ANNUAL REPORT 2022

INFINITUM

Infinitum owns and manages the Norwegian deposit return scheme (DRS). Our aim is for all DRS-labelled bottles and cans to be returned and recycled into new, high-quality products.

In 2022, Infinitum achieved a deposit return rate of 92 percent and a total collection rate of 97.6 percent. All returns are recycled, and Norway is a role model for other countries.

Choosing products with the DRS label and returning all drinks containers is one of the easiest and most important things we can all do for the environment.

Return everything. Always.

INFINITUM

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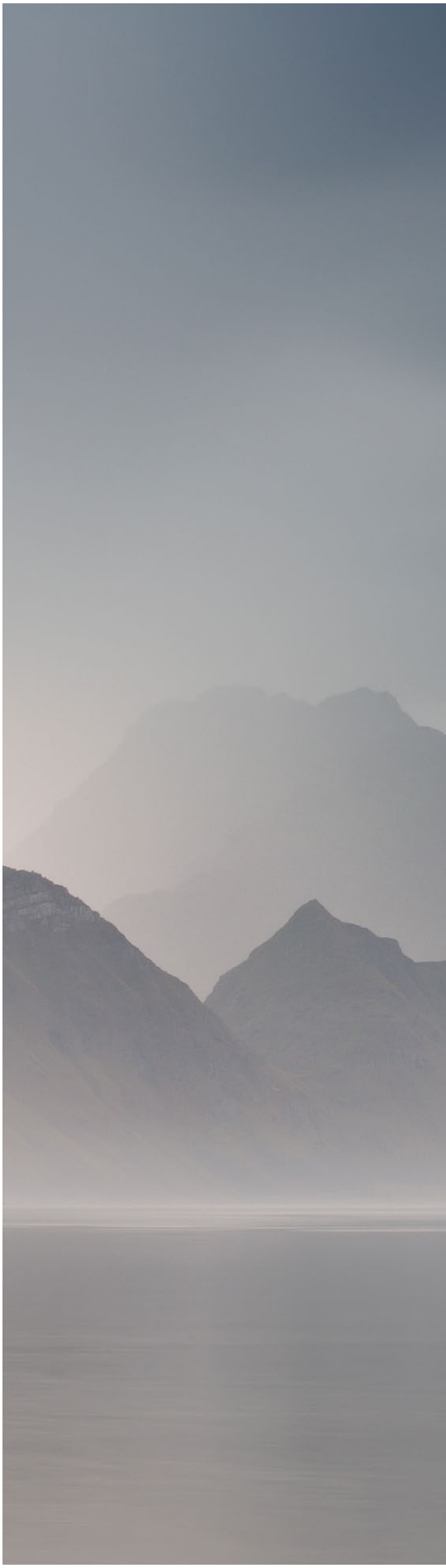


It's a matter of responsibility

The starting point for everything we do at Infinitum is that everyone is responsible for tidying up after themselves.

One of the first things we learn as children is that we have to tidy up after ourselves. As adults, we have an even greater responsibility, and a lot more to tidy up. If we are to avoid an environmental catastrophe, we have to tidy up after ourselves as best we can, both individually and as a society. Not just because our surroundings need to look tidy, but because our resources need to be used time and again.

Infinitum is the drinks industry's and retail trade's tool for tidying up cans and bottles. Our job is to ensure that the packaging used for beer, soft drinks, water and other beverages is collected and given a new lease of life. We help our owners take responsibility.

Fortunately, we are greatly assisted in our task by the entire Norwegian people. Pretty much everyone returns virtually all of their empty bottles and cans. The deposit return system works very well, partly because it gives people both a small reward and a good conscience when they do their duty. In 2022, we were once again visited by a number of delegations from countries wanting to copy our system.

Although the Norwegian DRS is world-class, we never stop improving. We upgrade equipment, optimise collection, and constantly learn more about how we can recycle plastic and aluminium in the best possible way.

One of the things we have learned in recent years is that bottles made from 100 percent recycled plastic are not a good idea. All circular systems require the injection of new resources, and the best solution is to give each new bottle a little new plastic in addition to the recycled material. A good mixture gives the bottle better properties, and makes it easier to recycle. Our responsibility now is to make manufacturers aware of this so that they can choose the best bottles.

Another important thing that we have learned is that plastic from bottles is best used for bottles. Manufacturers of clothing or other products buying recycled plastic from bottles for their products is not a good solution. It means that drinks manufacturers have to buy more new plastic, while clothing manufacturers duck the responsibility they have for their own products.

The best thing for the environment is for each actor or industry to take responsibility for collecting and recycling their own materials after use. Infinitum wants the authorities to provide a greater incentive to do this by introducing an environmental tax that rewards manufacturers for recycling their own materials.

It is not just in our collection and recycling that improvements are being made. In 2022, a large number of stores installed new reverse vending machines that customers can empty whole bags of empties into rather than feeding the machine with one can or bottle at a time. The new machines make returning empties simpler and faster, improving customers' deposit return experience. We are delighted that stores are demonstrating responsibility for the DRS in this way.

We take our responsibility seriously. Everything that is returned is recycled, and we are constantly working to make the journey from reverse vending machine to new product more efficient. Unfortunately, not everything is being returned yet, but we believe that improvements like new machines are bringing us closer to that goal. We still believe that everyone really wants to take responsibility and tidy up after themselves.

Kjell Olav Maldum
Managing Director, Infinitum


PLEASE RECYCLE ME
PLEASE RECYCLE ME
Coca-Cola
ORIGINAL TAS
1.5L
Coke
ORIGINAL TASTE
330ml
2 PANT

Statistics for 2022

921,069,327
cans returned*

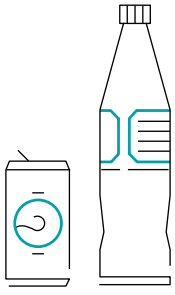
90.6%
of all cans sold

12,757
tonnes of aluminium was returned and recycled

599,970,546
plastic bottles returned*

92.8%
of all bottles sold

22,145
tonnes of plastic was returned and recycled



1,521,039,873

total returns

* Collection figures for reverse vending machines

“We want everyone to return all their empties”

The most important thing for Randi Haavik Varberg, Communications Director at Infinitum, is that people return every last empty.

“One of the highlights of 2022 was testing the recyclable festival cups on a large scale, and seeing them in use at a large number of festivals and events. We learned loads about what works best and what we need to change for the season next year,” she says.

Recyclable festival cups and beer kegs

More than two million recyclable festival cups were collected over the summer. Unlike other plastic cups that are widely used at events, these can be recycled in exactly the same way as plastic bottles. What is more, plastic beer kegs have also become more popular with food and drink vendors.

“They are much easier to handle than the usual steel kegs, in addition to which there is a nice deposit on them before they are recycled into new kegs,” says Varberg.

The festivals that used the recyclable cups included Hvalstrandfestivalen, Tons of Rock and Bergenfest.

Bringing in the last bottle

Infinitum still has a world champion who is also passionate about the environment on its team.

“We still have athlete Karsten Warholm as our DRS ambassador, something we are very proud of. We’ve run several campaigns fronted by him, and the most fun was perhaps when he was in his home town, Ulsteinvik, and called on everyone who lives there. By doing that, he got the whole town on board with a big community recycling project,” she relates.

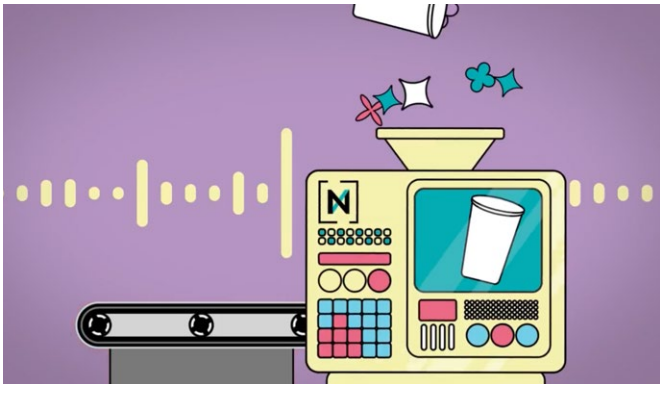
But it is not just Warholm who has been out and about this year.

“Following the pandemic, we’re seeing people on the go more again, travelling more, and going for a drink more. This is having an impact on recycling habits. During the pandemic, when we pretty much stayed at home, we saw a lot of empties coming from there. Now they’re coming from other places more,” says Varberg.

A new twist and new roles

In 2022, Infinitum piloted two types of advertising campaign that were slightly different to what they usually run. The first was about ‘hardware disease’, which results from cows and other livestock swallowing harmful pieces of metal that end up in the ditch. The other featured Warholm, who illustrated what not to do with empty cans and bottles.

“At the end of the year, we made a Christmas film for the industry, recreating ‘Dinner for One’, a comedy sketch shown on television every Christmas in Norway, with a message about deposit return. It was well outside our comfort zone, but we think the result was very funny,” she relates.



FESTIVAL CUP: This animated film was shown at a number of festivals over the summer to remind people that the plastic cups can be recycled.

NEW ROLES: Randi Haavik Varberg and Kjell Olav Maldum showed a slightly different side of themselves in the annual Christmas greeting, a deposit return version of ‘Dinner for One’.

New bottles – around the clock

Before a returned bottle is recycled and ready to be reused, it passes through all sorts of machines and three large plants in Norway and Sweden.

Ståle Maldum, Factory Manager at Infinitum.

Putting your empty bottle in a reverse vending machine starts the process of getting it back into the store. The machines therefore operate around the clock at Infinitum and Veolia in Fetsund. There is no storage for empties there. Everything goes straight onto the belt as it comes in. Infinitum receives up to 90 truckloads a day. This corresponds to something like 10 tonnes an hour, divided between two hatches.

"It takes 10 minutes from the load being tipped in to it coming out the other end," says Factory Manager Ståle Maldum.

Follow your bottle's journey here!

Infinitum

09:00

A container load of empty bottles is emptied down the hatch at Infinitum in a matter of minutes.

09:02

A machine tears the bags open and releases bottles and cans onto the belt. The bags are sent to a separate line for recycling.

09:04

Loose caps and labels are removed from the stream of bottles and cans.

09:10

Plastic bottles are compressed into large cubes, loaded onto a trailer and driven across the yard to Veolia. Each individual cube contains 10,000 squashed bottles weighing a total of 300 kg.

09:09

Plastic bottles and cans are sent to a sorting line, which runs at 4 metres a second, for optical sorting. The plastic bottles are sorted by colour. Clear bottles are sent straight to a press. Coloured bottles are sent back to a hooklift skip for further sorting.

09:08

The cans are removed using a magnetic field. All cans are sent to a separate press, which compresses them into cubes, each containing around 20,000 cans. These are loaded straight onto a truck bound for England.

09:05

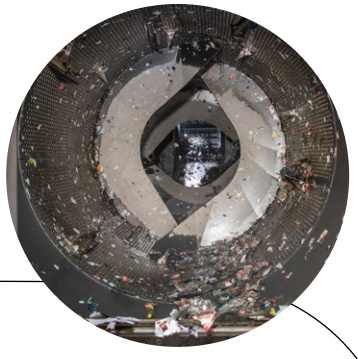
Plastic bottles and cans are sent to a buffer silo.

Veolia

Viola's 3,500 m² recycling plant, where plastic bottles are turned into pellets, is 100 metres from Infinitum's plant. A small truck drives across the yard from Infinitum every two hours around the clock carrying around 26 cubes of squashed bottles. In total, 36 tonnes of pellets are produced a day at Veolia. Trucks from Infinitum collect the load and transport the plastic to a warehouse a few hundred metres from Veolia's plant. From there, the plastic goes to Sweden and Lithuania, where it is turned into bottle preforms.

09:30

Empty bottles in cubes are unloaded by forklift and put on the belt. When the cube hits the first belt at Veolia, the bottles end up in a drum and the tightly packed mass is broken up.



09:35

The first of a total of three metal detectors removes aluminium.

09:40

The bottles are ground into smaller pieces, cap and all. The labels are then sucked up into a separate zigzag tower so that they do not go any further.

09:45

Pieces of bottle and caps are washed in a mixture of lye and water at 70 degrees. This process also requires another rinse in a separate machine.

10:00

Pieces of bottle and cap have to be separated. This is done in a sort of tank. PET from bottles sinks, while cap material floats.

01:30

After being sorted into large bags and labelled, the finished pellets are ready for transport to Sweden and Germany.

17:00

What has now been turned into pellets goes through another round of drying and heat treatment for at least six hours at 190 degrees. This is intended to ensure that the material is approved for food.

14:30

The pieces now have to be melted and heated to 280 degrees. A 'meat grinder' cuts the molten pieces into small pellets. The process takes place in water to prevent the pieces from fusing back together.

10:45

The pieces are heated and dried.

10:35

Another machine removes anything coloured. Only clear and pale blue PET is used to produce new bottles.

10:30

Another round with a label remover, metal detector and sieve. The pieces of bottle are now sorted into those that are the right size and those that are too big or too small.

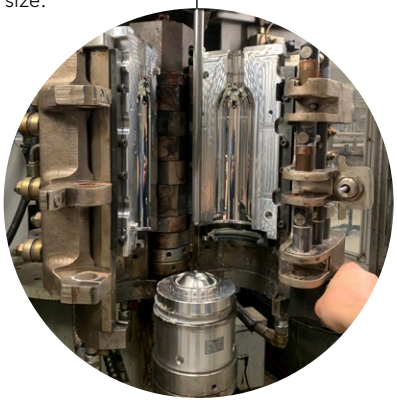
Petainer

Around four hours after leaving Fetsund in Norway, the load arrives at Petainer in Lidköping, Sweden. There the pellets are turned into preforms or finished bottles, ready for new bottling.

The pellets, which come from Veolia in sacks, are emptied out and stored in large silos.

The molten mass is sprayed into a steel mould, which turns it into plastic tubes known as preforms. These preforms are the starting point for new bottles. Finished preforms are stored in recyclable steel or cardboard crates.

The preforms are sent to a machine that heats them up. Then they are inflated to the desired bottle size. Inflated bottles are packed before being shipped to the customer for filling.



COMPARISON: Ole Faye from Infinitum is excited to see the results of the NORSUS report, which is going to compare the DRS with a hypothetical reuse system.

Reuse or recycle – what is best?

What is the environmental impact of the current DRS compared with a reuse system for bottles and cans? NORSUS, the Norwegian Institute for Sustainability Research, is going to find out.

"What we want to look at now is the environmental impact of the DRS for bottles and cans we currently have compared with a hypothetical reuse system," says Ole Faye, an advisor with Infinitum.

"Before we started recycling, Norway had a reuse system, in which bottles were washed and refilled. There are now some people in Europe who are of the opinion that we should move back to reuse. In order to make such assessments, we believe that the different solutions need to be analysed so that we have the facts regarding which solutions actually have the smallest environmental footprint," says Faye.

Specialists in life cycle assessments

"Here at NORSUS, we carry out life cycle assessments in order to chart the climate impact and other environmental effects of different products and systems. We also look at factors such as resource use, water consumption, transport and electricity. The aim is to compare different products and systems so as to make the best choices for the environment and climate," says Hanne Lerche Raadal.

Raadal, a researcher, is heading up this work at NORSUS together with Simon Saxegård and Ingunn Saur Modahl. There are different ways of modelling recycling in life cycle methodology. The EU has recently drawn up a framework for making life cycle assessments more universal, so that it will be easier to make comparisons between countries and industries.

"Infinitum is working to ensure that we will always have the most resource-efficient circular system for collecting bottles and cans as our contribution to the circular economy."

NORSUS are specialists in life cycle assessments and have a database that they use in their calculations. It includes emissions and footprints for transport and energy consumption. In order to make their calculations as close to reality as possible, they will also use specific data from the drinks industry.

"This data includes how much recycled material is used in the production of bottles and cans, what the different types and sizes of packaging weigh, how many bottles will fit on a pallet, and how much wastage there will be in a washing process," says Raadal.

Important factual basis

They are obtaining information from packaging actors in Finland, Estonia and Germany, as well as producers Lerum and Ringnes here in Norway. One of the objectives is to find out the conditions under which the different systems can work. The hypothetical reuse systems use the materials it would be realistic to use today: glass bottles instead of aluminium, and slightly thicker plastic bottles.

"Life cycle assessments always have to be based on some assumptions, including that, in a hypothetical reuse system, people will be as good at collecting as they are with the current DRS. With this report, we want to chart the conditions under which the different systems perform best, and it is by no means certain that one size fits all," says Raadal.

The report should be ready in the course of 2023 and will be used as a basis for discussions regarding future systems for packaging and collection.

"Infinitum is working to ensure that we will always have the most resource-efficient circular system for collecting bottles and cans as our contribution to the circular economy," says Faye.

Clothes chat tackles plastic

Award-winning Fœbrik has made redesigning clothes by sewing trendy. In their podcast, 'fÆb', they also problematise the use of recycled plastic in items of clothing.

Fœbrik was set up in 2020 by Jenny Skavlan, Ingrid Bergtun, Mari Nordén and Ingrid Vik Lysne. The purpose behind Fœbrik is to get more people involved in sewing, and thinking more sustainably. They sell patterns, courses and fabric, enabling people to fashion their own wardrobe or alter what they already have.

In an episode of the 'fÆb' podcast from September, they discussed what is currently a hot topic: Is there such a thing as sustainable clothing?

The jumping-off point was a new clothing collection created in collaboration with Kourtney Kardashian and called 'Ready for the Future'. The women went over the matter with a fine-tooth comb by looking at what the clothes were made of, and whether that can justify the ambitious brand name as far as the environment is concerned. It turns out that the clothes are largely made of 100 percent recycled polyester, i.e. plastic. Is it sustainable?

Greenwashing

"In no way whatsoever. It may be a tad more sustainable because it is recycled, so you didn't use even more raw material, but recycled polyester in clothing in itself is greenwashing," says Skavlan.

They explain that when they hear about clothing chains using recycled materials, their view is essentially positive, because recycling is good. But the problem with putting recycled polyester in clothing is that it is a dead end.

"The plastic in packaging and the like that we put in the recycling bin at home can be turned into new plastic. Plastic bottles, for example, ought to be kept in the plastic bottle lane. Because a plastic bottle can become a plastic bottle. But once plastic bottles are put in clothes, they can never become anything ever again, because we don't have the necessary technology," says Skavlan.

The fact is that polyester in clothes does not come from old polyester garments.

Not circular

"So the only good you're doing is using the bottles for something else and giving them a slightly longer life, but the problem is that doing so is not circular overall. You give the bottle just one more step, and that's it," says Lysne.

She explains that it bothers her that the clothing chains who claim that these clothes are more sustainable are right in a way. Because it is a tiny bit more sustainable than if brand-new polyester had been used.

"But this teeny-tiny bit of sustainability is so vanishingly small, and if you're going to think in a circular way and consider what will happen to the garment afterwards, then it's not sustainable overall," says Lysne.

It also annoys her that the clothing manufacturers are 'stealing' and using the words as if they are actually trying to do something sustainable.

"They're not seeing the bigger picture. By using one of the world's biggest influencers and saying that this is sustainable, they will sell an awful lot of clothes. This will increase the amount of clothes in the world that are made of plastic and cannot be recycled, and the amount of poor-quality clothing that people soon tire of, with the result that it ends up on the garbage heap," says Skavlan.

The Fœbrik women point out that sustainable clothes already exist, i.e. those you already have in your wardrobe and wear time and again until they are completely worn out. The most sustainable thing of all is to wear what you already have or buy second-hand.

FÆBRIK'S TOP TIPS FOR MAKING SUSTAINABLE CLOTHING CHOICES:

- Wear what you have, mend, swap with friends or family.
- Buy second-hand!
- To avoid impulse purchases, wait two days before buying the garment!
- If you have to buy new, look for natural fibres like wool, linen, organic cotton or silk. Preferably with the Nordic Swan label or a good rating on Good On You.
- Be nosy about how things are made. Ask in the store or read online about how and where the garments have been produced. We tend to be fonder of clothes with a story.
- Buy clothes that suit you and your body. If the garment does not fit well, it will probably not be worn much.
- Don't use getting rid of clothes as an excuse to buy new ones.

FÆBRIK: L to R: Jenny Skavlan, Ingrid Bergtun, Ingrid Vik Lysne and Mari Nordén.

PLASTICS EXPERT: Naveen Singh from Norner believes that plastic bottles should become new plastic bottles and not other products.

"Materials should be kept in the circle"

According to plastics expert Naveen Singh, developing pure material streams is the most important thing now.

Naveen Singh has a doctorate in plastics and is a senior researcher with Norner. The company is a leading polymer (plastics) R&D centre and helps Infinitum to make the recycling process for plastic bottles as good as possible.

"The most important thing we can do now is to see to it that the circle is made as efficient as possible, and make sure that materials do not disappear from it," he says.

Quality deteriorates

He talks about the challenges that arise when we lose materials from the value chain:

"Once materials disappear from an efficient circle, it becomes downcycling, with the materials and quality deteriorating. Recycling plastic bottles into clothes is a good example of this. Many clothes are made from different types of fibre, including polyester. Polyester is the same type of plastic that we find in plastic bottles. But when the materials are altered so that they can be used in clothes, their quality is reduced and there is no system for recycling the clothes again," he says.

The example of clothing is extremely relevant, as many clothing manufacturers advertise their clothes as being made from 100 percent recycled plastic. But, for the time being, the circle stops there.

Pure streams

"It's theoretically possible to create recycling systems for clothes too. The biggest challenge is that clothes are very frequently made from a blend of fibres, which are virtually impossible to separate. With a sweater made of 100 percent polyester, it would be easier to create a recycling system. Managing to separate the different materials to produce pure streams is one of the things that works so well at Infinitum. A plastic bottle has plastic in the bottle itself, and in the label, glue and cap. The plastics are sorted at Infinitum's plant and recycled in separate streams," he says.

Recycled plastic bottles can also be used in other products, such as car tyres and washing machine drums. Singh explains that when a company makes another type of product from recycled plastic bottles and says it is sustainable, it is pure greenwashing.

"It doesn't have a smaller impact on the environment, nor is it a circular economy, because the materials cannot be reused at the end of the product's life. This means we lose the chance to reuse the plastic many times over, as we can with plastic bottles," he says.

"We have to recycle as much as possible. In an ideal world, only companies with an efficient system for recycling their own products would be allowed to buy and use recycled plastic," Singh believes.

"As things stand, a lot of companies are meeting their need to appear sustainable, maybe instead of working on solutions for recycling their own products," he says.

The consequences of other actors using recycled plastic bottles in their products also affects Infinitum.

"When plastic material is removed from Infinitum's value chain, brand-new, virgin plastic has to be brought in to compensate. Instead of it being possible to use the same plastic time after time in new plastic bottles. We have to work on developing pure streams, and on making them even better so that we can recycle as much as possible as many times as possible," he says.

From small beginnings...

At Lerum, sustainability has been a guiding principle since 1907. 115 years ago, it was primarily about looking after the raw materials. Nowadays, it is about looking after much more.

FROM SOGNDAL: The juice and jam are well known throughout Norway. Last year, Lerum produced goods worth nearly NOK 700 million.

"We're always working to improve and follow up on the various requirements for our production," says Trine Lerum Hjellhaug, the fourth generation of the Lerum family and the Managing Director in charge of juice and jam in Sogndal.

Just now, Hjellhaug is anxious about the consequences the new EU directives will have for the family business. Such as the requirement that all plastic caps must be attached to the bottle, for example.

"I've been wondering whether we need this in Norway, which has such a good deposit return system. I'd bet that the majority of bottles are returned with the cap on," she says.

She admits that she would have liked the money to be spent on other sustainability measures.

"I'm all about common sense. A system that works in another country, may not work so well in Norway. For me, it's about looking after things, all the way to where we are now."

Berries and sustainability

The history of Lerum, a key business in Sogndal, goes back to Hjellhaug's great-grandparents, who ran a general store and liked to barter. On an August day in 1907, two buckets of raspberries were left behind on the quay when the Bergen boat cast off.

"Great-grandma took them home and made them into juice. And then she bartered the juice for something else. That's how it started," Hjellhaug relates.

Lerum now has 135 employees and a big production plant in Kaupanger, with notes on the wall telling people to turn the lights off in the local dialect. The plea comes from one of Lerum's youngest employees. He literally saw the light at a sustainability workshop attended by employees and management.

"Sustainability can be an abstract and slightly scary word for many people. We constantly hear about the Paris Agreement and EU targets and I don't know what else. At Lerum, we talk about looking after things. For us, sustainability is far more than climate and environment. It's about nature, people and the local community too," says Trine Lerum Hjellhaug.

Small steps count

Instead of a sustainability strategy, the production company has developed a sustainable strategy in recent years. The idea is that everyone working at Lerum should feel that even small steps are important.

"Among other things, we asked employees what they could do where they work to look after the future in a profitable way," Hjellhaug explains.

The answers she received were many and varied. Such as putting 'Go for it, the last little bit is good in gravy' on the lingonberry jam label in order to reduce food waste.

"Repeated small steps add up over time. It's the same with sustainability. Many people baulk and have no idea how to get started, regardless of the industry. We began by thinking simply and hopefully it produces results.

Belief in the next generation

In 2022, Lerum produced 54 million kg of jam and drinks, and had a turnover of nearly NOK 700 million. The juice and jam produced in Sogndal are well known throughout Norway.

"I sometimes ask myself what my great-grandparents would have said if they had known where things were headed," says Hjellhaug.

Whereas the generation before her industrialised the business, she and her cousins have mainly focused on the Lerum brand. Hjellhaug is sure that the next generation "will help make the world a better place."

"We already know that young people want to work for companies that take sustainability seriously. I believe that they'll be even more successful than we're managing to be on our watch," she says.

FAMILY BUSINESS: "Creating something for ourselves and others has always been our main motivation, says Trine Lerum Hjellhaug," the fourth generation in the Lerum family business.

Prepared for a tsunami of EU regulations

“We are facing an unprecedented readjustment.I’d go so far as to call it a paradigm shift,” says Head of Section Hege Rooth Olbergsveen from the Norwegian Environment Agency.

BUSY: This spring, the Norwegian Environment Agency is also going to help the Norwegian Tax Administration look into a possible tax on new plastic.

Nearly 50 new regulations are intended to help the EU and Norway achieve their climate and environmental targets by 2030. Many of them will have an impact on everyday life for most people.

In the next few years, the Norwegian Environment Agency and Olbergsveen will play a key role in the work to implement the new regulations adopted by the EU in Brussels. This spring, the agency is taking on 15 new employees in order to keep up with everything that is in the pipeline. Later, ensuring that the regulations are complied with will be an important job.

The Head of Section underlines that what is happening now will have a major impact for many people.

"The task right now is to keep up! We need to understand what this will mean for industry, for different businesses, and for you and me," she says.

Stricter design requirements

The Norwegian Environment Agency has referred to the new regulations as "a tsunami" in a number of contexts. There is a lot happening, and it is happening quickly. By summer 2024, the EU plans to have adopted all the proposals for regulations from the European Commission, after which they will be implemented successively in the various countries.

First to come in the circular economy are new requirements for the entire value chain for batteries, which will be followed by an ecodesign directive and a new packaging directive, among others.

Stricter requirements regarding the design and use of packaging will be a central element. Requirements regarding national deposit return schemes for plastic bottles and metal cans for drinks in all EU countries are also being proposed. Not just bottles but all packaging in the EU must be suitable for material recycling by 2030. The directive is intended to provide for better design, increase recycling and reduce the amount of packaging waste with a view to ensuring a circular economy.

"The packaging we know today will look different in a few years as a result of future EU requirements," says Olbergsveen.

Filling the void

The new rules have not yet been adopted, but future possibilities include removing the plastic window showing the contents of a carton of pasta. The same applies to the plastic sleeve around four packs of drinks and shampoo minis in hotels.

One of the proposed requirements from the European Commission involves minimising the empty space in packaging.

"A toy manufacturer will not be able to use more packaging than is necessary for the contents," Olbergsveen explains.

Manufacturers who do not meet the requirements will not be allowed to put the packaging on the market.

"We know that some businesses are already on the right road and adapting to what will happen under the EU's green initiative. In the building sector, parts of the furniture trade and some municipalities, we are seeing more people thinking creatively and innovatively regarding the circular economy," says Olbergsveen.

Competitive advantage

She believes that those who plan early and adapt to the new regulations will have a competitive advantage in the future.

The Head of Section is happy to highlight Infinitum as a driver for good solutions, and also believes that the deposit return giant would do well to look at new possibilities for the packaging of the future in a circular economy.

"Infinitum has always had a can-do approach and been at the cutting edge of such changes. They are also good at sharing information and showing solutions that are seen to be working to interested parties from all over the world," she says.

> *"The packaging we know today will look different in a few years."*
>
> *Hege Olbergsveen, Head of Section at the Norwegian Environment Agency*

BRUSSELS: The European Commission has submitted more than 50 proposals for regulations that could also have a major impact on Norway.

“It’s good that the resources are reused”

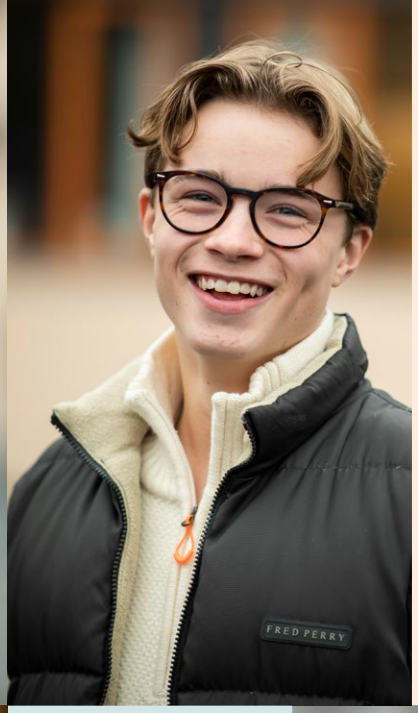
What do young people think of deposit return, what do they do with their empty bottles, and what do they think is good about the DRS?

Rayan (13)

“I don’t recycle all that much, but I’ve been saving some soft drinks bottles at home. I now have more than 20, which I plan to recycle soon. I’ll spend the money on sweets, so I’m looking forward to that. The rest of the family collect empties in a bag in the shed and return them once a month. It’s good that the plastic and cans can be used to make something new. If I drink a bottle when I’m on the move, I never throw it away. I take it home with me and return it with the other’s I’ve collected.

Patrycja (15)

"Actually, I usually have a big display of empty soft drinks bottles all over my room, and I think it looks great. After a while, I recycle them all. I spend all the money on more soft drinks, so it's like a circle. At school, we put the deposit in the class money box, then the money is spent on something nice for all the pupils. Recycling is great because it both gives you money back and is good for the environment. Throwing empties away isn't something I'd do."



Lasse (15)

"I recycle everything I drink, and pick up bottles and cans I find lying around. It makes what I want to buy at the store a few kroner cheaper. Sometimes I also press the Red Cross button to take part in The Recycling Lottery. At home, we've got a bag where we put empties, which someone in the family recycles when it's full. If I drink something when I'm out and about, I generally recycle it. If there isn't a store nearby, then I sometimes get rid of the bottle in a litter bin. Returning empties is good for the environment, because plastic and aluminium can be recycled. I often buy second-hand clothes too, so I'm a fan of it being possible to reuse things."

Kristoffer (14)

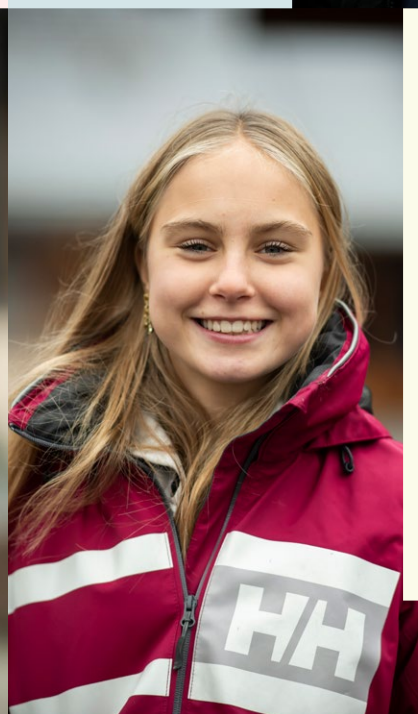
"I sometimes return empty cans and bottles, but if there isn't a store nearby, I throw them in a litter bin. I haven't thought very much about what happens to them after that, but maybe they aren't recycled. At home, we put all our empties in a bag, and the family member who returns them gets the money. It's great that the materials can be reused when you return empties, so everyone should really be good at it.

Eva Marie (15)

"I collect empties in a bag in my room and return them when I've got too much or need money. If I've got a bottle when I'm out and about, I take it home with me when it's empty. It's good that the resources can be reused instead of new plastic being made. My family is actually very good at returning empties. There's a large bag in the garage where they put empty cans and bottles. But I keep the money from what I drink myself. It's always nice to get a bit extra cash."

Tara (15)

"I think I'm pretty good at returning empties, but I sometimes throw an empty bottle away if I'm out somewhere or other. Maybe I should have returned it, but I don't really fancy carrying empty bottles around. At home, we've got a bag where we put all our empties. And the money goes to the family member who takes the bag to the store for recycling. I'm not really bothered about the money, but it's important for the environment. I try to be good at recycling what I can, like food and plastic.



Signe (14)

"At home, we've a bag where we put all our empties, and the money goes to the family. If I drink something on the move, I generally put the empty bottle in a litter bin. I haven't thought very much about what happens to it after that. I should probably have taken it home with me and returned it so that it would be recycled. I think the others in my family are good at recycling, and it's great that empties can be reused to make new cans and bottles.

GREENWASHING: Tonje Drevland from the Norwegian Consumer Authority sees to it that businesses do not claim to be more environmentally friendly than they are.

Using recycled plastic can be greenwashing

The Norwegian Consumer Authority sees to it that businesses do not make themselves out to be more environmentally friendly than they are. Now there is a good chance that they will look at the term 'recycled'.

"'Green', 'climate-neutral' and 'sustainable' are terms we've been targeting for a long time, but now 'recycled' has been added to our list too," says Tonje Drevland, who works in the Supervisory Department at the Norwegian Consumer Authority.

Wanting to appear environmentally friendly

The Consumer Authority is the only body that monitors the rules on greenwashing. Greenwashing is a form of misleading marketing in which a product or company is made out to be more environmentally friendly than it is. This is prohibited under the Norwegian Marketing Control Act. Drevland explains how they became aware of the use of 'recycled' by companies:

"It's largely a matter of recycling now being associated with the environment and sustainability, so it's also being used deliberately to present a sustainability message. When a footwear brand advertises a shoe as containing 100 or 30 percent recycled plastic, it will generally be done so that consumers perceive the shoe as being less harmful to the environment than other, similar types of shoe, rather than the data being provided by way of general information. Otherwise it makes no sense to do it," she says.

Documentation required

The Consumer Authority mainly works in two ways – seeking out businesses with undocumented sustainability claims and receiving complaints from other parties.

"Sustainability claims must be documented and supported with facts. If someone claims that a product is 'more sustainable', they have to be able to document how and why. And all relevant environmental impacts throughout the product's lifespan must be taken into account, of course," says Drevland.

The businesses have to provide the documentation themselves. The consequences of being judged to be greenwashing are first and foremost that the claims have to be removed or changed, and fines may be in order. When a case is concluded, the Consumer Authority issues general guidance in the market to warn other actors and prevent them falling into the same trap.

Whole lifecycle counts

In future, the Consumer Authority will consider taking up cases to do with misleading marketing of recycled plastic in products.

"In these cases, the companies must be able to document that recycled plastic in the product means that the overall environmental impact is substantially less that if new plastic had been used. They will have to know the relative importance of choosing this material seen in terms of the entire lifecycle of the product in order to be sure that pointing out that a product is made from recycled plastic is a relevant environmental claim," she explains.

She adds that the plastic in recycled products often seems to come from

"If someone claims that a product is 'more sustainable', they have to be able to document how and why."

recycled plastic bottles.

"If we take up cases relating to the use of recycled plastic bottles in other product types, such as clothes and shoes, we should perhaps also assess how relevant it is to remove the plastic bottles from an essentially circular system and use them in a product that can no longer be recycled. We will want to know whether it can be documented that removing the bottles from a circular system and using them instead in other products that cannot be recycled has any environmental benefit overall. If not, the whole recycled claim may be misleading. This is something we need to take a closer look at if we accept cases to do with such claims," she says.

Yes, there is a deposit on these

There is a deposit on more drinks packaging that you might think. Here are some of the more surprising cans and bottles that you will get money back on from reverse vending machines.

Tomtegløgg is an old acquaintance that has had low deposit return figures for many years. That is probably because it looks quite different to the traditional plastic bottles and cans containing beer and soft drinks. The mulled wine comes in both a 500 ml and a 1 litre size. It is usually sold in supermarkets and pays out NOK 2 on the small bottle or NOK 3 on the large.

Spirits with a deposit? Yes, more and more such bottles are getting a DRS label. This version of **Arvesølvet** aquavit contains 350 ml, making it perfect for those who enjoy a drink on their travels. You can buy it at Vinmonopolet, where you can also ask for your NOK 2 deposit back.

A deposit on beer cans may not be particularly unusual, but it is not always easy to see that something is beer. And not always easy to see what something is full stop. As with this product sold by Vinmonopolet. Called **Michelada Mexican Beer Cocktail**, it is a spicy, lightly peppered, frothy beer flavoured with pale malt, chilli and a little tomato, plus a hint of biscuit and citrus. It comes in a conventional 33 ml can and pays out a deposit of NOK 2.

Bendit with mango and passion fruit is small, just 250 millilitres, but still pays out NOK 2. It contains apple juice, mango, banana, passion fruit and a little bit of orange pulp. It is available from supermarkets, kiosks and petrol stations. You can also recycle it there when it is empty.

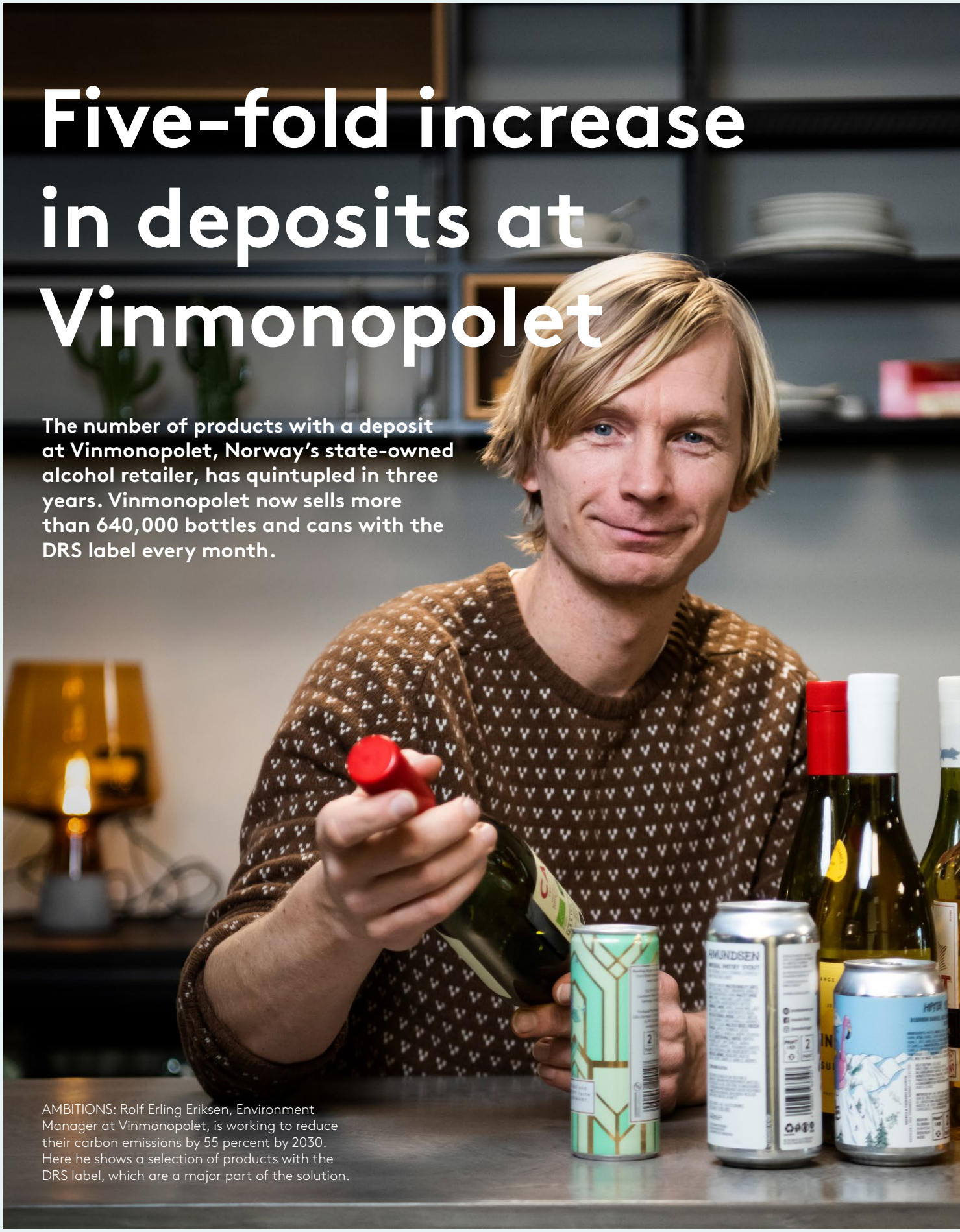
Deposit return on wine disappeared over 20 years ago. Now it is back with a vengeance, with more and more plastic wine bottles getting a DRS label. **Camp** red wine was one of the first wines with a deposit at Vinmonopolet. The bottle contains 75 cl and pays out a deposit of NOK 3.

As a matter of fact, wine is not just available in bottles, but in cans too, like the German **Riesling to go**. This white wine from Vinmonopolet comes in a 25 cl aluminium can and pays out a deposit of NOK 2.

DEPOSIT RETURN ON WINE: Did you know that a lot of wine bottles are included in the deposit return scheme?

Five-fold increase in deposits at Vinmonopolet

The number of products with a deposit at Vinmonopolet, Norway's state-owned alcohol retailer, has quintupled in three years. Vinmonopolet now sells more than 640,000 bottles and cans with the DRS label every month.



AMBITIONS: Rolf Erling Eriksen, Environment Manager at Vinmonopolet, is working to reduce their carbon emissions by 55 percent by 2030. Here he shows a selection of products with the DRS label, which are a major part of the solution.

Vinmonopolet needs to cut its greenhouse gas emissions. The weight of the products on its shelves is crucial in this respect, as lighter packaging means lower climate emissions. Plastic bottles and aluminium cans are lightest of all, and all these products are recycled and used in new products when returned.

"Products with a deposit have gone from being marginal to representing a substantial part of our range, a part that is growing every year. Because they require less energy to produce and transport, both plastic bottles and aluminium cans have a much smaller climate footprint than glass bottles," says Rolf Erling Eriksen, Environment Manager at Vinmonopolet.

All in all, Vinmonopolet sold 7.7 million bottles and cans with the DRS label in 2022, with spirits accounting for as many as 3.4 million units.

"This big investment in climate-smart packaging is unique in a global context and an important contribution to the climate."

A big job to do

A plastic wine bottle weighs around 50 grams, while a glass bottle at Vinmonopolet weighs around half a kilo, empty. Vinmonopolet aims to reduce its carbon emissions by 55 percent by 2030. It therefore wants a deposit on all new products in plastic and aluminium in its basic assortment. It also requires the majority of glass bottles to be made from thinner glass in order to use fewer resources and less energy for transport.

"Initially, it was mainly beer cans that we had a deposit on. Now spirits are becoming the fastest-growing product group with a deposit. But there are still a lot of products without a DRS label, so we and all the actors on the market have a big job to do in this respect," says Eriksen.

Increasing every year

Vinmonopolet first introduced a deposit on wine and spirit bottles in 2019. Three years later, the DRS label is on 3.4 million spirit bottles sold there, representing 16 percent of all spirit bottles sold. Beer is still the largest category, with 35 percent of all the units sold – 2.82 million – having the DRS label. Red, white and rosé wine with the DRS label now account for 3.2 percent of all sales. This is equivalent to 1.26 million units, and the percentage is increasing every year. This is after the deduction of wine boxes, wine bags, and bottles containing more than 4 litres, which are not accepted by reverse vending machines.

The deposit bottles and cans sold at Vinmonopolet are included in Infinitum's deposit return scheme. They can be returned at Vinmonopolet's stores or in reverse vending machines. Cans are melted down and made into new cans, while plastic bottles are made into new bottles or other plastic products.

"This big investment in climate-smart packaging is unique in a global context and an important contribution to the climate. The Norwegian DRS works very well, and we have good capacity for recycling the ever-increasing volume from Vinmonopolet," says Randi Haavik Varberg, Communications Director at Infinitum.

Numbers remain low

On average, 92 percent of all deposit cans and bottles are returned. Wine in plastic bottles with the DRS label now have a deposit return rate of around 65 percent.

"We think these numbers are too low, but they are not surprising. Deposits on wine and other beverages from Vinmonopolet are relatively new for most people, so many people don't realise that there is a deposit on these products and that they can be recycled like other plastic bottles. But we intend to continue with our information work and will keep going until returns are on a par with other bottles and cans," says Haavik Varberg.

No one beats Obs Lillestrøm for returns

When the Obs Lillestrøm supermarket got the R1 super machine in 2019, they decided that they had to be the best at deposit return in the entire country. They have been at the top of the deposit return league table ever since.

Their deposit return figures remained stable even when the borders reopened following the pandemic. In total, 921 million cans and 601 million bottles with the DRS label were returned last year. In addition, 38 million foreign items without a deposit came in. In this way, we contributed to a total of 21,600 tonnes of plastic and 13,200 tonnes of aluminium being recycled into new bottles and cans.

A competitive advantage

Obs Lillestrøm received more empties than any other store in Norway last year. In 2019, they were among the first in the country to instal a new reverse vending machine where customers can return whole bags of empties at a time quickly and efficiently. The year after, they came top of the deposit return league table. Since then, the volume of empties returned has risen sharply, and in 2022 they received an amazing 8.2 million cans and bottles with the DRS label. And still no one has toppled Grocery Manager Marcus Løkkeberg from his throne as Norway's deposit return king.

"The top is where we want to be, so that was nice to hear. Obs aims to be a one-stop shop. The idea is that visiting us should be easy, smart and worthwhile. So it's important for us to offer efficient deposit return too," says Løkkeberg.

In addition to the big R1 machine, the store also has two ordinary reverse vending machines, all located in a separate area close to the store entrance.

"The deposit return system enables all these resources to be reused, and we are happy to help with that. Deposit return has also become a competitive advantage that brings us even more customers. So we make sure that the machines are clean and tidy, and that they don't stop unnecessarily. We get a lot of positive feedback from customers, and customers are the most important thing for us, of course," he says.

Vacuuming returns out

The volume of returns coming in at Obs Lillestrøm has now become so large that they had to have a rethink. They have now installed a solution that sucks the returns out from the stockroom into a large container outside the store. These days, Infinitum comes as often as three times a week to empty it and transport the empties to its facility at Heia in Fetsund.

"The solution is absolutely great and it's almost magic how it sucks all the cans and bottles out into the container. We no longer have to handle returns in the stockroom or move all the bags of empties. That saves us a lot of time that we can spend helping the customers in our store instead," Løkkeberg explains.

DEPOSIT RETURN KING: Markus Løkkeberg at Obs Lillestrøm has been the undisputed deposit return king of Norway for several years.

‘THE DRS VACUUM’: THIS IS HOW IT WORKS

When you return bottles and cans, they are crushed in the reverse vending machine. They are then sucked through a long pipe, through the stockroom room (as shown in the picture) and out the back of the store. They end up in a hooklift skip or container. When the container is full, it is picked up with return transport and taken to one of Infinitum’s plants for sorting, after which the materials go for recycling.

An airy solution

Nine stores now have a 'DRS Vacuum' in the stockroom. This means that there is no need for staff to handle empty bottles and cans.

Sten Nerland

"The idea for the 'DRS Vacuum' came about when we introduced air systems at our plant, where we use air to transport caps, for example. We discovered that air works well," says Sten Nerland, Head of Logistics and Operations at Infinitum.

Obs Lillestrøm became the first to have the solution in March 2021. But the story goes back further than that.

"It actually started at City Lade about 6-7 years ago. At that time, we were still using cardboard boxes, not just sacks as we do now, to transport the empties. They had large volumes, and we agreed that handling the empties from their being put in the reverse vending machine to their being transported to the plant could be done more efficiently," Nerland explains.

Air as a solution

Obs City Lade decided to install a conveyor belt behind the machines to carry the empty bottles and cans out into containers. That did away with manual handling of empties in the stockroom.

"Obs Lillestrøm is another store with large volumes, and they wanted the same solution as at Lade. But we had learned that conveyor belts have some downsides, especially when they have to operate outside the store. They have to cope with wind, rain, snow and sleet, which requires a lot of maintenance," he says.

By then, Infinitum had started using air systems at its facility in Fetsund.

"We thought that air might be a good solution for this too. Together with Nordic Recycling Systems, which installed the systems at our facility, and Tomra, we created the system we have now," says Nerland.

Requirements must be met

Now Tomra sells the 'DRS Vacuum' to stores that are interested. To be considered for such a solution, a store must have a volume in excess of 1.5 million units a year, and space for a 25-foot container outside. It is Infinitum that sees to it that these requirements are met.

"At Infinitum, we work continuously to improve the DRS and make it more efficient. We are keen to come up with new solutions that bring down costs for everyone involved. This air system reduces total costs and makes transport more efficient, benefiting everyone," says Nerland.

A deliberate strategy

EMPTYING: You can empty whole bags of bottles and cans into the R1 machine.

Sixteen of the top 20 places in Norway's deposit return league table are occupied by Obs stores. This is a deliberate strategy on the part of the chain.

"We've put a lot of effort into deposit return and will soon have Tomra's R1 machine installed in 26 of our 31 stores. This has been a big investment, but has had a big impact too, as this league table shows," says Tore Westrum, Head of Continuous Improvement at Obs.

"Customers who come to Obs like to do a big shop and don't come as often as to a smaller supermarket. So they often have correspondingly more empties too. That means it's good customer service to offer a fast and efficient way of returning them," he says.

"Our stores also have relatively large premises, so we actually have room for this very big machine. In addition, we've also installed vacuum emptying, which sucks the empties out into the container, in many of our stores. This means that Infinitum doesn't have to pick up as often. Plus both we and the environment benefit from the fact that we no longer have to collect all the empties in thousands of plastic sacks, but transport everything in containers. Since we no longer need to empty the machines manually, they are very rarely out of operation. All in all, this solution saves us a lot of time and labour, which we can use for other tasks. We're also very interested in the environmental benefits, with our goal being to contribute to recycling. This is part of our strategy and social engagement, which we will continue to work purposefully on," says Westrum.

Deposit return around the country

All over Norway, store managers and franchisees are working to give customers a good deposit return experience.

These 20 stores took in the most empties in 2022:

1.	Obs Lillestrøm:	8,162,020
2.	Obs Tromsø:	7,596,823
3.	Obs City Syd:	7,533,134
4.	Obs City Lade:	7,379,482
5.	Obs Sørlandssenteret:	5,934,223
6.	Obs Haugenstua:	5,840,765
7.	Obs Mariero:	5,733,400
8.	Obs Arendal:	5,562,927
9.	Obs Haugesund:	5,069,209
10.	Obs Vinterbro:	4,982,169
11.	Meny Saga:	4,937,012
12.	Obs Harstad:	4,827,660
13.	Obs Bryne:	4,761,945
14.	Kiwi XL Ligosenteret:	4,472,061
15.	Obs Jessheim:	4,206,189
16.	Rema 1000 Gystadparken:	4,144,871
17.	Obs Bodø:	4,096,797
18.	Coop Mega Madla:	3,980,060
19.	Obs Olrud:	3,975,704
20.	Obs Mo i Rana:	3,935,441

"It's great to be number one! Our good deposit return figures indicate that customers are looking for accessibility. We have a good car park and the reverse vending machine is the first thing you come across when you enter the store, so you don't need to carry your empties very far from the car."

Silje Stamnli, franchisee, Rema 1000 Støren. 1st place in Midtre Gauldal.

"We want to stay at the top and are keen to keep evolving and become even better. We can also see that people are very aware of this thing with the environment and recycling, which is great."

Janne Hjørnevik, Store Manager, Kiwi Palmafossen. 1st place in Voss Herad.

"It was good news, and a very high figure. We're very keen to provide deposit return, and this machine makes it easier for both us and the customer. It's been very popular right from the start and also helps to bring in more customers to shop with us."

Torkell Mosebø, franchisee, Meny Saga. 1st place in Skien.

"We keep things clean and tidy, and our reverse vending machines hardly ever stop. It's high on our list of priorities. It's important to do our bit for the environment."

Joakim Daniloff Jonas, Store Manager, Bunnpris & Gourmet Bossekop. 1st place in Finnmark.

Finding future forms

Solenne Roudot works every day to find new packaging solutions for Tine. In the short term, the aim is for everything to be suitable for material recycling.

"Recently, we have made several changes that are not very obvious to the person in the street," says Roudot, a senior packaging developer at Tine Marked with primary responsibility for drinks cartons and plastic bottles.

Tine recently removed a label from its KOS product because it was made of aluminium. Plant-based plastic will soon be introduced in several drinks cartons without any appreciable change in appearance. The environmental benefit, on the other hand, will be greater.

Some solutions are more visible than others, however. Like yoghurt in a carton, which was launched in February 2023.

"If we sell the same amount of yoghurt as before, we will save 56 tonnes of plastic a year," says Roudot.

As for the carton, it will go for material recycling and gradually form part of a circular economy.

Prepared for change

Tine's 'packaging portfolio' is currently made up of slightly more than 78 percent fibre (cardboard) and 21 percent plastic.

The plan is for all packaging to be 100 percent suitable for material recycling by 2025, and to be made from 100 percent recycled material by 2030.

"There is a lot happening at the moment, both in Norway and in the EU," says Roudot, pointing to new packaging regulations and other changes that may be introduced.

"We are keeping up and following up. Tine has been proactive all the way in this respect. We want to have a can-do approach and be at the cutting edge of the changes that are on the way," she says.

Saving plastic for sour cream

Tine is particularly focused on 'making sure that the consumer makes the right choices', especially when it comes to sorting.

"We know that 40 percent of all drinks cartons are disposed of incorrectly in the household waste. We need to be better at communicating in this area so that the message gets across," she says.

"I know that Infinitum receives a lot of inquiries annually about using other products. That is because they have good logistics, good systems and a great deal of knowledge."

The same applies to plastic products, such as sour cream pots.

"People don't put them in with their plastic waste because they think the pots have to be washed clean first," Roudot believes.

And on the subject of cream pots: A few years ago, Tine tested paper cartons as packaging for sour cream, but the project was terminated before they gained a foothold in the market.

"We didn't get to 80 percent fibre material, so we couldn't label the pot as paper packaging," says Roudot.

Tine switched to recycled polypropylene instead.

"We save 150 tonnes of new plastic a year with that solution," says the packaging developer.

More wanted in the system

Ultimately, she wants the DRS in Norway to cover more than plastic bottles and aluminium cans.

"I know that Infinitum receives a lot of inquiries annually about using other products. That is because they have good logistics, good systems and a great deal of knowledge.

Currently, only material from recycled plastic bottles is approved for food use," she points out.

Roudot, who is of French origin, has lived in Norway for the last 12 years.

In her experience, there are differences between the countries in terms of the emphasis on recycling bottles and cans, for example.

"In my personal opinion, Norway has a very good deposit return system, because everyone understands the benefits it offers."

SOLUTION-ORIENTED: It is Solenne Roudot's job to come up with packaging that works: it has to both preserve the product in a manner that minimises food waste and be recyclable.

FAMILY BUSINESS: Hervik currently has 13 employees to take care of day-to-day production of, among other things, currant jelly, plum jam, juices and smoothies. Tor Romseland has run the family business for the past 25 years.

From mail order to DRS

When Tor Romseland's grandfather set up Hervik in 1939, the young entrepreneur hardly had juice infused with chilli and ginger in mind.

"There has to be a little spice in the juice, you know," Tore Romseland, the current owner and Hervik's third generation, explains.

The premises have been extended ten times since his grandfather and two great-uncles started the juice and jam factory on their farm in 1939. The private residence from the early days remains intact, and it is Romseland's sister and mother who now live on the family farm.

"My sister has 10 metres to walk to work," says Romseland.

Major player in a small village

The little factory in Tysvær Municipality to the east of Haugesund has gone from strength to strength in recent years. In terms of deposit return figures, the factory went from 790,000 bottles in 2019 to 2,460,000 bottles in 2022, far from trifling for a business in a small place with 250 inhabitants. In 2022, Hervik sold juice and jam worth NOK 51 million.

"We're an important business in the village and a well-known actor in the region. What's more, we have brands you can find at airports, in cafés or as an alternative to remuneration for voluntary work," says Romseland.

Shipping nationwide

Mail order was Hervik's principal sales channel for more than 50 years. The business mainly sold juice and jam to around 50,000 private households all over Norway. In order to reduce waste and prevent leaks, large jars of both plum jam and apple juice were replaced with 'space-friendly', square cartons.

"But that didn't look very nice. And when we switched from mail order to more usual sales channels, the whole point of having square cardboard cartons was lost too. In the early 2000s, we went back to jars and plastic bottles. A few years later, we joined the deposit return scheme," says Romseland.

Smoothie becomes jam

The DRS also brought deposit bottles, which ensure a better shelf life. This led to Hervik starting production of freshly squeezed juices and smoothies. Which is where this year's innovation with chilli and ginger comes into the picture.

"We're a fruit and berry business that is rich in tradition. We also work on product development. When we come up with a new product, we have it approved by Infinitum and it is included in the deposit return scheme. We find ourselves becoming increasingly professionalised," says Romseland.

Hervik now has 13 employees who "take care of everything that needs to be done in a small business". This gives them shorter decision-making paths and the ability to change course quickly when needed. Like in 2020, when the plan was to make a green smoothie with kiwi and apple, and the result became a jam.

"We believed in the smoothie, which tasted good and looked cool. Then the pandemic hit and the market where we would have sold it was closed. What do you do when you have a cold store full of kiwi? You make jam," says Romseland.

Using up the leftovers

All in all, he believes that Hervik is good when it comes to food waste, a legacy from his grandfather's day.

"Practicality is important when you operate a small business in the country. If you have systems for it, it works," he says.

As far as possible, Hervik uses local berries and fruit in its products. If the factory has a surplus of fruit and berries, it is squeezed into juice, for example. The same waste from the press is collected by a local farmer for composting.

"At Hervik, we use all the leftovers. So in that respect, you could say that the circle is being closed," says Romseland.

REGULAR CUSTOMERS: According to Tor Romseland, the factory in Hervik has customers who have been buying the same products for generations.

Ski festival with recycling for powder snow

The world's largest ski touring festival is Norwegian and has been held for more than 20 years. For the last five years, it has been part of the 'Pant for pudder' (Recycle for Powder) environmental campaign.

Jotunheimen's most rugged and imposing peaks lie close together in a mountain range known as Hurrangane. With all of 23 summits rising more than 2,000 metres above the end of the Sognefjord, this has become a very popular location for both mountaineering and ski touring. The idea for the world's largest ski touring festival, High Camp Turtagrø, was made a reality there more than 20 years ago. Since 2016, it has been part of an environmental campaign focusing on deposit return and recycling.

Powder snow is under threat

"Powder snow is skiers' and snowboarders' white gold. It is also under threat from the major environmental challenges we are facing. This has led to a strong commitment to environmental action, including deposit return, among this group," says Torkel Karoliussen, project manager for 'Pant for pudder'.

"There's a lot to be gained by returning empty bottles and cans, as it saves energy and greenhouse gas emissions. In this way, we can help work to ensure that light, dry snow continues to fall on the mountains in the future. Protect Our Winters, the snow enthusiasts' own environmental organisation, collaborates with Infinitum on the 'Pant for pudder' campaign, which, needless to say, is represented when hundreds of us come together for the festival at Turtagrø," says Karoliussen.

Since the skiing magazine Fri Flyt launched High Camp Turtagrø over 20 years ago, the concept has grown into the world's largest event of its kind. It has also spread, with camps in Hemsedal, Lofoten, Lyngen, Sunnmøre, Romsdalen and Bodø. With a limited number of places at each camp, the tickets sell out in record time year after year. In 2022, more than 300 people travelled to the first camp at Vatnahalsen by eco-friendly public transport on the Flåm Railway, as there is no road up to this mountain hotel, which is 811 metres above sea level, while 600 people met for the festival at the Turtagrø Hotel in Hurrangane.

Fri Flyt High Camp

What: Ski and snowboard touring festival
Who: Organised by Fri Flyt skiing magazine
Where: Turtagrø and Vatnahalsen in 2022 and 2023.
How: Brings together hundreds of ski touring enthusiasts every year.
Why: Joint tours, courses, films, talks, concerts and socialising

DEPOSIT RETURN BARRELS Around Turtagrø, ski fans find deposit return barrels that make it easy to dispose of empty bottles and cans.

Encountering return points

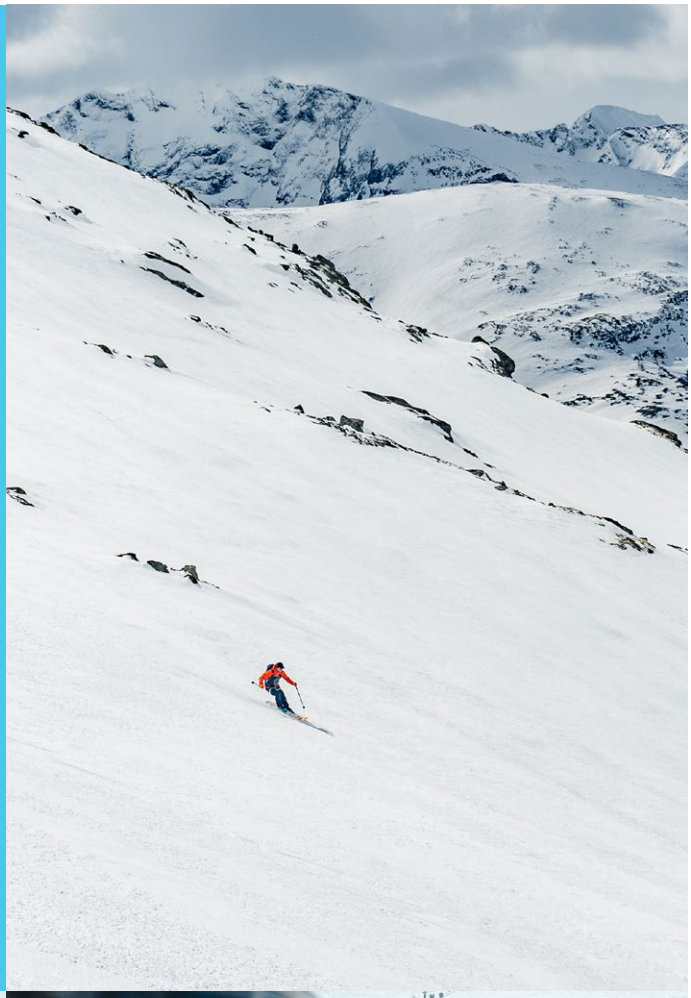
All these people come together for their own or guided tours, to take part in courses, to enjoy concert, film and talk programmes, and, not least, to meet like-minded people and enjoy socialising both during the day and in the evening.

"They also encounter the specially designed return points from Protect Our Winters and Infinitum, which take care of empty bottles and cans while communicating an important message right at the heart of the Norwegian winter sports community," says Karoliussen.

'Pant for pudder' collectors are available in the form of Big Bottles made from recycled plastic and deposit return barrels made from recycled oil drums. These have long been a fixture at a number of Norway's ski resorts too, including Geilo, Hemsedal, Myrkdalen and Hafjell, not to mention the Snø indoor arena in Lørenskog. In 2022, the 'Pant for pudder' campaign was also represented at summer snow events, both at Folgefonna during Norway's largest summer ski camp for children and young people, and at Strynefestivalen, where hundreds of skiers, snowboarders and action sports enthusiasts come together to celebrate the change of season.

'Protect our Winters Norway' (POW) is winter sports people's very own environmental and climate organisation. POW Norway works to change attitudes and raise awareness of the environment and climate in the skiing and snowboarding community. 'Pant for pudder' is a project that POW Norway has been running in collaboration with Infinitum since winter 2016/2017.

The aim is to inform people about the importance of returning their empties and encourage them to fundamentally rethink their attitude to the circular economy. Return points where people can dispose of their empty bottles and cans are set up at various festivals and events throughout the winter.



GUIDED TOUR: Kjell Olav Maldum shows Espen Barth Eide around the sorting plant in Fetsund.

“Recycling is an important part of the solution”

The Norwegian government is working to solve the global problem of plastic pollution. “Infinitum shows that it is possible to make a living from looking after the environment,” said Espen Barth Eide, Norway’s Minister of Climate and the Environment, when he visited Infinitum’s facility.

“Learning to reuse plastic and create whole value chains for collection, recycling and new production is a very important part of the solution,” says Barth Eide.

He was impressed and inspired by his visit to the sorting plant.

“I found it very exciting to see it in practice. I knew it happened, but it is always different to be hands on and experience that this is a well-developed value chain that really delivers, and helps us reduce plastic waste and lower greenhouse gas emissions more than we could have done otherwise,” says Barth Eide.

More systems like Infinitum

“We believe the rest of the world can learn from our experiences in Norway,” says Barth Eide.

It was agreed in March that the UN would draw up a legally binding agreement to stop plastic pollution around the world, and the Norwegian government was an important driving force.

Among other things, the agreement will require countries to reduce their consumption of single-use plastic and ensure that the plastic produced is designed to be reused.

“We have to put collection systems in place where new plastic is made using old plastic,” says Minister of Climate and the Environment Espen Barth Eide.

Deposit return saves the electricity consumed by 65,000 households

More recycling can make a substantial contribution to cutting electricity consumption. The DRS for bottles and cans alone saves 1 TWh of electricity a year. This is equivalent to the electricity consumed by 65,000 households.

"When electricity prices were low and there was more than enough electricity, the energy aspect of recycling aroused little interest. Now more and more people are seeing this benefit in deposit return," says Kjell Olav Maldum, Managing Director of Infinitum.

Recycling cans and bottles uses one seventh of the energy required to make new materials. For Norway, this makes a difference of 1 TWh per annum, equivalent to the electricity consumed by 65,000 households. At NOK 5 per kWh, this electricity would cost NOK 5.2 billion.

Resource-efficient

"The DRS is best known for using materials in a sensible way, in a resource-efficient circle. With the shortage of electricity, it's important to highlight the fact that mechanical recycling also saves a huge amount of energy," says Maldum.

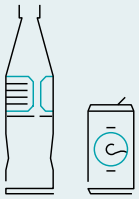
Large energy benefit

"Transporting, sorting and recycling plastic and aluminium requires energy too, of course, but just one seventh of the energy it would take to make new packaging. Our calculations also include the energy benefit that would have come from incinerating the empties in a district heating plant," he explains.

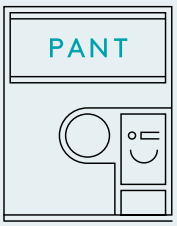
"The large energy benefit should inspire more recycling in Norway, and we are also seeing more countries wanting to introduce a DRS like ours," says the Infinitum boss.

FACTS

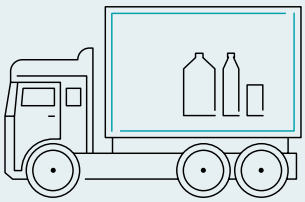
- **In 2022, Norwegians returned more than 1.5 billion cans and bottles.**
- **Infinitum recycled everything, 21,600 tonnes of plastic and 13,200 tonnes of aluminium.**
- **The energy benefit from this compared with producing new packaging is 1 TWh.**
- **According to Statistics Norway, average annual electricity consumption in Norway is around 16,000 kilowatt hours (kWh) per household. 1 TWh is therefore equivalent to 65,000 households.**



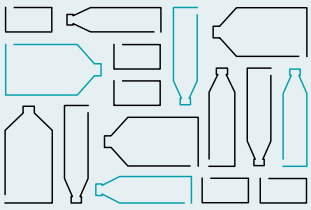
Drink
The consumer buys and enjoys a refreshing drink.



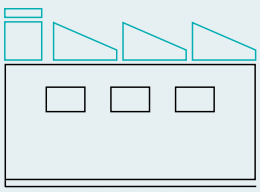
Deposit return
Empty cans and bottles can be returned wherever they are sold. The machines crush the packaging for eco-friendly transport.



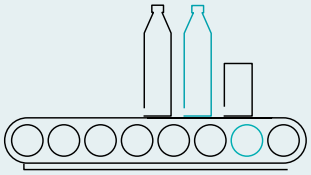
Return transport
The bottles and cans are sent to Infinitum on lorries that have delivered goods to the stores.



Sorting and crushing
At Infinitum, the bottles and cans are sorted before being crushed even more.



Recycling
The materials are recycled into preforms for new bottles and cans.



Producer
The drink manufacturers put drink in bottles and cans made entirely or partly from recycled material.

INFINITUM

A circular deposit return system

For us Norwegians, the deposit return system is a given. For specialists from all over the world, it is brilliant and remarkable.

Climate, recycling and plastic in the world's oceans are attracting increasing attention around the world. Huge quantities of drinks packaging are part of the problem, and retail, industry and authorities are looking for solutions. The best solution they have found is in Norway. No other country is quite as good at collecting and recycling cans and bottles. The key to this success is eco-thinking and efficiency in every link of the chain, and thinking circular.

Once the consumer has treated themselves to something refreshing to drink, they take the empty bottle or can back to collect the deposit. They can do this wherever deposit return drinks are sold.

The reverse vending machine crushes cans and bottles so that they take up as little room as possible when transported.

Onward transport from the store uses empty space on the lorries that are already at the store. Then the empties are collected at haulage terminals before being transported to one of Infinitum's three facilities.

Sorting is done at Infinitum's three facilities in Bjerkvik, Trondheim and Fetsund. Plastic and aluminium are separated before being crushed further for volume-efficient transport for recycling.

The materials are recycled into preforms for new bottles and cans. At the drinks manufacturer, they are filled with another drink and land back on the shelf in store until someone is thirsty again. And so the cycle continues, from bottle to bottle and can to can.


ESTAURANT
Neat Dress
Essential

Ireland introduces a deposit return system

Delegations from all over the world visit Infinitum to learn about the Norwegian DRS. Ireland is setting up a DRS based on Infinitum's model.

"We have a lot of parties from other countries wanting to visit us, and the fact that the DRS attracts international interest is very motivating," says Kjell Olav Maldum, Infinitum's Managing Director.

One of the countries to be inspired was Ireland. Representatives from there first visited in 2018, and they are now well on the way to implementing a DRS. The EU Plastics Directive requires member states to have a collection rate of 90 percent for plastic bottles by 2029, something Norway has had for many years, and this is speeding up change.

Best practice

"A DRS is the only solution if our collection rate is to be as high as the EU requires. When we began looking around for best practice and successful solutions a few years ago, we soon got in touch with Infinitum. They're the world leaders in deposit return," says Tony O'Sullivan of Re-turn.

He is the project manager for the new DRS in Ireland and says that they have been planning to introduce such a system for many years, but have now reached the stage of setting a launch date: 1 February 2024.

"We've set up a separate company, which is very similar to Infinitum. It's called DRSI (Deposit Return Scheme Ireland). We're working with stakeholders, manufacturers and vendors in order to prepare them for the future system," he explains.

"No two deposit return systems are completely identical, because different countries have different circumstances. But we've taken on the core principles and business model from Infinitum, which formed the basis for our system," says Tony.

Broad support

He also explains that it can be challenging to get vendors (supermarket chains, stores) and the general public to understand that investment in reverse vending machines and infrastructure is necessary for collection and ensuring that the bottles and cans are recycled. Consumers also need to understand that the deposit is not a price increase, but money they get back when they return their empties. He also says that everyone needs to understand that drinks packaging is too valuable to be thrown away and so treat it as such by returning it for recycling.

"Broad support for and an understanding of the benefits of introducing a DRS will go a long way to countering any opposition. This understanding will ensure a successful introduction of the DRS," says O'Sullivan.

"I think it's great that what we do at Infinitum can help other countries to introduce deposit return systems so we ensure that all empty bottles and cans are collected for recycling. It's a simple action that means a lot for the climate," says Maldum.

Bjerkvik best in class for energy efficiency

Infinitum's new facility in Bjerkvik has been given an A energy rating by Enova, which means that it scores top marks for energy efficiency. "Our goal is for our operations to be as climate-friendly as possible, so this is something we're very proud of," says Kjell Olav Maldum, Managing Director of Infinitum.

The energy rating, which indicates how energy-efficient the building is, is calculated on the basis of various tests and the materials used, such as the type of heat pump and windows.

Energy-friendly solutions

"We went for the most energy-friendly solutions, even though they cost a bit more," says Maldum.

The facility has been built in such a way as to make even the production line inside as efficient as possible.

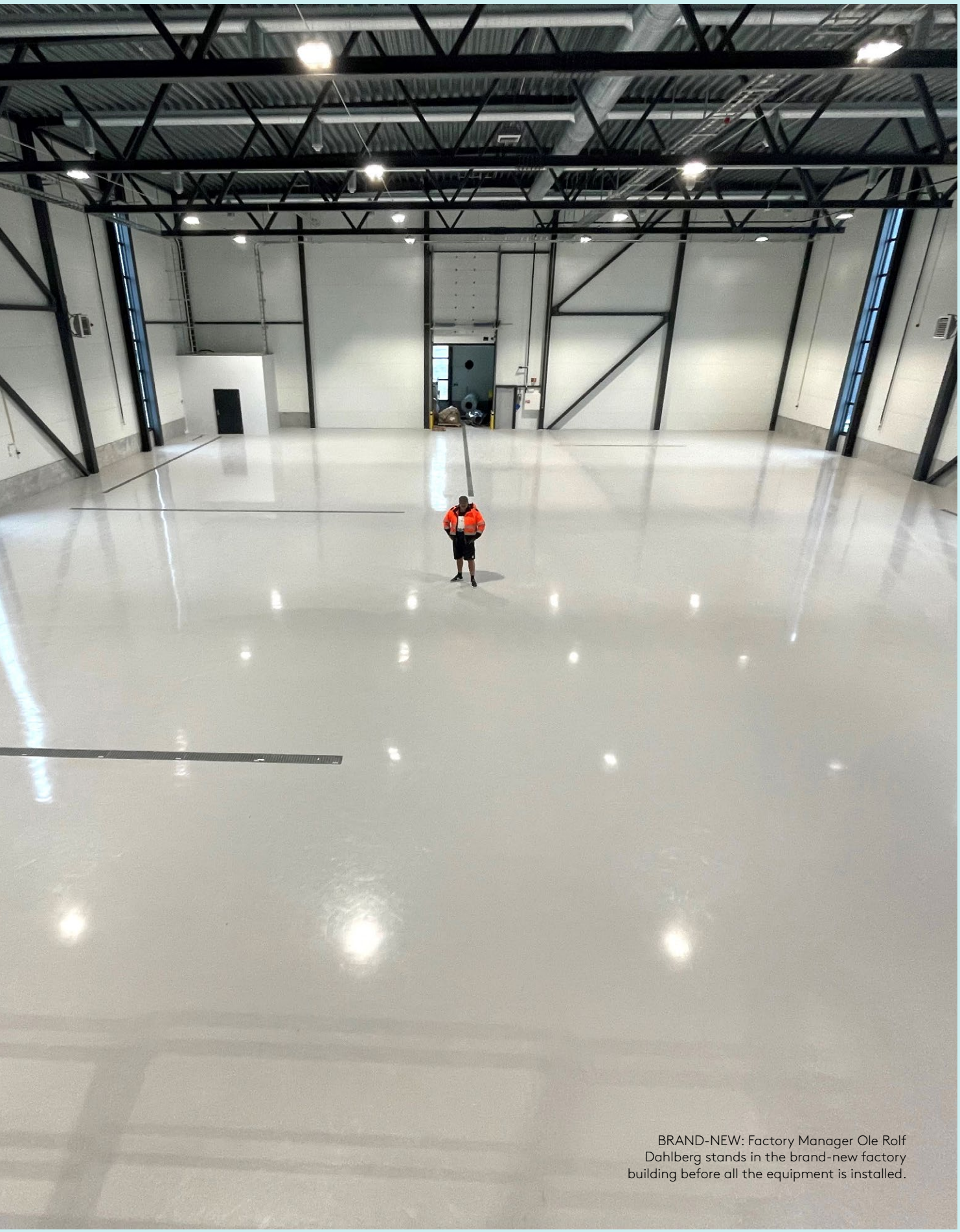
"This time we've built higher so that we can benefit from gravity wherever possible," Maldum explains.

Start-up in 2023

Operations are scheduled to start in spring 2023, with a test period before all operations are transferred from the current facility, which Infinitum leased a few kilometres away.

Bottles and cans will be sorted and compressed into square bales.
Bring, which occupies the site next door, will deliver the bales of plastic and metal to Narvik for onward transport by rail for recycling. The plastic will go to Veolia PET Norge, the recycling plant for plastic bottles, which is right next to Infinitum's main facility in Lillestrøm Municipality. The aluminium from the cans will be sent to Novelis in the UK, the world's largest recycler of aluminium from can to can.

"We're constantly working to improve the DRS to make it even easier and more environmentally friendly to return empties. Generally speaking, people are good at returning their empties. We're happy about that, because it means we can reuse the material for new bottles and cans, as many times as possible," says Maldum.



BRAND-NEW: Factory Manager Ole Rolf Dahlberg stands in the brand-new factory building before all the equipment is installed.

Circular economy in Arendal

How should sustainable packaging be ensured? In a live podcast during Arendalsuka, a small panel tried to come up with some clear answers.

The terms circular economy and sustainability were among those most frequently heard during Arendalsuka, a week-long political gathering attended by around 150,000 people. But what do they really mean? And what progress has Norway made with these terms compared with other countries?

These were some of the questions that Kjell Olav Maldum from Infinitum, Gunnar Hovland from Tine and Christine Lundberg Larsen from Amesto Footprint got to answer at a live recording of the Lederliv podcast.

Plastic is most eco-friendly

The jumping-off point for the conversation was Norwegian consumption and the resulting challenges linked to packaging: Who is responsible for seeing to it that it becomes more sustainable, and what instruments are being used to bring this about? Tine, for example, produces 30,000 tonnes of packaging a year. How can they do so in the most environmental way possible?

If you want to know the answer, in this case the panellists were more or less in agreement. Plastic is most eco-friendly because it is most efficient to recycle.

The biggest talking point for the panel discussion was, in any case, the circular economy – and goods in short supply. Because, as the panellists pointed out, where their grandparents had to scrimp and save with everything, our generation has to scrimp and save when it comes to natural resources.

"Life doesn't have to get worse for that reason, systems just have to get better," said Christine Lundberg Larsen. As someone who supplies digital solutions for companies' carbon accounts and other services, she believes that sustainability will be a competitive advantage in the long run. In order to succeed, Lundberg Larsen claimed, companies will have to innovate in their business model.

"Now's the time for us nerds," she stressed.

Value chains must be closed

According to Lundberg Larsen, sustainable data should be at least as important

Arendalsuka:

- Arendalsuka was first held in 2012, with 50 events and 30 stands in the streets. Since then, Arendalsuka has grown, attracting more participants every year.
- In 2022, around 150,000 people were recorded in the centre of Arendal.
- Arendalsuka 2023 is being held from Monday 14 to Friday 18 August (week 33).

as financial data within a decade.

"For it to work, circular operation will have to pay," she said.

Agreeing on a common definition of what a circular economy should be has nevertheless proved a challenge in both Norway and the rest of the world.

"Everyone agreed that there are many definitions and they are not unambiguous. Going forward, we must work to close the different value chains in order to see and measure the results," said Kjell Olav Maldum in summary.

As things stand, Infinitum represents the most circular system in Norway, with the most experience. Infinitum was also singled out as the company known for having the best DRS for cans and bottles in the world, and Tine for having a high collection and recycling rate for cardboard.

But where will we be in ten years?

According to the panellists, it will depend on how good the underlying regulations are. As things stand, that may be what falls short the most, they claimed. And, according to Christine Lundberg Larsen, far more products need to be promoted into the waste hierarchy.

In ten years, we must be able to make use of resources we have available throughout the year. Currently we are often in a situation where we have used up our resources in May, said Gunnar Hovland.

"And we have to keep returning everything, all of the time," Kjell Olav Maldum urged.

ARENDAL: Ole Christian Apeland (L to R) chaired the circular economy debate, in which Christine Lundberg Larsen from Amesto, Gunnar Hovland from Tine and Kjell Olav Maldum from Infinitum took part.

More than two million recyclable festival cups collected

In summer 2022, a number of festivals and concerts used the new recyclable plastic cups, which were collected by Infinitum.

"It means that around 14 tonnes of plastic get recycled instead of being incinerated," says Kjell Olav Maldum, Managing Director of Infinitum.

The plastic cups are made from PET and recycled in the same way as plastic bottles. More than two million of them were collected over the summer.

"The plastic cups have many advantages. They are light and don't take much plastic to produce, and they can be recycled even if they get crushed," Maldum explains.

Environmentally friendly solution

"These plastic cups are the most resource-efficient solution we currently have. They're easy to collect, we have an efficient system for recycling them to make new ones, and they're in a form and shape that people are familiar with. It takes much less energy to recycle them than to use reusable cups that have to be washed," says Maldum.

Hansa and Ringnes are among the manufacturers who offer their customers such plastic cups.

"Our customers welcome the initiative. Sustainability is on organisers' agendas, with most welcoming initiatives that contribute to greener festivals. Most of our major festival customers tried out the festival cups this summer, and we hope to get them all on board for the 2023 festival season," says Stina Kildedal-Johannesen from Hansa.

The festival and concert venues that used the plastic cups included Tons of Rock, Bergenfest, Hvalstrandfestivalen, Kadetten, Neon and Ekstremsportveko.

All of 926 sacks of empty plastic cups were collected from Tons of Rock.

"We now have a strong focus on our environmental footprint, and we want to be one of the best in the country when it comes to the environment. We have a big festival, and it's great to show that we can accomplish this. Finding the most eco-friendly way to serve drinks is one of the steps we've taken," Eirin Martina Berg, Tons of Rock's Environmental Coordinator, explains.

Sorting is important

"We created a system that made it easy for people to sort the plastic cups. We still had our work cut out with sorting afterwards, as nothing else must be left in with the cups. We're therefore going to look at solutions for making things even more efficient," says Berg.

Trondheim Stage used the cups at its concerts too. Trondheim Stage often has audiences in excess of 10,000 at each concert in the summer season, and its summer programme included concerts by Brad Paisley, Toto and Bjørk, as well as Trondheimsnatt with Åge Aleksandersen and Sambandet.

"The new scheme exceeded all expectations; it was simple to handle before, during and after. We found that good signage, information and good solutions throughout the process were important in terms of getting sorting right first time," says Per Kristian Aasen, who is responsible for sustainability and the environment at Trondheim Stage.

"We're working on our environmental profile, and focusing on, among other things, reusing equipment and employing electric vehicles in addition to having recyclable plastic cups. We'll definitely continue with these plastic cups," says Aasen.

Bringing more on board

Infinitum's task now is to evaluate this year's scheme so that it can be made even simpler for next year.

"It was great fun to try out the cups in practice, and we ensured that around 20 tonnes of plastic were recycled. We're now hoping to bring more actors on board for next year," says Maldum.

RECYCLED: The festival cups are recycled in the same way as plastic bottles.


ESTE
NÆR?
PANTELOTTERIET
Røde Kors
PANT

Run for the environment on the DRS Roarer

On the DRS Roarer, your body will tell you how much energy is saved by recycling bottles. The DRS Roarer was on tour at shopping centres in East Norway during the first week of August.

"The DRS Roarer is a fun activity that enables you to feel how much energy you save when you return empties. It's our way of showing just how efficient deposit return is for the environment," says Randi Haavik Varberg, Communications Director at infinitum.

Infinitum has built three DRS Roarers in collaboration with the Vitensenteret science park in Ås. One of them is permanently based in Ås, while the other two are mobile and frequently go on tour. During the first week of August, the two DRS Roarers were on tour at various shopping centres in East Norway.

Hamster wheel for humans

The DRS Roarers are like big wheels that you run inside. A bit like a hamster wheel for humans. When you run on the DRS Roarer, it generates energy, with the number of bottles recycled telling you how much energy you are producing.

Recycling a single bottle saves enough energy to charge your mobile all of 70 times, for example. And the more bottles you run off the energy for, the louder the machine growls – hence the name.

DRS Roarer tour

The Liertoppen shopping centre was one of the locations visited by the DRS Roarers in August. 86-year-old Carl Otto was one of the many people who had a go on the machine.

"It's great to know that the pump still works, but it was challenging as well. I think it's important to recycle and always return your empties," says Carl Otto.

"Running and seeing how much energy we used was fun. We learned how much energy there really is in bottles. We always return empties," say Herman Haug Hansen (11), Mia Haug Hansen (8) and Adele Bune (9), who had a go on the DRS Roarer outside the Down Town shopping centre in Porsgrunn.

"Children and adults alike enjoyed having a go on the DRS Roarer in the places visited on the tour. Some competed with friends to see who could run fastest and score more recycled bottles than their friends managed. I have the impression that many people think it's a great way to learn about the impact of returning empties," says DRS Roarer host Eira Riiser Moe.

Karsten Warholm has a go

Karsten Warholm had a go on the DRS Roarer too, with the world champion finding out for himself how hard it was.

"Norwegians are world champions when it comes to recycling, but here at Infinitum we're working to ensure that every last bottle and can is returned. The DRS Roarer is a fun way of reminding people of the environmental impact of returning empties, and motivating more people to reach our target of 100 percent collection. Every empty returned is recycled," says Randi Haavik Varberg of Infinitum.

Recycle for animals

Throwing your empty can or bottle out of the window or onto the verge may feel easy, but it can have fatal consequences.

"In actual fact, this action can be the beginning of the end for cows and other animals in the countryside," says Randi Haavik Varberg, Communications Director at Infinitum.

Ending up in fodder

In 2022, Infinitum ran an information campaign highlighting a problem that not many people are aware of. Every year, animals die as a result 'hardware disease'. Hardware disease is a complex condition caused by animals eating sharp or pointed foreign bodies. It is an extremely painful process in which undetected empties and litter end up in their fodder.

"The 'Recycle for animals' campaign aimed to highlight the issue and give people even more motivation to return their empties," says Varberg.

"Hardware disease is not a new problem, but in our experience there is little awareness of the possible consequences of throwing empties and litter away in the countryside. When the campaign film was being shot, we spoke to farmer Lars Kristian Grøndahl, who talked about colleagues who had lost cows to hardware disease and his fear that the same might happen to him," she says.

HARMFUL: When chopped-up aluminium cans end up in cattle feed, it can have harmful consequences.

Thousands of deaths

According to figures from the Norwegian Animal Protection Alliance, as many as 4,267 cows died as a result of hardware disease between 2018 and 2020. A TINE study revealed that more than 6,000 dairy cows showed symptoms and fell ill or died between 2013 and 2017.

"With the campaign, we wanted to remind everyone that nothing should be thrown away in the countryside. Especially not bottles and cans, which can be returned and given a new lease of life," says Varberg.

"We measure the performance of all our films, through media companies OMD and Annalect. 'Recycle for animals' produced very good results in terms of awareness and sender identity, after a mere three weeks just in cinemas and on social media. So we decided to run it on television too," says Varberg.

The film and manuscript were produced in collaboration with PULS Communication and production company Fenomen, who specialise in documentaries.

The deposit return story

Norway's deposit return scheme for reusable bottles was set up in the early 1900s. When, in the 1980s, retailers wanted recyclable disposable packaging that could be crushed before being returned, it became the start of the present deposit return scheme. Jan Tore Sanner, former Minister of Finance, returned the very first bottle for recycling in 1999.

1995:
The DRS is approved by the Norwegian Pollution Control Authority, now the Norwegian Environment Agency.

1996:
Norsk Resirk is founded with retailers and industry as equal shareholders through their industry associations.

1999:
Norsk Resirk's deposit return system for drinks cans and bottles is set up. The system is open to all. The first can is returned through the system on 3 May 1999.

2000:
The first recyclable bottles are registered in the DRS. Norsk Resirk opens its own facility at Alnabru in Oslo.

2003:
In just the fifth year of operation for the company, 92 percent of all cans and 77 percent of all drinks bottles are collected through the DRS.

2004:
Norsk Resirk has another successful year with an increase in the number of both drinks cans and recyclable plastic bottles collected, leading to a reduction in the environmental tax of 93 percent on cans and 80 percent on PET.

In 1999, former Minister of Finance Jan Tore Sanner returned the very first can to Norsk Resirk's new DRS for bottles and cans. The then chairman Øyvind Winther and Managing Director Jarle Grytli were also present.

2006:
A production facility opens in Bjerkvik to serve Northern Norway.

2007:
Kjell Olav Maldum takes over from Jarle Grytli as Managing Director.

2008:
TINE, Norway's largest producer, distributor and exporter of dairy products, launches drinks bottles for the first time in 40 years. The decision to use bottles is down to the DRS.

2009:
The Norwegian Climate and Pollution Agency gives its approval for DRS-labelled bottles and cans used in waste-to-energy recovery to count towards Infinitum's collection rates as well. These drinks containers account for around 4 percent of the overall collection rate for cans and around 8 percent for bottles.

2011:
The environmental tax on bottles is removed because the collection rate has exceeded 95 percent of packaging sold. Small importers are invited to join the DRS.

2012:
The environmental tax on cans is abolished because the verified return rate has exceeded 95 percent of packaging sold.

Mack Bryggerier, Ringnes and Coca Cola Enterprises switch from refillable bottles to recyclable PET. The other drinks manufacturers follow suit.

A new production facility opens in Heimdal, just outside Trondheim, to serve Central Norway.

2013:
A new production facility opens at Heia in Fetsund to serve Southern Norway. A new production facility opens in Bjerkvik to serve Northern Norway.

2014:
Norsk Resirk changes its name to Infinitum. The name and logo are inspired by the infinite number of times bottles and cans can be recycled in the DRS.

2017:
Producers worldwide change their mind and take a positive view of deposit return systems and their responsibility as producers. Sky News broadcasts a piece on the Norwegian DRS, generating an influx of visitors from all over the world wanting to learn more about Infinitum's deposit return scheme. The Ministry of Climate and Environment decides to increase deposit rates from NOK 1.00 and NOK 2.50 to NOK 2.00 and NOK 3.00.

2018:
Infinitum achieves its highest ever collection figures, with 88.6 (95.1) percent of bottles and 87.3 (98.9) percent of cans collected. Vinmonopolet, Norway's state-owned alcohol retailer, requires manufacturers to switch to PET and cans with a deposit.

The EU is pushing towards a circular economy, adopting ambitious targets and strict requirements for both collection and material recycling. PET bottles must be made from at least 25 percent recycled plastic by 2025 and 30 percent by 2030. The collection rate for drinks bottles must be at least 77 percent by 2025 and 90 percent by 2029.

The deposit on bottles and cans is doubled from NOK 1.00 to NOK 2.00, the first increase since 1986. The deposit on bottles and cans larger than 500 ml also increases from NOK 2.00 to NOK 3.00.

2019:
Infinitum celebrates the 20th anniversary of the current deposit return scheme and achieves a collection rate for both bottles and cans of 90 per cent, ten years before the EU requires 90 per cent.

Construction of the recycling plant at Heia in Lillestrøm Municipality begins. Extended producer responsibility becomes an increasingly important element in the EU's efforts to create circular economies for packaging. Deposits on DraughtMaster beer kegs are introduced.

2020:
In the year of Covid-19, Infinitum sets a record with a deposit return rate of 92 percent and more than 1.4 billion cans and bottles for recycling. Deposits on festival cups and recycling at Infinitum. Deposits on KeyKeg beer kegs are introduced.

2021:
New partnership with Novelis for aluminium, plastic bottle recycling plant opens at Heia, and recyclable plastic beer glasses introduced.

2022:
A new sorting plant at Bjerkvik in Narvik Municipality, full-scale use of recyclable festival cups at various events, large and small, and several foreign delegations visit the Heia plant after the pandemic.

BRAND-NEW: The new sorting plant at Bjerkvik was completed in 2022.

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Benno Graser
Board member
DMF (Engrospartner AS)

Deputy board members 2022:

Jens Olav Flekke
DMF (DMF)

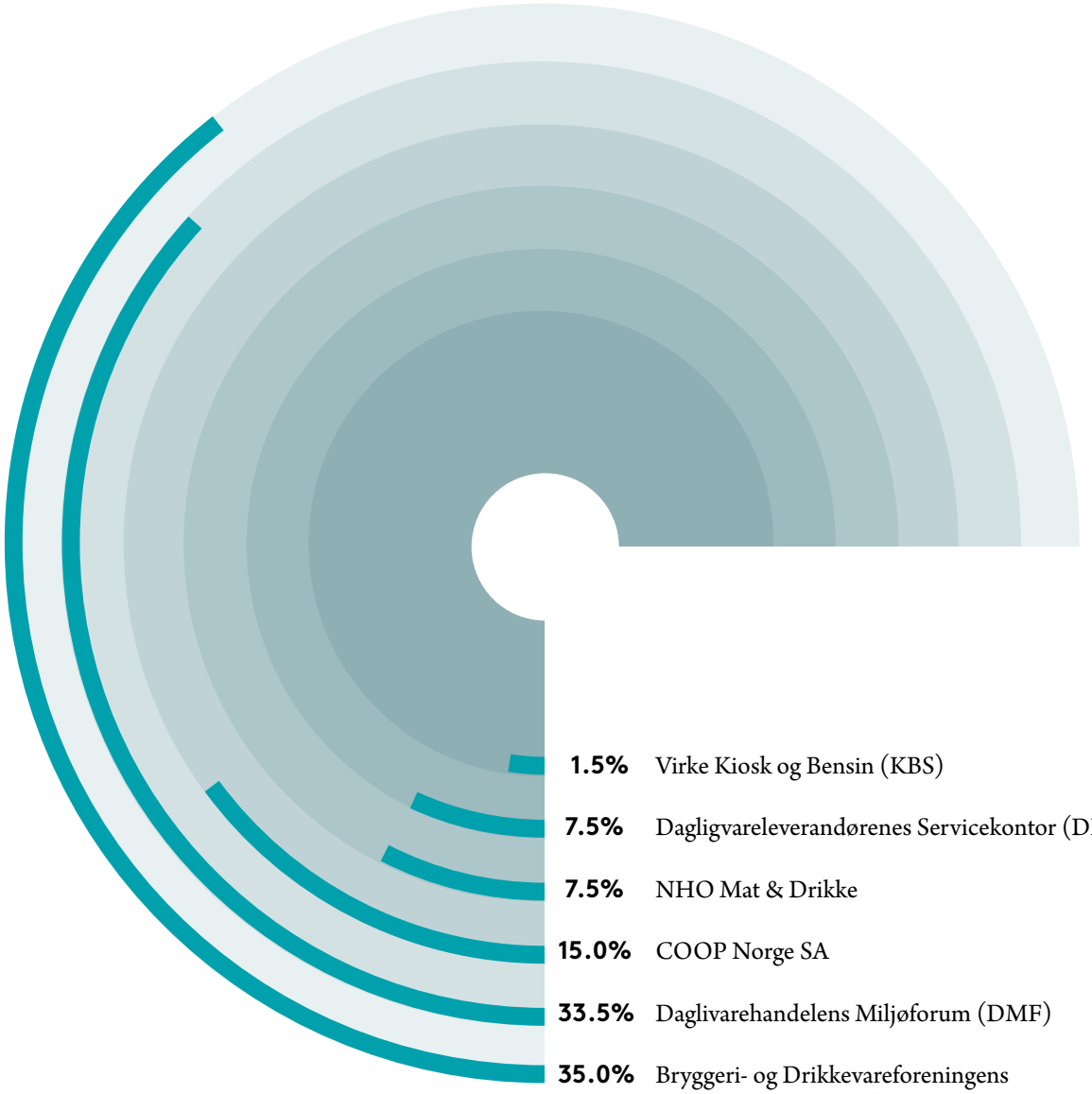
Torgeir Løftingsmo
CNH (CNH)

Siv Grønning
BS (Ringnes AS)

Erlend Fuglum
BS (BROD)

Petter Haas Brubakk
DLF (NHO Mat & Drikke)

Infinitum's owners



1.5%	Virke Kiosk og Bensin (KBS)
7.5%	Dagligvareleverandørenes Servicekontor (DLS)
7.5%	NHO Mat & Drikke
15.0%	COOP Norge SA
33.5%	Daglivarehandelens Miljøforum (DMF)
35.0%	Bryggeri- og Drikkevareforeningens Servicekontor AS (BS)

Financial statements

Infinitum AS - Income statement (figures in NOK 1,000)

Operating revenues and expenses	2022	2021
EPR revenues	49,500	37,257
Deposit return revenues	3,679,057	3,827,089
Sale of collected materials	455,850	315,768
Other operating revenues	49,821	47,931
Net operating revenues	**4,234,228**	**4,228,045**
Deposit return expenditure	3,360,150	3,535,526
Handling fees	318,868	332,149
Transport costs	208,653	174,334
Other production costs	95,075	89,067
Total operating expenses	**3,982,746**	**4,131,076**
Profit from operating activities	**251,482**	**96,969**
Admin, marketing and depreciation	81,112	75,527
Operating profit	**170,370**	**21,442**
Net financial items	9,496	2,248
PROFIT AFTER FINANCIAL ITEMS	**179,866**	**23,690**

Key figures

Supply chain	No. of cans	Tonnes of cans	% added to market	No. of PET	Tonnes of PET	% added to market
Total sales	1,008,569,001	13,939	-	643,673,637	23,499.4	0%
Change in value chain inventory	9,866,791	137	-	9,299,083	365.4	0%
Added (Sales + Change in value chain inventory)	1,018,435,792	14,076	100%	652,972,720	23,864.8	100%
Total returned through reverse vending machines	**921,069,327**	**12,757**	**90.6%**	**599,970,546**	**22,145**	**92.8%**
Recycled from central sorting plant	7,274,994	102	0.7%	1,069,338	35	0.1%
Recycled from slag sorting	39,049,649	545	3.9%	-	-	0.0%
Recycled from wasted sorted at source	7,640,473	104	0.7%	1,771,874	58	0.2%
Waste-to-energy	9,719,357	136	1.0%	34,930,697	1,147	4.8%
Total recycled from waste	**63,684,472**	**887**	**6.3%**	**37,771,909**	**1,240**	**5.2%**
Total recycled	**984,753,799**	**13,644**	**96.9%**	**637,742,455**	**23,386**	**98.0%**
Incineration waste in bottom ash	14,304,520	200	1.4%	-	-	-
Energy recycling incineration	1,550,382	22	0.2%	5,438,494	179	0.7%
Unknown allocations and uncertainty in analysis	17,827,090	211	1.5%	9,791,771	300	1.3%
Total not returned	**97,366,465**	**1,319**	**9.4%**	**53,002,174**	**1,719**	**7.2%**
Total	**1,018,435,792**	**14,076**	**100%**	**652,972,720**	**23,865**	**100%**
Foreign items	35,029,950	484		3,800,000	139	

Balance sheet as at 31 December (figures in NOK 1,000)

Assets	2022	2021
Non-current assets		
Plant and equipment		
Land, buildings and other real property	229,003	157,708
Plant and machinery, equipment, fixtures, etc.	84,949	50,624
Plant and equipment	313,952	208,332
Non-current financial assets		
Net plan assets	0	145
Non-current financial assets	0	145
Total non-current assets	**313,952**	**208,477**
Current assets		
Receivables		
Trade receivables	357,336	347,247
Other receivables	22,491	28,024
Total receivables	379,827	375,271
Cash at bank and in hand, etc.	377,110	353,837
Total current assets	**756,937**	**729,108**
TOTAL ASSETS	**1,070,889**	**937,585**

Equity and assets	2022	2021
Equity		
Contributed equity		
Share capital (200 shares in denominations of NOK 7,500)	1,500	1,500
Total paid-in capital	1,500	1,500
Retained earnings		
Other capital	126,039	-53,827
Total retained earnings	126,039	-53,827
Total equity	**127,539**	**-52,327**
Liabilities		
Pension liability	1,435	0
Total provisions	1,435	0
Current liabilities		
Trade payables	199,996	208,863
Unpaid government charges and special taxes	3,443	3,442
Other current liabilities	8,734	8,865
Provision for deposit liability	729,742	768,742
Total current liabilities	**941,915**	**989,912**
Total liabilities	**943,350**	**989,912**
TOTAL EQUITY AND LIABILITIES	**1,070,889**	**937,585**

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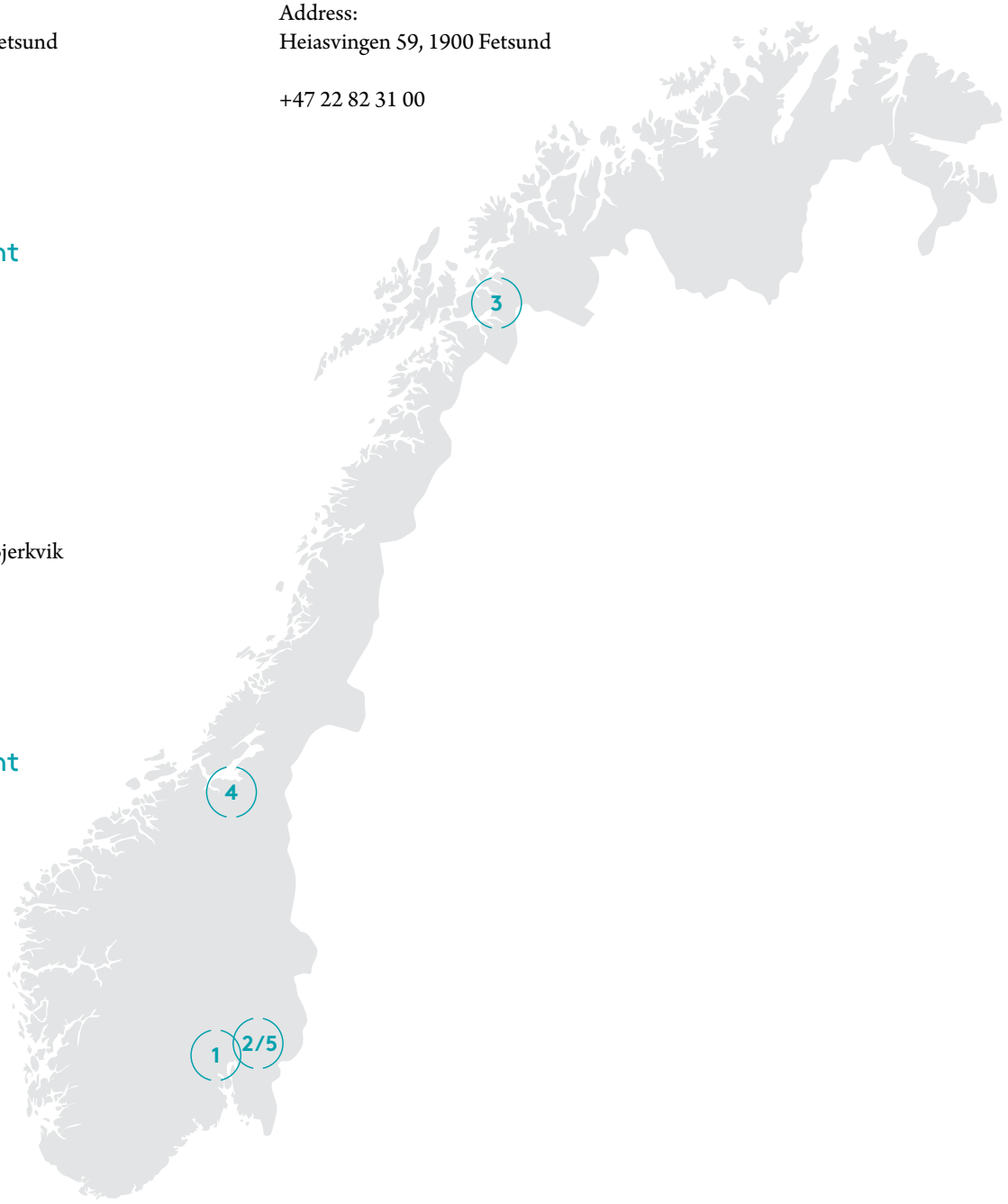


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MAX
PILSNER
1516
Hansa

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