

SUSTAINABLE STEEL
Policy and indicators 2016



The steel industry is creating technologies and solutions that meet society's changing needs, driving economic growth, supporting environmental responsibility and contributing to millions of livelihoods in its communities – and we will continue to do so in the future. The members of the World Steel Association (worldsteel) are committed to a vision of steel as a valued foundation for a sustainable world.

The steel industry's sustainability principles are strongly aligned with the 17 United Nations Sustainable Development Goals set out in 2015.

worldsteel members are committed to 7 sustainability principles

SAFETY AND HEALTH

We foster the well-being of employees and provide a safe and healthy working environment.



worldsteel members contribute directly and indirectly to the UN Sustainable Development Goals

VALUE FOR STAKEHOLDERS

We operate our business efficiently and in a financially sustainable way, to supply steel products and solutions that satisfy customers' needs and provide value to stakeholders.



ENVIRONMENTAL PROTECTION

We strive to optimise the eco-efficiency of products throughout their life cycle. We promote the recovery, reuse and recycling of steel.



DISCLOSURE AND TRANSPARENCY

We build and share our knowledge of sustainability through open and active communications. We help others in the supply chain to implement sustainable practices.



LOCAL COMMUNITIES

We promote values and initiatives that show respect for the people and communities associated with our business.



ETHICAL STANDARDS

We conduct our business with high ethical standards in our dealings with employees, customers, suppliers and the community.


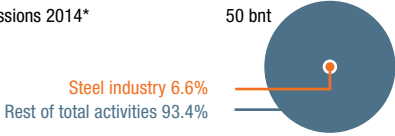

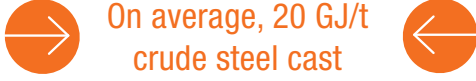



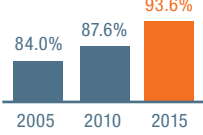

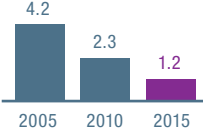

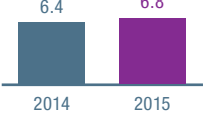


STAKEHOLDER ENGAGEMENT


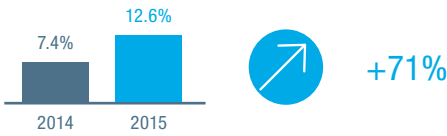


We engage our stakeholders and independent third parties in constructive dialogue to help fulfil our sustainable development commitments.



The steel industry recognised the need for a systematic method to measure and report on its sustainable development performance. To this end, worldsteel established a set of sustainability indicators, which were officially established in 2003. worldsteel members report on 8 sustainability indicators every year. The indicators are aligned to the principles underlined in the steel industry sustainable development policy and to the UN Sustainable Development Goals. Reporting is voluntary.

| INDICATOR | RELEVANCE | BENCHMARKING TRENDS | UN SDGs |
|---|--|---|---|
| Environmental sustainability | | | |
| <p>1</p>  <p>Greenhouse Gas (GHG) Emissions</p> | <p>Reducing GHG emissions in steelmaking must be tackled on a global level. Making the substantial CO₂ reductions required will need technology transfer, collaboration and breakthrough technologies. Steel products also play an important role in a low carbon economy due to their long life cycle, 100% recyclability, and innovative qualities.</p> | <p>World GHG emissions 2014*</p>  <p>On average, 1.9 tonnes of CO₂ are emitted for every tonne of steel produced.</p> <p><small>*Source: CO₂ Emissions From Fuel Combustion Highlights 2014 and 2015, IEA</small></p> | <p>UN SDG 13 – Take action to combat climate change and its impacts</p> |
| <p>2</p>  <p>Energy intensity</p> | <p>Steel production is energy-intensive. The steel industry has made significant reductions in energy consumption in the past decades resulting in benefits to the environment while ensuring economic competitiveness.</p> | <p>On average, 20 GJ/t crude steel cast</p>  <p>The most energy efficient steel companies have reduced their energy consumption per tonne of steel produced by 60% since 1960.</p> | |
| <p>3</p>  <p>Material efficiency</p> | <p>The recovery and use of by-products within and outside the steel industry combined with the responsible management of natural resources contribute to material efficiency and help to prevent waste.</p> | <p>Steel production output 2015 based on materials used</p>  <p>Our goal is zero waste.</p> | <p>UN SDG 12 – Responsible consumption and production</p> |
| <p>4</p>  <p>Environmental Management Systems (EMS)</p> | <p>Registered environmental management systems are an effective way to manage environmental performance and to ensure legal compliance.</p> |  <p>+11.5%</p> <p>11.5% increase of employees and contractors working in EMS-registered production facilities since 2005.</p> | |
| Social sustainability | | | |
| <p>5</p>  <p>Lost time injury frequency rate</p> | <p>Our industry employs millions of people. Nothing is more important than the safety and health of the people who work in the steel industry.</p> |  <p>-72%</p> <p>Lost time injury frequency rate has improved by 72% since 2005.</p> | <p>UN SDG 8 – Decent work and economic growth</p> |
| <p>6</p>  <p>Employee training</p> | <p>Human capital is a key asset for all organisations and a main driver for the creation of value. Training programmes aim to expand the knowledge and skills of employees and help them to make the best use of their talents.</p> |  <p>+5%</p> <p>5% increase in training days per employee compared to 2014.</p> | |

SUSTAINABILITY INDICATORS

| INDICATOR | RELEVANCE | BENCHMARKING TRENDS | UN SDGs |
|---|--|---|--|
| Economic sustainability | | | |
| 7  Investment in new processes and products | Investments in new processes and R&D contribute to a sustainable steel industry. | Percentage of revenue invested in new processes and R&D  7.4% 2014 12.6% 2015 +71% 71% increase in investment since 2014 (excluding developing countries, the increase is 4%). | UN SDG 9 – Industry, innovation and infrastructure |
| 8  Economic Value Distributed (EVD) | Steel is critical to economic growth. It is important to quantify the value companies create and to establish how much of this wealth is distributed to society. | Economic value distributed to society in 2015  US\$ 1,068 bn | UN SDG 8 – Decent work and economic growth |

worldsteel has been reporting on 8 sustainability indicators since 2004 to inform the public on our industry's environmental, social and economic performance. Data provided by members, non-members and associations is verified by worldsteel staff. Crude steel produced by 159 organisations who reported on one or more indicators for fiscal year 2015 was 889 Mt, representing 55% of global production. For details on coverage by indicator, methodology and for further historical data, please visit worldsteel.org.

| INDICATOR | UNIT | 2013 | 2014 | 2015 | |
|-------------------------------------|--|--|------|------|----------|
| Environmental sustainability | | | | | |
| 1 | Greenhouse gas emissions | tonnes CO ₂ /tonne crude steel cast | 1.8 | 1.9 | 1.9 (p) |
| 2 | Energy intensity | GJ/t crude steel cast | 20.1 | 20.2 | 20.3 (p) |
| 3 | Material efficiency | % of materials converted to products and by-products | 96.4 | 97.5 | 97.3 |
| 4 | Environmental management systems (EMS) | % of employees and contractors working in registered production facilities | 90.2 | 94.0 | 93.6 |
| Social sustainability | | | | | |
| 5 | Lost time injury frequency rate | injuries/million hours worked | 1.6 | 1.4 | 1.2 |
| 6 | Employee training | training days/employee | 7.8 | 6.4 | 6.8 |
| Economic sustainability | | | | | |
| 7 | Investment in new processes and products | % of revenue | 8.6 | 7.4 | 12.6 |
| 8 | Economic value distributed | % of revenue | 96.1 | 96.6 | 98.1 |

Notes:

(p) = preliminary; data collection in progress.

Indicator 1 and 2: These indicators are calculated using route-specific energy and CO₂ intensities for three steel production routes: basic oxygen furnace, electric arc furnace and open hearth furnace. The indicators are also weighted based on the production share of each route. The 2014 and 2015 figures for these indicators are higher due to the increased share in BOF production, which has a higher energy and CO₂ intensity. Indicator 1 includes CO₂ emissions only as these make up approximately 93% of all steel industry greenhouse gas emissions.

Indicator 5: Lost time injury frequency rate includes fatalities and is calculated based on figures including contractors and employees. Updated values for 2013 and 2014.

Excellence in Sustainability Steelie Award

worldsteel's Excellence in Sustainability Steelie Award seeks to recognise an initiative or programme that has made a positive impact, or provided benefits in all three areas of sustainability –

including economic, environmental and social performance. A judging panel consisting of internal and external judges selects the winner. The 2016 finalists for this award are presented here.

ArcelorMittal: Extending the lifecycle of steel – sheet piles in a circular economy

ArcelorMittal has implemented a rental business model for its steel sheet piles portfolio that allows both customer and the environment to benefit from renting and reusing these products, thereby reducing project costs as well as emissions from production. This enables the promotion of steel as the material of choice for earth and water retention in sustainable construction projects in a circular economy.



Hesteel Tangsteel: Urban recycled water as the only water source in iron and steel production

Tangsteel, the largest water consumer located in an area of water scarcity, has developed the biggest industrial waste water and urban water recycling and treatment centre in northern China. The capacity of each pre-treatment system is 3,000 m³/h and is now the only source of water for the steel plant. Thanks to this investment, surface and deep well water no longer need to be extracted, the plant achieves zero water discharge and all urban waste water is treated and recycled.



Ternium: Development of a sustainable industrial centre in Pesquería, Mexico

Ternium has made a fully sustainable concept reality with an industrial centre in Pesquería (50 km from Monterrey, Mexico). To ensure the balance between industrial development, the environment and society, Ternium developed an ecological conservation and wildlife management programme from inception in 2009, implemented Best-Available-Technologies to meet ambitious emission goals, and created a new technical school for the local community. It has also stimulated the building of new roads, infrastructure and further economic development – including automotive and railway manufacturing.



STEEL IN THE CIRCULAR ECONOMY

A sustainable circular economy is one in which society reduces the burden on nature by ensuring resources remain in use for as long as possible. Once the maximum value has been extracted, the resources are then recovered and reused, remanufactured, or recycled to create new products.

As a permanent material, which can be recycled over and over again without losing its properties, steel is fundamental to the circular economy.

The industry is continuing to expand its offer of advanced high-strength steels, which reduce the weight of applications, and encourage circular economy practices. For society, the benefits include durable products, local jobs, reduced emissions, and the conservation of raw materials for future generations.

Steel in the circular economy

