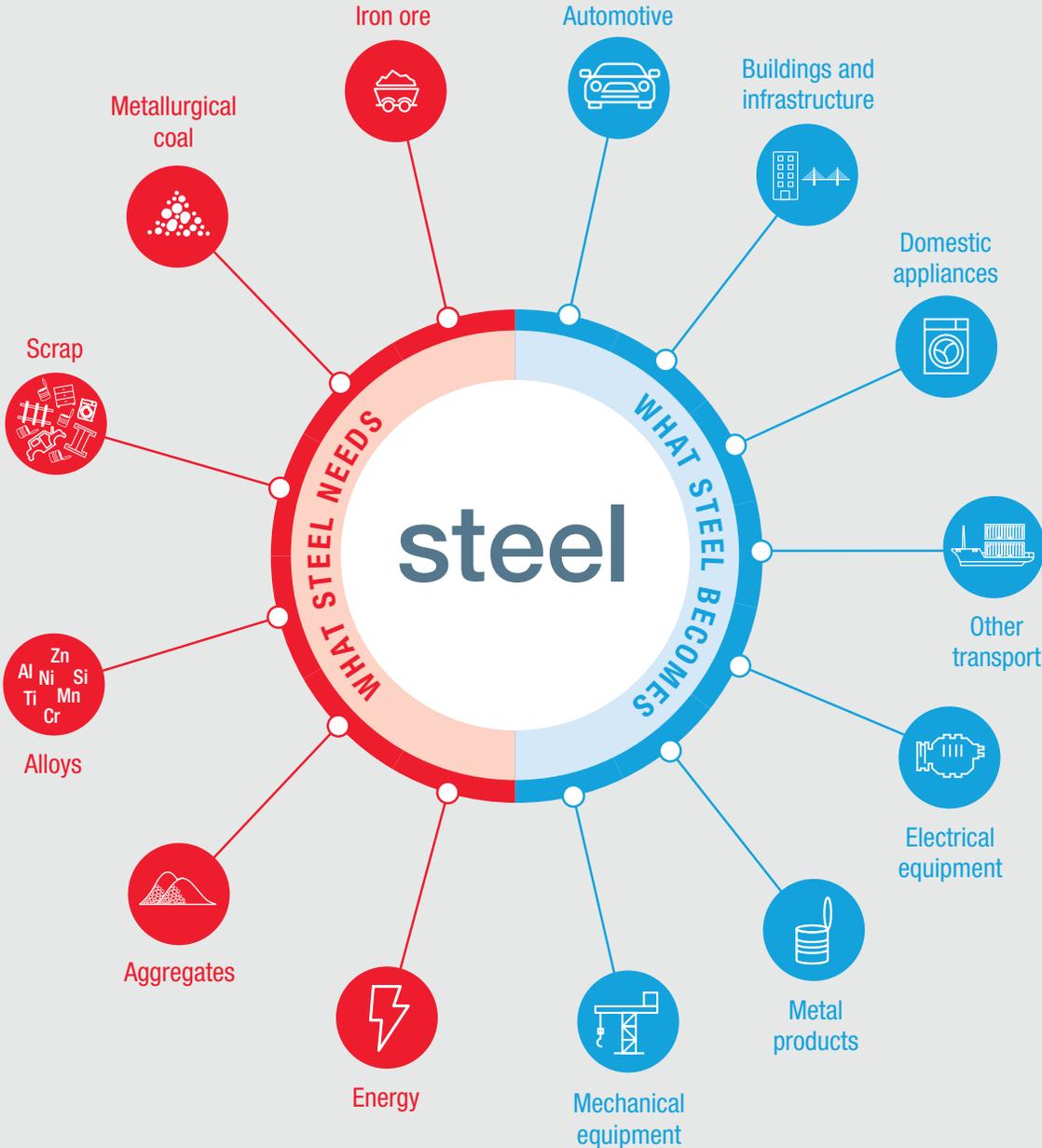


# SUSTAINABLE STEEL

## Indicators 2018 and industry initiatives



## Sustainable development and the steel industry

The global steel industry shares society's challenges and concerns – from climate change and urbanisation, to ensuring long-term economic growth and responsible management and sourcing of resources. We, as an industry and as individual steel companies, are being pro-active in addressing these challenges on many different fronts. This report highlights for you:

1. The steel value chain: what we need to make steel and how society uses it
2. Industry level challenges, commitments and actions related to: climate change, responsible sourcing and co-products
3. Sustainability performance: continued reporting on our 8 global economic, social and environmental indicators
4. Steel solutions: how steel is being applied in versatile and innovative ways to provide sustainable (and sometimes surprising) solutions for our everyday lives
5. Member actions and initiatives: what our member companies are doing individually to address our global industry and societal challenges.

We do not yet have all the answers, but we are committed to engaging and collaborating with our stakeholders to find the right solutions to help meet society's needs in a sustainable way. We welcome you to join the conversation at [worldsteel.org](http://worldsteel.org).

### SUSTAINABILITY EFFORTS OF WORLDSTEEL MEMBERS IN 2018



**Sustainable Development Charter**  
**71** steel companies signed the worldsteel Sustainable Development Charter



**Sustainability Indicators**  
**97** steel organisations provided data to our reporting



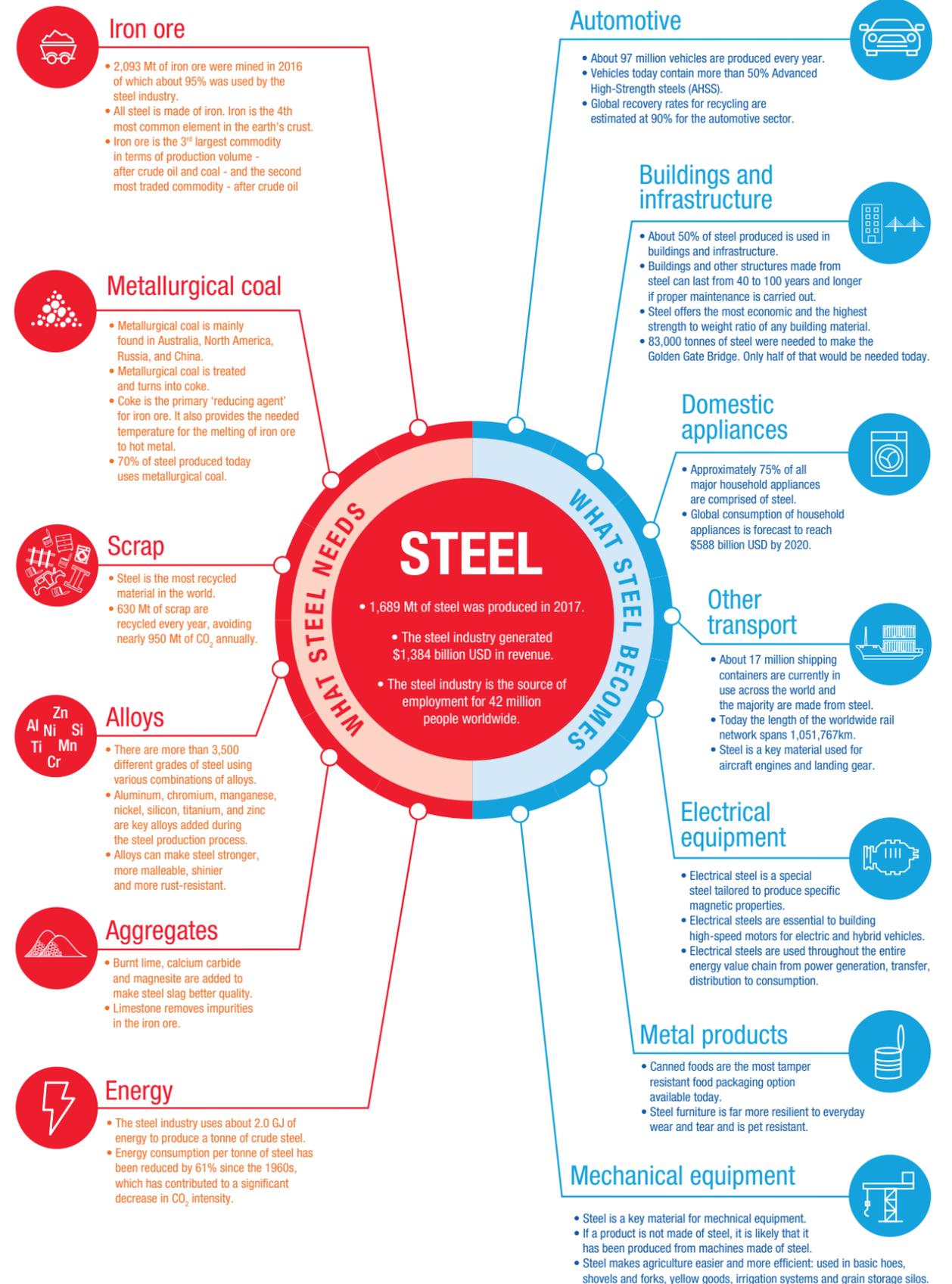
**Climate Action**  
**53** steel companies reported their CO<sub>2</sub> emissions intensity



**Steel Safety Day**  
**47** steel companies carried out a safety audit



**Sustainability Champions**  
**6** steel companies were recognised as Steel Sustainability Champions 2017



There is always a good reason to choose steel

Tom takes a high-speed train to the office every morning. Travel by train is the most energy efficient way. It consumes about 10% and 30% less energy per person compared to planes and cars respectively.



Tom works in a repurposed steel structured building on its 3rd cycle of reuse. His open plan office had been used as a laboratory, a cafeteria and a technical museum before.

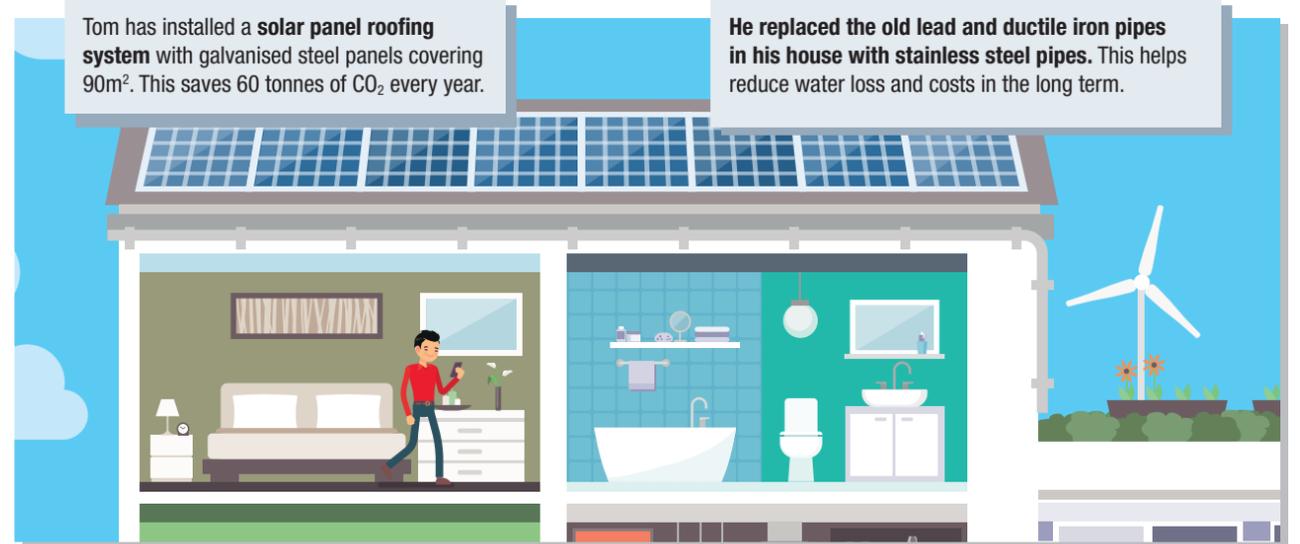


Tom is a 3D printing engineer and is working on an innovative fully-functional 3D steel bridge over the waters of the Oudezijds Achterburgwal canal.

Tom uses a reusable steel cup throughout the day in the office. It's made from 90% recycled material and he got it from Glastonbury festival last year.

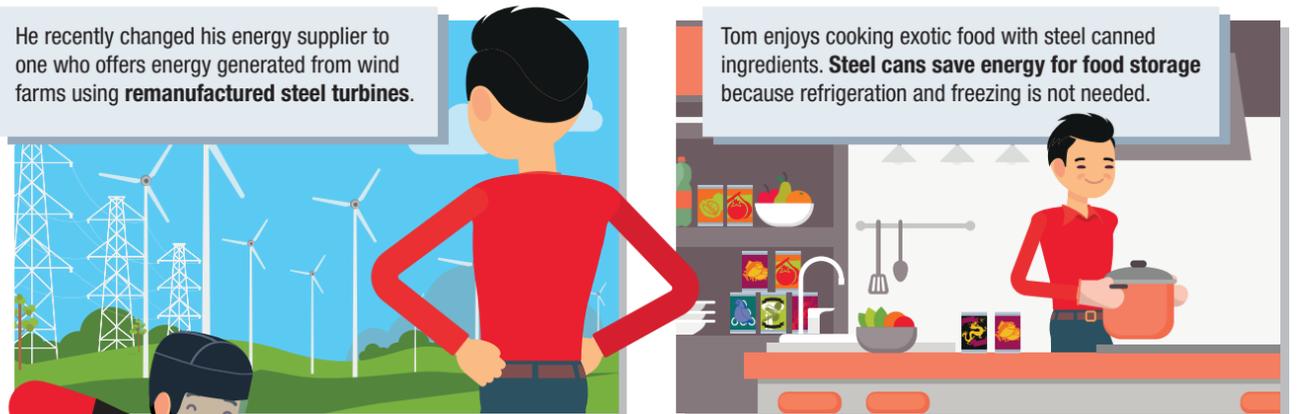
Tom has installed a solar panel roofing system with galvanised steel panels covering 90m<sup>2</sup>. This saves 60 tonnes of CO<sub>2</sub> every year.

He replaced the old lead and ductile iron pipes in his house with stainless steel pipes. This helps reduce water loss and costs in the long term.



He recently changed his energy supplier to one who offers energy generated from wind farms using remanufactured steel turbines.

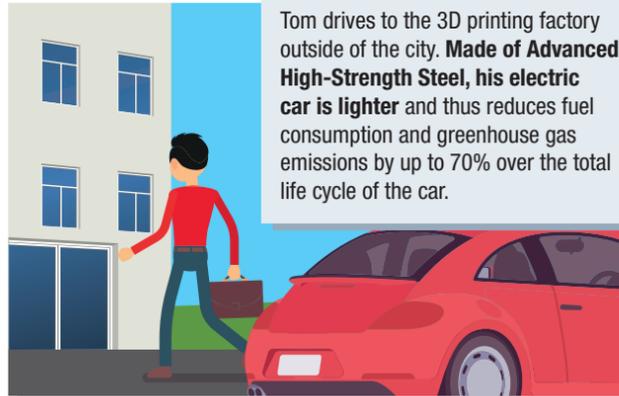
Tom enjoys cooking exotic food with steel canned ingredients. Steel cans save energy for food storage because refrigeration and freezing is not needed.



Tom proposed that the council build a local bridge with salvaged beams. This reuse of steel beams would save over US\$ 50,000.



Tom drives to the 3D printing factory outside of the city. Made of Advanced High-Strength Steel, his electric car is lighter and thus reduces fuel consumption and greenhouse gas emissions by up to 70% over the total life cycle of the car.



Tom plays ice hockey with his friends. His new skates have LS4 blades that are made from the same steel used for knives. This special steel gives a better edge wear resistance.



Tom waters the trees and plants in his garden by using the rainwater collected by his steel guttering system. This saves him many litres of clean water.

He is reusing a retired steel shipping container as his garden shed. It has a very long life and can be repurposed or recycled when he no longer needs it.



Tom is training for the Tour de France this year and recently bought a new steel race bike because it is more durable and responsive than other materials but is still lightweight. He also likes the fact that the steel in his bike is 100% recyclable.



A more detailed interactive 'Steel life' is available at [worldsteel.org](http://worldsteel.org).

Taking action makes good business sense



**KEY:**

- Shortlisted programmes - Excellence in Sustainability Steelie Awards 2016 & 2017
- Shortlisted programmes - Innovation of the year Steelie Awards 2017
- Shortlisted programmes - Excellence in LCA Steelie Awards 2016 & 2017

Selected initiatives and actions taken by forward-thinking worldsteel members to address our global industry and societal challenges. More details on the initiatives are available at [worldsteel.org](http://worldsteel.org)

Tracking our sustainability performance

Steel companies from around the world have been reporting to worldsteel on sustainability indicators since 2004. These indicators provide a systematic way of measuring key aspects of our economic, environmental and social performance on a yearly basis. The indicators are aligned to the commitments outlined in our sustainable development policy and to the UN Sustainable Development goals.

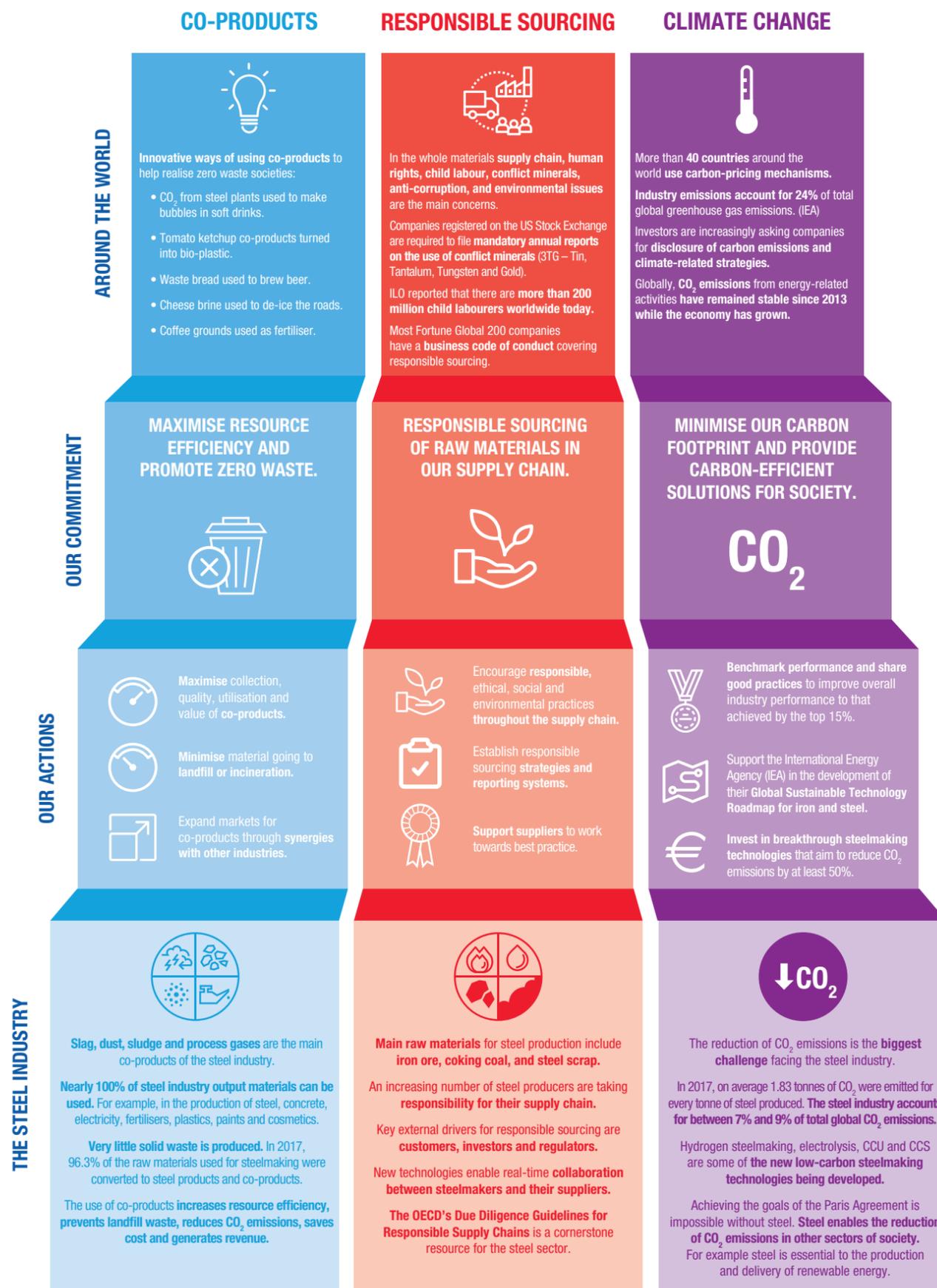
Steel companies report voluntarily on up to 8 sustainability indicators every year. In 2018, 97 steel organisations contributed data for fiscal

year 2017. Crude steel produced by companies who reported on one or more indicators was 960.8 MT, representing 56.9% of global crude steel production. The average indicator results, participation by indicator, as well as performance trends of the steel industry over a decade, are provided in the sustainability section on our website.

To supplement these indicators, we provide additional information, facts and figures on 7 focus areas – three of which are shown on the next page. For further information, please visit worldsteel.org.

INDICATOR	UNIT	2015	2016	2017
<b>ENVIRONMENTAL PERFORMANCE</b>				
1. Greenhouse gas emissions	tonnes CO <sub>2</sub> / tonne crude steel cast	1.87	1.88	1.83 (p)
2. Energy intensity	GJ / tonne crude steel cast	20.3	20.3	20.0 (p)
3. Material efficiency	% of materials converted to products and by-products	96.8	97.5	96.3
4. Environmental management systems	% of employees and contractors working in registered production facilities	93.6	97.1	96.8
<b>SOCIAL PERFORMANCE</b>				
5. Lost-time injury frequency rate	injuries / million hours worked	1.17	1.01	0.97
6. Employee training	training days / employee	6.8	7.0	6.1
<b>ECONOMIC PERFORMANCE</b>				
7. Investment in new processes and products	% of revenue	12.6	13.0	5.9
8. Economic value distributed	% of revenue	96.7	98.8	97.0

Notes:  
 (p) = preliminary; data collection in progress  
 Indicators 1 & 2: These indicators are calculated using route-specific energy and CO<sub>2</sub> intensity for the basic oxygen furnace and electric arc furnace. The indicators are also weighted based on the production share of each route. Indicator 1 includes CO<sub>2</sub> 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.  
 Indicator 7: Investment in new processes and products includes capital expenditure and R&D investment.



**Excellence in Sustainability Steelie Award**

worldsteel's Excellence in Sustainability Steelie Award seeks to recognise an initiative that has made a positive impact, or provided benefits in all three areas of sustainability: economic, environmental and social performance.

The sustainability initiatives presented below are the 2018 finalists, and demonstrate actions being taken by worldsteel members to respond to sustainability challenges in their region. More details are available on worldsteel.org.

**ArcelorMittal Brasil - Water Master Plan (WMP)**

ArcelorMittal Brasil has developed and successfully implemented a holistic approach to water management (WMP) including 1) diversifying its water sources; 2) improving efficiency e.g. increased water reuse and recirculation; and 3) engaging their stakeholders on water-related issues. Their efforts are helping the company to achieve their sustainability goals - "Global Outcome #5" to be a trusted user of air, land and water - and the UN SDG #6 - which aims "to ensure water availability and sustainable management of fresh water to all and everyone".



**ArcelorMittal Europe and HBIS Group turning "waste" heat into urban heating**

What used to be "waste" heat at one of ArcelorMittal's steelmaking sites in France is now being recuperated for use both internally, to heat the halls of the plant, and externally distributed to the heating network of the town of Saint-Chély d'Apcher, heating the equivalent of 1,150 homes. This has resulted in the carbon footprint reduction of both the plant and the town by more than 4,000 tonnes of CO<sub>2</sub> per year, equivalent to taking 2,000 vehicles off the road. Hansteel Company (HBIS Group), located close to Handan City, China, has also developed a technology that allows it to utilise and distribute "waste" heat from its operations to heat 5.5 million m<sup>2</sup> of building space for Handan residents, reducing the use of small coal burning boilers in Handan City, and improving local air quality.



**Tata Steel Limited – Reduces Supply Chain Carbon Footprint**

Tata Steel Limited's (TSL) shipping and logistics team initiated a project to reduce the Green House Gas (GHG) emissions from its shipping operations by increasingly deploying energy efficient vessels for ocean transportation which carries its raw materials and finished products. Given TSL's growth strategy, vessels under operations are expected to go up from 200 to 500 by 2025. Through implementation of this initiative, they will achieve CO<sub>2</sub> emission reductions in their shipping operations of 64% by 2025.



As producers of steel, we know that a sustainable steel industry is crucial for the long-term health of our economy, our society and our planet. And every steel company has a responsibility to help achieve this. Many members of the World Steel Association have already demonstrated their commitment to sustainable development and made extensive efforts in their sustainability programmes. As an industry, we have made progress. But we need to do more and go further.

worldsteel has therefore launched an industry-wide sustainability recognition programme to encourage steel companies to increase their efforts, set higher standards and make further progress.

In 2018, this Sustainability Champions recognition was given to the 6 steel companies who have: clearly demonstrated their commitment to sustainable development and the circular economy; evidently made measurable and tangible impacts in their activities; and led the way to create a truly sustainable steel industry and society. They are ArcelorMittal, Tata Steel Europe, Tata Steel Limited, Tenaris, thyssenkrupp AG and voestalpine AG.

This recognition does not mean that champion companies do not need to do more. Instead, the recognition strongly encourages champion companies to aim higher by setting goals and targets and progress further.

## Steel Sustainability Champions

**Our contribution to a sustainable society and planet is our responsibility**

## World Steel Association

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