physical models based on the know-how of operators and takes a step towards building a model that can surpass human judgement regarding blast furnace conditions.

Using real-time quality data of sinter and coke, it is possible to diagnose the condition of sintering and coking process more quickly. Using a deep learning algorithm, the models for controlling fuel ratio and pallet speed in the sintering process have been developed and a model for controlling combustion heat in the coke process is under development.

After successful use at Pohang's #2 blast furnace these are being applied at Pohang's #3 blast furnace. The models for controlling fuel ratio and grate speed in the sintering process were applied at Pohang #3 sinter. After applying the models, a number of operational improvements were noted, including a 20% improvement in hot metal temperature deviation, a 1% reduction in the reducing agent ratio (RAR), a 5% productivity increase, a 1% reduction in CO<sub>2</sub> emissions, a 0.8% reduction in energy and a 14% increase in the utilisation ratio of low quality iron.

The remaining six blast furnaces will have the model applied by 2023.



## Excellence in sustainability

Climate Action Report 2019

ArcelorMittal

ArcelorMittal published its first Climate Action report in May 2019. The report announces the company's ambition to significantly reduce CO<sub>2</sub> emissions globally and be carbon neutral in Europe by 2050. It lays out the choices available to the industry as a whole and outlines the components of its own climate action strategy, including its wide-ranging portfolio of low-emissions steelmaking technologies, the development of a new carbon reduction target to 2030 to be announced next year, and its contribution to the development of the public policies needed to support the industry's successful transition.

The report – the first of its kind in the steel sector – responds comprehensively to escalating stakeholder concerns about the climate-related risks for the steel industry, and goes further than any other steel company in inviting discourse on the policies needed to support the industry's low-carbon transition at a global, regional and national level. It serves as a significant document in a number of important ways:

As a core resource to build stakeholder understanding of what is involved in the low-carbon transition of the steel industry.

As a catalyst to drive dialogue on how to enable the right policy environment for the right technology routes to become viable, highlighting the need for a more collaborative approach if the full potential of the steel industry is to be unlocked.

As the first example within the steel sector of how a company can respond to the expectations of the financial community to make disclosures on their climate-related financial risks and opportunities, following the recommendations of the Task Force on Climate related Disclosures.

As a callout to policymakers that the steel industry has a lot of the technology solutions to achieve the goals of Paris, but it cannot do it alone.

Climate Action  
Report 1  
May 2019

“Our ambition  
is to significantly  
reduce our  
carbon footprint.”

## Excellence in sustainability

### Australian Steel Products Power Purchase Agreement

#### BlueScope Steel Limited

BlueScope's Australian Steel Products conducted an energy strategy review for their Australian operations during the 2018 financial year, a key component of which was to investigate opportunities for investing in renewable energy.

The company entered a Corporate Power Purchase Agreement (PPA) to underwrite investment in a 500,000-panel solar farm, located at Finley, 100km west of Albury in the Riverina of New South Wales. The ground-mounted solar farm is located on a 300 hectare site which is almost half the size of BlueScope's Port Kembla Steelworks. The landmark 7-year PPA is a commitment by BlueScope to purchase 66% of the 133MWac of energy generated from ESCO Pacific's Finley Solar Farm. BlueScope's component is equivalent to 20% of BlueScope's total Australian electricity purchases. Construction is nearing completion, with the solar farm currently being commissioned. It is expected to be generating at full capacity in the third quarter of 2019.

The PPA with the 500,000 solar panel farm is one of Australia's largest corporate renewable off-take agreements and complements BlueScope's firm electricity supply arrangements, which provide the reliable electricity supply needed for manufacturing processes that must operate 24/7. Through this investment the company is building resilience against fluctuating energy prices and contributing to the decarbonisation of the electricity grid by reducing annual greenhouse gas emissions in the order of 300,000 tonnes of CO<sub>2</sub> each year, comparable to taking 90,000 cars off the road or supplying power to 60,000 homes.

The jobs created by this project, particularly during construction, along with the subsequent increase in demand for local goods and services has provided a boost for the local community at Finley. This contribution has been significant and has come at a time when the local community needs it most as the area is currently suffering from drought conditions. This project emphasises again that good environmental practice is good business. These improvements have driven very positive business, environmental and community outcomes.



## STEELIE AWARDS 2019

### Excellence in sustainability

#### Conveyor system for iron ore transportation

#### JSW Steel Limited

JSW Steel has set a record in installing the world's longest pipe conveyor to transport iron ore from a cluster of mines to their Vijayanagar Works in Karnataka, India. At present 24km have been completed, but the total length will be 83 km when fully completed. The conveyor system is designed to carry 36 million tonnes of iron ore per year.

Prior to this, between 20,000 and 30,000 tonnes of iron ore were transported each day by road by about 3,000 trucks, resulting in airborne dust, road accidents and traffic congestion, all of which were major concerns for the surrounding villages along the way.

The installation of the conveyor system has eliminated airborne dust, improving air quality and crop growth in areas surrounding the road from Nandihalli village to the Vijayanagar Works. A reduction of 3.86 kg of CO<sub>2</sub> per tonne of iron ore transported is expected as a result of removing the 3,000 trucks from the road.

In addition to this, road accidents and traffic congestion have also been reduced, making the roads and surrounding villages safer.

## Excellence in sustainability

### Recycling and reusing Jamshedpur township water for industrial application

**Tata Steel Limited**

In 2018 Tata Steel initiated an ambitious project to reuse all of the domestic sewage water generated at its Jamshedpur township for industrial use at its plant at the same site.

The Jamshedpur plant is located in Jharkhand in the east of India and used to be solely dependent on fresh water from the nearby Subarnarekha and Kharkai rivers for its operations. While the Jamshedpur plant has reduced its water consumption by more than 50% in the last ten years through recycling, reducing consumption and preventing leakages, its dependence on fresh water continues to be a long term risk to the area, especially in view of changing precipitation and land use patterns.

As a part of Tata's Zero Liquid Discharge (ZLD) ambition and to reduce fresh water intake, the company has set up a Tertiary Treatment Plant (TTP) at a cost of 258 million rupees that can process 30 million litres of sewage water per day at the Bara Sewage Treatment Plant for later use at the Jamshedpur steel plant. This has resulted in a 16% cut in the intake of fresh water from the Subarnarekha, with a further saving of up to 27% expected in the next 2 years. This will enable higher water availability for the community and other stakeholders in the river basin.

The project has delivered long term economic benefits for the company; the current cost of withdrawing fresh water from the river is 11.13 rupees per cubic metre, whereas the cost of water generated from the TTP is 6.11 rupees per cubic metre (including depreciation and power cost). At full capacity utilisation the project will have a direct bottom line impact of approximately 43 million rupees per annum (0.62 million US dollars per annum).

This project will be horizontally deployed at all other locations in Tata Steel India to reduce dependence on freshwater intake.



### Excellence in Life Cycle Assessment

**Supporting production improvement and product marketing**

**Baotou Iron & Steel (Group) Co., Ltd.**

Baotou Iron & Steel (Group) Co., Ltd. prides itself on the ecological design of industrial products and has devoted itself to the practice of green manufacturing for a number of years. LCA has been applied in their research and development and production and marketing of their products.

They have created their first online data collection system for steel production to calculate their products' LCA. This system can carry out data collection, calculation, interpretation and can generate LCA results. It shows the full process of Baotou's steel production from mining to final steel products.

LCA also has been applied in the design stage of their new 'green product development' to understand environmental performance throughout the full life cycle. Three types of abrasion-resistant steel products (NM360, NM400 and NM450) have achieved national "Eco-Design Product" certification. These products are designed and developed with LCA and have a high degree of market recognition and good profitability in China, helping to build a good product image for the company as well as actively promoting the environmental development of downstream industries.



### Excellence in Life Cycle Assessment

Creating a by-product resources recycling network

**HYUNDAI Steel Company**

Steel industry regulations are becoming increasingly stringent due to recent environmental issues in South Korea. In order to improve the image of steel in terms of its environmental impact, Hyundai Steel has developed a resource recycling network and is collaborating with the local community to contribute to the environmental improvement of other industries; the use of steel industry slag by construction aggregate manufacturers is a good example of how reuse reduces the burden on nature by ensuring resources remain in use for as long as possible.

In this case, Hyundai Steel has developed two new products, FerroPhalt and FerroCon, both of which can replace natural aggregate used in construction and civil engineering projects to reduce the need for aggregate mining and associated CO<sub>2</sub> emissions.

LCA was used to evaluate the environmental performance of these products, the results of which demonstrate the reduced direct and indirect environmental impact on local communities. It is calculated that the CO<sub>2</sub> reduction rate is 230 tonnes of CO<sub>2</sub> per year during the production of FerroPhalt and FerroCon. With the application of FerroPhalt and FerroCon, this could result in 20 to 40% cost savings on road maintenance due to improved durability.



### Excellence in Life Cycle Assessment

**Developing an LCA tool to assess the sustainability of new product developments**

**Tata Steel Europe**

With the increasing interest in issues such as climate change, the circular economy and responsible sourcing there is a need to be able to quantify and articulate how new products create value in the context of these key topics. Tata Steel in Europe has developed an LCA tool to quantify the sustainability attributes of all new product developments across the company in order to identify those products which offered the greatest value in terms of sustainability over the complete product life cycle.

Using this LCA-based assessment tool helps to support the company's ambition to build a leading European steel business that is sustainable in every sense by integrating life cycle thinking into the development process of all new products (e.g. packaging, engineering, automotive and construction). It provides a means of assessing the relative sustainability of new product development in order to track progress and identify products which offer improvements with respect to issues such as climate change, the circular economy and responsible supply chains.

This LCA tool can be used by non-specialists and considers environmental, social and economic aspects over the complete product life cycle in a consistent manner. It can be used to explain to customers and/or regulators potential trade-offs between different life cycle stages. It can also help to identify opportunities for marketing products based on their life cycle and sustainability credentials.



## Excellence in Life Cycle Assessment

### Developing demountable composite floor deck (CFD) in the construction sector

Tata Steel Europe

The construction industry is material and waste intensive. This important steel market sector is therefore the focus of emerging circular economy legislation. A composite floor decks (CFD) is manufactured and used globally and are an important product for Tata Steel and for steel companies in general as an important leverage to design a building in steel.

Tata Steel in Europe developed the demountable CFD to improve the LCA of steel in construction. In order to account for the demountability/reuse in LCA, allocation alternatives of reuse in LCA were developed and evaluated. The project provided technical solutions for demountability of CFDs (demountable shear studs, cast in steel channels etc.), which can be applied globally.

The CFD provides a demountable solution for steel decks (and related steel frames), avoiding disqualification of steel in the design phase due to non demountability/reusability. Hence the project increases the potential for steel in construction. Reuse of building components will save primary material use. Compared to the recycling of steel, reuse of steel provides significant CO<sub>2</sub> and energy savings due to the avoidance of remelting the steel, and hence a significant improvement of the environmental footprint of steel products.

The demountable CFD solution will result in a more sustainable building (e.g. higher BREEAM rating) and higher residual value at end-of-life, resulting in a higher property value for the customer.



### Excellence in Life Cycle Assessment

Promoting hollow tubular steel sections in the construction market

Tata Steel Limited

Tata Steel Limited has carried out an LCA study for the downstream branded steel product Tata Structura (hollow tubular steel sections). Tata Structura is a light-weight steel product with higher durability that helps to reduce the weight of the structure by 30% against conventional structures (reinforced concrete).

The LCA study has been conducted to evaluate the environmental impact of Tata Structura, and demonstrates the environmental sustainability advantages throughout the full life cycle, from mining to end-of-life recycling. The LCA study has helped Tata Structura to achieve GreenPro certification.

Tata Structura is the first product in the "Steel Products category" to receive GreenPro certification in India. GreenPro is an Indian eco-label for building materials which aims to promote the use of greener materials in the construction of buildings and infrastructure. Having a GreenPro certificate gives credits for Green Building Certification in India. Key elements of the GreenPro certification are the LCA study and the life cycle approach adopted in the product design and manufacturing phases, including a reduction in environmental impact over the years. The LCA study shows that by using Tata Structura, over 30% material savings have been achieved compared with conventional steel sections, which would bring a 20 to 60% cost saving, depending on the application and design. By using Tata Structura, any construction projects opting for Green Building Certification will acquire additional credit points under the Building Materials Category of the Framework.



### Excellence in education and training

**G.Makers**

**Gerdau S.A.**

The G.Makers Programme aims to develop professionals with innovative and digital mindsets, encouraging entrepreneurship and non-conventional solutions for Gerdau's main challenges. The Makers group is comprised of professionals who already work at Gerdau as well as others from outside the company, resulting in a robust team with different professional experience and varied energy and ideas to transform our processes. The programme takes 9 months and is a partnership between Gerdau and one of Brazil's most important innovation schools. The outcomes are applied to high impact projects, connecting people and trends to business opportunities.

The first edition of the initiative took place in 2018 with 42 participants and had a direct impact on approximately 1,700 employees.

In October 2019, the programme's second edition will start in Brazil, with 35 attendees, while our operation in North America welcomed its first edition in August 2019, with 30 participants.



## Excellence in education and training

Leading Safety Excellence (LSE)

Tata Steel Europe

LSE breaks the mould.

Its purpose is to move beyond transactional safety management to transformational safety leadership. The goal is to make safety an intrinsic way of life.

This requires a fundamental change in perspective, from people are the problem whose behaviour must be controlled to seeing people as the solution. This shift drives us towards interdependency and shared responsibility for our safety and that of our colleagues.

To make this shift, leaders must think and act differently. We don't reload leaders with safety process knowledge they probably already have. We help them to explore and challenge the mindsets that make deployment of the right safety leadership behaviours difficult.

LSE explores the imperfect operational world and the polarities leaders face every day. It is designed to help participants reflect on the authenticity of their own safety leadership.

Aimed at some 750 senior managers, the 6 month learning journey is supported by top leaders providing sustained coaching support to facilitate the change challenges identified by participants. These challenges emerge from a blended learning journey that features eLearning, a 3 day workshop introducing the concept of adaptive safety leadership, and a social media scaffold and coaching. All this is brought to life by the voluntary charitable organisation, Guide Dogs for the Blind, with whom we created a moving and pertinent experience.

We are immensely proud of the impact this programme is having; we have demonstrated that it is meeting its behavioural learning expectations. Year 1 of 3, we are confident the impact on business performance will follow.

## Excellence in education and training

**Contractor competency building**

**Tata Steel Limited**

Tata Steel India (TSI) directly employs more than 34,000 people and hires more than 50,000 contractors in operations and maintenance activities across the value chain. It realises the importance of education and training in ensuring the development of not only its own employees, but also its contractors, considering their significant contribution in meeting safety, quality, cost and productivity targets. Education and training on such a large scale requires not only investment, but the right model to ensure the right skills are delivered to the right people at the right time.

TSI launched its Vendor Skill Development Initiative in FY2019 under the JN Tata Vocational Training Institute (JNTVTI) to upskill contractors in specific safety and steel industry skills. Aspiring to become a 100% skill certified contract workforce organisation by December 2019, more than job specific courses were developed and delivered from November 2018 to August 2019. More than 29,000 contractors have been trained, evaluated and certified in three tiers of excellence: silver, gold and platinum. TSI currently certifies between 4,000 and 5,000 certifications a month across 7 geographic locations, managed through four JNTVTI centres. Certification on this scale is a one of a kind endeavour in the steel industry. JNTVTI has received formal recognition by the Indian Government; the National Skills Qualification Framework (NSQF) has accredited its programmes.

This unique initiative by TSI is expected to yield a 25% improvement in safety and productivity. Interest shown by other manufacturing companies in adopting this model is testament to the model's maturity and puts even greater responsibility on TSI to ensure that JNTVTI becomes a responsible skilling hub in the nation today and across the globe in future.



### Excellence in education and training

#### The Essential Knowledge Strategy

#### Tenaris

Tenaris has launched a New Learning Model for staff employees with a new online platform. The objective was to introduce the company into a continuous learning culture, conveying a just-in-time kind of learning, while reinforcing Tenaris's required basic knowledge.

To ensure this, the company launched a second phase of the model on November 2018, focused on a key stage of employees' careers; when they join Tenaris for the first time or whenever they take on a new role. Before the implementation of this programme the onboarding process was decentralised and it required a great deal of resources while its quality was variable. The Essential Knowledge Strategy has emerged as the most innovative remedy to this problem. We focused on improving our knowledge baseline to meet the high quality standards that we, as an industrial company, are required to have, while providing a learner-centered experience at the same time. To this end we created Essential Knowledge pathways, which are basic and mandatory training plans related to the job that the employee takes on. They help employees adapt faster to their new position and better control the time and place of their training, shortening their learning curve. As for supervisors, they can depend on a predefined onboarding guideline, ensuring that the required employee training is covered and registered on a single platform. Now we are in charge of inspiring employees to train, relying on this initiative as the solid foundation of our onboarding process.

Tenaris has covered 95% of its target audience, trained 1,200 employees and seen a 10% decrease in training costs.

## Excellence in education and training

**Roberto Rocca Technical School in Pesquería (Nuevo León, Mexico)**

**Ternium**

The Roberto Rocca Technical School (Escuela Técnica Roberto Rocca, ETRR) is located in one of the most marginalised communities in the state of Nuevo León, Mexico. Its main objective is to enhance equal opportunities in the community by providing almost 400 children with high quality technical education. It places a strong focus on the development of technical skills and values such as passion, excellency, teamwork and innovation.

The ETRR offers two technical specialities, electromechanics and mechatronics, including Industry 4.0 content, both of which are taught through project-based learning. All students perform internships in different industries to develop their industrial skills for their future jobs. Many of them are involved in community activities as well as in robotics clubs. A team of three students represented Mexico in the World Educational Robotics (WER) contest in December 2018 in Shanghai, China. All ETRR students receive scholarships, a computer and uniform and free school meals.

The ETRR also offers training to teachers from other schools, technical courses to Ternium employees and other companies, courses for parents and STEM extra-curricular training to high-school students from the community. In total the ETRR's 30 teachers are training almost 1,000 students, 2,100 employees and 300 parents.

In July 2019, the ETRR saw its first group of students graduate: 85% of them are now working or in further studying and working. For Ternium, the ETRR is more than a school; it is a community development project to providing equal opportunities through education.



## Excellence in education and training

### Corporate professional skills championship: Games of Masters

TMK (PAO)

Games of Masters is a unique development project from TMK. Its main objective is to increase the economic performance of the company by ensuring a high level of development of technical competencies of production personnel, enhancing labour efficiency, production practices and the image and prestige of blue collar jobs.

The competitions are held in two age categories: Young (under 28) and Profi (29 and older) in eight areas of expertise.

At the first stage, the participants are selected for Games of Masters both at the internal plant contests of professional skills and through training activities aimed at development of the required competencies.

At the second and final stage of Games of Masters, the winners of the internal plant contests test their mettle against each other.

The finals include the competition and business and training programmes as well as team building activities. All these create TMK's development environment. In order to win the internal plant contests, workers begin to improve their skills, quality, speed and precision of work with the help of the internal training system, which is available to everybody. The competition tasks are based on cross-cutting corporate professional standards, which makes it possible to provide training to the employees in accordance with uniform requirements.

Games of Masters are held at two TMK2U training centers. A further two training centres are planned to be developed in 2020. The competitions are held at special workplaces where participants use real-life equipment or training simulators that fully imitate the production process.



# STEELIE AWARDS 2019

## Journalist of the year

Hongmei LI  
Paul LIM  
Elena MAZNEVA  
Maria TANATAR

Mysteel Global  
Fastmarkets  
Bloomberg  
Fastmarkets

## Excellence in communications programmes

#SteelSaveEarth

POSCO



POSCO intends to raise awareness of the sustainability of steel and change the public's outdated unfavourable perceptions of the steel industry as a whole.

To this end, POSCO launched the #SteelSaveEarth campaign in order to promote the use of steel, a permanent material that can be infinitely recycled, especially compared to plastic, which adversely affects the environment and is accumulating in huge quantities around the world every year.

In the first phase of the campaign, we focused on educating audiences on what steel is and its environmental benefits based on Life Cycle Assessment (LCA). Educational videos and series of carousel posts were released on social media, receiving over 400,000 views. At the same time, we conducted #SteelSaveEarth hashtag promotions on Instagram and multiple on-site events in order to attract the interest of a wider audience.

Taking into account the fact that most plastic waste ends up in the ocean, threatening millions of marine species every year, we kicked off phase two of the #SteelSaveEarth campaign with a focus on increasing social concerns about ocean and marine life protection. With the support of POSCO's 10th Clean Ocean Volunteer Programme that is run by employees, we plan to host the Clean Ocean Volunteer Day event, which will be held near to POSCO's Gwangyang Steel Works in October. To encourage active participation in this event and continue to promote the sustainable nature of steel, POSCO has been incorporating a variety of content marketing, hashtag promotions and competitions, awarding winners with a steel bottle made of POSCO's stainless steel.

With this purpose-driven campaign and strategy for content, we opened up conversations by connecting with a broader audience to talk about the sustainability of steel. As of 6th September, the campaign has achieved 1 million views on social media and has driven active participation from 7,265 people to help change their perception and understanding of the steel industry.

## Excellence in communications programmes

Promoting the sustainability of steel to every generation

Nippon Steel Corporation

Nippon Steel campaigns for the promotion of the sustainability of steel to every generation, especially to the young, using a variety of tools and media, including brochures, books, web videos, TV and exhibitions.

With the LCA company brochure, we show the importance of life cycle thinking in the selection of materials, and what a low environmental impact steel has in its life cycle compared to other materials.

In five series of advertisements in a monthly journal, we show the high recyclability, low environmental impact, and closed-loop recycling of steel products. We have produced a notebook that teaches the sustainability of steel to school children as a souvenir for visitors to our steel works, highlighting that steel scrap is 100% and infinitely recyclable without any loss of properties. We have also produced a 137 page educational cartoon book that explains steel production, steel products and the sustainability of steel. The book has been donated to elementary schools and public libraries all over Japan.

In television, we have produced a TV advertisement which demonstrates the abundance of steel everywhere and highlights its special magnetic character, and we have also begun to sponsor a TV show which features professionals who manufacture their steel products with passion.



## Excellence in communications programmes

#WeAlsoMakeTomorrow

Tata Steel Limited



**TATA STEEL**

### WeAlsoMakeTomorrow

You know us for making steel, and we do make steel. But we also create solutions that make a positive difference to society. The iconic landmarks you see, and admire, often stand on the steel we make and so do the little big things that make cities better, distances shorter, journeys safer, and the world greener. We go beyond steel to champion new materials that help develop new products, as yet unimaginable. Our work drives towards a future that is more humane, and a lot more liveable. Sure, we make steel.

But #WeAlsoMakeTomorrow.

To know more, visit [www.wealsomaketomorrow.com](http://www.wealsomaketomorrow.com)

For over a hundred years the Tata Steel brand has not just been synonymous with steel, but also for making a positive impact on society. This has been reinforced by the company's messaging and campaigns over the years; the brand is associated with trust, ethics and social welfare.

In 2016, a Nielsen study revealed a drop in Corporate Equity Index and brought to the fore that Tata Steel was not perceived as a technology leader, nor was it seen as an innovative and sustainable enterprise. The spontaneous awareness of the brand was also low.

In reality however, Tata Steel is leading the steel industry with cutting-edge technology and innovation, creating products and solutions for the future.

There was a need expressed by our stakeholders to reposition the image not only of steel in general as today's material with applications for the future, but also of Tata Steel as a company, which is leading the industry with its innovative products and sustainable solutions.

Phase 1 of the campaign focused on highlighting technology and innovation at Tata Steel, demonstrating how it is impacting lives today and how it will shape the future, while Phase 2 will leverage its sustainable practices. The underlying message of sustainability was also consistently retained in the communicate of Phase 1.

The communication architecture and media mix was designed for a defined target group for relevant exposure and reach.





### Excellence in communications programmes

**Acero para Hacer (Steel to Make)**

**Ternium**

Ternium is the leading steelmaking company in the Americas and produces a wide range of products with the highest technology. It supplies industries such as automotive, construction, metalworking, home appliances, packaging, energy and transportation.

The objective of this campaign was to generate knowledge of the Ternium brand and allows it to be installed as one of the leading companies in the market, based on its values, its technology, its history, its leadership, its people and its industrial strength. The campaign focuses on the fact that we live surrounded with steel objects without knowing it, and local people can associate Ternium as its main producer.

The main challenge of this campaign was to present Ternium in a society that mostly did not know the brand. We sought to identify with people, to generate empathy, and to look for points in common in order to start generating an emotional bond with the brand.

The campaign was designed to cover a wide audience, with a medium frequency in major TV networks, radio, street advertising and digital.

The Acero para Hacer campaign was a full 360 integrated campaign. Each message was intended for each medium and each medium was selected based on the message. The mix of all messages and all media, built a complete perception of the brand. The language of the campaign was clear, simple and resonant. The message had the perfect mix of information and emotion; it aroused interest and positive feelings and it generated a positive assessment towards the brand and the steel products it makes.

# worldsteel

A S S O C I A T I O N