



The benefits of using aluminium for beverage cans



Hydro Papers



Synopsis

What is the environmentally friendly way to bottle drinks, whether water, fizzy, warm drinks or alcoholic beverage? Glass bottles, cardboard wine, aluminium cans, milk cartons or plastic bottles? Globally, more than a million plastic bottles are sold every single minute, when approximately 700,000 cans are being produced.

Cardboard and plastic bottles that are sold in countries where you have collections schemes are by many studies considered the best alternatives together with the increasing sought after drink favorite, the aluminium can or bottle.

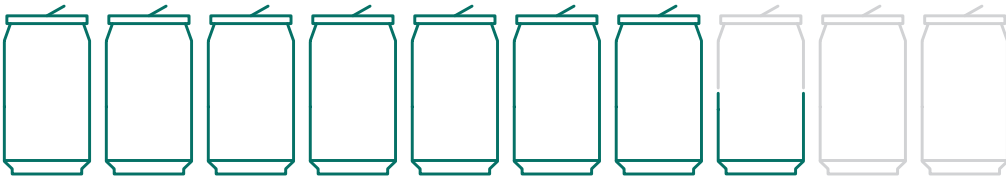
There are pro and cons for the selection of most materials. We have looked into the use of aluminium for packaging to gather an overview of the opportunities and benefits of using aluminium in particular in cans.

The aim of this paper is to provide insight into aluminium cans for policy makers and stakeholders interested in packaging issues, to support drinks brands as they assess packaging options, and as a guide for consumers. We survey the many benefits of cans, how they are made, the political environment in Europe and arguments for and against cans in the public domain. Finally, we consider the status of used beverage can (UBC) recycling and the outlook for cans in a fast-changing world.

- The can stands out with
- **Cooling effect:** Due to its high heat conductivity properties, beverages filled in aluminium cans are easily cooled with a minimum loss of energy.
 - **Light-proof and oxygen-tightness:** With its physical barrier properties, aluminium is ideal for protecting liquids from external influences.
 - **Safe and easy handling:** Thanks to low weight and shape, aluminium cans are perfectly suited for transporting and stacking large quantities of beverages in small units with minimum space requirements. Robust and with the opener safely included, consumers benefit from practical advantages.
 - **Recyclability.**

As aluminium is a permanent material that can be recycled repeatedly with no loss of inherent characteristics, cans stand out in terms of their recyclability and contribution to the circular economy. Around 75% of all the aluminium ever produced is still in use and available for future generations. Plastic on the other hand degrades after only limited recycling, while recycling glass uses significantly more energy than recycling aluminium.

Aluminium cans are already the planet's most recycled container and can be considered a renewable resource in themselves. About 3 out of 4 cans used in Europe are being recycled. Recycling the aluminium also requires only 5% of the energy required to make virgin aluminium. Trade body European Aluminium has set a target of 100% recycled aluminium cans by 2030 amid rising collection rates. Aluminium also has the highest value of all scrap materials in circulation and goes some way to cover the cost of recovering less economical materials.



About **75%** of all aluminium ever produced is still in use

Benefits of the aluminium can

Aluminium cans provide excellent barrier protection

Drinks makers demand consistency in appearance and taste. Cans provide superior preservative properties and long shelf life, while they are also:

- Impermeable and tamper-proof
- 100% airtight: (hermetic closure locks in carbonation so drinks stay fresh)
- 100% light-proof: (especially important for beer, which can go off if exposed to light for too long)

Can makers are constantly innovating new added-value features

One well-known example is the plastic ball inside Guinness cans that releases a burst of liquid nitrogen to give a full, creamy head. More recent novelties include a valve at the bottom of latte coffee cans that produce the typical latte froth, while smart technology enables cans to heat up or cool down when squeezed.

Cans provide a 360-degree canvas for brand advertising at point of sale

Advanced printing technology has opened up a new era of creativity for one-of-a-kind designs. Cans can, for example, feature glow-in-the-dark graphics or thermochromic designs that change as the ambient temperature changes, as well as sculptured surfaces and textured coatings. Options for ends and tabs include embossing and the use of different base colors laser-etched with text or symbols.

Cans are hugely versatile

Given the wide range of sizes and custom shapes available, drinks makers can choose the optimal format that aligns with their target market and cost base. For example, sleek and slimline cans are becoming increasingly popular for consumers on the move, and for products new to canning like wine in handy portions. Another can evolution is also taking place with the development of resealable aluminium bottles.

Being light and easy to hold, cans are very convenient for drinking on the go

Resealability is also seeing increased uptake, exemplified by energy drinks brand Monster, which has adopted a non-drip resealable end for what it calls the “one hand, no hassle” can. German company XOLUTION is pioneering a resealable system it is pitching as the “Relock Revolution” targeting mobile consumer lifestyles. While these involve plastic components, innovator SNSTech has come up with resealable sliding mechanism made of aluminium.

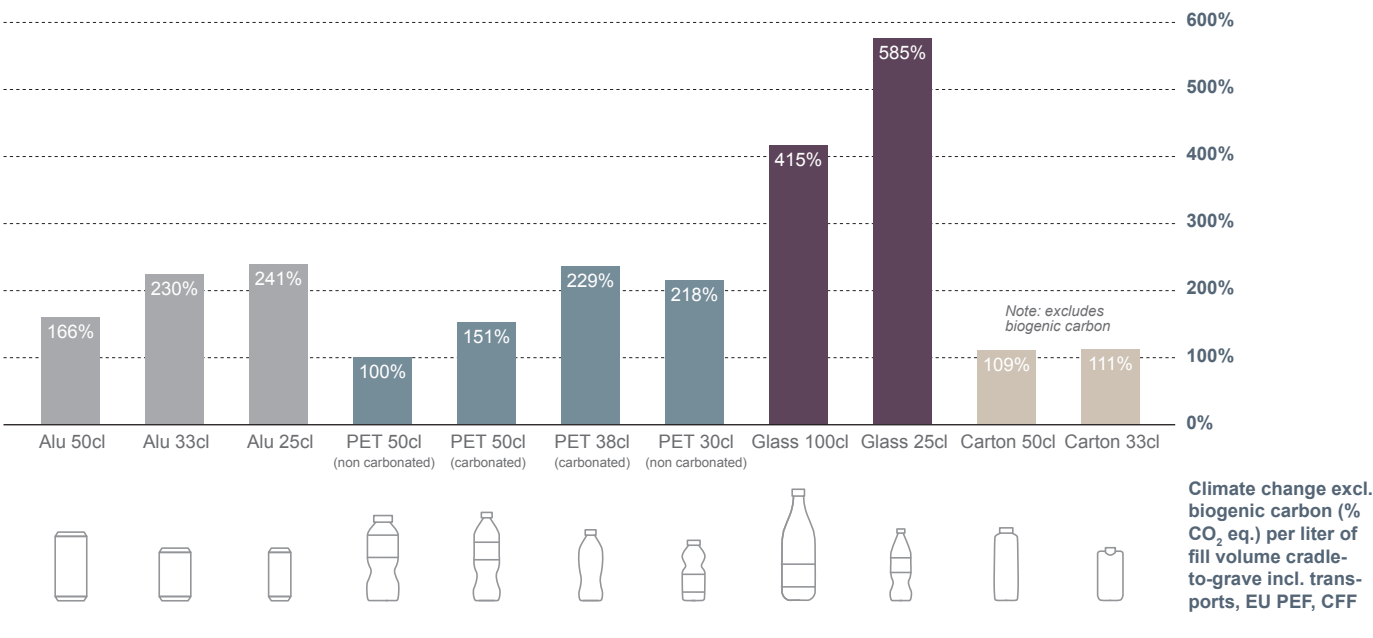
For added convenience and to avoid waste, completely removeable lids now enable cans to be used as recyclable cups instead of single-use plastic tumblers. One can manufacturer is seeing high demand for these cans in football stadiums, while they are an ideal greener solution for big events and festivals.





GLOBAL WARMING POTENTIAL (CARBON FOOTPRINT) PER LITER

Carbon footprint comparison per liter, Life Cycle Assessment for Europe



Source: Peer reviewed comparative beverage packaging LCA, Sphera, 2020. Methodology: EU, PEF, CFF. Comparison per liter. Global/European scope, not considering refillable glass bottles. See www.ball.com/realcircularity

Benefits of the aluminium can

Cans are unbreakable

Cans won’t shatter if accidentally dropped, while smashed glass bottles are a widespread hazard for both humans and wildlife. Cans don’t have tops that can pop off causing eye injuries; the pull tab won’t fall off a well-made can unless removed with force. Cans also don’t make a particularly effective weapon, unlike a broken bottle.

Cans cool down fast

Aluminium’s high heat conductivity means cans chill faster than glass or plastic. This means less energy for refrigeration and an ice-cold refreshment just when it’s needed.

Cans have strong life-cycle sustainability credentials

A 2019 life cycle assessment (LCA) by industry federation Metal Packaging Europe shows an impressive reduction in the carbon footprint of cans over 10 years from 2006 to 2016. The study examined the average environmental performance of three sizes of standard cans – 250ml, 330ml and 500ml – from raw materials extraction to end-of-life, although not in comparison to glass or PET bottles. The carbon footprint shrank by 31% on average for the three volumes, in line with the industry’s goal to reduce carbon emissions while still increasing production. Recycling is key here, with a potential reduction in the climate-change impact of -6% for every 5% increase in the recycling rate of UBCs. The study also identified a 12% reduction in aluminium ingot supply and 4% reduction in can weight; a 35% reduction in electricity and heat consumption thanks to manufacturing efficiencies; and an almost 50% increase in the recycling rate across Europe.

Cans are safe from a health perspective

Cans shield drinks from contaminants, while the interior coating ensures the drink does not come into contact with the surface of the metal. PET bottles, on the other hand, are subject to health concerns over potential leeching of carcinogens from the plastic into the drink.

Cans do not aggravate the global plastic pollution crisis

Millions of tons of plastic including PET bottles and bottle tops end up in river and ocean ecosystems every year, threatening marine life. Microplastics resulting from the degradation of larger objects over time may also be entering the ocean food chain with as yet unknown consequences. These concerns are compounded by the fact that plastics production is slated to grow in tandem with the increase in world population. What can we do to avoid being swamped in garbage and potentially poisoned in the long run? Cans are a clear option.

Research by can maker Ball also forecasts that 78% of consumers around the world expect drinks brands to switch to more sustainable packaging in the next five years. Reflecting this trend, PepsiCo is positioning its canned Bubly product as a “no-plastic brand” aimed at consumers with a conscience, while Coke has switched its Dasani water brand to cans and aluminium bottles.

Cans are efficient and economical to transport

Superior load space efficiency and lower packaging weight makes can distribution more environmentally friendly than filled glass and plastic bottles. Of the total weight of a filled 0.5 litre aluminium can, only 3% is packaging and 97% is product. An average truck can carry twice the amount of 0.5 litre drinks in cans than in glass bottles. Fewer highervolume shipments means lower fuel costs and emissions especially over longer distances. A 2016 report by environmental research company ICF International found that a 330ml standard can generated 45% lower associated emissions on a per-ounce basis than a 330ml glass bottle, and 49% less than a 568ml plastic bottle.

Political environment and cans in the debate

Aluminium cans fall under the EU’s Packaging & Packaging Waste Directive (PPWD), which came into force in 1994. It aims to limit waste by reusing scrap materials and reduce the import of primary raw materials while ensuring a level playing field for the free circulation of packaged products. It also sets packaging recycling targets for each EU member state.

In May 2018, the PPWD was amended as part of the EU Circular Economy Package (CEP), which in respect of aluminium proposes a target of 75% for recycling aluminium across Europe by 2025. The European Council has also adopted new waste recycling rules that include a 50% re-cycling rate for all aluminium packaging by 2025, and 60% by 2030. Member states must also ensure that by 2030 no material suitable for recycling should be accepted for landfill.

By opting for cans made under European regulations for the international market, drinks makers are voting for a packaging solution that minimizes waste throughout its life cycle.

On this score, Germany suffered an unfortunate setback in 2003 following a political decision to introduce a mandatory deposit on “one-way” drinks packaging, lumping cans in with plastic bottles. Almost all retail chains immediately stopped stocking cans, with sales plummeting from 6.1 billion cans to around 249 million. However, since new regulations were introduced in 2006 that simplified the return system, cans are regaining lost ground, with sales back up 3.9 billion in 2019.

As in Germany and elsewhere, there remains a small but vocal opposition to aluminium cans. The following are some typical reproaches and counter-arguments in their favour.

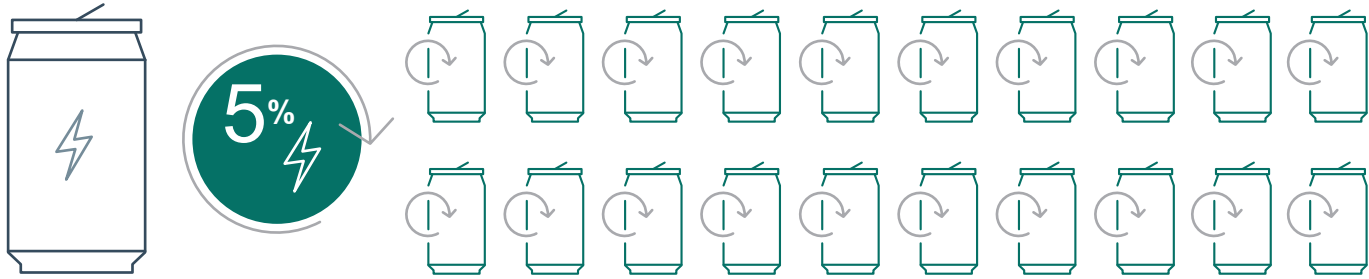
Myths, prejudices... and the facts

Cans are less sustainable than the drinks they contain
There is a tendency to assess the environmental soundness of a beverage based primarily on its packaging while ignoring the ecological footprint of the drink itself, and of the transport involved in its distribution. This is in fact the wrong way around. Data from the German Packaging Institute shows that the ecological footprint of packaging is on average 10 times less than of the beverage it contains. If any packaged commodity spoils due to poor packaging, the ecological and economic damage of the spoiled goods is likely far greater.

Cans are only partially recyclable or not recyclable at all
This is not correct. Cans are almost fully recyclable, with no loss in quality. The fact that cans in Germany are still required to be labelled as “one way” is misleading. Cans can be recycled indefinitely, while it takes just 60 days from collection to a brand-new can being back on the shelf.

Cans are not sustainable because primary aluminium is still needed to make them
Of all primary aluminium produced worldwide, a maximum of just 6% goes into can production. Making primary aluminium has been quite energy-intensive, and still is, in China notably, where more than half of the global primary aluminium is being produced with about 20 kg CO₂ emissions per each kg aluminium. Indeed, the European aluminium industry has reduced its carbon emissions from primary production by 55% per metric tonne since 1990. It projects a sharp 58% reduction in total carbon emissions by 2050 compared to 2014, through increased recycling and use of

Recycling beverage cans uses only 5% of the energy used to produce primary aluminium and emits only 6% of the greenhouse gases (GHGs).



renewable electricity. In addition, recycling beverage cans uses only 5% of the energy used to produce primary aluminium and emits only 6% of the greenhouse gases (GHGs).

Cans may indeed be recyclable but the core issue is bauxite mining
Responsible producers go to great lengths to limit the environmental impact of bauxite mining through clearly defined strategies to rehabilitate land used for mining. Mining leases and concessions carry rehabilitation conditions and operators must comply with government regulations. In addition, bauxite mining disturbs a relatively small area of land compared to other types of open-cast mining. Every one square meter of land that is opened up every year produces one tonne of aluminium, with an equivalent area rehabilitated (IAI).

It is wasteful to use a valuable material like aluminium to make cans at all
First, aluminium is in no danger of running out, unlike oil used to make plastic. Purging the world of cans is hardly realistic in the absence of viable alternatives with superior benefits. The fact that too many cans go to waste is not resource-efficient but primarily a behavioral and political issue. Everyone should follow the example of countries with high recycling rates so that eventually new cans can be 100% made from greener recycled aluminium.

Refillable glass bottles are more environmentally sound than cans
This may have been the case in most use situations 15 or so years ago, before can recycling kicked in on a massive scale, but is not the case today. It is true that virgin glass production requires much less energy than primary aluminium but this ignores the fact that glass bottles are heavier, more energy-

hungry to recycle and less space-efficient to transport. For example, cans containing 10,000 litres of fizzy drink would fit into the trunk of a compact car when compressed post consumption, while two 7.5-tonne trucks would be needed to accommodate the equivalent amount of bottles.

The interior coatings of cans are a danger to health
Tiny amounts of the industrial chemical bisphenol A (BPA) may be found in the epoxy resins used to coat most cans but cans themselves contains no BPA. The European Food Safety Authority has determined that exposure to trace amounts of BPA is safe. Next-generation linings that are BPA-free have already been developed, while in France, where BPA is banned, BPA Non-Intent (BPA-NI) coatings are widely used. The can industry is also actively pursuing green chemistry solutions to remove all volatile organic compounds (VOCs) from the washing solvents used in can production.

Cans can taint the flavor of the drink
This is incorrect as the interior lining prevents leeching of the metal into the filler (in the presumption that the can is not many years past its sell-by date). Cans should in fact be valued for their superior protection. The number of craft brewers opting for cans points clearly to their performance in guaranteeing taste and aroma.

Drinking from a can is unhygienic
While there is a risk of germs accumulating on the rim of cans if they are not handled properly post filling, drinking from a can is generally pretty safe. Can makers and canning plants have strict hygiene protocols and it is the responsibility of retailers to store and display cans safely. If in doubt the can should be cleaned thoroughly before opening.

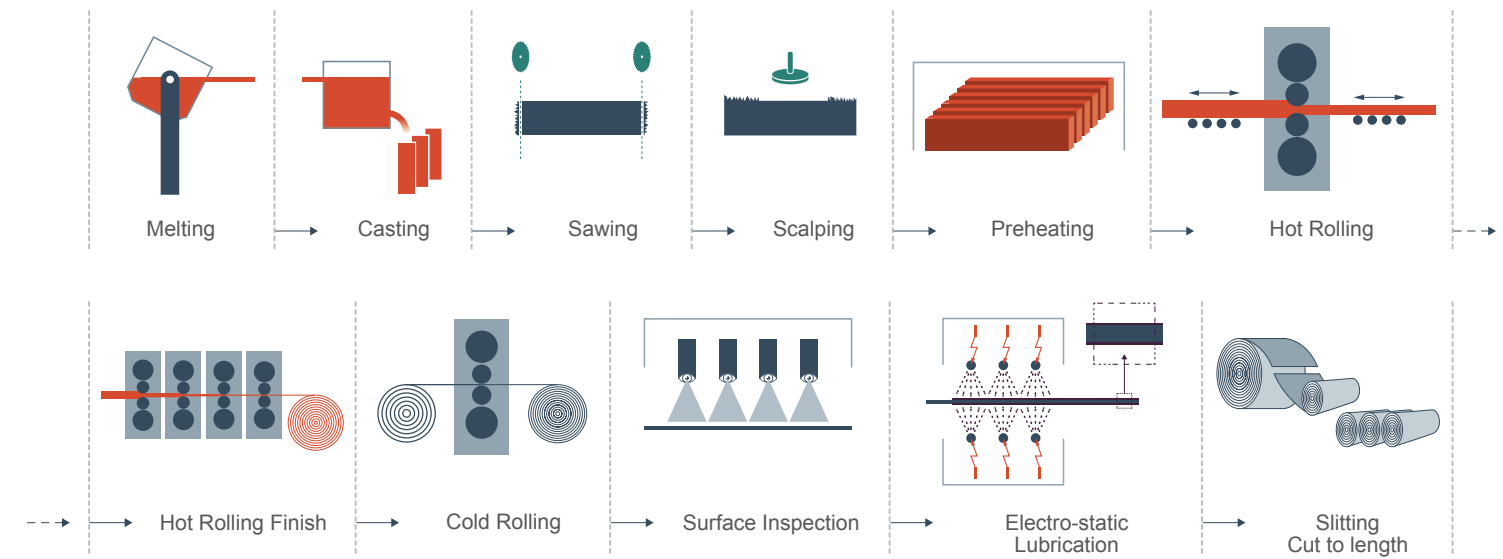


How cans are made

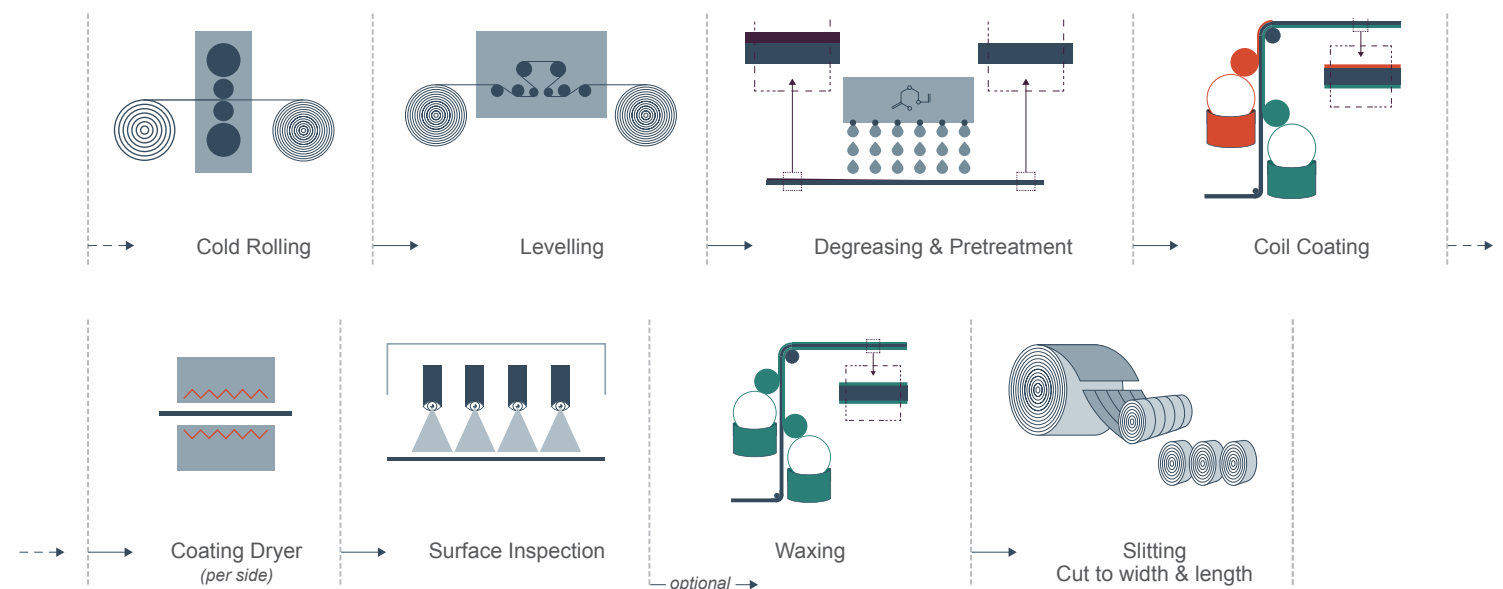
The aluminium used in cans is alloyed with max 5% magnesium, manganese and small amounts of iron, silicon and copper – a composition to optimally support performance, product stability and recyclability. A lot of science has gone into producing a superior lightweight and economical hybrid material designed for optimal machinability, excellent corrosion resistance and to provide an optimal surface finish for decoration.

Can manufacturing is today highly automated, with process scrap (surplus sheet material from body-making) returned to suppliers to be melted down and reprocessed as part of the aluminium circularity loop.

Production of strip for can bodies



Slab-shaped alloy ingots are first processed in suppliers' mills into thin sheets using high-pressure rollers. One ingot typically results in aluminium sheet, up to 8,000 meters long, although long ingots may generate sheet as long as 16,000 meters. Sheet arrives at can makers in massive coils up to two meters wide. A single Hydro coil can produce 700,000 can bodies.



Cold forming process

The sheet is fed into a cup press that rapidly punches out circular blanks and “draws” them into shallow cups. The cups then enter a bodymaker, where they are rammed through a succession of tooling dies that redraw and iron the cup walls to full size. The bottom of the can is also punched upwards to form the trademark concave dome, which evenly distributes internal pressure.

A trimmer then shaves the body walls to a uniform height. Multiple-stage cleaning/washing then takes place to remove any residual lubricant and metal fines. Cans are then sprayed with acid to remove a thin surface layer that gives them their distinctive shine. They are then rinsed and dried, with a basecoat color applied if required.

Labelling and graphics are applied at the printing station in a process that today is largely digitalized. A protective over-varnish renders the required matt, gloss or tactile finish, while a coating is also applied to the can bottom. The cans are then baked in a drying oven to set the ink and varnish.

Cans then proceed to the internal coater and oven-baked once more to cure the lining. The can necks are then flanged to the required diameter, with a lip created to receive the can end. Each can body is then camera-inspected for defects such as denting, pinholes and scuffing prior to being palletized for shipment.

Ends and tabs

Higher-strength alloys are used to make can ends and tabs, with a protective coating well equipped for the steps that follow. One Hydro coil typically produces eight million tabs or four million ends. Again, circular blanks are punched out in a shell press, then fed into curlers that create a channel around the edge of the shell that will receive the sealing compound. The shells then progress through compound liners that apply water-based lining to the channels.

After curing in a liner oven, the shells are then conveyed to a conversion press. Here multiple die sets raise a rivet in the center of the shell, score the opening, apply type and graphic elements as specified, while at the same time forming the tab and attaching it to the rivet. A multi-camera system behind the conversion press checks each end and removes any that are bad. Some are selected for lab testing to validate required properties. Finished ends are then bagged for delivery to the filling plant.

Why aluminium versus steel?

Steel is still used to make cans in some markets because it is cheaper. It is stronger than aluminium but less malleable and elastic. Because they are more susceptible to corrosion, steel cans require a very thin coating of almost pure tin. Aluminium benefits by being one-third of the weight of steel. Both are equally recyclable but in terms of relative efficiency, recycled aluminium saves 95% of the energy required to make primary aluminium while recycled steel saves around 75% of that used to make virgin steel. Can ends even for steel cans are exclusively aluminium. Thus, the all-aluminium can is also easier and more efficient to recycle.

Can ends even for steel cans are exclusively aluminium.

The aluminium can in brief



The modern two-piece aluminium beverage came into being in the late 1960s as an evolution of the first soldered steel beverage cans used to deliver Krueger beer in the US in 1935. Now ubiquitous in modern life, aluminium cans deliver thirst-quenchers from soft drinks and beer to energy and performance drinks, wine and sparkling wine, natural and flavored waters and ready-to-drink coffees and teas.

Approximately 370 billion cans are produced globally every year. Aluminium drinks cans are responsible for 75% of worldwide production (DataIntel) while tinplate steel cans account for the rest. Two-piece cans, both aluminium and steel, hold around 96% of global market share versus three-piece cans (Reportsanddata). The most common form of two-piece can is the DWI (drawn and wall ironed)

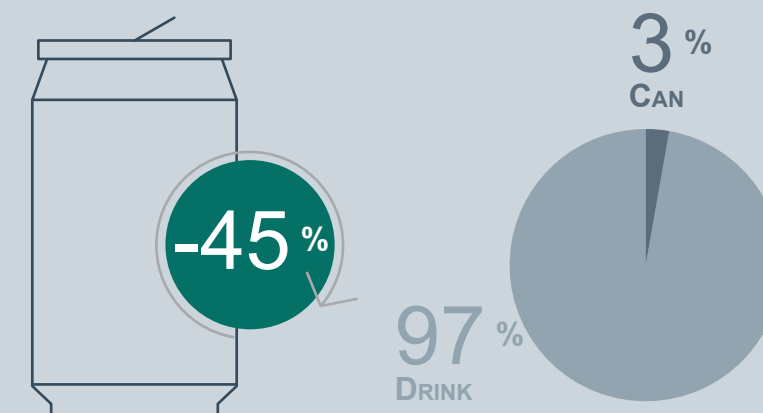
can ranging in format from portion size to pints. The 12oz/330ml standard aluminium can is the preferred choice for many beverage brands, accounting for nearly 75% of the global market.

While they may look deceptively simple, aluminium cans are technically advanced involving clever engineering honed over decades. At just 0.097mm thick, can walls are often as thin as a human hair (IAI) but they are still incredibly strong, able to withstand high internal pressure of up to 625 kilopascals (kPa). Big breakthroughs have been made in reducing can sheet gauge, with cans now more than 38% lighter than in the early 1970s (CMI). The first generation of 330ml aluminium cans weighed more than 80 grams, while standard 330ml cans today weigh only around 12.2 grams (IAI).

CAN WEIGHT – CONTINUOUSLY LIGHTER

A 0.5 litre aluminium can today weighs just 15 grams - using 45 % less material compared to the beginning of the 1980's, due to continuous improvement.

When you lift that can from the shelf, the drink is 97% of the total weight, the can only 3%.



Source: Gesamtverband der Aluminiumindustrie e. V.

Recycling used beverage cans (UBC)

69% of aluminium UBCs are recovered globally making them the most recycled packaging worldwide. This equals more than 113,000 recycled every minute. Again, the UBC recycling process emits only 5% of the GHGs generated by primary aluminium production, saving the annual equivalent of around three million tonnes of GHG emissions. That is equivalent to the annual emissions of a medium-sized European city like Cologne or Belfast, and represents a huge environmental benefit over time.

Novelis is the world's leading buyer and recycler of UBCs and recycles more than 74 billion cans every year. Hydro in Neuss boasts the world's most modern UBC line capable of processing up to 50,000 tonnes of can scrap annually. Advanced technology allows it to identify, sort, separate

and secure material for recovery with a relatively high share of impurities, hence its ability to deal with UBC scrap from all over Europe. Hydro's pioneering Hydro CIRCAL® material also puts it in the forefront of the can-to-can loop (see Hydro CIRCAL® box).



Hydro's recycling process in brief

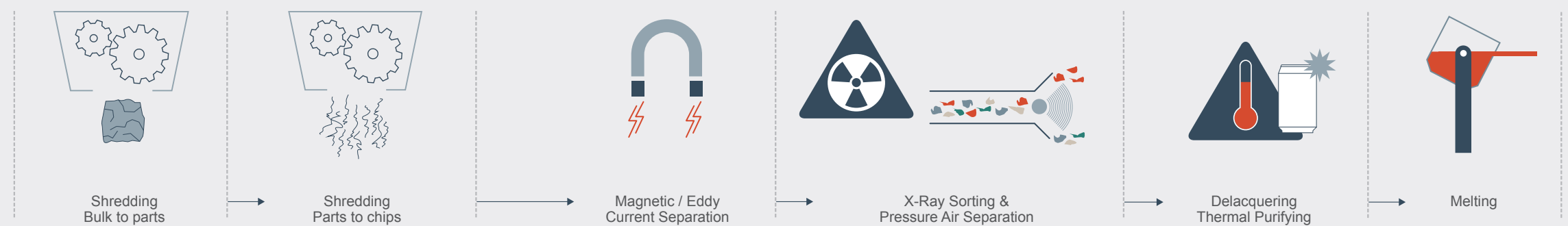
Following collection, UBCs arrive at aluminium plants typically compressed to bulk cubes that are then shredded into chips. The chips are then sorted using such technologies as magnet sorting, X-ray and eddy current separators. This separates the right aluminium alloy chips from other alloys or metals while extracting materials including plastics and other impurities.

The chips are then treated in a pyrolysis gas facility to burn off organic material including ink and lining material. They are then melted down and refined with other metals for the final order-specific alloy mix. New ingots are cast for rolling into sheets of the required customer gauge.

There is no loss of quality and very little volume loss when recycled aluminium is melted, making it much more efficient than plastic, which is often “down-cycled” into inferior material used, for example, in plastic textiles. Any kind of finished or semi-finished aluminium product can be reused for can stock, not just cans. Recycled aluminium can also be reused in other products ranging from coffee pots to automotive components.



How we recycle aluminium already used, for next use



Prime-quality recycled aluminium for cans

Demand for low-carbon products, not least beverage cans, is growing particularly in advanced markets amid deep consumer concern over climate change. To address this need, Hydro has created its Hydro CIRCAL® recycled material. Hydro CIRCAL® 75R contains minimum 75% recycled, post-consumer scrap aluminium. This drastically reduces energy use in the production phase while maintaining full quality. Hydro guarantees a carbon footprint below 2.3 kg CO₂e per 1 kg of aluminium produced using Hydro CIRCAL®. The recycled aluminium used is exclusively from end-of-life products ranging from construction materials, automotive components and food and, foremost, beverage cans. The reclaimed aluminium is cleaned and sorted so only the best and least contaminated scrap is put back into circulation, which would otherwise require additional energy to recycle.

In July 2020, Hydro agreed a strategic partnership with the energy and soft drinks producer HELL ENERGY Group for the supply of Hydro CIRCAL®, marking its debut in the can domain. HELL has its own production plant in Hungary with an output of 4.5 million 250-ml aluminium cans per day. The Hydro CIRCAL® 75R aluminium for HELL is coming from Hydro's state-of-art line in Neuss (Germany), that recycles each year about as much used beverage cans (UBC) as are sold, emptied and collected in Germany.

While it is already theoretically possible to produce cans from nearly 100% post-consumer scrap, the minimum 75 percent liquid UBC metal are being mixed with other metals. Next to Hydro's metal plant in Neuss, a central role herein is played by Alunorf, the adjacent, giant plant for rolled aluminium products, which is a joint venture between Hydro and Novelis. Both Hydro and Alunorf are taking responsibility to close the material loop also for scrap generated from own and customers' industrial processing.

This approach for efficient processing and comprehensively closed loops has led to the decision to keep the guaranteed number at 75% post-consumer scrap for Hydro CIRCAL®. It allows adding up to 25 percent process scrap, other alloying elements or new aluminium – and cast the mix into new sheet ingots. These get rolled and finished at Alunorf to can body stock for can makers.



PROCESS SCRAP + PRIMARY METAL **25%**

*varying share of further post-consumer scrap, external or internal process scrap and additional secondary or primary metal.



CERTIFIED POST-CONSUMER SCRAP **75%**



Recycling used beverage cans (UBC)

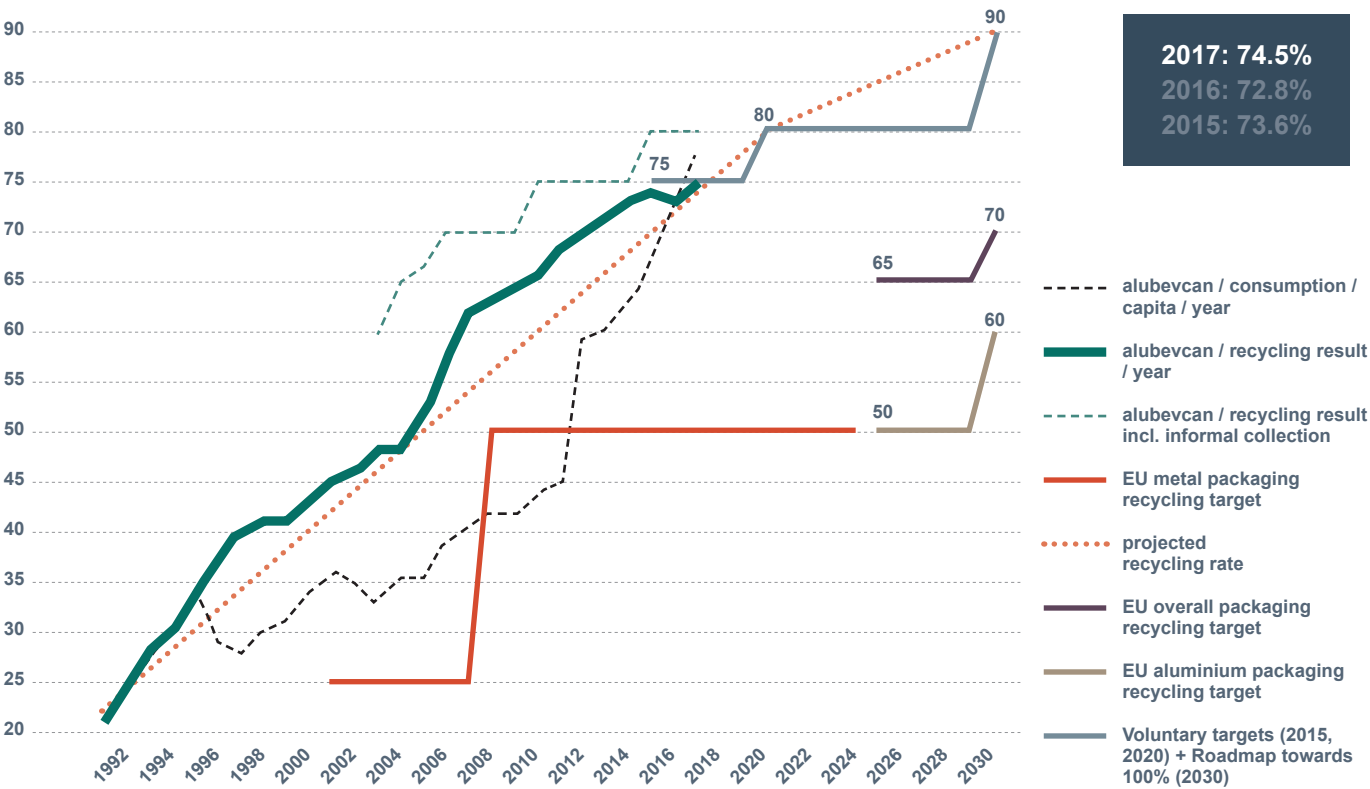
When it comes to UBC recovery, every country has its own regulations and systems that determine how products and materials are managed after use. These vary widely and impact the respective national shares of UBC collection and recycling. Collection rates are highest in Europe at 74.5% on average, with the US on 50%. Germany now leads the world with a recycling rate of 99% followed by Norway, Finland, Belgium and Brazil, all on 98%. Indeed, the European average still represents a significant loss of a valuable resource.

Those with high shares, like Germany, benefit from highly organized deposit-based systems but the fact that only 20% of UBC volumes in Europe are collected in this way may limit prospects for full can-to-can recycling for the time being.

Proof that deposit-return systems are effective also comes from the US. Research firm Circular Matters showed that while the 10 US states with such systems consume about a quarter of all beverage cans, they generate more than one-third of all cans recycled. Meanwhile, less than optimal sorting in the US causes many cans to be lost. A study for the Can Manufacturers Institute (CMI) estimate that 25% of UBCs entering recovery facilities do not make it into UBC cubes. It also estimated in 2018 that 45 billion aluminium cans ended up in US landfills – the equivalent of eleven 12-packs per person. Their lost scrap value amounts to some \$800m.

ALUMINIUM BEVERAGE CAN USAGE AND RECYCLING RATES IN WESTERN EUROPE

1991-2017, 2030 projected – in view of the present and future EU packaging recycling targets for metals / aluminium



Source: European Aluminium

Back in Europe, recycling culture continues to gain ground, with a 16% increase in the can recycling rate in just five years in the UK alone. Organisations such as “Every Can Counts” (everycancounts.eu) are actively raising awareness, now with programmes in 16 countries. Uniting aluminium suppliers like Hydro, can manufacturers, recyclers and drinks companies, its goal is to achieve 100% can recycling with “on the go” curbside collection boxes and outreach initiatives to inspire mindset change, even without a refund.



Launched in 2014, the “Metal recycles forever” mark on cans provided by Metal Packaging Europe also aims to spread awareness of the can-to-can loop, putting consumers at the heart of the circular economy. “With 80% of EU citizens increasingly buying environmentally friendly products, it has never been more important to engage and accurately inform consumers,” states this initiative of more than 760 production companies.



The outlook for beverage cans

Looking to the future, aluminium producers will continue to increase the recycled content of can sheet while applying materials competence to optimise its workability, structural properties and strength-to-weight ratio.

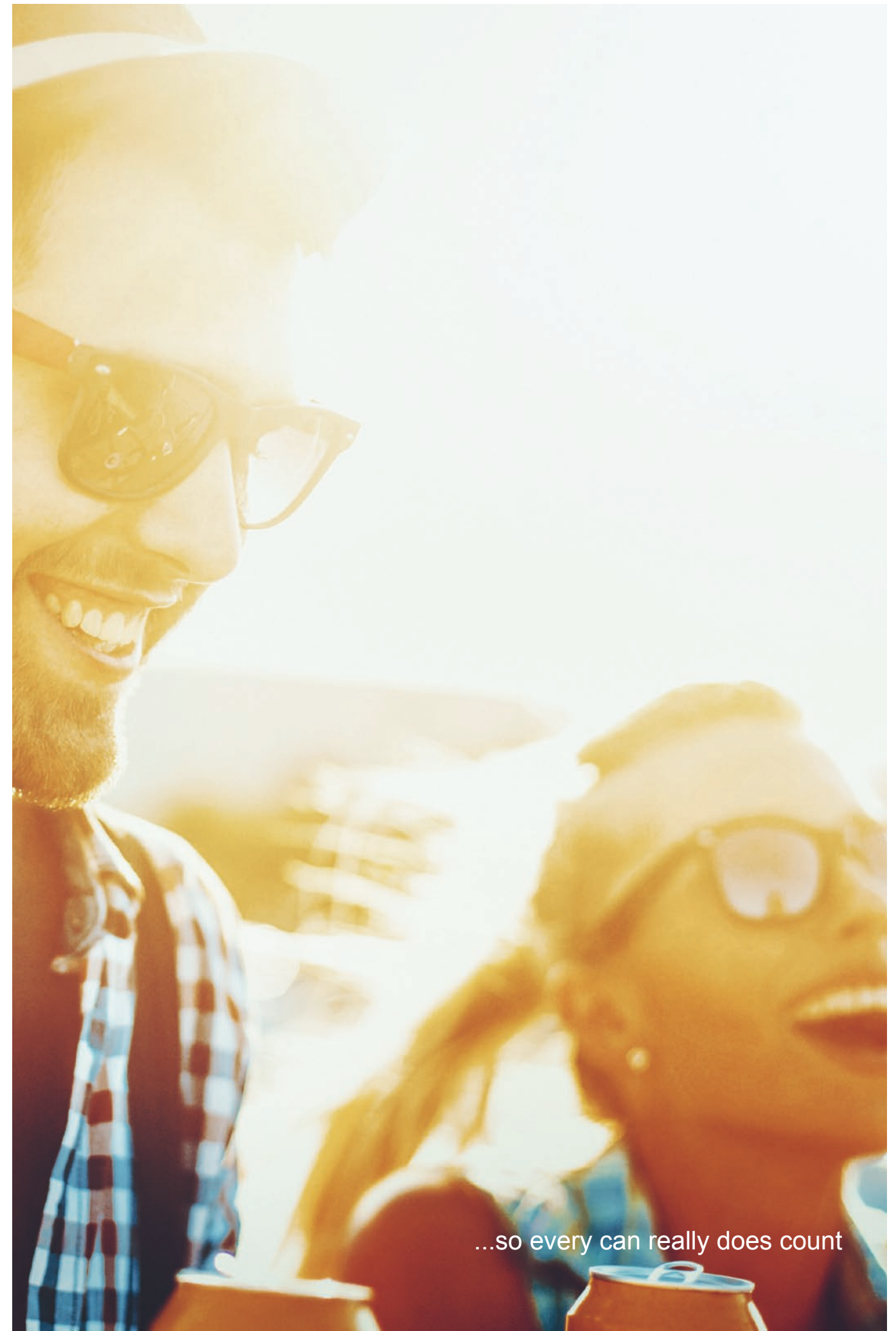
The new ultralight cans developed just in the past few years are a case in point. Ball's 330ml and 500ml ultralight cans weigh only 9.5 grams and 12.2 grams, respectively, reducing metal content by around 5%. That might not seem like much, but if you were to substitute standard cans of the same size with ultralight variants throughout Europe, it would save some 19,000 tons of aluminium every year equivalent to the take-off weight of around 29 A380 jumbos. At the global level, the International Aluminium Institute (IAI) estimates that just a single gram of weight reduction could save over an estimated 200,000 tons annually, with the added benefit of lower fuel use and transport emissions.

Reducing the diameter of can ends is another light-weighting measure that can have a big cumulative effect. The new generation of can ends contain 10% less material than standard ends, the IAI notes, but how much more they can be structurally optimized depends on practical issues such as maintaining strength and stackability.

Meanwhile, can makers and their partners will continue to innovate new formats to boost convenience and differentiation, while the entire value chain focuses on reducing emissions and improving resource efficiency. Can maker Ball, for one, has reduced its water usage by over 6% since 2008. Competitor Ardagh says by reducing the weight of its standard 330ml can by 7% across most of its plants worldwide, it can potentially save 3.3 million hectolitres of water and slash its carbon emissions by 28,000 tons per year.

To conclude, our ambition in Europe should be to preserve a strong manufacturing base through innovation and setting the right framework conditions for growth, in the words of European Aluminium. Action is still required to engage the public and increase UBC collection but as the circular economy becomes more entrenched, it should become second nature, certainly in Europe. The high scrap value of cans is a big economic incentive in itself. So every can really does count.

When used, please collect to recycle



...so every can really does count



Industries that matter

Norsk Hydro ASA
NO-0240 Oslo
Norway

T +47 22 53 81 00
www.hydro.com