Our global operations

Alcoa is a global industry leader in bauxite, alumina, and aluminum products, built on a foundation of strong values and operating excellence, dating back nearly 130 years to the world-changing discovery that made aluminum an affordable and vital part of modern life. Since developing the aluminum industry, and throughout our history, our talented Alcoans have followed on with breakthrough innovations and best practices that have led to efficiency, safety, sustainability, and stronger communities wherever we operate.

- One of the world’s largest bauxite miners
- World class alumina portfolio
- Aluminum products leader that includes smelting, casting, and rolling with a portfolio of select energy assets

In today’s aluminum market, where lean operation is critical, our comprehensive portfolio of assets and our operating experience make Alcoa uniquely built to lead. We are known worldwide as a values-based company that holds the highest standards of excellence — operational, environmental, and ethical — as essential to our business. We never stop looking for ways to be more productive, efficient, innovative, and sustainable, in order to deliver the best products and outcomes to our customers and shareholders.

At Alcoa, Values have always been a foundation of our Company, governing the way we act, operate, and how we interact with our customers, communities, and each other. Purposefully brief and memorable in their simplicity, our Values are a simple reflection of who we are: thousands of individuals around the world who share the same commitment to do things the right way. This means that we:

**Act with Integrity**
We are open, honest, and accountable. We do what we say we’ll do.

**Operate with Excellence**
We relentlessly pursue outstanding and sustainable results. And we creatively transform ideas into value.

**Care for People**
We treat all people with dignity and provide a diverse, inclusive work culture. We work safely, promote wellness, and protect the environment.

### Our values:
- Act with Integrity
- Operate with Excellence
- Care for People
Alcoa is one of the world’s largest bauxite miners.

**Strong portfolio**

Alcoa has ownership in seven active bauxite mines globally and operates four of them. We have access to large bauxite deposits with mining rights that extend in most cases more than 20 years. Our global network is strategically located near key Atlantic and Pacific markets. It includes the Huntly mine in Australia, the second largest bauxite mine in the world.

Alcoa can offer bauxite from its mines to meet customer-specific needs and provide a consistent, reliable, and sustainable supply of raw material for refineries around the globe.

**Leaders in land rehabilitation**

We are leaders not only in technology for reducing the cost of mining bauxite, but in solutions for restoring the land once mining operations are complete.

With refineries on five continents, a global delivery network, and leadership in alumina refining technology, we provide customers worldwide with a reliable, high-quality supply of smelter grade and non-metallurgical grade alumina.

We’re a world leading producer and currently operate refineries in Australia, Brazil, and Spain, and have a 25% share in the refinery that is part of our Ma’aden joint venture in Saudi Arabia. Our three-refinery operation in Western Australia is the world’s biggest single source of alumina, able to supply eight percent of the global market.

In addition to supplying alumina to our own smelters, we also sell our production externally. We provide smelter grade alumina to aluminum manufacturers worldwide, with operations strategically located for access to growing markets in Asia, the Middle East, and Latin America. We also produce non-metallurgical grade alumina for sale to industrial chemical operations in North America, Latin America, Europe, and Asia.

For nearly 50 years, our Australia-based Center of Excellence has been developing innovative equipment and processes for cleaner, more efficient alumina production. Technology developed by this group of scientific, engineering, chemistry, and support staff has steadily increased our system-wide capacity by the equivalent of a new refinery over the past decade without greenfield development. In addition, Alcoa refineries have led the way in ISO9001 and ISO14001 certifications for quality and environmental performance.
Aluminum
Aluminum products leader

As one of the world’s largest aluminum producers, Alcoa is a global supplier, reaching customers worldwide with high-quality aluminum.

Meeting the world’s need for aluminum
We have been improving the process of making aluminum since we pioneered the industry more than a century ago. Today, Alcoa is a global supplier with fully integrated resources from mining to refining, smelting, casting, and rolling. Our operations are strategically located near the world’s growth markets, positioning Alcoa to meet the demands of dynamic industries with high-quality aluminum products delivered through a highly efficient global distribution network.

Low-cost production
We manage our portfolio of smelting operations to maintain a competitive cost position and assure a reliable supply for our customers. Our newest production facility, the Mo’laden joint venture in Saudi Arabia (of which Alcoa owns 25.1%), is one of the world’s lowest cost, fully integrated aluminum production sites. The Mo’laden joint venture includes a bauxite mine, an alumina refinery, an aluminum smelter, a casthouse, and an aluminum rolling mill, integrated to deliver high-quality aluminum at a competitive cost.

Operating excellence
Alcoa’s Aluminum Center of Excellence provides innovation in breakthrough technology and automation that is needed to maintain our high standards of operating performance and product quality. Based in Canada, the Center is a training hub and a nerve center for developing, transferring, and standardizing best practices in manufacturing and developing new technology.

The right product, the right place, the right time
A pioneer in the aluminum industry, Alcoa provides excellent customer and technical service along with rigorous research and development that includes a commitment to sustainability, giving you confidence in the quality of our products.

- Exceptional quality aluminum products
- Unmatched customer service and technical field support
- Global producer with domestic supply to support customer needs
- Strong commitment to sustainability

Our global network of primary aluminum casthouses produces a complete portfolio of aluminum billet, foundry ingot, rolling slab, rod, powder, high purity, and P1020, including proprietary alloys uniquely designed for today’s most challenging applications. These high-quality, cutting-edge products are the result of constant research, testing, and technological advancement.

Our technical service team supports our products with expert knowledge and technical and design assistance, working through a global network anchored by our world class Alcoa Technical Center. With these resources, we can help you identify alloy formulations that meet or exceed your application’s specific property and performance requirements while optimizing casting processes.

Our award-winning sustainability record
We are committed to operating sustainably across all of our businesses. Some of our milestones/certifications include:

- Named Gold Supplier - Supply Chain Management by EcoVadis, a sustainability rating agency. Alcoa is among the top five percent of companies in the non-ferrous metal industry.
- Absolute greenhouse gas emissions reduced by 11.5 million metric tons since 2014.
- Achieved reduction in carbon dioxide equivalent (CO2e) emissions intensity by 46.5 percent from 2005 baseline.
- Member, Aluminum Stewardship Initiative (ASI).
- 75% of our smelter energy consumption came from renewable sources.

To see our full range of products please visit our website: www.alcoa.com/global/en/what-we-do/aluminum/default.asp
Lightweighting with the Alcoa family of aluminum foundry alloys
Alcoa’s family of foundry aluminum alloys are contributing to vehicle lightweighting without compromising safety, performance, and fuel economy.

Case study: SupraCast
Advanced aluminum alloy for vehicle lightweighting and engine down-sizing.

Framework conditions and government regulations in the United States, Europe and regions worldwide, as well as consumers’ wish for fuel-efficient and environmentally friendly vehicles, is increasing aluminum use in cars. Alcoa is meeting customers’ demand by improving and developing its portfolio of high-performance alloys for the automotive market.

To remain competitive and to meet emissions reduction targets, internal combustion engines will continue to down-size. The new, down-sized engines, pack more power into a smaller package, which will increase the operational temperature of the engine, requiring increased thermal fatigue strength. To maintain, or even to reduce weight, new and better aluminum alloys for engine components will be necessary.

Alcoa answers the call with the SupraCast™ aluminum alloy, designed for both low pressure and high-pressure casting processes, and applicable to engine blocks, bed plates, and cylinder heads. The benefits of the SupraCast™ alloy are many; its strength at 200 degrees Celsius is nearly double, it has elevated temperature performance superior to the common cylinder head alloys, ISO Al-Si7Mg (USA 356) and ISO Al-Si10Cu2Fe (USA 319), and far superior creep resistance.

Finally, it is casting friendly.

Alcoa Foundry Aluminum Alloys
370 EZCast
High fluidity, thermal stability, low shrinkage, casting friendly for body structures.

560 Non-Heat Treat HPDC
Eliminate heat treat cost and distortion; shock towers, body structures.

A354 VersaCast
Versatile processing, corrosion resistant, weldable for driveline.

351 SupraCast
Superior strength at 300C, creep resistance, casting friendly for cylinder heads & engine blocks.

EverCast
High strength, high fatigue resistant alloy for suspension components.

The leader in aluminum sheet
Alcoa has delivered innovation after innovation in the flat-rolled aluminum market, enabling can makers to create containers that are more convenient, exciting and sustainable. We’ve been a force behind many major innovations in the can market, everything from the development of the pop-top tab to the technology used to make aluminum bottles.

Not only do we offer best-in-class quality, our team offers the technological assistance to help our customers win.

Warrick: The innovator in can technology
Our rolling mill at Warrick Operations, east of Evansville, Ind., has a history of innovation. We envisioned the rigid container sheet market before it even existed. This plant was built to pioneer a market, serve it, and lead it. Today, Warrick continues to innovate with aluminum sheet used in packaging, including aluminum bottles and food cans. The facility leads in coating capacity, engineering, and customer service. Warrick’s capability is vast, encompassing can body stock, can end and tab stock, bottle stock, food can stock, and lithographic sheet.

New state-of-the-art capacity: Ma’aden Rolling
Joining Warrick in serving the North American can sheet market is Alcoa’s joint venture with Saudi Arabian Mining Company (Ma’aden), the Ma’aden Rolling Mill Company, of which Alcoa owns a 25.1% interest. One of the largest integrated aluminum production centers in the world, Ma’aden produces can body stock, and can end and tab stock.

These two centers work together to give our customers an edge in technology, quality, and service that will help them meet new challenges for decades to come.

Capabilities
- Coated food stock
- Coated end stock
- Bottle stock
- Body stock
- Tab stock
- Lithographic sheet
- Closures and other rolled products
- Engineering
Alcoa Corporation has launched SUSTANA™, an aluminum product line produced with low carbon emissions and recycled content that is well positioned to meet customer demand for sustainable aluminum products. The new products are designed to help companies reduce the carbon intensity of their supply chain and achieve their sustainability goals.

The SUSTANA family includes two key products:

• **ECOLUM™** – a full range of cast products that are among the least carbon-intensive products available today, yielding a 75% lower carbon impact than the industry average. These products are produced at hydro-powered smelters that generate less than 2.5 metric tons (MT) of carbon dioxide per MT of smelted aluminum. Alcoa provides certificates of origin that enable customers to verify the sustainability benefits when reporting on their own operations.

• **ECODURA™** – aluminum billets made from recycled content, ideal for customers seeking low-carbon materials for their products. Available in a variety of alloys and sizes, these products are manufactured with a minimum of 50% recycled content and up to 85% less energy usage compared to products with no recycled material. They also contribute to LEED and BREEAM certifications for sustainable building projects. Our EPD (Environmental Product Declaration) also enables the customer to get LEED points for primary aluminum products.

The World’s First Carbon-Free Smelting Technology.

Alcoa is an equal partner in a new joint venture with Rio Tinto called Elysis that aims to commercialize a revolutionary technology that eliminates all direct greenhouse gases from the smelting process, replacing those emissions with oxygen. Quebec also holds a small equity stake in the venture, and Apple and the government of Canada are investors.

This research, developed by Alcoa, represents the most significant innovation in the aluminum industry in more than a century. The patent-protected process is currently producing metal at the Alcoa Technical Center, and has been operating at different scales since 2009.

The joint venture intends to scale up this process, through additional research and development, and offer a technology package by 2024 for retrofits or the construction of new facilities.

The name Elysis refers to the process at the center of aluminum smelting, the electrolysis of alumina.

Elysis will employ 100 people, including research and development, management, and sales.

At a facility in Quebec, employees will work on the commercialization of the world’s first zero-carbon aluminum smelting technology.

The technology could eliminate 6.5 million metric tons of annual greenhouse gas emissions, if fully implemented at existing aluminum smelters in Canada, an amount equal to taking nearly 1.8 million light-duty vehicles off the road.

Read more: www.elysistechnologies.com

Designed to help companies reduce the carbon intensity of their supply chain and achieve their sustainability goals.