



Moving greener with your aluminium bicycle

How aluminium can support
a more sustainable mobility





Aluminum Bicycle Revolution

Bicycling is one of the best ways to stay fit, physically as well as mentally. Aluminium is one of the ways to ensure your bicycle is fit.

Since the first half of the nineteenth century, the bicycle has been one of the most popular means of transport, enjoying unflagging interest. Over the years, it has changed its appearance, and the materials used for production have had a significant impact on this.

Currently, manufacturers are most likely to bet on aluminum. Why?

Aluminium is strong, durable and light. Its density is one-third that of steel. It offers terrific performance with regard to corrosion –even in coastal saltwater

environments– and the metal is 100% recyclable.

And not only bikes. Electric bikes and e-scooters are promising alternatives to motor vehicles for short journeys, because they can reduce the footprint of transportation.

Cargo bikes are also becoming more popular for logistics specialists due to their brilliance in dealing with the difficulties of delivering goods to their destination. Last-mile deliveries are often the most costly and complicated part of the supply chain.

From aluminium extrusions to bike parts





Crank: Aluminium provides a good balance between strength and lightness, and for this application, bike manufacturers appreciate the metal's workability and weldability.



Forks: Aluminium is commonly used for its strength and for its ability to be shaped through processes like hydroforming.



Frames: Aluminium provides the main structure of the bicycle with an excellent balance of strength, weight and resistance to corrosion. It is also well suited for welding and shaping into the complex geometries of modern bike frames.



Handlebars: Aluminium is widely used due to its good workability and ability to withstand the stresses of riding. And it can be shaped easily into ergonomic designs.

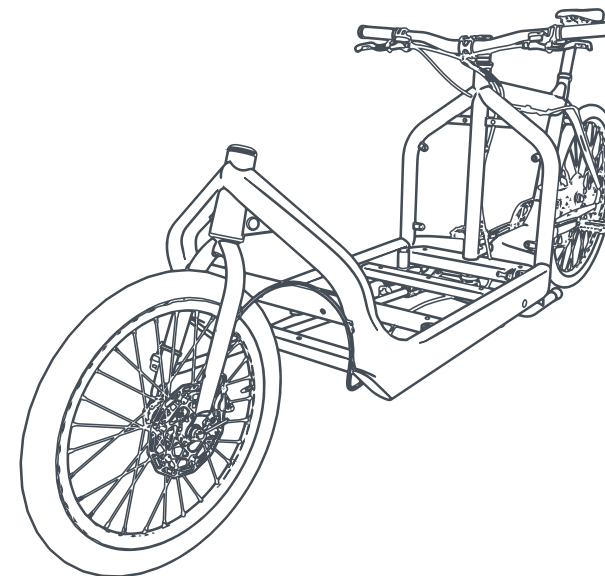


Rims: Aluminium allows for a wide range of profile designs that can easily be cut, bent and welded.

Which is the best aluminium alloy for bikes and cargo bikes?

Aluminium alloy 6061 is widely used for bike components due to its material properties and fatigue resistance, especially for parts that are welded and subject to high forces and vibrations.

Today, alternative alloys used for bike rims and frames are 6005A and 6082, which have similar or even better properties than the 6061. These alloys are also used in cargo bikes, due to their good performance in structural components.



Do you need more?

Our Innovation & Technology engineers are already working with customers to develop tailored alloys that can reach tensile strength of 320 MPa.

This means higher mechanical properties, less thickness in the tubes and lighter bikes.

Meet your sustainability goals

In response to climate change, we need to decarbonize energy systems, produce for circularity, and recycle resources already in use.

Aluminium can be infinitely recycled, retaining all its properties and requiring 95% less energy than the production of primary aluminium. However, not all recycled aluminium is equal. It matters where the aluminium is produced, and how.

Local production for more sustainable bikes

By using our aluminium for your bike, you get an environmentally friendly solution. You get certified low-carbon and recycled aluminium, which we developed in-house, to help reduce your carbon footprint.

Through our network of local recycling units, we collect the scrap to recycle it close to the source.

Hydro Recycled Aluminium is followed by an Environmental Product Declaration (EPD) stating the average shares of pre-consumer scrap, post-consumer scrap and the carbon footprint from each production location.

Hydro Low-Carbon Aluminium products carry a carbon footprint below 4 kg CO₂e*.

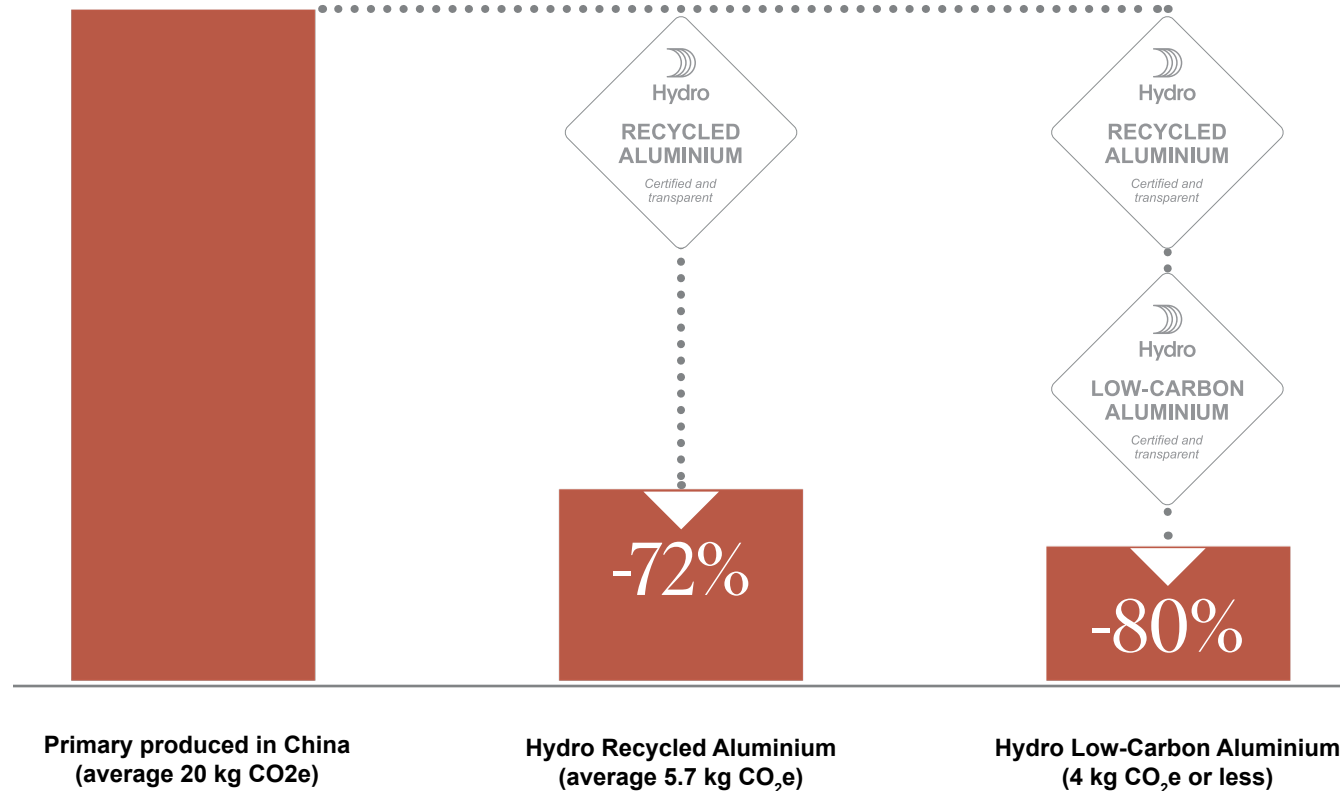
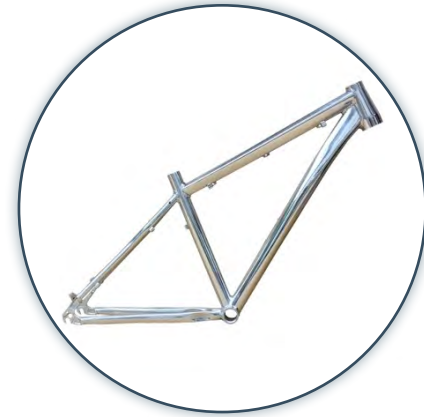


* Calculations based on Avoided Burden method



How much CO₂ can aluminum contribute?

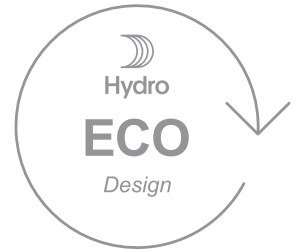
In response to climate change and the challenges facing the world, Hydro offers certified low-carbon and recycled aluminium products which help customers minimize the carbon footprint of their products while ensuring responsible production.



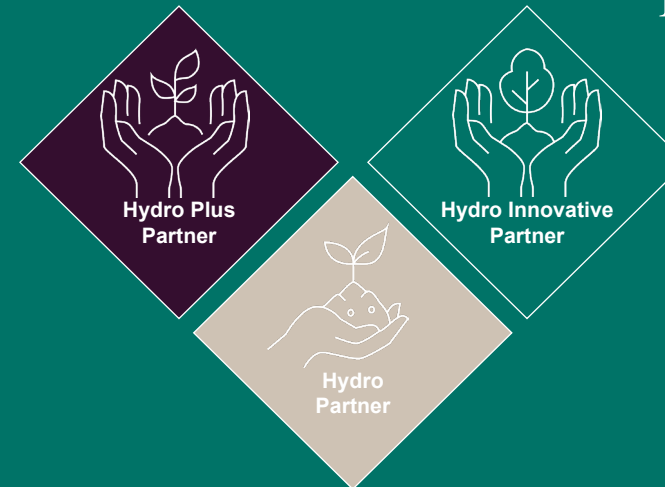
Choosing Hydro means choosing responsible production. More than 60 Hydro sites are currently ASI certified according to the Performance Standard (ASI PS), representing our aluminium value chain from bauxite mining to finished products. We have also certified an increasing number of sites according to the Chain of Custody standard (ASI CoC). This ensures you have continuous transparency.



Further, by incorporating circular principles into your design, we can help you reduce resource use and achieve more cost-effective products. Our **Hydro EcoDesign** service will make sure you make the right choice.



Join us in our mission to offer more sustainable solutions.
Discover Hydro Partnership.





Industries that matter

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Hydro Extrusions is a world-leading aluminium extrusion business counting around 100 production sites in 40 countries and employing 20,000 people. Through our unique combination of local expertise, global network, and unmatched R&D capabilities, we can offer everything from standards profiles, to advanced development and manufacturing for most industries.

Since 1905, Hydro has turned natural resources into valuable products for people and businesses with focus on a safe and good workplace for our 34,000 employees in more than 140 locations.

Hydro is committed to leading the way in shaping a sustainable future and in doing so, creating more viable societies by developing natural resources into products and solutions in innovative and efficient ways to industries that matter.