

OVAKO



CARBON
NEUTRAL
NOW

Leadership in sustainable steel

A BETTER ENGINEERED FUTURE DEPENDS ON WHAT WE DO TODAY

Good intentions are great, but positive action is what counts

Rooted in a 500-year steelmaking legacy, Ovako has long been passionate about offering specialty steels that bring huge benefits to customers and society. Today, we are a leader in long, low-alloy, high-performing steel products that enable lighter designs, large energy and CO₂ savings, and some truly remarkable engineering. More than 500 steel grades of bar, tube, and ring, to be exact – for demanding manufacturing customers in the automotive, mining, energy, and other sectors.

Over the years, strong investments in R&D, innovative thinking and a close collaboration with our customers have allowed us to continuously reinvent and upgrade our offering many times over. Always improving, our aim remains constant – to boost productivity, ensure safety, and secure sustainable processes that drive growth. In all of this, we follow the UN Sustainable Development Goals and strive to use recycled raw material, fossil-free electricity and apply circular thinking in all we do.

Now, driven by an ambition to make an even bigger difference for the world, we are taking this commitment to the next level. Based on our clear strategic roadmap, innovative technologies and available resources, we are well positioned to help further reducing climate impact for the benefit of all. We call it **Carbon Neutral Now**.



WHY THIS INITIATIVE

OUR PLANET CANNOT HOLD ITS BREATH UNTIL 2050

In the media today, there is a lot of talk about green steel, hydrogen steel or climate-neutral steel. It's all very confusing. And when you drill down deeper, the timelines cited by many steelmakers for commercial delivery (if cited at all) are often far in the future, or only account for a small portion of total production. We believe the world needs a more immediate and tangible solution.

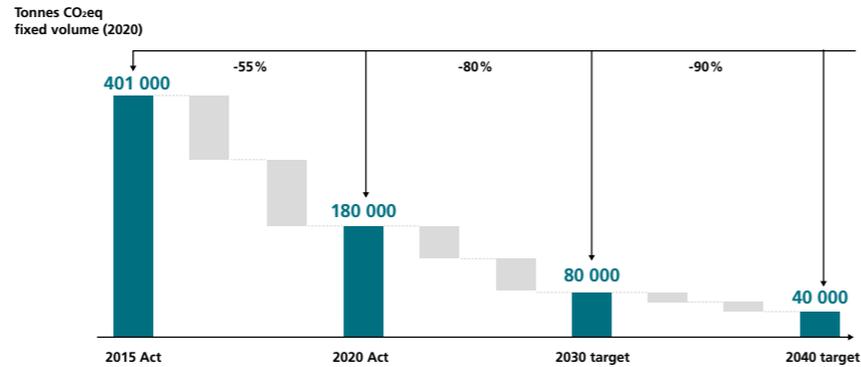
The good news is that Ovako – together with its customers, partners, owner, and other key stakeholders – is well positioned to lead the change. In fact, an ESG study of global steelmakers by a leading financial institute placed us in the pole position to drive progress towards carbon neutrality. While this is gratifying – the result of years of work – we are not resting easy. There is still much to do. Importantly, our “cradle-to-gate” perspective and scalable “circular” platform are not patented or exclusive to us – we hope others embrace this thinking, too.

Product Life Cycle Analysis

The diagrams to the right provide an overview of our carbon footprint and road map for hot-rolled steel products. Cradle-to-gate means we make a Life Cycle Assessment (LCA) from raw material extraction through materials processing and manufacturing, including all yield losses, until the point of delivery. Hot-rolled products from each of our three metallurgies then receive an Environmental Product Declaration (EPD), produced by RISE and verified by a third-party auditor. Based on these, we can deliver specific details for all downstream products and all different grades we produce through our Carbon Footprint Calculator.

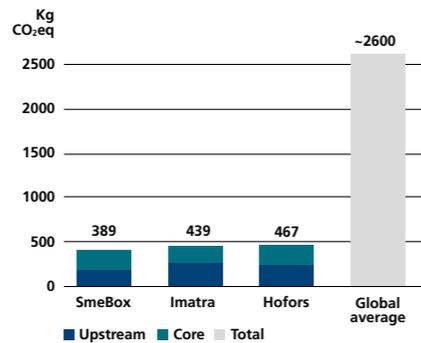
OVAKO CLIMATE ROADMAP

Carbon dioxide equivalent emissions for Ovako's total operations, scope 1 and 2



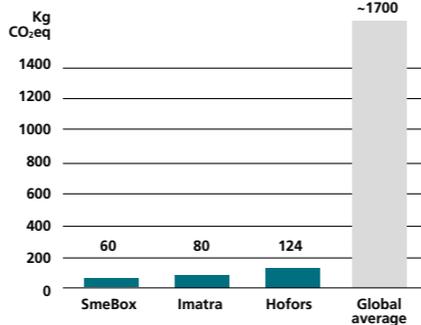
HOT-ROLLED STEEL PRODUCTS

Scope 1, 2 and 3 emissions, hot-rolled steel products, divided by tonnes of finished products (2019)



CRUDE STEEL

Scope 1 and 2 emissions, in steel mill only, per 1000 Kg crude steel (2020)



- A good starting point**
- 97% recycled steel
 - 100% fossil-free electricity sources
 - 95% lower carbon footprint for steelmaking process vs global industry average
 - 80% below global average of cradle-to-gate footprint for hot-rolled products.
 - 2 tonnes of CO₂ below global average per 1 tonne of hot-rolled product, cradle to gate
 - 55% reduction in CO₂ emissions from already low baseline since 2015
 - Successful full-scale trials to heat steel with 100% fossil-free hydrogen and oxygen

WHAT WE ARE DOING

INVESTING IN HYDROGEN TO TACKLE CLIMATE CHANGE



Hydrogen is not just a gas – it is an ingenious energy source that will play a key role in our efforts to achieve zero carbon emissions. We can produce it using electrolysis with 100% fossil-free electricity. When burned with oxygen, it emits nothing but water vapor and recoverable heat. Our plan is to switch our heating of steel prior to rolling, from fossil fuels to hydrogen – and a full-scale trial shows it works!

Heating of intermediate steel products, downstream from the steel production itself, is an essential processing step that all steel producers have in common. Unfortunately, this heating requires large amounts of fossil fuels. So how can you do this using fossil-free fuel, avoiding the use of propane or natural gas? We found hydrogen and oxygen to offer a promising combination.

Abundant Nordic fossil-free power

In Europe, hydrogen is largely manufactured using fossil fuels, such as natural gas, oil, and coal. This is not the case in the Nordic region where hydro, wind, and other fossil-free power sources are more abundant – a good starting point!

Sweden's largest electrolyzer

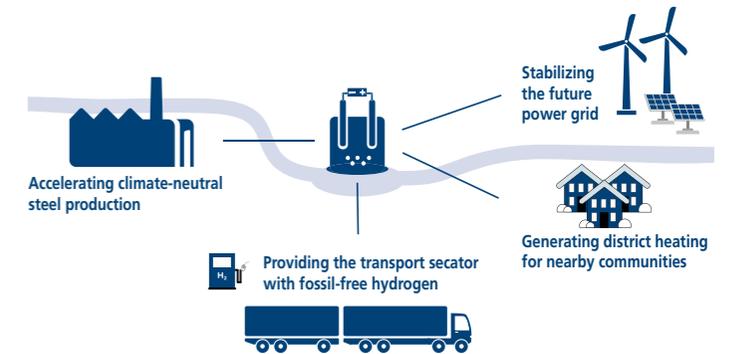
However, to secure a reliable supply of low-cost, fossil-free hydrogen, it became clear to us that we'd need to build an industrial-scale plant of our own (Sweden's largest electrolyzer, in fact). Supporting us in our efforts, we were fortunate to gain valuable input and guidance from key partners across a range of industries, as well as from the Swedish Energy Agency. In 2020, we carried out a successful full-scale proof of concept at our facility in Hofors, securing the path forward. In 2021, we obtained the financing needed to bring our first hydrogen plant on stream.

Broad societal benefits

Not only will this help reduce our Scope 1 and 2 emissions by more than 50%, but it also opens a whole range of exciting possibilities that can benefit society in a broader sense. For example, the fossil-free hydrogen produced at our facility could be used for refueling of fuel-cell powered trucks. Also, the residual heat could be used for district heating of nearby communities.

Finally, the electrolyzer could serve as a flexible regulator, allowing us to help the electricity grid operators to balance power supply and demand (see illustration).

LOCAL INDUSTRIAL FOSSIL-FREE HYDROGEN PRODUCTION



The broader benefits to society of local, industrial-scale hydrogen production.

HOW WE DO IT

COMMITTING TO CLIMATE COMPENSATION IN THE INTERIM

Starting in 2022, to bring our already very low carbon footprint to zero, we will buy voluntary carbon offsets. These are aligned with the UN Sustainable Development Goals, the Science Based Targets initiative (on the 1.5°C target level) and support the UN-led Race to Zero Campaign.

It's no secret that carbon offsets are a controversial topic. Some say that offsetting doesn't really reduce emissions. Others say it is a distraction from the root problem. This couldn't be further from the truth for Ovako, which continues to make significant progress in shrinking its already record-low carbon footprint. However, we don't deny that there will be some unavoidable CO₂ emissions from our production, however small. Ovako's CO₂ emissions are already at world-leading low levels of below 90 kg per tonne of crude steel produced, compared to a global average of 1700 kg. Still, our journey continues.

Reducing climate impact – now

So while we continue to achieve major milestones in carbon reductions, it is still our responsibility to take immediate action for the benefit of our customers and society. By purchasing offsets, we ensure that any CO₂ released into the atmosphere from our production will be balanced by an equivalent amount of carbon removals. The need for carbon offsets will be gradually reduced as we continue to invest in process improvements.

Supporting carbon offset projects

All projects that we will support are carefully evaluated and reviewed. These range from building renewable energy production facilities, such as wind farms and hydro or solar power installations, to forest preservation projects and more. The projects, which help to reduce CO₂ emissions, are certified according to one or more standards for CO₂ offsets as set by independent carbon certification bodies, for example Verified Carbon Standard or the Gold Standard. Details of all our climate compensations are published on our website.



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WHAT IT MEANS FOR ALL OF US

HOW A CARBON-NEUTRAL COMPANY BENEFITS THE WORLD

Our Carbon Neutral Now initiative is the right thing to do. It has immediate benefits for you as a customer, for society and for the planet. As a customer, it means you get an engineering steel partner that is taking concrete action to mitigate climate change. You gain access to tube, bar, and ring products from our three metallurgical workflows and nine production sites – all manufactured in a 100% carbon-neutral process.

It's happening! We go carbon-neutral in all of our operations starting in 2022. Carbon Neutral Now is our pledge to customers and society that we are taking concrete action to mitigate climate change. In the same time frame, our full-scale hydrogen plant goes on stream, as part of a concept to ensure a further reduction in CO₂ emissions by 50% or more. As a natural part of this, we have signed the Science Based Targets initiative (SBTi) and support the UN-led Race to Zero Campaign.

Reach your ESG goals faster

Most likely, you already have an ESG strategy with a focus on sustainable business practices. This may include accreditation of suppliers who are working to reduce environmental impact, promote social responsibility and good governance. Here we can team up with you to reach your own sustainability goals faster. And should you want to reduce the full cradle-to-gate carbon footprint of your products, you have no better steel supplier to turn to than Ovako. We can help you estimate just how many thousands of tonnes in CO₂ savings this would represent.

Piggyback on our own EPDs

Each of our hot-rolled products comes with an Environmental Product Declaration (EPD) in accordance with ISO 14025 and EN 15804: 2012+A2:2019, produced by RISE and verified by a third-party auditor. You can consider these as building blocks, together with our Carbon Footprint Calculator, to establish your own detailed EPDs for your products.

Make these claims with confidence

You can inform your own customers that the steel products used from Ovako are:

- Based on 97% recycled steel
- Produced in a 100% carbon-neutral process
- 80% below global average in cradle-to-gate carbon footprint
- From steelmaking (even without offsets) 95% below the global average in CO₂ emissions
- Produced using fossil-free electricity sources
- From a supplier that recycles or reuses 94% of all residuals
- A foundation to reduce your own cradle-to-gate footprint by two tonnes of CO₂ per tonne of product

300,000,000 tonne CO₂ difference

Our hydrogen project has a broader scope than Ovako's own operations. Using fossil-free hydrogen for heating steel has a global potential to reduce some 300 million tonnes of CO₂ emissions – a significant benefit for all of society, accelerating the transition to electrification with green hydrogen.

Just imagine the broader implications this can have on fossil-free transport, or the flexibility to provide more renewable energy to the power grids of the future. Please join us in supporting a faster pathway to a hydrogen economy for all.

About Ovako

Ovako develops high-tech steel solutions for, and in cooperation with, its customers in the bearing, transport and manufacturing industries. Our steel makes our customers' end products more resilient and extends their useful life, ultimately resulting in smarter, more energy-efficient and more environmentally-friendly products. Our production is based on recycled steel and includes steel in the form of bar, tube, rings and pre-components. Ovako has around 2,700 employees in more than 30 countries. Ovako is a subsidiary of Sanyo Special Steel and a member of Nippon Steel Corporation group, one of the largest steel producers in the world, with more than 100,000 employees globally.

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