



The SIJ Group uses steel scrap as the basic raw material for steel production.

The vertical integration of the SIJ Group enables us to establish well-thought-out material flow cycles and operate according to the principles of the circular economy.

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Responsibility SIJ Group commitments

RESPONSIBILITY SIJ GROUP COMMITMENTS

Responsible customers are opting for steel with a low carbon footprint.

The community of European countries is introducing strict regulations to reduce environmental impacts.

Responsible investors are focusing on opportunities that are in line with sustainability guidelines.

That is why European steel producers are taking a responsible approach to reducing CO₂ emissions from steel production as outlined in the European Commission's Green Deal commitments on steel. Compared to 2018, European steel producers will cut their emissions by 30% by 2030 and by 80–95% by 2050.

The CO₂ intensity of the SIJ Group is already significantly lower than the global average. The 2020–2030–2050 SIJ Group Decarbonisation Plan, which is presented in this document and supported by a comprehensive investment plan, is focused on carbon neutrality, which we aim to achieve by 2050. Compared to 2020, specific emissions of the SIJ Group, which – with its SIJ Acroni and SIJ Metal Ravne steelworks companies – is the largest steel producer in Slovenia, will be 51% lower by 2030.

Through our strategies, plans and actions, we are establishing responsible steelmaking practices

Decarbonisation is an integral part of the overall Sustainability
Strategy of the SIJ Group. We are delivering on the UN's
17 Sustainable Development Goals with an economically,
environmentally, and socially sustainable business model and
by meeting the international ResponsibleSteel™ standards.
The certification of companies according to the criteria of
ResponsibleSteel™, an independent and non-profit organisation
for the evaluation of sustainable practices in the steel industry,
will be carried out in the SIJ Group by the end of 2023.

The 2020–2030–2050 SIJ Group Decarbonisation Plan includes measures for all scopes of emissions – the emissions which we are directly responsible for (Scope 1), indirect emissions (Scope 2), and the impact of our operations on emissions in the supply chain (Scope 3). We will calculate our carbon footprint in accordance with the ISO 14404:2013 international standard.

RESPONSIBILITY SIJ GROUP COMMITMENTS

The SIJ Group contributes to the achievement of eight out of 17 UN goals



Source: United Nations. Available at link. (3. 5. 2023).

In reporting on the implementation of the 2020–2030–2050 SIJ Group Decarbonisation Plan, we will draw on the binding definitions of the medium- and long-term strategy for achieving the goals of the Paris Agreement and the UN's 2030 Agenda for Sustainable Development, which link the three dimensions of sustainable development – namely the economic, social and environmental dimensions – in a balanced way and interweave them into the 17 sustainable development goals to be achieved by 2030.

In 2015, the Sustainability Charter of the World Steel
Association was signed by 75 CEOs of steel companies, including the
SIJ Group. In 2019, the ResponsibleSteelTM initiative also adopted
a standard of the same name, to which we will be certified by the
end of 2023. Both documents set out concrete requirements for
the implementation of the 17 Sustainable Development Goals in
sustainable steelmaking.

The Sustainability Strategy of the SIJ Group and the 2020–2030–2050 SIJ Group Decarbonisation Plan are based on all of these global trends. Out of a total of 17 goals, the SIJ Group can contribute to the achievement of eight general UN goals, either on our own or together with our partners, customers and stakeholders.

At SIJ Group, we care for the health and well-being of our employees and the local communities our companies are based in (3), ensure quality education on equal terms and encourage lifelong learning (4), support gender equality and strengthen the role of women (5), provide all employees with free access to water and sanitation and make efforts to ensure the sustainable management of water sources (6), plan for sustainable economic growth and decent work for all (8), maintain a robust and appropriate infrastructure, and promote inclusive and sustainable industrialisation by accelerating innovation (9), ensure sustainable consumption and production patterns (12), and are taking steps to mitigate climate change by reducing environmental impacts and implementing and duly considering environmental initiatives (13).

decarbonisation commitments and targets using internationally applicable environmental, governance and social (ESG) benchmarks. The 2022 Annual Report and Sustainability Report of the SIJ Group and SIJ d.d. already include reporting in line with the sustainability guidelines of the Global Reporting Initiative (GRI).

We will monitor and report transparently on compliance with our



According to the World Steel Association, the production of 1 tonne of steel produced an average of 1.84 t of CO_2 in 2021. At the SIJ Group, the production of 1 tonne of steel produced 1.45 t of CO_2 in 2021.

Timely adaptation planning is critical for decarbonisation. Investment cycles in the steel industry last between 10 and 15 years. As these are billion-dollar projects, they require large amounts of financing and can also be hampered by limited supplier capacity.

Approaches to achieving the planned decarbonisation in the steel sector will vary depending on the location of steelworks, market requirements, the state of existing infrastructure, the technical feasibility of adaptation, operating costs (the price of renewable electricity, emission allowances and emissions trading) and the regulatory environment. Steel producers will decide on the most economically and technologically viable method of reducing their carbon footprint, based on their assessment of such impacts.

Nearly all steel producers in Europe are already running pilot projects to evaluate different production technologies. At the same time, in-depth decarbonisation strategies are being developed in line with Green Deal commitments on steel.

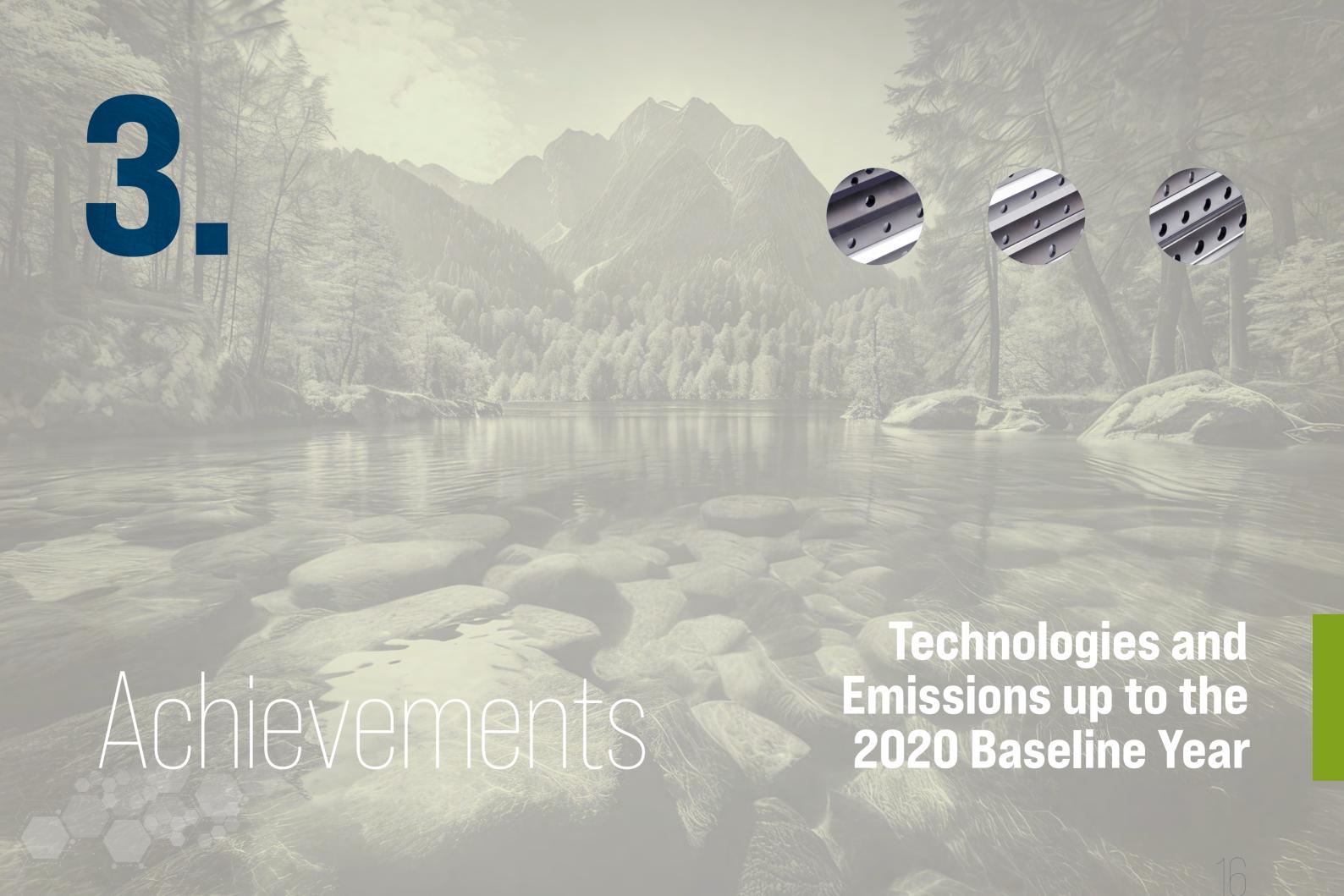
Energy-intensive industries are the cornerstone of decarbonisation in Europe. By implementing our sustainability strategy and decarbonisation plan, the SIJ Group will contribute to achieving this goal.

Green Deal on Steel Guidelines.



With two steelworks, the SIJ Group ranks among the most modern recycling steelworks in Europe that produce steel by using secondary raw materials and their own steel scrap using electric arc furnace technologies. This production method accounts for approximately 40% of all steel produced in Europe. Nevertheless, in order to fulfil the 2050 decarbonisation commitment, the following will be essential for European steelworks:

- access to funding;
- availability of affordable clean energy;
- market development and demand generation for green steel; as well as
- maintenance of a globally competitive status on an equal footing.



Introduction of recycling technology

SIJ Metal Ravne and SIJ Acroni – two steel companies of the SIJ Group – are nurturing Slovenia's outstanding iron and steel tradition, which dates back to the 14th century. Small ironworks gradually grew into larger ironworks and small industrial plants, which produced iron and steel from ore.

We made our first commitment to a cleaner environment decades ago, with transition of steel plants from blast furnaces to production from steel scrap. This change in technologies had a major impact on the environment.

Calculations with the help of archival data according to today's methodology state that the SIJ Group reduced the carbon intensity of Scope 1 by shutting down the blast furnace by approximately 70%, as the value of emissions intensity of Scope 1 was above 2 t CO_2 /t crude steel. With EOP technology we have additionally reduced direct (Scope 1) CO_2 emissions by 34%, from 0.59 to 0.39 t CO_2 /t of crude steel.

With this step we achieved a level of CO₂ emissions 30 years ago that is now considered as a benchmark for our industry.

At SIJ Group we have operated according to the principles of the circular economy for many years, which means that we produce steel exclusively from steel scrap. This means that SIJ has long been emitting half as many tons of CO_2 as the average steel company in Europe.

With transition of steel plants from blast furnaces to production from steel scrap SIJ Group achieved a level of CO_2 emissions 30 years ago that is now considered as a benchmark for our industry.

Update milestones and reduction of CO₂ intensity of the SIJ Group



Emissions up to 2020

Between 2005 and 2020, SIJ Acroni increased its production of stainless steel and more environmentally friendly high-strength and wear-resistant steel.

During this period, SIJ Metal Ravne increased its production of heat-treated steel and steel products as well as the scale of its forging programme.

Despite the accelerated introduction of advanced technologies, emissions in both companies have increased over the period due to the increase in production volumes.

• 107,000 t of ingots produced
• 61,000 t of CO₂ emissions
• 0.57 t of CO₂ per tonne of crude steel (Scope 1)

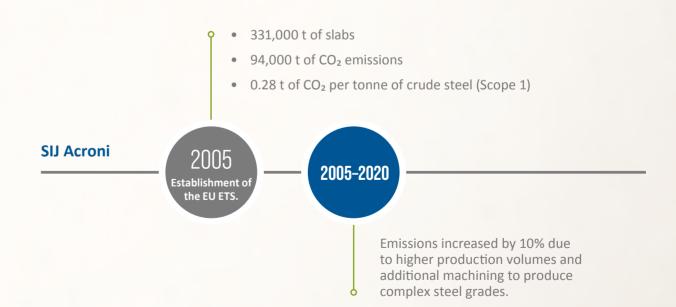
SIJ Metal Ravne

2005

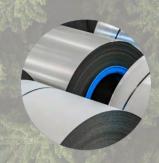
Establishment of the EU ETS.

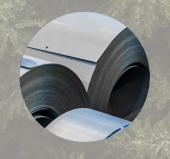
Emissions increased by 18% due to higher production volumes and additional machining to produce complex steel grades.

The SIJ Group is the largest recycling company in Slovenia that operates according to the principles of the circular economy.











Plan for reduction of CO₂ intensity of the SIJ Group

In line withour business strategy and plans, the SIJ Group will increase the production of steel and steel products to 2030, while continuing to significantly reduce CO_2 intensity, which is already lower than the global average. Compared to the 2020 baseline, the SIJ Group aims to reduce CO_2 emissions by 51% by 2030 and become carbon neutral by 2050. This is why we are committed to the 2020–2030–2050 SIJ Group Decarbonisation Plan, which has been drawn up to include all three scopes.

Scope 1: Reduction of emissions from operations

To reduce specific emissions, the SIJ Group will continue to modernise and optimise production and increase energy efficiency. These are the main objectives of the SIJ Group's comprehensive investment plan, which is defined in more detail in internal documents. They lay out both the planned investments and the sources of their funding.

The most important planned measures include:

1) Upgrading furnaces and burner technologies

In both out steelworks, SIJ Acroni and SIJ Metal Ravne, the heating furnaces, heat-treatment furnaces and heating are powered by natural gas. By replacing conventional burners with recuperative and regenerative burners or burners that add oxygen to the gas instead of air, we will reduce specific consumption by 30–50%, and in certain processes even more than 50%. Replacing the existing furnace with a furnace that has better insulation and a more advanced heating optimisation system will lead to additional energy savings.

2) Replacing gas with electricity

Electric furnaces are generally more efficient than gas furnaces. However, as electricity is more expensive than gas, switching to electric furnaces are economically viable only in cases where an appropriate technological solution also reduces energy consumption. After the implementation of the planned investments, where the SIJ Group is applying the Best Available Technology (BAT) principle, the aggregates will operate without direct CO₂ emissions. These investments will also increase energy efficiency, reducing energy consumption per tonne of product produced.

3) Replacing gas with hydrogen

As the generation of electricity from renewable sources increases, so does the need for energy storage solutions. One option is to convert electricity into hydrogen. The hydrogen produced can be injected into the internal natural gas distribution system, producing a natural gas mixture with a maximum hydrogen content of 20% that can be used for combustion. The SIJ Group will use the hydrogen produced this way to heat the furnace, either partially or entirely. We are already planning trials with new oxygen burners for heating slag pots.

4) Reusing waste heat

The furnace upgrades will be accompanied by new projects aimed at recovering the waste heat generated by steel production and building the necessary infrastructure. SIJ Metal Ravne has already implemented two projects that use waste heat for the needs of the local community and the steelworks itself. SIJ Acroni, on the other hand, is already implementing the CREATORS¹ project to create an advanced energy community.

5) Use of biomass

The smelting process in steelworks uses carbon carriers from fossil sources. We will strive to reduce our pollution of the environment by replacing them with biomass carriers. Charcoal and various recycled materials are potential carriers, which will further reduce our waste production.

6) Optimising production with advanced tools

At the SIJ Group, we produce most of our steel and steel products for known customers. To them, customised products are more suitable and more affordable, and better material efficiency also means a lower carbon footprint for the final product. This business model also allows us to have low stocks of finished products and less exposure to price fluctuations, but requires more changes to the production programme. Investments in planning tools to date have already facilitated these changes, and we intend to develop models aimed at reducing specific emissions with advanced analytical tools. These will include, for instance, increasing the hot stacking of the push furnace, increasing the proportion of sequential casting, optimising the input in the heating furnaces in the forge, optimising the input in the electric arc furnace, etc.

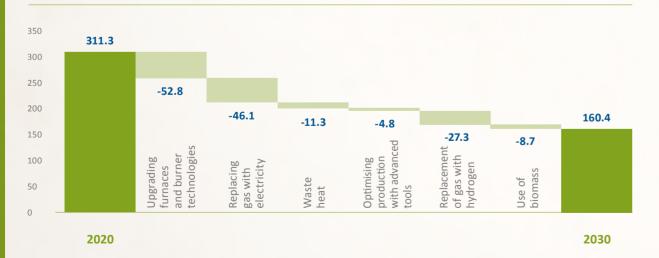
1 SIJ Acroni and its partners from Slovenia and abroad have obtained funding for the CREATORS project from the EU's Horizon 2020 research and innovation funding programme.

By 2030, we will reduce the CO₂ intensity of the SIJ Group (Scope 1) by 51%.

Reduction of CO₂ Intensity of the SIJ Group, Scope 1 (in percent)



Reduction of CO₂ intensity of the company SIJ Acroni (kg CO₂/t crude steel)



Reduction of CO₂ intensity of the company SIJ Metal Ravne (kg CO₂/t crude steel)



Scope 2: Reduction of indirect emissions

By procuring energy from clean sources, the SIJ Group aims to reduce by 30% all indirect emissions associated with the consumption of electricity for heating and cooling by 2030. The achievability of this goal depends on many external factors, which are described in the Assumptions section of the Plan (see page 32), on a number of stakeholders, and on the implementation of the measures for achieving the fundamental commitment of the SIJ Group to reduce by 51% its own emissions by 2030 (Scope 1).

Reducing emissions in both Scope 1 and Scope 2 is associated with high decarbonisation costs. Although the Energy Transitions Commission² estimates that the additional investments needed for decarbonisation will amount to 1.5% of gross domestic product by 2050, the costs of this transition will be particularly high in the steel industry. Even with more advanced technologies and an improved clean-energy infrastructure, the steel industry will not be able to cover all the additional costs entirely on its own.

The SIJ Group is updating its investment plans accordingly in anticipation of more affordable new technologies.

Source: Energy Transitions Commission
 Achieving net-zero emissions by 2050 | Avaliable at link.

Scope 3: Reduction of emissions in the supply chain

At the SIJ Group, the planned measures and investments to reduce our own and indirect emissions are also inextricably linked to suppliers and the sustainability of their operations. On the road to decarbonisation, we will establish a sustainable supply chain in line with our operational policies and Suppliers Code of Conduct.

Financing

At the SIJ Group, we will rely on our investment plan for achieving our optimistic targets (51% reduction in our own emissions and 30% reduction in indirect emissions by 2030). Based on the available information, we estimate that the cost of decarbonisation measures at the SIJ Group will rise to EUR 70 million by 2030. We also intend to finance these measures through the European initiatives for climate transition finance.

We assume that in the period leading up to 2050, when decarbonisation or net-zero emissions are expected to be achieved, more advanced technologies will become more accessible and more affordable; this is why we will develop a new investment roadmap for achieving the decarbonisation targets before the start of the 2030–2050 period.



Projections and the limitations on their validity

The 2020–2030–2050 SIJ Group Decarbonisation Plan includes forecasts and estimates or future projections for³ SIJ d.d. and its subsidiaries, which do not relate to past facts. Future projections include known and unknown risks, uncertainties, and other important factors beyond the control of the SIJ Group. These factors could cause actual results, performance, or achievements to differ materially from any results of operations or achievements expressed or implied by these future projections, including information relating to decarbonisation.

The future projections are based on a number of assumptions regarding the current and future business strategy of the SIJ Group and the environment in which the SIJ Group operates now and will operate in the future. The factors that may cause the actual results, performance or achievements of the SIJ Group to differ materially from those expressed in the projections are related in particular to the risks and opportunities described in the special section of this document (see page 38) and in each Annual Report and Sustainability Report of the SIJ Group as well as in the Semi-Annual Report of SIJ d.d., which are available on the SIJ Group's website at www.sij.si.

The decarbonisation targets of the SIJ Group are based on current assumptions and expectations about the projected costs of achieving the targets, assumptions about government and social support for emission reductions, as well as expectations about technological progress and the development of appropriate decarbonisation infrastructure, which will not necessarily materialise in the future. Therefore, the future projections presented are only valid on the date of publishing this document.

The SIJ Group expressly disclaims any obligation to publish any updates or revisions to the future projections contained herein to reflect changes in the projections or any changes in the events, conditions or circumstances on the basis of which the projections were made, except as required by law and the Listing Conditions of the Ljubljana Stock Exchange.

Readers of this document should be aware that a number of important factors may cause actual results to differ materially from the plans, objectives, expectations, estimates and forecasts expressed in the future projections contained in this document.

3 References to future projections include words such as »plan«, »estimate«, »believe«, »expect«, »target«, »intend«, »will«, »may«, »anticipate«, »would«, »could«, and similar expressions or their negations.

Plan assumptions

The 2020–2030–2050 SIJ Group Decarbonisation Plan is based on the assumptions that:

- the SIJ Group will conclude all planned investments in already developed and proven technologies that have an impact on reducing our carbon footprint;
- hydrogen production technologies will be more accessible and less expensive after 2025, so the SIJ Group will pursue the use of hydrogen instead of natural gas;
- the supply of electricity from renewable sources will increase and the price of renewable energy will be competitive;
- infrastructure for carbon capture, utilisation and storage will be provided;
- with different rates of decarbonisation around the world, the European Union and the Republic of Slovenia will ensure that European companies operate on a level playing field and that suppliers from European and non-European countries are treated comparably (including in the case of EU ETS allowances).

The selection and actual implementation of the measures laid out further on in this document will depend mainly on:

- the relationship between the prices of energy products,
- the supply of energy products,
- the amount of funding for investments into certain solutions,
- the development of equipment and references for certain technologies.

The measures and targets set out in this document will be reviewed, updated and adjusted by the SIJ Group at least once a year in the light of global technological developments and the realisation of the above assumptions.

Industry-Specific **Cost of Emission** Allowances

INDUSTRY-SPECIFIC

SIJ Acroni and SIJ Metal Ravne are included in the EU's Emissions Trading System (EU ETS). The 2020–2030–2050 SIJ Group Decarbonisation Plan takes into account that at the same volume of emission allowances currently held by both steelworks, the cost of emission allowances would gradually increase and be fully borne by the SIJ Group. The increase in costs would mainly be due to additional systemic changes, or the reduction in the total sum of emission allowances under the EU ETS.

The trading of allowances for greenhouse gas emissions is an important part of the strategy to reduce greenhouse gas emissions in the European Union and its member states. The EU ETS, the world's first international trading system for greenhouse gas emissions, was set up to achieve mandatory emission reductions in a cost-effective way.

The EU ETS can be expected to change at an accelerating pace as the planned overall emission reductions are achieved.

The EU ETS, which involves more than 11,000 companies from EU member states, was based on a binding target for the European Union to achieve at least a 40% reduction in greenhouse gas emissions by 2030 compared to a 2005 baseline. This target was adopted by the European Council in 2014 and was part of the agreement on the 2030 climate and energy framework. The accelerated reduction of annual total emission allowances could have an impact on costs to the SIJ Group.



Carefully
assessed



Risks and Opportunities

CAREFULLY ASSESSED

The 2020–2030–2050 SIJ Group Decarbonisation Plan takes into account the most important risks and opportunities for the SIJ Group related to internal carbon footprint reduction. While we recognise the risks – particularly in the area of technological development and in the regulatory requirements of the European Union – we are also aware of the opportunities presented by the commitment of the SIJ Group to decarbonise the steel industry.

Risk of delays in the development of technology and infrastructure

An environmentally sound and, at the same time, cost-competitive transition to green steel production technologies will depend on the timely development of competitively priced technologies for the production of more environmentally friendly hydrogen and the development of infrastructure to enable sufficient and competitively priced renewable energy. Delays in the development of these areas represent the most significant risk for the SIJ Group in terms of the implementation of our decarbonisation plan.

Limitations of the regulatory environment in the EU

Steel producers in the European Union are being faced with more stringent decarbonisation requirements than steel producers in other parts of the world. European producers are less competitive on the global market, which is the result of increasing prices for emission allowances (EU ETS), increasingly demanding emission reporting obligations, and higher production costs due to volatile prices (e.g. energy) at the entry points of the production chain, as well as regulation of by-products or waste from the production process. In order to manage this risk, European steel producers will need support from or the implementation of appropriate measures by the European Union. Creating such a level playing field and legislating for the use of more environmentally friendly steel grades could protect us on the European market.

In assessing the risks associated with decarbonisation, the SIJ Group sees opportunities to work with new customers and investors who understand the positive financial impacts of sustainable operations.

Opportunities for green steel suppliers

At the SIJ Group, we are proud of the carbon footprint reduction that we have already achieved as it is lower than the global average. Compared to integral steelworks that extract steel from ore, we also have the advantage of being a fully recycling steelworks that operates according to the principles of the circular economy. In view of the expected requirements and decarbonisation targets, we are in a favourable position to produce steel that meets stringent environmental requirements. In the context of the decarbonised steel industry transition, we can unlock new customers who will be driven by market demands and legislative changes to use green steels, such the ones already produced by the SIJ Group today.

Trust in proven sustainable companies

At the SIJ Group, we believe that through sustainable management, certification, internal controls and external verification, we are increasing the availability of capital for the implementation of the decarbonisation programme and driving our revenue through the sale of low-emission products and services.

Management Efforts for Sustainable Operations The decarbonisation plan is part of the SIJ Group's sustainability strategy. The strategy is set in line with the business strategy and plans. The SIJ Group has clearly defined responsibilities and competences for sustainability management.

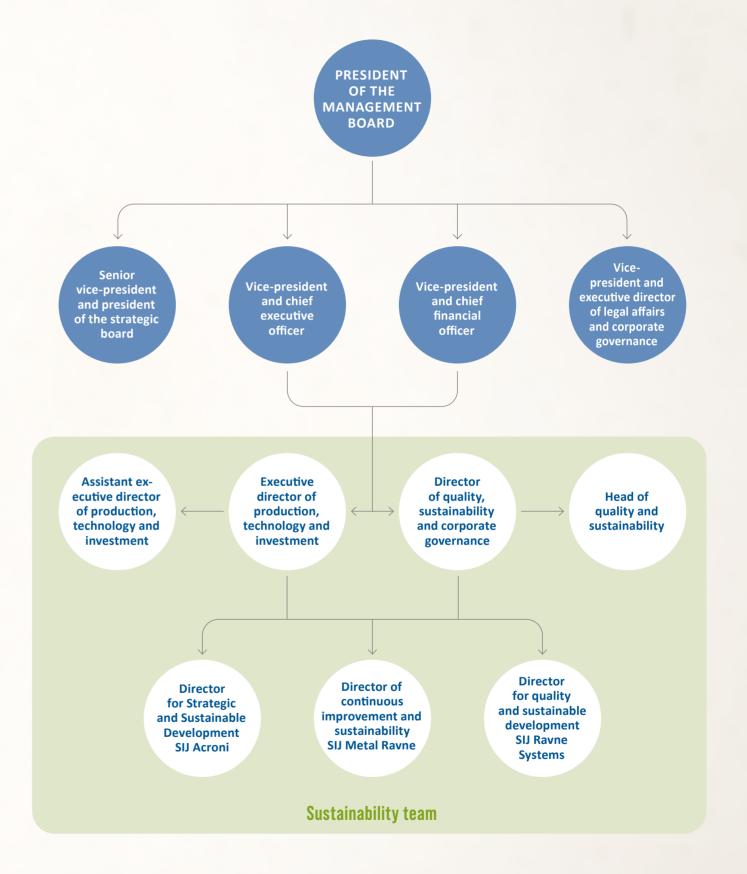
The responsibility for strategic sustainability development and the approval of the sustainability strategy lies with the president of the management board. Sustainability management is part of their overall responsibility for leadership and management of the SIJ Group.

The approval of sustainability projects and investments of the SIJ Group is the responsibility of the Strategic Board, which is composed of vice-presidents and executive directors. All members of the Board (29% of whom are women) have more than ten years of experience in the strategic management of steel companies as well as relevant knowledge on sustainability.

The Sustainability Team is responsible for identifying, addressing, and managing risks and opportunities related to climate change. Two vice-presidents, the chief executive officer and the chief financial officer, are also members of this Team and are responsible for overseeing and coordinating the work of the team.

Heading the Sustainability Team and implementing the SIJ Group's sustainability strategy is the Director of Quality, Sustainability and Corporate Management.

Overseeing the implementation of the 2020–2030–2050 SIJ Group Decarbonisation Plan is another member of the Sustainability Team, the Executive Director of Production, Technology and Investment.







The SIJ Group commits to implementing the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) in reporting on governance, strategies and risk management as well as in reporting on metrics and targets. Notes will be included in the SIJ Group's regular annual sustainability reports.

In sync with Nature

At the SIJ Group, we are aware that we share our natural environment with an indigenous bee species – the Carniolan honeybee. We are similar to the Carniolan honeybee in terms of our shared characteristics, such as adaptability, resilience and profitability.



The steelworks of the SIJ Group's steel operate in an environment with exceptional cultural and natural heritage. The historical ties between the iron and steel industry on the one side and the local environment on the other have instilled in us a corporate social responsibility. In order to support our sustainability strategy and reduce our environmental impact, we cooperate with local communities, which is also where most of our employees live.

Showing respect for natural heritage of global importance

We are particularly committed to preserving the heritage in Upper Carniola and Carinthia regions, which is where our steel companies operate. The Jesenice steelworks in Upper Carniola is just a couple of kilometres away from the Triglav National Park, the largest nature conservation area in Slovenia. Our other steelworks is located in Ravne na Koroškem, which is not far from the Karavanke UNESCO Global Geopark.

Sharing our environment with the Carniolan honeybee

In every corner of Slovenia, culture and nature are brought together magnificently in beekeeping, which is inscribed on the Unesco Representative List of the Intangible Cultural Heritage of Humanity as a way of life.

On Slovenia's initiative, the UN has declared 20 May as World Bee Day. On this day in 1734, Anton Janša, the father of modern beekeeping, was born in Upper Carniola, not far from where the SIJ Acroni steelworks stands today.

Nowadays, one in every two hundred people in Slovenia is a beekeeper. There are more than 10,000 beekeepers in Slovenia taking care of more than 200,000 bee colonies, with up to 100,000 bees per beehive. In Slovenia, beekeepers only breed our indigenous bee species — the Carniolan honeybee.

Inspired by the our exceptional indigenous species of bees

The Carniolan honeybee (Apis mellifica carnica) is set apart from other bee species by external characteristics and behavioural traits. It has an excellent sense of orientation, is highly productive, adapts quickly to temperature changes, is resistant to diseases and rarely stings.

With our sustainability commitments, the SIJ Group aims to preserve the environment in which the Carniolan honeybee provides for the future of the planet by pollinating various plants and working to improve our health with its honey products. The purity of its honey underlines the purity of the environment in which it thrives. At the SIJ Group, we will further demonstrate our care for the environment by installing beehives on our land or in the surrounding area.

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