

Annual Report 2023

RESILIENCE

AVR.

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Rob de Fluiter Balledux, CFO, and Yves Luca, CEO

Resilience

Yves Luca & Rob de Fluiter Balledux

Many far-reaching events took a toll on AVR's resilience in 2023, with the fire on 21 September being an all-time low. CEO Yves Luca and CFO Rob de Fluiter Balledux share their experiences of this memorable year.

How do you two look back on 2023?

Yves: "On 21 September, fire broke out in our plant, bringing the whole business in Rozenburg to a standstill. Up till that day, and despite all the previous setbacks, we were performing ahead of budget. It would have been a good year, financially, in spite of everything that went wrong. In January, a balloon in the cooling water pipe burst during work on the new drainage system of the bottom ashes. The recount of the water damage took several weeks and that had a significant impact on the operational result. We then heard, to our disappointment, that the acquisition of Amsterdam waste processor AEB was not going ahead. We were also faced with big

problems with laughing gas cylinders, which were delivered along with our clients' household waste and exploded in the ovens. To cap it all, we had a fire that brought large parts of our installations in Rozenburg, which is where we earn our money, to a standstill. It's serious, but precisely because of that it's further strengthened the bond between our people, which is something we started working on two years ago. Employees started doing things for each other. And people who were thinking about moving on said: 'I'm staying on now.' They all have a fondness for AVR and want to help us back on top. That's wonderful with something awful that's happened to us."

Rob: "It's a blessing no-one was injured. That doesn't bear thinking about. And in a crisis like that, it's important to keep in close contact with the employees. They were all shocked and afraid they would lose their jobs, for example, because we wouldn't be generating income while our incinerators were out of operation. Luckily, we were able to assuage those fears. The commitment and loyalty of our employees during this period have been admirable. Our stakeholders too – central and regional governments, financiers and waste and energy clients – are important to the recovery. We keep them informed, indicate the consequences and discuss the best way to come out of this together."

What's happening with the delivered waste in the meantime?

Yves: "The sector imports 1.3 million tonnes of waste annually and we process 1.3 million tonnes of residual waste in Rozenburg every year. So in theory, the government could stop the import, but that's not easy to do so we're not committing to that. Storage in landfill sites is an alternative. Another solution is incineration at other waste processors, in addition to their own contracts. The very last option is permanent landfill. We've decided on 40% incineration elsewhere and 60% temporary storage in landfill sites – for a fee. We have managed to find a place for all volumes, so permanent landfill is not needed. We will retrieve the stored waste within three years for incineration, that's our responsibility. And that means the market will not be disturbed. AVR's commercial and logistics divisions have produced really good work in this, in good collaboration with the authorities. And our clients, even some competitors, our shareholders and our employees have all been especially helpful."

How has the energy supply been resolved?

Rob: "We immediately informed our clients that we can't supply any energy. After all, that's the logical consequence of the ovens being out of operation and no steam being produced. We're trying to limit the impact as much as possible on our energy clients, such as the Rotterdam heat network. Auxiliary boilers on natural gas, distributed across the Rotterdam heating chain, are now generating some of the energy – you don't want citizens suffering from the cold. The post-separation installation, the biomass power plant and the water plant were started up again in November. The latter two also supply heat but less than the amount that processing residual waste makes available. Under normal circumstances, we are the largest supplier to the heat network in Rotterdam and surrounding area. It just goes to show how important we are to the chain."

Yves: "In the meantime, we are making use of the situation. We're now carrying out major maintenance on our waste bunker, for example, and replacing the chimney, both of which were quite old. We can only do that if we are not in operation. We've also started on the connection that is coming for the CO₂ capture installation in Rozenburg. All that is part of the recovery project Phoenix, which will ensure we come out of the battle better off."

The ACM blocking the acquisition of AEB was another disappointment.

Rob: "That was really disappointing. We had spent two years working intensively on that. It's frustrating and difficult to understand why the transaction was not allowed in a market with so much overcapacity. But we have accepted the ACM's decision. Their argument was that we would



become too big as household waste processor in the Randstad region. The ACM argued that after privatisation, AEB could become our competitor and by acquiring them we would be removing a future competitor from the market. Our view of that is different and in our opinion, a number of recent transactions in the market have been in line with our vision."

What kind of problems have you had with laughing gas cylinders?

Yves: "Since 1 January 2023, laughing gas is covered by the Opium Act. Until that date, there was an informal mandatory deposit system but thanks to the new classification, that no longer applies. And from 1 July it was announced that the Public Prosecutor's office would enforce the new classification. That led to an extra wave of dumped cylinders. Everyone wants to get rid of them and dumps them wherever they can, including

in residual waste. There's a pressure relief valve on gas tanks but not on laughing gas cylinders, so they explode under pressure. They then become projectiles that hit the oven walls violently. That causes severe damage to the ovens. We have to shut down the oven immediately after an explosion and repair it. The risk of accidents has also increased and we've had to adapt our procedures. We have now provided the post-separation installation with a new feature that allows us to remove the cylinders mechanically from the waste. That helps a bit."

Rob: "We thought the problem would be solved after a couple of months, but that's unfortunately not the case. Consumers continue to use laughing gas at the same rate, even though it's illegal. The problem is not only in the Netherlands, it's in other European countries too. And we're not finished with it yet either, because those cylinders are also in a part of the stored waste that we'll be processing later."



How is your contact with the shareholder CKI, in Hong Kong?

Yves: "August marked ten years of CKI as a shareholder in AVR. We all found that to be an important milestone. The entire Board came to Rozenburg. The Chair gave a good speech, and all the employees were given lunch. A nice gesture. The fire occurred a few weeks later and all our shareholders put their words into actions, supporting us in all areas. They're there for us in good times and bad."

Rob: "The employees really appreciate that. For them, the shareholder is a somewhat distant figure but if they invite everyone to lunch and give a heartfelt speech about how they see AVR and the collaboration, that's a real boost for our people."

How did the shareholders respond to the fire?

Rob: "We experienced an extraordinary amount of support. And we're very grateful for that. Nobody

asked for this situation, it's a case of force majeure. And it's then nice to experience understanding and broad support from our stakeholders. We can't resolve this on our own. We're getting good help. Sometimes asked for and sometimes unsolicited."

How have you dealt with the turbulence in the world?

Rob: "In 2022, the war in Ukraine had two effects: shortages occurred in certain markets, such as chemicals and steel, and prices sky-rocketed. We found it difficult to get the raw materials for our processes to the plants on time. On the other hand, energy prices rose. As a supplier of energy, we were able to take advantage of that, but society struggled with it. In 2023, things returned to normal. There were enough raw materials available again, and at acceptable prices. The energy prices dropped with a corresponding effect on the inflation."

Yves: "But the pressure is still on. At some point, there will be an energy shortage again. As yet, the conflict in the Middle East is not affecting oil and gas prices, but if more countries get involved, it will. The reasons for the rising prices have not been eliminated."

The strategy was reassessed in April. Why?

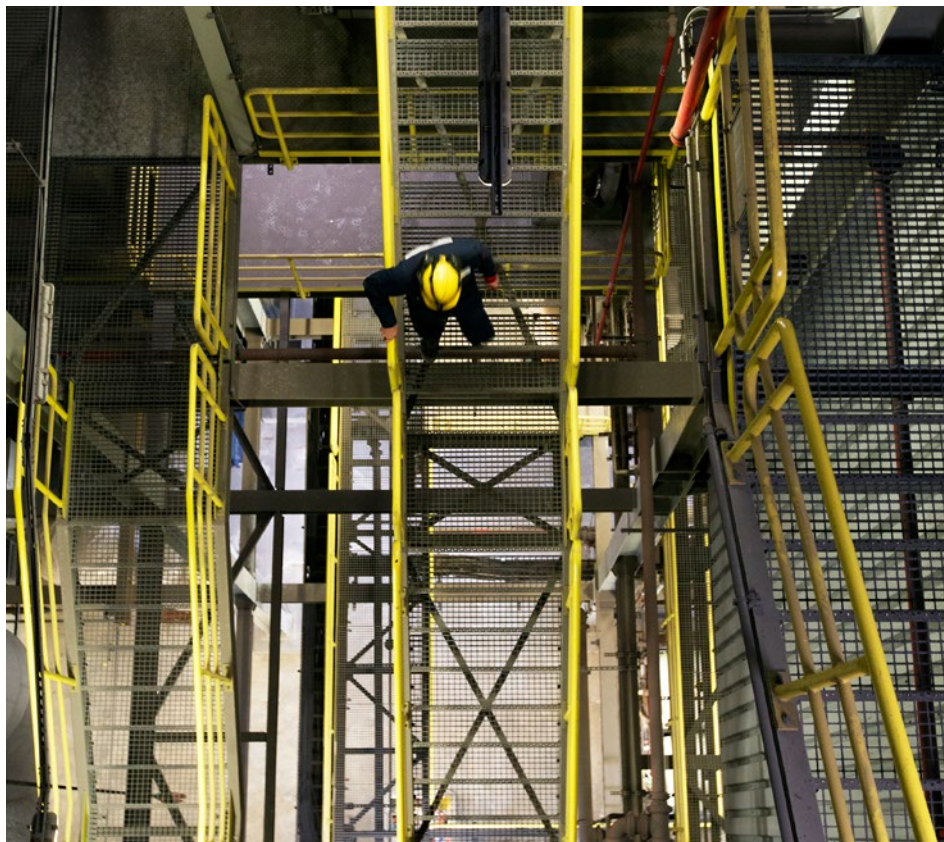
Rob: "In our existing strategy, we integrate ten goals in the areas of ESG, that's Environmental, Social and Governance. We held a successful session for that with the top thirty managers at AVR. We had also planned a stakeholders' meeting about this, but that was cancelled due to the fire. That meeting is now scheduled for 2024. We've examined more closely the implementation of the reporting obligations according to the Corporate Sustainability Reporting Directive, the CSRD, in 2025. Naturally, we want to be compliant on time. We achieve a lot within the organisation, but we're also a player in the chain so we need to know what happens before and after us in the supply chain. That gives chain thinking a huge impulse. I believe it's a good development, because it not only makes AVR more aware of its own emissions, but also makes you think about who you're collaborating with and what that party's role is with regard to emissions. We can't become more sustainable alone, we have to do it together. This legislation stimulates us to join together in searching for solutions. Not everyone is on the same page: large companies engage dynamic knowledge, while smaller companies need more time. It's good that the legislation allows for that. It may be a hesitant start, but the quality of the reporting will improve in coming years."

Are there any results known about the Connection Project?

Yves: "We set up the Connection Project because of feelings of dissatisfaction among the employees. The effect won't be visible until in the longer term. The results of the employee satisfaction readings are a bit better, but there's still work to be done, particularly in the shifts and the maintenance division. Now that they're working incredibly hard to get the plant up and running again, there is automatically more connection. There's little to do in production at the moment, so we need to put energy into keeping the connection both between the people and with the company. We're offering extra training and making an effort to keep everyone on board."

Rob: "What we want, of course, is to learn from what's happened and use it to later come out of the finished rebuild better. We're going to scale up further in the area of leadership too. One thing the Connection Project showed was that quite a lot of employees were promoted from the workplace to managerial jobs, which is naturally a good development, but that these employees are not always fully equipped for those jobs. So a new leadership programme in which we work on continued focus on connection has emerged from the project. This programme is being combined with more focus on safety. Setting a good example and showing leadership if a potentially unsafe situation arises. You can call people to account for that. There was an unsafe feeling as a result of the fire too, it was an unsafe situation, so there is momentum."

Yves: "It's also important because due to the reconstruction, there are more contractors than our own people on the grounds. Leadership is necessary in that situation. We're doers at AVR, we find it difficult to call people to account and getting



feedback is also tricky. But production, maintenance and purchasing are a group activity and that has to run like a Swiss clock."

It must have been a tough year for the employees.

Rob: "Certainly. Our people are determined, they display resilience and join in putting their shoulders behind rebuilding the company fast. In addition to the normal work, we now have to manage the restoration, together with clients, suppliers and financiers. That puts a heavy load on the employees. That goes for those with knowledge

and skill. Certain people know a lot about a niche subject, such as electricians and project managers, and they're having a tough time. The pressure is on deciders, and on people who carry out the work, at all levels. The commercial team is also working day and night on permits and purchasing. They're specialists. There might be a bit of leeway for management, but those people must be able to find relaxation on time."

Yves: "We want to be back in the running soon, but we have to do things carefully and safely. The balance is important."

Rob: "I'd like to add that our people in Duiven

might be getting a bit snowed under due to there being a lot of attention on what happened in Rozenburg. One thing that is really great in any case is that part of the waste destined to be processed at our site in Rozenburg is now being processed in Duiven and the colleagues there are making the targets that have been set. We can certainly use that right now. So kudos for them."

How are you starting 2024?

Yves: "Hopeful. It's going to be hard work if we're to be able to start processing waste again in the autumn, but in the meantime we're improving the processes and safety. And we're continuing to work on the large-scale CO₂ capture with the planned extra installation in Duiven and the large one in Rozenburg. There's no reason for that to be delayed. And with the reconstruction of the installation, we've focused a lot on the Environmental aspect of ESG, and the new infrastructure will have a back-up."

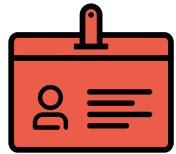
Rob: "I would like to conclude 2023 by thanking our employees. We do that every year, but this time I want to explicitly express our appreciation of their commitment and trust, and above all of their adaptability and resilience. We really need each other at this time, and we hope to be able to count on each other again in 2024, as we rebuild and spread our wings once more. We can't wait."

Resilience

The title of our annual report expresses several aspects of the term "resilience. First, the ability to recover from adversity, but also elasticity and robustness. Comfort, Boin and Demchak^[1] define resilience as the capacity of a social system to adapt and recover from unusual disruptions. Time plays a role in this: in the short term, move along

and innovate quickly, and in the longer term, rebuild and return stronger, or building back better. And that is what we are going to do.

¹ Comfort, L.K., A. Boin & C. Demchak (2010). Designing Resilience: Preparing for Extreme Events. Pittsburgh: University of Pittsburgh Press.

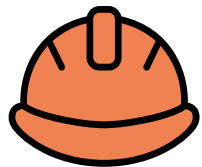


Number of employees
(FTEs)

468



2022: 464



Safety
(IF rate)

0.8



2022: 3.3



Sick leave
(percentage)

5.4



2022: 5.6



EBITDA
(in millions of €)

69.1



2022: 150.8



Net result
(€ mln)

-99.7



2022: 46.3



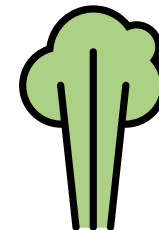
Quantity of waste processed
(kton)



Household waste	571
Commercial waste	519
Hazardous waste	78
Imported waste	139
Subtotal residual waste for energy plant	1,307
Biomass: waste wood	109
Biomass: paper pulp	149
Wastewater	69
Total residual waste processed	1,634

1,634

2022: 2,109



Total energy output
(Petajoules)

5.6



2022: 7.8



Converted into household
equivalents to whom we supply energy
(number of households)

113,000



2022: 159,000



Fossil
CO₂ emissions
in scope 1
(ktonnes)

556



2022: 881

Biogenic
emissions
(ktonnes)

1,307



2022: 1,346

January – December



Debottleneck for progress

Our waste incinerating installation (EFW) dates from the 1970s. In order to modernise the EFW, we're carrying out the Debottleneck programme. Bottlenecks were determined, based on a study. They are in various installations, systems and processes. We're dealing with all of them in this programme, which will run for some years.

Acquisition of AEB blocked

After eighteen months of deliberation, the Dutch market regulator, the ACM, decided that AVR's acquisition of its Amsterdam counterpart could not go ahead. A disappointment for us, because it would have been a great opportunity for an innovative collaboration. We would have liked to deploy our broad knowledge and ample experience for the processing of waste in the Noord-Holland region.

23 May



AVR reached Rung 1 of the SEPL ladder

SEPL stands for Social Enterprise Performance Ladder, and it evaluates a company's degree of social enterprise. We went up from Aspirant status to Rung 1. That means that AVR performs above average in helping people with a vulnerable position in the employment market to find a job, in a sustainable and qualitative way.

20 March



January – December



Exploding laughing gas cylinders

Since the ban on the use of laughing gas by consumers and the ending of the mandatory deposit system, there are many laughing gas cylinders to be found in municipal waste. In the incinerators, the cylinders become dangerous projectiles, with all the accompanying risks for our employees. Removal from the waste is tricky. We are joining other waste processors in sounding the alarm at government and municipalities. In the meantime, we are taking appropriate measures to protect our personnel.

CKI 10 years

On Wednesday, August 9, it was exactly 10 years ago that AVR joined the CKI family. A milestone we did not let pass unnoticed. We celebrated that day with a CKI Celebration Lunch: 10 years of family spirit. It was a special event with the Board of CKI. Mr. H.L. Kam of CKI looked back on the past 10 years and thanked all AVR employees and contractors. We closed with the video '10 years of family spirit', and during a delicious lunch there was time to catch up with each other.



9 augustus

AVR Rozenburg celebrated 50 years

AVR Rozenburg started processing waste in 1973. In the ensuing 50 years, the location was expanded to include a harbour, flue gas cleaning and a post-separation installation. We also started supplying steam, energy and district heat. So we weren't resting on our laurels, and we won't be in the coming 50 years either. All employees were treated to lunch and a gift to celebrate the anniversary.



16 October

Green light for CO₂ project Porthos

Porthos is a project in which CO₂ is transported to the North Sea, to be stored in depleted gas fields. One activist group had started legal proceedings against the project, because it would allegedly emit too much nitrogen, but the judge gave green light. This infrastructure is an important infrastructural link for CO₂ capture projects.



18 August

AVR craft at Dutch Design Week

We revealed a unique cabinet at the Dutch Design Week, made of recycled plastic separated by AVR. WasteCraft makes design products from waste and constructed the cabinet together with children at Petje Af, a foundation that is committed to supporting children who could use a bit of help. AVR supports these good causes through our Perfect Days, with which we put aside an amount of money for a good cause every time we have a perfect day - free of accidents or infringements and within budget. Children at Petje Af contributed their ideas to the design, after which WasteCraft turned the ideas into this unique cabinet in AVR colours.



27 October

November



Happy with the baling press

Since late in 2023, we have a press in use with which we package the NSI residue flow in bales. This is an impressive technique for being able to store waste safely and efficiently. The bales are flame-resistant and airtight, so there's no nuisance from the smell. We're extra happy with it since the fire, because we were able to use it to bale waste to transport and store it until the E plant is rebuilt and waste processing can be resumed at Rozenburg.

15 november

AVR presented on the Technique Day Arnhem for children

At the well-attended Technique Day in Arnhem, parents and children were introduced to technique. AVR people explained how the process of incinerating waste to produce energy works. Children were able to operate the buttons on the AVR installation of computer-driven technical Lego and see exactly how it works. The installation generated a lot of attention, and the day was a big success.



Further with NetVerder

We signed for the expansion of the NetVerder steam network in the Botlek - we're one of the parties that supply steam. Once all parties make maximum use of the available steam sources connected to the steam pipe, the large amounts of CO₂ en NO_x emissions in the chain will be reduced. The expansion is expected to be started in 2025.

30 november



Slag system overhauled

Slag remains behind after incineration. We installed a new system for the drainage to replace the transport bands on our grounds. We constructed a storage building, an access through the plant and a slag tunnel. When this route is put into operation in 2024, the transport of slag will be more sustainable, faster, safer, cheaper and more reliable.



Januari-december

Profile, mission, vision and strategy

AVR in brief

AVR specialises in the processing of various types of residual waste: household and commercial waste, wastewater, paper pulp residue, waste wood and hazardous waste. AVR strives continuously to achieve the maximum recovery of energy, raw materials and other materials from this residual waste through effective, efficient and safe business operations. We ensure that plastics, drinks cartons, films and metals are recycled, and minerals are used in building and road construction. And by incinerating the rest of the residue, we supply sustainable steam, heat and electricity to our surrounding area, preventing the use of fossil fuels. We also capture CO₂ from our processes, which we then supply to the greenhouse horticultural sector. In doing so, AVR makes an important contribution towards the achievement of the Dutch and European climate and energy goals. And AVR does all of that with residual waste that other people often think is worthless.

AVR has two facilities: Duiven and Rozenburg. Four transfer stations are located in The Hague, Utrecht and Rotterdam. The central location of the facilities is very convenient, both for the waste clients and the buyers of energy and raw materials. The residual waste is transported by water where possible and where that is impossible, by road. At the end of 2023, AVR employed a total of 483 people (468 FTEs).



Our mission: to create a clean world in which nothing is wasted

AVR gives a useful purpose to what everyone sees as worthless residual waste streams by converting them into raw materials and energy. The aim is always to convert all the rest of the residue that nobody else can do anything with into something worthwhile, and with minimum impact on the environment. We believe our solution is the best one currently available. It's our raison d'être and our motivation: to create a clean world in which nothing is wasted. We and our proud employees workday in and day out to bring about positive change.



Our vision: too good to waste

Supplies of vital raw materials are being depleted and harmful greenhouse gas emissions are changing the climate. If we want this planet to be liveable for future generations we must make radical changes now. Changes like implementing a circular economy and an energy supply that is 100% renewable. The way we deal with residual waste is a key factor in making our planet more sustainable. The population of the world continues to increase, the global waste mountain keeps growing and in many countries, the majority of the residual waste is still dumped as landfill, which results in huge emissions of methane and other greenhouse gases.

AVR makes an important contribution towards reducing difficult residual waste streams: as experts in handling the rest of the residue, we create new beginnings. In a world subject to many changes, that demands a flexible approach from AVR. With our sights set firmly on tomorrow, we offer the best solution for the rest of the residue today. At the same time, we ourselves are also constantly changing and adapting: to continue offering the best solution for the day-to-day challenges facing our society. We research how things can be better, cleaner and more efficient, with no emissions. You can't have one without the other: we are striving for a natural balance between economy and ecology. And with that, we have not only a social solution for keeping the streets clean, but also the capacity to be a driving force for far-reaching and high-risk innovations. Here's to a circular and sustainable 2050! AVR will be a part of it.



Our strategy

AVR has developed a strategy that will add substance to its mission and vision. The key elements are encapsulated in three pillars our organisation works on every day:

contracting of waste and residual waste, also in the long term;

maintaining operational excellence and improving it where possible;

maximising energy and raw material efficiency and minimising the CO₂ footprint and negative environmental impact.

The successful implementation of our strategy depends on our employees. They make the difference, in all three of the pillars. Which is why safety is always paramount in everything we do. It's also important that our employees are healthy and energetic, can develop their potential and personal growth and can carry out their tasks to the very best of their ability.

HOW WE ADD VALUE

Our mission

Create a clean world in which nothing is wasted



Material themes

- | | |
|-----------------------------|------------------------------|
| 1 CO ₂ emissions | 5 Other emissions |
| 2 Reliability | 6 A safe working environment |
| 3 Recycling | 7 Sustainable employability |
| 4 Renewable energy | 8 Financial stability |

Impact

3 4

Contributing towards a clean world (by preventing landfill of waste)

Contributing towards renewable energy generation and eco-goal achievement

Contributing towards the transition to a circular economy

Social developments

AVR operates in the context of society, both nationally and internationally. And in that context, there are currently trends and developments that affect the waste industry. We'll describe a few of them from 2023. We explain in the themed chapters how AVR dealt with them and which results ensued.

Prices of energy and excipients

The Russian invasion of Ukraine led to a shortage of energy in Europe, resulting in a very significant rise in prices of both energy and all kinds of raw materials and excipients. The shortage of excipients was a particular problem for the waste industry. The rise in energy prices was, on the other hand, an advantage for energy-producing companies. In 2023, the average energy prices were around 50% lower than in 2022. In 2022/2023, much work was done on the product chain of natural gas. There are now LNG terminals and Europe is much less dependent on Russian gas. The volume of gas in storage was good and the relatively mild weather meant less gas being used for heating. Also, government campaigns urging consumers to be thrifty with energy (including the one about setting the thermostat no higher than 19°C) clearly bore fruit. And there are signs that the demand in the processing industry is lower as a result of negative economic develop-

ments. That said, the energy market - and with that the prices - remains extremely sensitive to unrest (also political) and incidents anywhere in the world. As far as the excipients are concerned, the situation was much improved by 2023: they are more available and at lower prices than in 2022.

Climate change

The fact that the climate is changing is becoming more clearly tangible and noticeable. Dry and hot periods alternate with extreme precipitation and near or actual flooding. In 2015, the Netherlands committed to the goals of the Paris Climate Accord and drew up a climate accord which The Climate Accord states that CO₂ emissions must be 49% lower in 2030 than they were in 1990. The EU wants this to be 55%. The Dutch government committed to that and raised the ambition in 2023 to 60% reduction by 2030. The goal for 2050 is 95% fewer emissions of greenhouse gases.



Shortage of raw materials

Sources of non-renewable raw materials (in particular fossil and mineral sources) are being increasingly exhausted. That forces us to recycle and reuse raw materials, preferably as high-grade as possible. The Netherlands has set a goal for 2030, to reduce their use of metals, minerals and fossil fuels by half that of 2014. And the goal of being completely circular by 2050 is included in the Grondstoffenakkoord (agreement on raw materials).

Nitrogen (NO_x)

The deposition of nitrogen is a serious problem for biodiversity. The Cabinet wants all sectors to contribute equally to solving this problem and a comprehensive approach in every sector, containing specific points of focus per sector. Ambitious goals have been set for industry and mobility, to reduce emissions of greenhouse gases, such as CO₂, and

of substances that are harmful to air quality, such as particulates and nitrogen. By 2030, the industry must have succeeded in reducing greenhouse gas emissions by 60% compared to 1990. Often the measures to reduce CO₂ emissions lead to a reduction in NO_x emissions too. However, CO₂ capture projects can lead to more nitrogen emissions in the construction phase.

The employment market

The shortages that arose in the employment market after the corona pandemic are continuing. They are particularly severe in technical and operational occupations, partly because there are fewer practically trained people entering the market. Population ageing also plays a role. Companies and organisations have to do their utmost to get new employees interested in a job and to retain them. Focus on the health and development of employees is an important factor in this.

Our stakeholders and material themes

Our stakeholders

With our activities, we create value for our stakeholders and for society while keeping an eye on the needs of generations still to come. We have a great deal of contact with our stakeholders, both in daily business dealings and at special moments when we discuss their needs and our possibilities for meeting them. The contact moments take place in all echelons of AVR and at the stakeholders' organisations.

To the right are the ten stakeholder groups we distinguish.

AVR reporting policy

In recent years, we have continued to improve the coordination with stakeholders and development of the KPIs for our annual report. We have taken steps towards an integrated annual report by way of stakeholder dialogues. We originally gathered information through an internal stakeholder dialogue. That information was used to determine our material themes and define important KPIs. To enable us to carry out the stakeholder dialogue externally, we identified and classified all the stakeholder groups. Later, we held a stakeholder day, on which a delegation of ten of our stakeholder groups offered input about AVR's social contribution and impact and the subjects they felt were material. We provided accountability for that

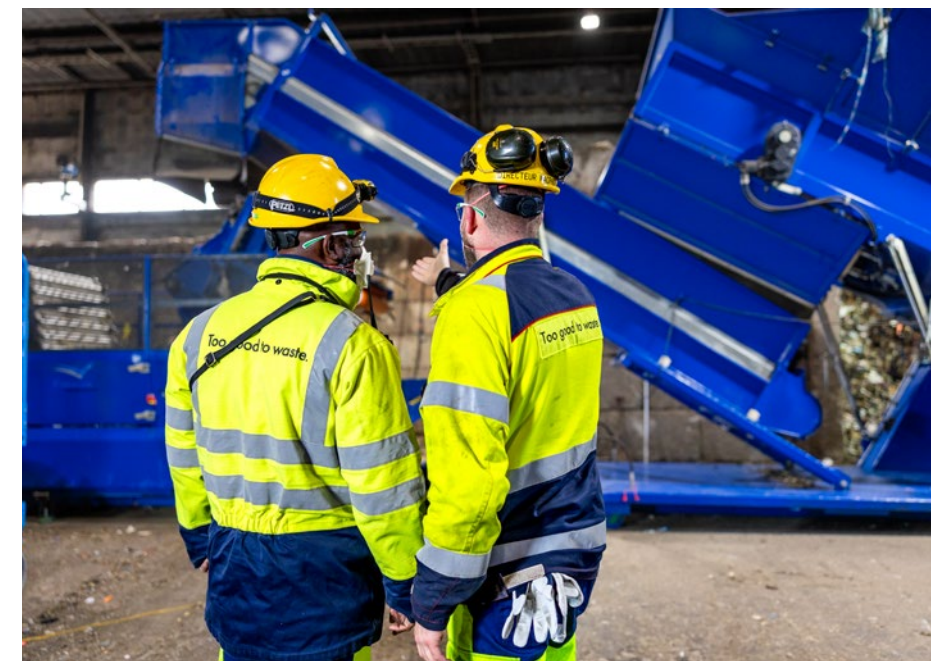
Employees
Shareholders
Waste clients
Energy clients
Suppliers
Financiers
Policy developers
Licensing authorities / enforcement officials
Politics
Environment

in the Annual Report which was also expanded to include governance information. We then took a critical look at our reporting structure and KPIs in order to anchor them better in our existing processes and to further professionalise the management information surrounding KPIs. The subsequent external stakeholder dialogue was made impossible by corona. We had scheduled it anew for the day after fire broke out in Rozenburg, so we then

postponed it until 2024. In 2022, we did carry out a stakeholder study in which we asked representatives from various stakeholder groups about the material themes and AVR's impact. The results gave us no reason to change our material themes. There were however ideas and recommendations made which we have taken to heart.

In April 2021, the European Commission adopted the Corporate Sustainability Reporting Directive (CSRD). The Commission's aim with this directive is to achieve more consistency between European companies in respect of their sustainability reporting. AVR also falls within the scope of the CSRD and will prepare its Annual Report in accordance with the directive from financial year 2025 onwards. In 2022, with the help of a consultant, we launched a project aimed at

mapping the impact of this change and preparing the organisation for it. On the basis of the results, we classified the themes again and divided them - in anticipation of our reporting according to the CSRD - into ESG (Environmental, Social and Governance). These elements are central to the CSRD and based on them, we measure and report our sustainable and ethical trading practices. We set up a roadmap which we used to establish the strategic goals in 2023 and to make the KPIs more monitorable.



Ready for the CSRD: AVR's strategic ESG goals

As mentioned, AVR is obliged to report on financial year 2025 according to the upcoming CSRD legislation. Sustainability is not new for AVR: processing waste is after all a social necessity and has much common ground with environment. So, many of the requirements of the CSRD are nothing new to AVR, but rather concern a new format which the reporting has to adhere to. The guidelines stimulate a different way of thinking.

In the first half of 2023, a broad-based group within AVR met several times to consider the interpretation of ESG and the future of the organisation. There were also external meetings with guest speakers and advisors from diverse backgrounds. The aim was to ensure that everyone at AVR recognises themselves in the ESG strategy chosen.

AVR has set ten strategic ESG goals. We classify them according to the E for Environmental, the S for Social and the G for Governance.

E To make the cleanest and best choice for extracting the maximum value from residual waste in the value chain (circular).

- 1. Energy efficiency and reduction of emissions:** to produce raw materials and energy with the lowest possible emissions.
By emissions, we mean all sorts of harmful emissions: greenhouse gases such as CO₂ and methane, gases that have a negative effect on the ozone layer such as nitrogen, extremely worrying substances such as mercury and emissions that have a negative effect on surface water. That way, we minimise our fossil footprint too.

Energy efficiency, for example by maximising the value from waste at the level of raw materials and energy, contributes significantly to the reduction of our emissions.

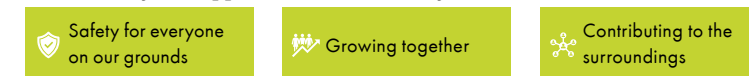
- 2. Circularity:** to contribute to a circular society. From our business operations, AVR makes an important contribution to a circular economy. AVR extracts the maximum value from waste materials that cannot be processed, recycled or applied and aims to be the best choice in this for its clients and for future and new waste flows.
- 3. Diversification of activities:** expanding primary processes with adjacent activities. By diversifying activities, we are searching for the balance between finances and ESG: growth through new activities around the core and strength of AVR in line with ESG. On the one hand, this core and strength are characterised by operating with capital-intense and technical assets. AVR deploys collaborations, strategic partnerships and innovation for this. On the other hand, this core and strength are characterised by AVR's expertise: processing waste.
- 4. Preserving the living environment:** decomposition of harmful substances and keeping the immediate environment clean.
We visibly help combat the pollution of the immediate environment. AVR wants to be, and remain, the cleanest waste processor. Scattered litter must be prevented to keep the immediate environment clean. Ecosystems and biodiversity, also outside the immediate environment, should be protected.

AVR's 10 strategic ESG goals

Environmental: Be and remain the cleanest and best choice for maximizing the value of residual waste in the (circular) value chain.



Social: Strong connection between AVR, its employees and the environment, where safety and appreciation for all is key.



Governance: Embed ESG in the organization and realistically engage and inform stakeholders.



S To achieve a strong connection between AVR, its employees and the environment, in which safety and appreciation of everyone are central.

- 5. Safety for everyone on our grounds:** physical and social safety as basic condition for everyone on AVR grounds.
Social safety means psychological safety, safeguarded, and an organisation where you can be yourself, respect each other and be valued. Background, religion, education, gender and other core values play no role: AVR embraces diversity throughout the entire organisation. Everyone at AVR goes home safe and well every day - physically and mentally.
- 6. Growing together:** attracting, retaining and developing employees, to their satisfaction and that of AVR.

Driven, proud and contented employees are challenged to do their work well and with that, positively influence and develop the team they work in. That way, they're developing not only themselves, but also AVR. AVR facilitates training and personal development courses to stimulate possibilities for growth and challenge employees. The norm in this is social equity. Individual training and development courses are coordinated together. We assess general feedback and the potential for improvement of the organisation in an annual employee satisfaction survey.

- 7. Contributing to the environment:** giving value back to society through a worthwhile contribution by all employees to the immediate environment, something that is in line with AVR's core values and operational activities.
AVR employees have a strong connection with

each other and the immediate environment they work in. This can already currently be seen in a broad range of initiatives and collaborations, such as Perfect Days, in which money is set aside for a good cause when a day runs perfectly, Project Wastecraft, in which new products and even furniture are made from recycled plastic, and the development of a 'food forest' in Duiven.

G To anchor ESG in the organisation and involve stakeholders in a realistic way and keep them informed.

8. **Norms and values:** safeguard a company culture with appropriate norms and values. Complying with norms and values ensures a safe and pleasant working environment for everyone involved at AVR. That applies to all levels of the company, including contractors and suppliers. Everyone at AVR is expected to recognise deviating norms and values and to take action in the event of culpable behaviour. Integrity and acting in a principled way are important core values here.
9. **ESG in the organisation:** integrating the ESG strategy into the company strategy and safeguarding this within AVR management. Pioneering ESG decisions for and by the whole organisation with realistic decision-making and clear goals are drawn up and safeguarded. We adhere to ESG for and with everyone and actively monitor it. An ESG Roadmap records the ESG business cases and projects. At AVR, an ESG Committee supervises the actual safeguarding of ESG in the organisation.
10. **Reputation and valuation:** honest and realistic communication towards the stakeholders about

AVR interests, such as politics and residents, and vice versa. Elucidating and clarifying AVR's role in society and its responsibility to its environment is part of this, as is honest and clear communication of ESG goals and the safeguarding of transparent and honest stakeholder management and communication.

The coming years

The double materiality analysis is central to the CSRD; it determines which sustainability information will be communicated in the Annual Report. Double materiality means that the material themes are highlighted from two sides: on the one side, the risks and opportunities that come from outside the company and on the other, the impact the company has on people, environment and society. In order to involve stakeholders diligently and optimally in this, AVR decided to organise a second stakeholders day. Due to the fire in Rozenburg, the day has been postponed to 2024. A number of other activities based on the double materiality themes have also been postponed to 2024. Take, for example, an overview of impact, risk and opportunities and the setting up of targets and actions based on the material themes. The 2024 reports on these are expected to be presented for the first time in 2025.

We have also made progress on other CSRD-related topics:

1. Scope emissions

Scope 1 (direct emissions) and Scope 2 (indirect emissions from purchased energy) are no new variables for AVR. We expect to report on the financial year 2024 data in 2025. We intend to do this more in line with the CSRD. We will report about

Scope 3 (other indirect emissions) in financial year 2025, in the compulsory reporting year 2026.

2. Taxonomy

The CSRD prescribes that the CSRD and the EU Taxonomy should be reported together. The EU Taxonomy is a classification system with clear criteria that are in line with the EU climate and environment goals. Company activities in the area of sustainability can be grouped and assessed this way. 'Taxonomy-eligible' activities at AVR are classified. It is not certain whether some activities can be included. AVR is affiliated with CEWEP (Confederation of Waste-to-Energy Plants) through the Dutch Waste Management Association. CEWEP represents the interests of waste-to-energy plants at a European level. It maintains contact with the European bodies in order to give a definite decision on uncertain activities. We expect

that the first results on financial year 2025 will be announced in the compulsory CSRD reporting year 2026.

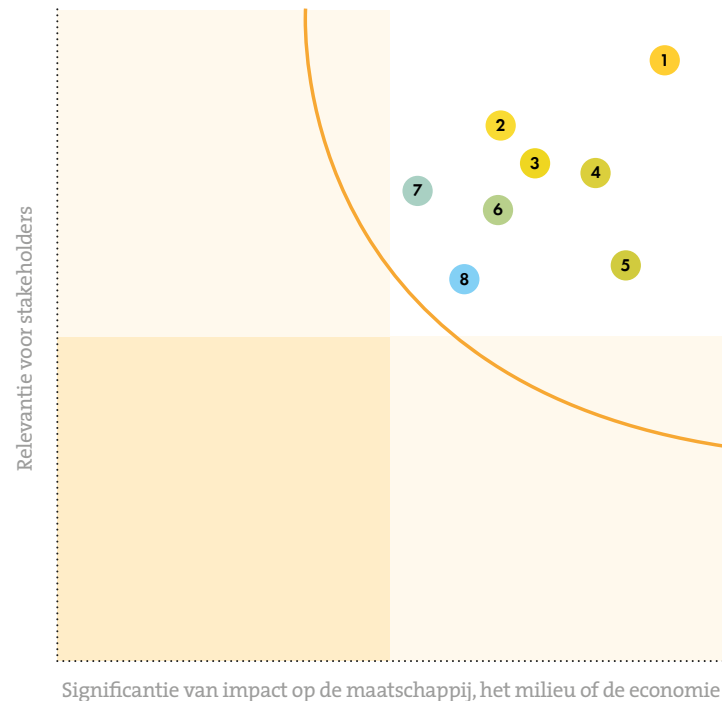
3. Sustainable Development Goals

We will chart the relationship between the ESG goals and the Sustainable Development Goals (SDGs, the UN's sustainability goals) in 2024, so that we can report on financial year 2024 data in 2025.



Materiality matrix

Our material themes have not changed since the stakeholder contacts and our study. They are shown in the materiality matrix and ranked according to their relevance for stakeholders and their importance to society, the environment and/or the economy.



Material themes, goals and KPIs

The themes that are most material for our stakeholders have been linked to AVR's strategic goals. One or more KPIs have been specified per theme. The KPIs make AVR's impact on these themes measurable. Every year, we assess whether the KPIs sufficiently reflect the effects or whether an addition or adjustment is required. The following is a complete overview of the ESG and the accompanying themes. The Annual Report is laid out according to this overview.

	Material themes	Strategic goals	KPI
ENVIRONMENTAL	1 CO₂ emission	<ul style="list-style-type: none"> Maximisation of energy and raw material efficiency and minimisation of our CO₂ footprint 	<ul style="list-style-type: none"> CO₂ emissions (in CO₂ equivalents) Share of biogenic in CO₂ emissions CO₂ emissions avoided through energy supply CO₂ emissions avoided through recovery of raw materials
	2 Reliability	<ul style="list-style-type: none"> Long-term waste and residual waste contracts Continuation and improvement of our operational excellence 	<ul style="list-style-type: none"> Percentage availability of plants Reliability in supplying steam and heat
	3 Recycling	<ul style="list-style-type: none"> Maximisation of energy and raw material efficiency and minimisation of our CO₂ footprint 	<ul style="list-style-type: none"> Quantity/percentage of separated raw materials recovered
	4 Renewable energy	<ul style="list-style-type: none"> Maximisation of energy and raw material efficiency and minimisation of our CO₂ footprint 	<ul style="list-style-type: none"> Total volume of energy supplied – heat, electricity and steam Percentage of biogenic in the energy supply
	5 Other emissions	<ul style="list-style-type: none"> Continuation and improvement of our operational excellence 	<ul style="list-style-type: none"> Nitrogen (NO_x) Particulates Dioxins
SOCIAL	6 Safe working environment	<ul style="list-style-type: none"> Continuation and improvement of our operational excellence Promoting and guaranteeing a safe working environment 	<ul style="list-style-type: none"> IF rate Number of Safety Observation Rounds (SOR)
	7 Sustainable employability	<ul style="list-style-type: none"> Continuation and improvement of our operational excellence Increasing our employees' potential 	<ul style="list-style-type: none"> Percentage of sick leave
GOVERNANCE	8 Financial stability	<ul style="list-style-type: none"> Long-term waste and residual waste contracts Maximisation of energy and raw material efficiency and minimisation of our CO₂ footprint Continuation and improvement of our operational excellence 	<ul style="list-style-type: none"> Revenue EBITDA EBIT Net result Cash flow Cash position Investments



“Transparency on non-financial data, I’m all for that”

Bram ter Horst
ESG Reporting Specialist

“During my European business studies, I came in contact with the Kyoto and Paris climate goals. At that time, they were still ambition, not legislation. I worked in the corporate world for a time but after that, I wanted to switch to a social sector. AVR makes life easier for households and produces energy - those are social roles. There’s a link there with the ESG, in full Environmental, Social and Governance, reporting criteria that I feel a strong connection to. For that reason, I started further developing the ESG reporting at AVR a year ago. AVR must report on 2025 according to the CSRD, in full the Corporate Sustainability Reporting Directive. That standard is a part of the Brussels Green Deal and contains requirements for transparency about matters other than solely financial, so about that ESG. It’s a guideline with a big impact. If the auditor doesn’t accept the reporting on those non-financial matters, the risks for the company are just as great as when the financial report is not approved. Take, for example, attracting capital. You’re constantly searching for the balance: you do something not only from a financial point of view, but also not only based on the ESG. The Silicon Valley Bank is an example of the latter. It invested in ESG start-ups without checking liquidity, and went bankrupt. But looking only at the finances is also not enough anymore. At the same time, it’s not actually anything new, because AVR has been carrying out ESG activities for years, just not with that label. Take the CO₂ capture installation in Duiven. For many companies, it’s a struggle to find all the data. We’ve been measuring many things for a long time, such as the direct emissions in Scope 1. But measuring indirect emissions in the chain is much more difficult. That generates interesting discussions. And you have to present everything clearly and accessibly. One advantage we have is that listed companies have to report according to the CSRD on 2024 already, so we’ll have some examples later. I think it’s great, since I’m all for showing what we do. It encourages a different mindset. You need that to include the non-financial part in the strategy. A good development.”

Reconstruction of the fire at Rozenburg

On Thursday 21 September, AVR was shaken by a fire that had a huge impact on business operations.



At 07:30, one of the shifts saw smoke in the E-centre of the waste processing installation at the Rozenburg location. Shortly after that, the electricity went out almost everywhere on the grounds. The fire alarm was activated and the fire service called out - fire fighters classified the fire as 'medium'. And extra fire truck with fire fighters arrived and started extinguishing the fire from the inside. When the fire service scaled up to 'large fire', more fire trucks arrived. All AVR employees not involved in work activities related to the fire, such as with safety, were sent home. Luckily, no-one was injured.

Then the fire was scaled up again to 'very large fire'. Electricity was shut off and all processes came to a standstill. After quite some time, the fire service seemed to have the fire under control, and stopped the extinguishing work. The 'all clear' was given and the last extinguishing work was handed over to HEBO, a private fire fighting company. After a while, HEBO discovered fire at another location. The fire service was called out again, and arrived with even more trucks and fire fighters. At 01:10 on the Friday morning, the fire service scaled the fire up to GRIP 1, which means that multiple disciplines are involved and specific coordination is necessary. The fire service used extinguishing foam but couldn't get the fire under

control. There was also a lot of black smoke. At 02:45, GRIP 2 was announced, which means that support is needed from outside the location of the incident. The exact location of the new source of fire turned out to be extremely difficult to reach. At 08:00 on Friday morning, fire boats were deployed too.

In the afternoon, the fire service wanted to try and extinguish the fire by way of the roof, but the construction was very strong and they didn't succeed in forcing open the roof. So at around 16:00, they made an opening in the side wall, using heavy equipment. The fire source was then accessible and it was only a matter of time before the all clear could be given. That happened at 02:00. GRIP 2 had already been cancelled, and now GRIP 1 was also cancelled and the fire service was able to leave the damp down work to HEBO. At 19:00 on Saturday 23 September, the fire was finally put out and HEBO was able to complete their task.

It was then time to inspect the damage and ascertain the cause. The processes that enable that were set up in no time and alternatives organised. You can read about that in various chapters in this Annual Report.

ESG

Environment

Theme 1 of the ESG

The E in ESG stands for Environmental. At AVR, this covers the material themes with which we have a positive impact on the environment, through the production of sustainable energy and the recycling of raw materials and also our reliability in those matters. It covers themes with which we have a negative impact too, such as emissions.

CO₂ emissions

Reliability

Recycling

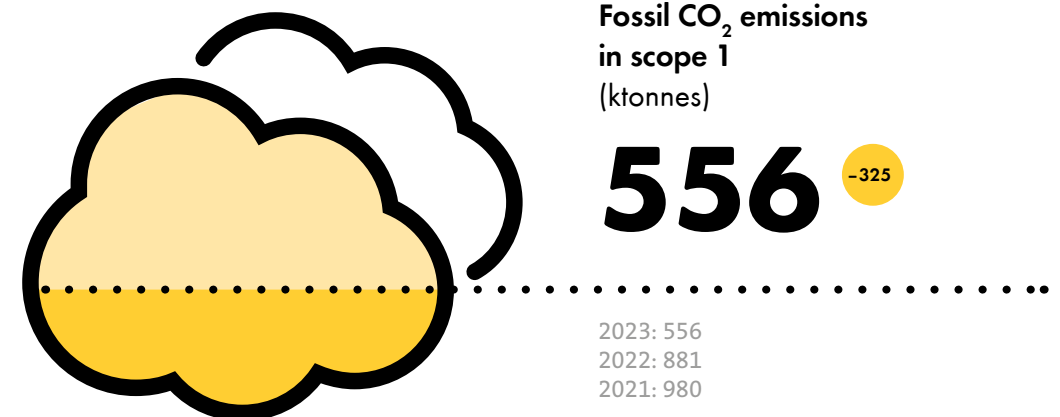
Renewable energy

Other emissions

CO₂ emissions

Towards a climate neutral AVR

We separate as much as possible for recycling, sometimes in multiple stages. That leaves us with a valuable part that we use to generate heat, steam and electricity. The process is sustainable because this energy does not have to be generated by burning fossil fuels. We make the processes we use to generate energy as efficient as possible in order to achieve the highest possible yield. And we capture as much as possible of the CO₂ in the flue gases for useful purposes. Our goal is to have climate-neutral operation in 2050.



Biogenic CO₂-emissions (ktonnes))

1,083

2023: 1,083
2022: 1,346
2021: 1,383

CO₂ emission avoided (ktonnes)

475

2023: 475
2022: 619
2021: 684

CO₂ emissions avoided through recovery of raw materials (ktonnes)

184

2023: 184
2022: 232
2021: 242

The fire and the CO₂ emissions

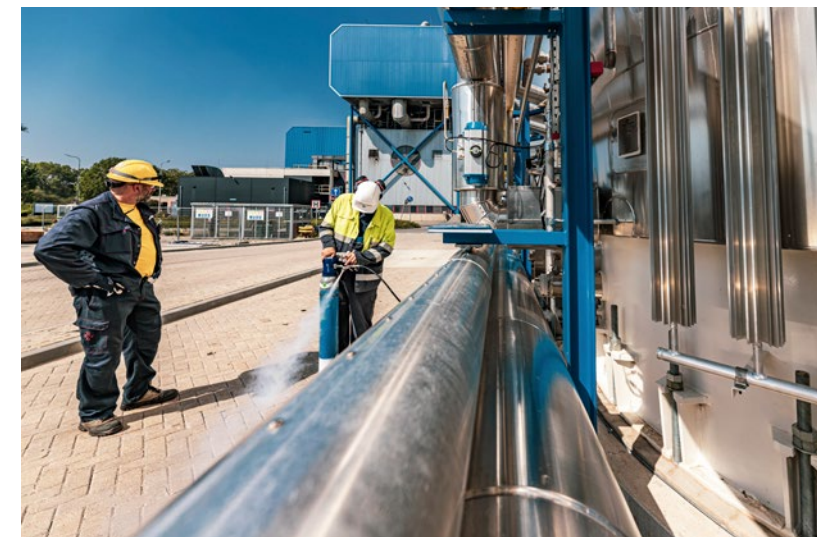
The fire at Rozenburg had a direct effect on our CO₂ emissions: since we processed less residual waste, biomass and waste water in 2023, CO₂ emissions were lower. We should also mention that part of the waste is being stored and part is being processed by third parties. AVR also supplied less energy in the form of electricity, process steam and heat. The CO₂ emissions prevented in the chain were consequently reduced. Locally, the fire led to more CO₂ emissions because the heat and steam supply was taken over by fossil sources.

CO₂ capture installation

In Duiven, AVR has an installation that recovers CO₂ from the flue gases from the incineration of the waste, with the aid of a solvent. In 2023, the CO₂ captured from this installation was 43.5

ktonnes, which is roughly 500 tonnes more than in 2022. Due to the high energy prices, the demand for CO₂ in the Dutch horticultural sector was under pressure. We did a lot to raise the availability of our capture installation in 2023. The fact is that there has been a significant learning curve in dealing with our solvent MEA. This solvent is inclined to get damaged the more often it is reused, which is detrimental to the installation. In the long run, both the steel parts and the efficiency of the installation suffer because of this. For that reason, we adapted the replacement regime of this solvent and are now looking at options for selectively filtering the 'bad bits' out of this solvent.

In 2023, AVR got the permit for the construction of a large-scale CO₂ capture installation at the Rozenburg location. This installation will capture



482 ktonnes of CO₂ a year. Half of that will be applied for improvement of the growth process in the nearby horticultural sector (Carbon Capture and Usage or CCU). CO₂ supplier OCAP will arrange delivery to the horticultural sector. The other half will be permanently stored in depleted gas fields under the North Sea (Carbon Capture and Storage or CCS). That will be carried out by Aramis, that provides the infrastructure. We are working closely with various market parties including Porthos, Aramis en OCAP (see further on) for the transport, storage and application.

In 2023, we did a technology selection for the new installation to be built at Rozenburg: together with a specialised firm of engineers, we researched the technologies on offer from several potential suppliers. We brought a long list down to a short-list, basing it on important matters to be considered, such as energy consumption, use of raw materials, system integration and investment costs. Early in 2024, we enter the Front End

Engineer and Design phase, known as the FEED phase. The result of this study will be deciding for our definitive investment decision early in 2025. We aim to have the capture installation fully operational in 2028.

Capture of CO₂

Porthos

On 16 August 2023, the Dutch Council of State gave the green light for the Porthos Project, which enables CO₂ to be stored in the North Sea by way of pipes from the port of Rotterdam. There had been court proceedings against the project because of the nitrogen emissions involved during its construction. The Council's Administrative Law Chamber acknowledged that there would be onerous nitrogen emissions but that they would be temporary and limited and have no serious consequences for areas of nature. In October 2023, partly as a result of the positive ruling, Porthos made the definite decision to invest. In 2024, Rotterdam will start construction of the first major



system in the Netherlands for the transport and storage of CO₂. The Porthos system is expected to be operational in 2026. This is important for AVR, because the onshore Porthos pipeline will be used for transport of CO₂ from our Rozenburg location to the Aramis infrastructure for storage under the North Sea.

Aramis

Aramis is a joint venture set up by Gasunie, EBN, TotalEnergies and Shell (subject to approval by regulating bodies). On 30 November 2023, Aramis announced officially that it had started the FEED phase. The design is expected to be finished in 2025, after which the definitive decision to invest will follow. After that, construction can begin on the transport infrastructure. According to current planning, the project will be operational by the end of 2028, as long as all necessary permits have been obtained. From then on, the industry - including AVR - can transport its CO₂ to depleted gas fields under the North Sea by way of the

Aramis transport pipeline. AVR will be connected to the Aramis pipelines through the OCAP and Porthos pipeline network.

CO₂ levy

All fossil CO₂ emissions from our plants are taxed with a minimum CO₂ price. That minimum price is only levied when the price of the European emission trading system EU ETS falls below it.

Under the EU ETS system, participants 'pay' one emission right for every tonne of CO₂ they emit. The cabinet feels that this system is not contributing enough to achieving the goals set in the Climate Agreement. So there is a national CO₂ levy for the industry. This is how it works: if the emission prices rise, the national levy falls and vice versa.

The expectation is that waste incinerating installations will also fall under the EU ETS from 1 January 2028. So AVR is following the results of the impact assessment that the European Commission will

carry out mid-2026 with interest. That assessment will also look at other forms of waste processing. Our attention is particularly directed to the risk of waste flows disappearing to countries outside the EU, landfill sites or other thermal processing techniques.

Ambitions for reduction of CO₂

We have outlined a strategy, with roadmap, for reduction of CO₂ emissions, up to at least 2030 with a look to 2050. The roadmap describes how we will reduce and by how much.

In 2022, there were 881 ktonnes of CO₂ emissions in Scope 1 and 1,346 ktonnes of emissions were biogenic. Almost 80% of the total CO₂ emissions comes from our EfW installations. And almost all fossil CO₂ emissions come from the EfW installations (71%) and the Caustic Water Treatment plant at Rozenburg (28%). At present, only the fossil CO₂ emissions are affected by the government's national CO₂ levy and emission reduction goals.

Our strategy will enable us to reduce our fossil emissions by almost 70% by 2030 compared to 2022 - from 880 ktonnes to 290 ktonnes. We will achieve this largely through the extra CO₂ capture installation to be built in Duiven and the large-scale one to be constructed at Rozenburg. We are also going to apply an alternative treatment solution for caustic water that is sent to us by industrial clients.

We will then be dependent on the realisation of the offshore transport and storage structure Aramis, expected to be operational in 2028, for the storage (CCS). There is also scope for realising a negative CO₂ footprint regulations, but changes in legislation are needed for that, such as expan-

sion of the granting of negative CO₂ emissions to biomass plants and waste biomass plants and of application (CCU).

The legislation is still surrounded by uncertainties. We are dependent on new legislation and regulations for the full roadmap to 2025, in which we hope to operate CO₂ neutrally as far as possible. The government has announced various measures pertaining to the climate policy, but most of them still have to be developed further.

Reducing our own CO₂ emissions

We also want to reduce the CO₂ emissions not directly related to our plants. We're doing that by continuing to make our vehicle fleet more sustainable. In 2024, for example, we will be expanding the charging facilities for electric cars and increasing the budget for employees who want to order an electric lease car, to make that decision more attractive.

Looking to 2024

The theme for 2024 is the Phoenix Project: review, rebuild and resurrect. We also expect a positive ruling on our application for a permit for the construction of a second CO₂ capture installation in Duiven, that is projected to capture 120 ktonnes of CO₂ a year. In addition, we are aiming to make the definitive decision to invest in the construction of the capture installation in Duiven and the one at Rozenburg.



“We want to substantially reduce our greenhouse gas emissions”

Michiel Timmerije
Director of Energy and Residual Substances

Niek Nieswaag
Head of Business

Michiel: “For years, Niek and I have been working together on plans for the reduction of AVR’s CO₂ footprint and anchoring that in our strategy. We aim to achieve the lowest possible CO₂ emissions. We’ve made a strategic roadmap for that.”

Niek: “Large-scale CO₂ capture is out licence to operate. Suppliers and clients are also demanding a CO₂ neutral footprint. It’s going to be an item in the competition with other companies.”

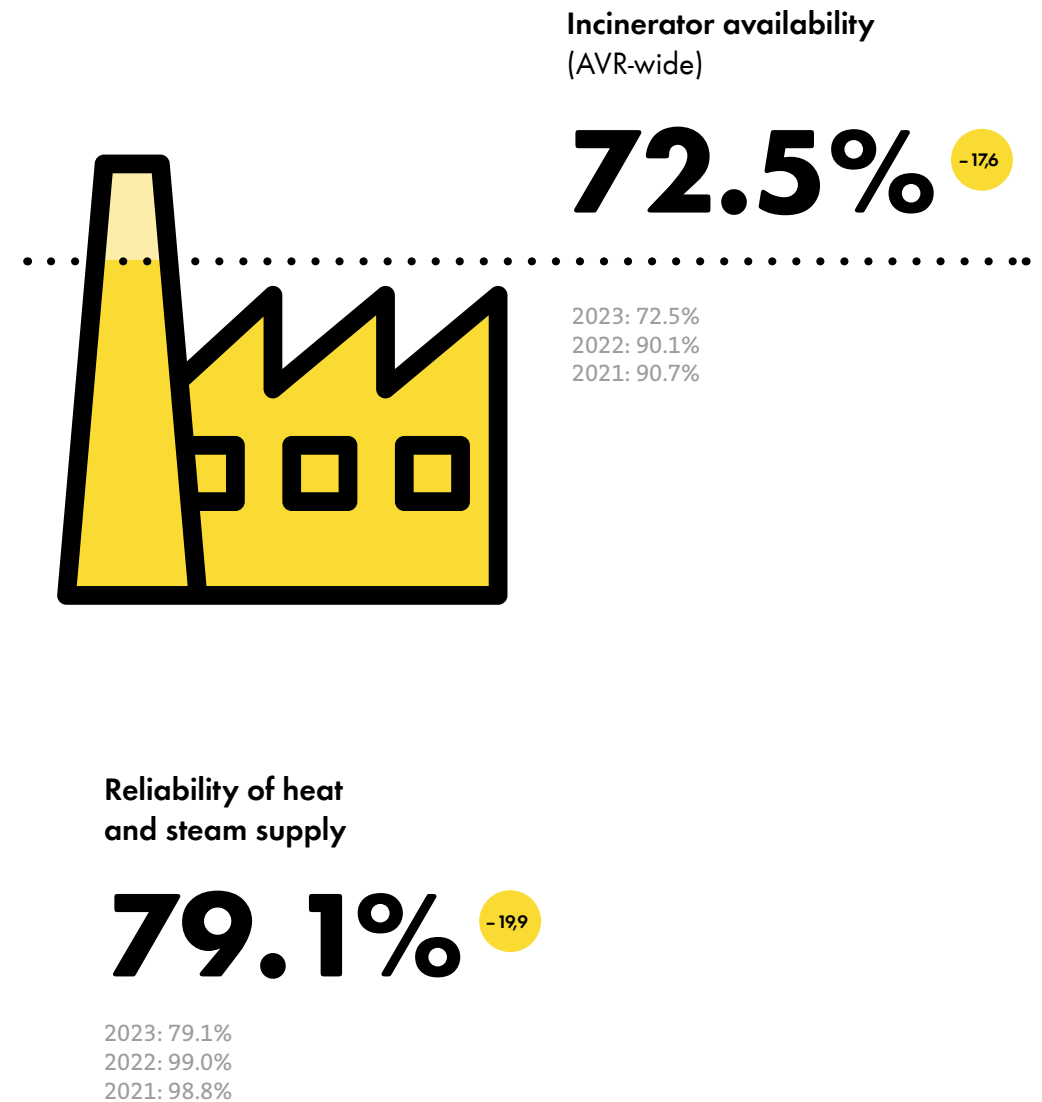
Michiel: “During the incineration of waste, you bind oxygen to carbon atoms, so CO₂ emissions are unavoidable. We also process organic biogenic waste. In that process, we don’t emit any new CO₂, according to international standards. We want to capture the fossil part of the CO₂ emissions, in terms of volume, so that we won’t be adding any new CO₂. If we also store biogenic CO₂, we will have a negative CO₂ footprint. Storage can take place in various ways: in depleted gas fields or sealed in a product such as concrete. The latter is taking place now, on a small scale, but it’s not the future. The CO₂ captured in Duiven is used in greenhouses but ends up in the atmosphere eventually. Where the savings can be found is in the fact that the horticulture sector uses less natural gas, but that doesn’t reduce our flue emissions.”

Niek: “Our roadmap consists of steps leading to 2030. In 2022, our plants emitted 2.2 million tonnes of CO₂. Of that, 40% was fossil - 880 ktonnes. We aim to reduce those emissions to 290 ktonnes by 2030. We’ll do that with capture in Duiven, which we’re expanding, and at Rozenburg, where a large installation will be built, and subsequently storage. In addition, the last cabinet expressed the intention of also labelling the biogenic part after incineration that is stored as CO₂ reduction. Lobbying is taking place at both national and European level to get use of CO₂ recognised as reduction too. The majority of our fossil emissions come from our water plant that uses natural gas. We are searching for alternative fuels or other ways of processing. That will get us to 70% reduction in 2030. After that, further reduction depends on the developments in international legislation and regulations.”

Michiel: “We’re issuing the roadmap and corresponding projects now. We don’t just talk the talk, we make things concrete. The fire has delayed the progress somewhat, but we’re not putting it off, partly because the subsidies and permits have already been granted.”

Reliability

Our partners want certainty about AVR's continuity. For example, our waste clients have to be able to count on their waste being processed according to the agreed contract and our energy clients have to be able to count on AVR energy being supplied according to the agreements made. The energy production is dependent on the availability of our waste processing installations. We bundle all this together under the heading of reliability.



Reliability as a material theme

We hope to achieve many years of continuity in delivery of energy to our clients, thanks to our commitment to reliability. We invest a lot in maintaining our existing installations and in new, future-resilient ones that guarantee optimal availability. They form the precondition for a constant and reliable delivery of energy.

Continuity for waste clients

Despite the fire, the continuity of our services for our waste clients has remained pretty much unchanged. And where that was not the case, we've been able to reach good agreements. All the waste is being collected and transported. Part of it is being processed by other waste processors and part is being stored. That allows us to retain our clients until the power plant is rebuilt and we are once again able to process waste. And that in turn has enabled us to make sure wheelie bins and roll containers were emptied and underground containers were not full to overflowing. AVR processes 20% of the residual waste in the Netherlands, so cities such as Rotterdam, The Hague, Utrecht and Leiden and municipalities in the province of Zeeland, plus many industrial estates in the Netherlands could have looked very different after the fire, but they stayed clean.

That was possible in part due to us having been able to work closely and constructively with all the partners involved: waste companies, transport businesses, business clients, municipal clients and representatives of the various authorities. In order to retain continuity for the clients, we held many talks in a very short time with municipal officials, alderpersons and executives of environmental services, with delegates and officials of provincial authorities and officials of the Ministry of

Infrastructure and Water Management. The State Secretary also supported AVR by soon after the fire, writing to the sector to call on everyone to help AVR where possible, given that in a formal sense, the fire was a calamity. In a number of cases, there were consultations at board level and a municipality got in touch with a provincial authority to find solutions together or to speed up decision-making. And all that led to the temporary storage in landfill sites in the provinces of Noord-Brabant, Gelderland, Limburg and Zeeland and, we expect, in Drenthe too, in 2024. The environmental services in the regions of Rotterdam, The Hague, Limburg and Midden and West-Brabant played an important role in supervising the issue of permits for, amongst other things, the temporary storage of the waste. Thankfully, several public partners were willing to galvanise their networks to raise awareness for AVR's plight or to speed up matters. So several national news channels ran stories about the fire, without having to report that waste was piling up in the streets which, given the extent and immediacy of the abrupt cease in processing was a very real possibility. We've received many compliments for that, but we couldn't have done it without the support and help of many people.

Now that the processing of residual waste at Rozenburg is at a standstill, we're seizing this opportunity to tackle issues we would otherwise only be able to resolve in a scheduled stoppage. One good example of that is maintenance of the bunker, which is otherwise never empty. This will positively affect our reliability in the future.

Storage of waste in Duiven

A solution for the storage of a part of the waste that currently cannot be processed at Rozenburg

has been found in Duiven. The new CO₂ capture installation in Duiven will be built on a piece of land that was used until recently as a car park for contractors. In June 2023, some ground was purchased as a new car park for contractors. Preparing the grounds for both the capture installation and the car park has been accelerated by two years. Due to the fire, storage space is needed for temporarily storing waste from Rozenburg at this location in Duiven. Given the situation at Rozenburg and the shortage of storage space, the environmental service Regio Arnhem (ODRA) speeded up the issue of a permit to store 10,000 tonnes of baled waste for a maximum of one year on these 5,000m² in Duiven. Excavation started in December and asphaltting will start early in 2024. We are

hanging bird nets to prevent birds from tearing or making holes in the bales.

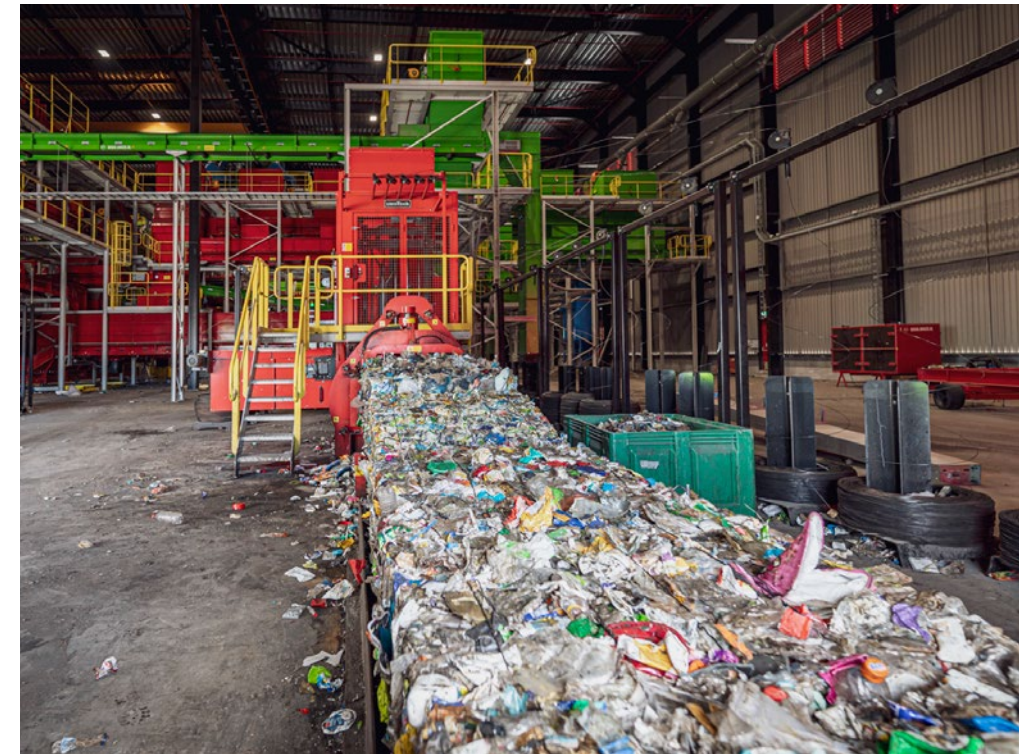
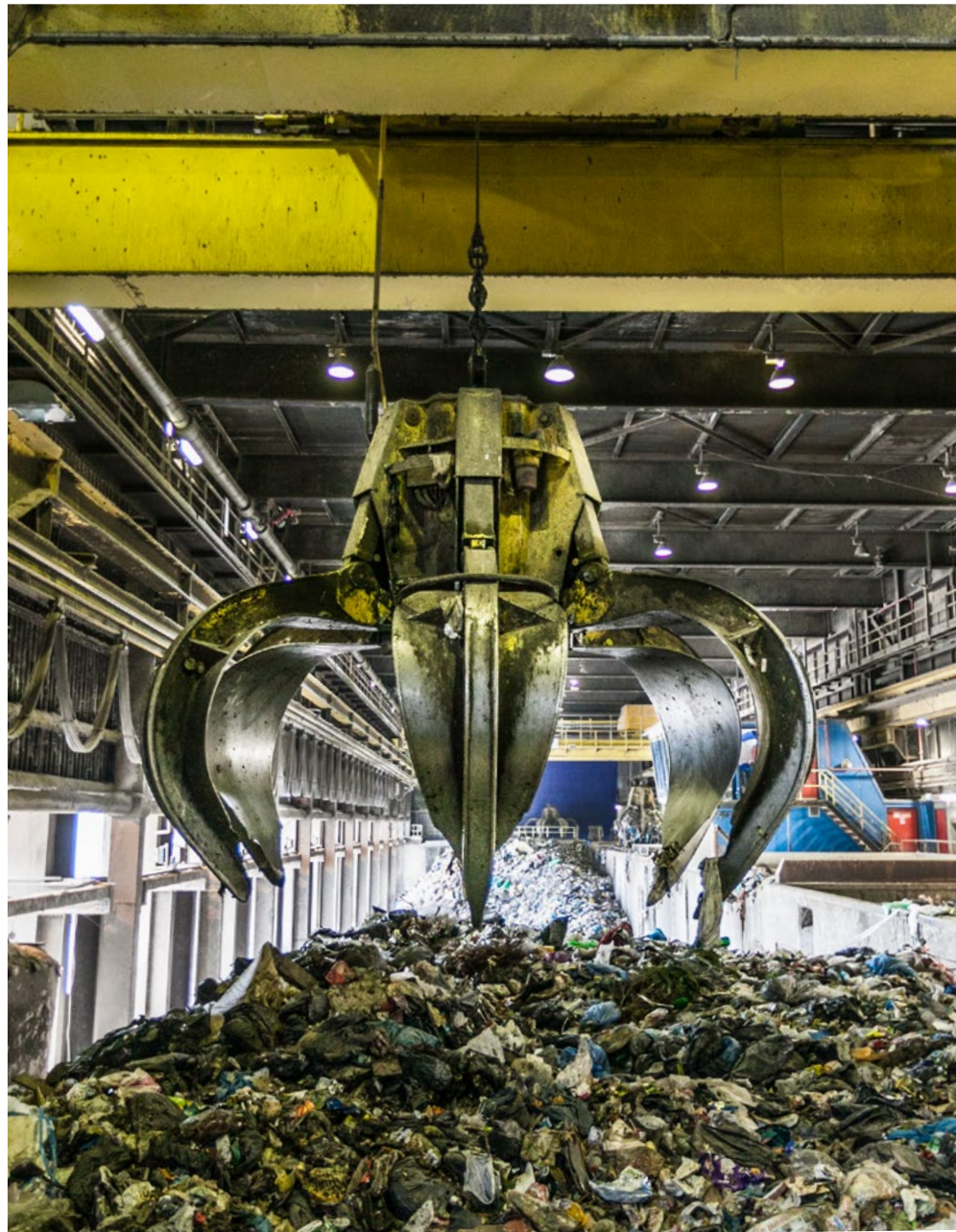
KPI: Incinerator availability

Until 21 September 2023, availability of the incinerator installations at Rozenburg was in order. Since then, the installations are at a standstill. Delivery of energy has also stopped since the fire. That results in the figures greatly deviating from those of 2022. Our efforts to continue the delivery of steam and heat are described in the them Renewable energy, from Page 66.

Laughing gas cylinders

The availability of the installations has suffered badly in both Rozenburg and Duiven due to the damage to the incinerators caused by laughing





gas cylinders. As of 1 January 2023, laughing gas was prohibited for consumers and shortly after that, the cylinders started appearing in the residual waste delivered to us. This was a consequence of the informal deposit system stopping and it was aggravated by the announcement that the Public Prosecutor would start enforcing the ban on laughing gas from 1 July 2023. The cylinders are hard to find in the waste. When they explode in the ovens, they cause severe damage and we have to stop the installation to repair the oven grids. It's logical that these unscheduled stoppages impact the figures and the availability of the EFW installations.

Post-Separation Installation

Post-separating high-quality plastics is one of our goals. In 2023, we invested in converting and improving the foil line in the NSI, because the quality of the foils was not good enough. Using the NSI consequently came under some pressure, because we prioritise the highest possible quality of the plastics sorted by the installation above the goal of having as much as possible processed by the NSI. We hope to achieve a better balance in this in time.



“Our work in searching out solutions leads to the ultimate feeling of solidarity”

Bram van Opstal Manager for municipalities

“I have been responsible for our municipal clients at AVR since October 2021. Municipalities deliver an agreed volume that we then process at our plants. That continuity is important. In the event of an unscheduled stoppage, stock piles up. That has certainly been the case since the fire, since we cannot process anything at Rozenburg. We asked other waste processors if they had any extra incineration capacity but many of them also have more stoppages due to the exploding laughing gas cylinders and are therefore working to full capacity. Another option is to store at colleague companies that have a landfill site. In terms of permits, temporary storage of waste in a landfill site is not always allowed, but it is at de Spinder in Tilburg. We store a lot there.

We transport the waste by lorry, roughly 100 a day. If you take that to just one location, chaos ensues. Waiting times increase to as much as 5 hours. In the end, we organised more landfill and storage locations and more incineration capacity. The waste travels all over the country. When we resume operations in October 2024, there will be around 500,000 tonnes in storage. We’re allowed to leave it there for three years. After that, we have to start processing it along with the usual amounts.

De Spinder didn’t have a permit for so much storage. We talked a lot with competent authorities, municipalities, provincial authorities and ministries to obtain permits. That’s time-consuming, because you have to take the environment into consideration. But we’re in a hurry. Luckily, the ministry supported us and wrote to provincial authorities asking that they give us priority. Because if the storage stagnates, waste collection in Rotterdam, The Hague, Utrecht, Leiden and the province of Zeeland will come to a halt.

Since December, we have a machine that presses that waste into bales. That reduces odours and makes storage easier. Permits are also easier to obtain. Loose waste has to be closed off, bales don’t. There are also more trucks available for bales.

It’s a gigantic challenge that we’re doing our utmost to meet. The reason behind it isn’t nice but it does lead to the ultimate feeling of solidarity between divisions, colleagues and clients, and that really energises. Creative ideas arise too, such as when a colleague suggested taking waste to Tilburg by boat rather than by road. Plus, I’m learning all sorts of new things. What is a landfill site? How can you obtain a permit without having to wait a year? Luckily, we have good contacts and committed municipalities. And we’re very grateful for that.”

“Time was and still is our biggest challenge”



Ravin Mathura
Asset Manager LTM
Paul de Werk
Buyer, Rozenburg

Paul: “As a location buyer, I already had a lot of contact with Ravin, but now we work more closely together on temporary facilities following the fire. We had to hire a lot of people and buy and hire materials, all in a short time. Fortunately, we already knew a lot of contractors who carry out work during normal maintenance stoppages, and we were able to engage their services soon after the fire. For erecting scaffolding, for example, and connecting rented equipment.”

Ravin: The plant provides power to installations and partial installations, and also IT servers, lighting and buildings. They were all off, as was the feed water system of the biomass plant and the electricity supply to the post-separation installation. We hired all sorts of equipment, such as generators, in order to get those systems up and running again. Safety on the grounds must also remain safeguarded, with enough lampposts, for example.”

Paul: “Normally, you would discuss things like that but there’s no time for engineering just now. We have to adapt really fast. Time was and still is our biggest challenge. At the beginning, we immediately hired everything that was needed to be able to work safely. Now, we’re looking to see which rented installations we can say goodbye to, to reduce costs.”

Ravin: “The rented generators are bad for the environment and less reliable. We’re now hiring an installation that’s powered from AVR’s electricity network. And although it’s an emergency scenario, it’s cheaper and more reliable than generators. That’s how we’re constantly looking to see what we can do without.”

Paul: “From purchasing, there was no time to put large contracts out to tender, so we managed to organise a lot of matters through permanent partners and contract agreements. It’s always a question of weighing up lead time, quality and price. This way, we may not be paying the most favourable price for, say, a cable, but if it means you’re saving on a generator, it’s still cheaper.”

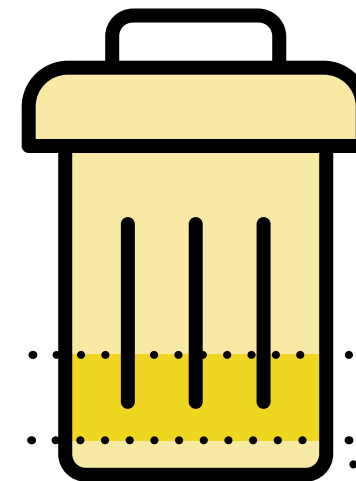
Ravin: “Hiring operational staff in the field also went well. They started repair work in advance of their definitive job. These contractors understood our pain and soon reserved their people for us. Their people were even willing to work weekends for us. That’s the power of a good relationship.”

Paul: “There were a few suppliers who needed us to reassure them about AVR’s financial situation. We’re still healthy. We’ll just keep going and come back with a brand-new plant.”

Recycling

Recovering raw materials

AVR contributes to the circular economy by recovering raw materials from the residual waste delivered. Every substance has value. We separate and sort materials and try to close the cycles as much as possible. That prevents us having to use new raw materials and prevents greenhouse gas emissions too. We aspire to the best possible quality in the raw materials recovered.



Quantity of recovered or separated raw materials

Minerals

(as a % of the quantity of waste)

25.4% +3.4

2023: 25.4%
2022: 22.0%
2021: 22.8%

Metals

(as a % of the quantity of waste)

2.6% =

2023: 2.6%
2022: 2.6%
2021: 2.6%

TopCrete
(ktonnes)

26.6 +1.6

2023: 26.6
2022: 25
2021: 28

Molybdenum
(tonnes)

21 -99

2023: 21
2022: 120
2021: 160

Plastics
(ktonnes)

21 -4

2023: 21
2022: 25
2021: 29

CO₂ applications
(tonnes)

43 =

2023: 43
2022: 43
2021: 42



Avoided emissions

Recycling materials means sustainability gains in a number of areas. It prevents the use of (fossil) raw materials for extraction or production and it avoids CO₂ emissions. In 2023, AVR avoided 184 ktonnes CO₂ emissions in this way. For more information about the avoided CO₂ emissions per recovered raw material see the section CO₂ emissions on page 40.

Post-Separation Installation

KPIs post-separation	2023	2022	2021
Volume throughput (ktonnes)	286.1	382	428.1
Volume output (ktonnes)	21	24.8	28.6

Performance in 2023

On our grounds at Rozenburg, we have a post-separation installation (NSI) that separates plastic, foils and Tetra Pak cartons for recycling. We modified the post-separation installation (NSI) in 2022 with an upgrade of the optical separators. We continued to improve the performance of the NSI in 2023. Initially, we wanted to increase its availability. That was necessary because operational and technical challenges in 2022 had led to quite a lot of unscheduled stoppages that year. More focus on steady operating has resulted in an improvement in availability in the period January through August 2023, compared to the same period in 2022.

Tetra Paks

In 2022, the only buyer of separated Tetra Pak cartons stopped recycling them due to the high energy prices for the paper industry and the consequent falling demand for recycled material. So Nedvang, our recycling partner, requested we incinerate the Tetra Pak cartons along with other residual waste. Early in 2023, Nedvang contracted a new buyer and the separation of Tetra Pak cartons was resumed.

Improvements

In May 2023, we modified the Windshifters, that separate materials by way of a flow of air. There were several reasons for that. We want to prevent unsafe actions during maintenance, reduce loss of product due to insufficient negative pressure in the extraction system and prevent stoppages, to increase availability of the installation. The modification is aimed not only at the safety but also at the improvement of recovery of foils and their cleanliness.

In addition, much attention was paid in 2023 to improving the separation yield of 3D plastics. One consequence of this is that the settings of the optical separators have been optimised. The first positive results of this were clearly visible in September.

Availability

The fire at Rozenburg on 21 September knocked the NSI out of operation immediately. That was because the NSI shares facilities such as electric power supply and process operation with the incineration. Those facilities had to be repaired before the NSI could be put back into operation. While making those repairs, we also carried out a modification for the removal of laughing gas cylinders from mixed household waste.

On 1 December, the NSI was put back into operation with a single separation line. In technical terms, the NSI could run fully, but it is currently running at 50% of the technical capacity. That's because of logistical restrictions to the capacity for disposal of the residue, which is usually removed to our own incineration installation by way of a transport band. We're searching for solutions to enable more household waste to be post-separated in the NSI. In the meantime, we have also contracted external separation capacity in order to be able to continue serving our municipal clients.

Looking to 2024

The year 2024 will be all about getting the NSI operating at full capacity as soon as possible. That may well correspond with putting the incineration installation into operation again, but we're doing everything we can to get it done earlier. We're also working on the projected improvement in performance. Based on the results in December 2023, the improved separation yield of 3D plastics looks to continue. In 2024, we aim to achieve a similar improvement in the recovery and quality of the foils.



"I want to keep working at AVR for the rest of my life"

Tim Huysse
Chief operator of post-separation installation, Rozenburg

"I started work at AVR in 2018, when the post-separation installation, or NSI, was first installed. The NSI separates materials from household waste delivered by municipalities. I started as an operator and progressed to chief operator. Since the beginning of this year, I am chief operator of the day shift. I like working at AVR. It's nice to work for an organisation that offers excellent conditions and where there's scope for personal development. There's an open culture - everyone is accessible and approachable.

The NSI organisation is a separate division within AVR. With the NSI, we want to set an example for the rest of the company, in the areas of safety, procedures and employee training, for example. We feel this is important because there are a lot of young people working in our team who may not have much experience.

When the incineration installation burned down in September, the NSI ceased operating too. That was because that plant provided the power supply for the NSI. A number of generators were brought in, as an emergency solution, but they were able to supply only enough power for the lighting and control room. In order to have the whole installation running again, a new power supply was installed from a distribution station.

When the NSI shut down, after the fire, we carried out maintenance with the entire staff. Everything was cleaned and parts were replaced. The installation was also modified to be able to remove laughing gas cylinders from the waste. They are a huge problem for the incineration installation, because heat can cause them to explode, severely damaging the ovens.

We also looking at the possibility of improving the separation yield of foils even more with the help of a robot arm. For example, we're looking into the possibility of separating pieces of foil smaller than A4 format. And we're searching for an optimum between separation yield, cleanliness of the separated flows and throughput.

Separating waste is the future and will only become more important. I want to keep working at AVR for the rest of my life. I'm given a lot of scope for initiatives, which makes it great for creative people like me."



“Finding high-grade applications is becoming increasingly complex”

Rob Schoorl

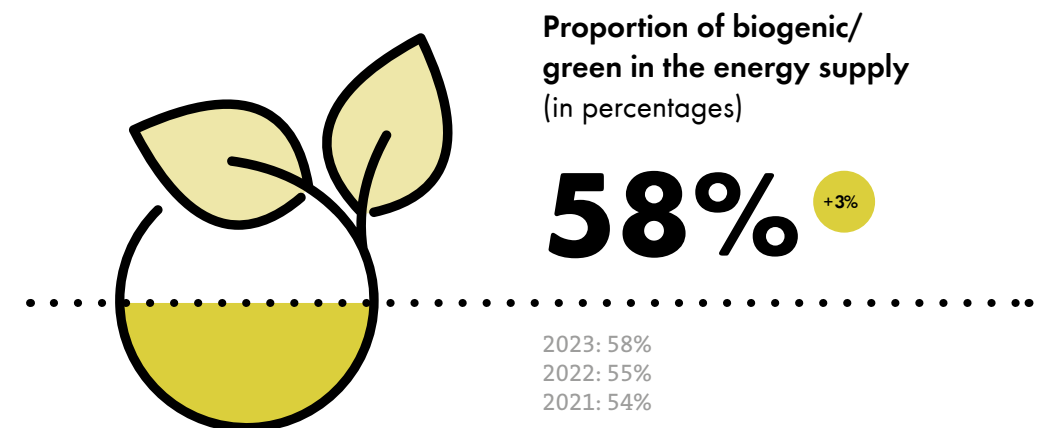
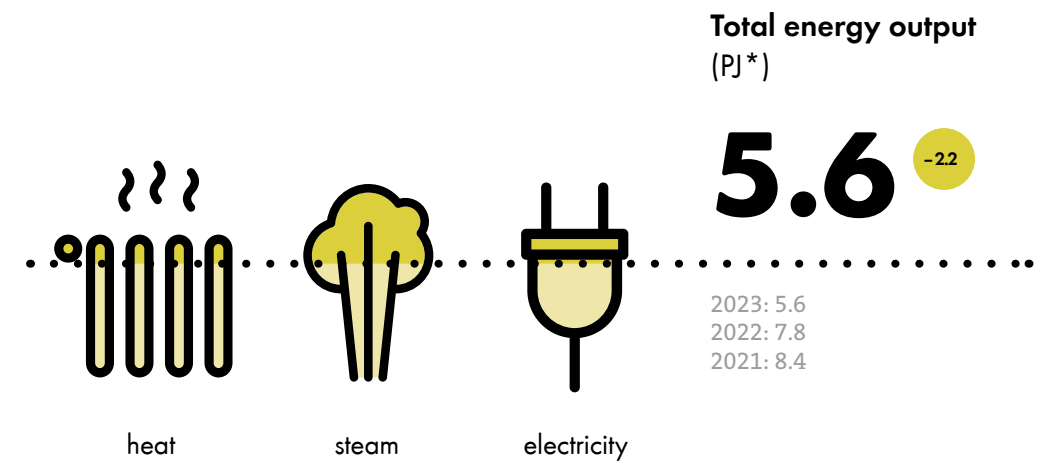
Senior projectmanager Energy and Residual Substances

“A lot of my work is concerned with bottom ash, the residue left after incinerating waste. It consists mainly of metals and minerals. The recovery of the metals is 100%. The mineral component was used in road foundations, but due to the pollution it contained, is used controlled and isolated. In 2012, it was agreed in a covenant that the quality would be improved to such an extent that it could be applied freely. This is a Green Deal between the national government and a number of waste energy plants. There are now two applications. For use as road foundations, the bottom ash is now either mixed with binding agents that retain the pollution or it is washed and used in concrete. But it still has a bad image. AVR is searching for a high-grade application that doesn't cause discussion. We're doing that using CEMPR, the innovative technology developed by specialised firm Blue Phoenix Group. The minerals from bottom ash are ground and the resulting powder can serve as filler in concrete, replacing cement which is a huge source of CO₂. The EU is subsidising this development in the context of innovative CO₂-decreasing projects. Together with Blue Phoenix Group and concrete manufacturer Kijkstra, we form a consortium. There is now a demonstration factory, a complex piece of technology, at AVR in Duiven. In 2024, we will start operating on an industrial scale. That isn't easy, since bottom ash is an aggressive material and large-scale processes cause problems that can't be simulated on a small scale. For example, factories wear out fast. And it's a wet process with unexpected side effects. For AVR, this is an important project for the continuation in throughput and application of the bottom ashes. But the quality of the waste is decreasing, affecting the quality of the bottom ash too. That's why it's becoming more difficult to find high-grade applications. It's an interesting dilemma. Politicians want to reach 100% circular, but how realistic is that? The higher-grade your recycling, the more recycling residue. If the quality of bottom ash decreases, do you still want to use it, as a society? Or do you accept lower-grade applications and invest in activities that yield more, socially? Those discussions will come up in coming years. Competition in the market also makes reuse difficult. Washing is a much better solution but also much more expensive than immobilising the pollution. And washing creates a residue that you have to dump, and dumping is taxed. If you use it isolated, not washed, it's not taxed. Those are strange twists.”

Renewable energy

Renewable energy from residual waste

We separate everything that might possibly be reusable or recyclable from the waste that comes in at AVR. After that, the residue is still very valuable because it forms the source of sustainable electricity, heat and steam through incineration. Those products are sustainable because they replace the use of fossil fuels. We supply that energy to our surroundings and to heating networks. That way, we make optimum use of all the waste.



* 1 PJ (1 Petajoule) is equal in electricity to 277.78 kWh. And if you were to generate heat using natural gas, you would need 31.6 million m³ to generate 1 PJ

Division into heat, electricity and steam (in PJ*)			
	2023	2022	2021
Heat	3.7	4.9	5.5
Electricity	1.3	1.9	1.7
Steam	0.7	1.1	1.2

The fire at Rozenburg

The year 2023 falls into two parts - before the fire on 21 September and after it.

The energy that AVR supplies in the form of electricity, process steam and district heating is always the result of the primary process of waste processing. AVR's goal is efficient conversion to energy carriers. Local throughput in the form of

steam to industrial clients and of heat to affiliated district heating networks take priority in this. AVR at Rozenburg and Duiven is the dominant source for the supply of both the industrial process steam and the district heat. The fire on 21 September had a severe impact on the central process control of our incineration lines. Multiple distributors for low and high voltage were also irreparably damaged.

During the fire, we kept our clients constantly and transparently informed about the progress and possible impact on our supplies. Immediately after the emergency services gave the all clear, it was obvious the operation at Rozenburg would be disrupted for a long time. The energy team was in daily contact with our heat and steam clients to discuss the impact and exchange ideas for alternatives.



We immediately scaled back our sales positions (hedges) in the electricity market, bringing them in line with the expected production of electricity for the autumn of 2023 and the whole of 2024.

Right after the fire, we informed the Ministry of Economic Affairs and Climate that without additional measures, the continuity of the Rotterdam heating chain was at risk. This in accordance with Article 12.b.1 of the Warmtewet (Dutch heating act). The Rotterdam heating chain (Uniper, Warmtebedrijf Rotterdam, Vattenfall, Eneco and AVR) was able to put together a package of emergency measures with which to safeguard the supply of district heating to Rotterdam residents. The emergency measures consisted of the maximum deployment of Uniper's gas-fired power plant and the placing of a large number of emergency boilers at various locations in Rotterdam. In collaboration with Warmtebedrijf Rotterdam and Vattenfall, three gas-fired emergency boilers were placed on AVR grounds. They allow us to prevent the installations from freezing in the winter and to provide a part of the heat supply to Warmtebedrijf Rotterdam - in Rotterdam-Zuid.

We will be able to use the incineration lines at AVR for the supply of steam and heat again in the second half of 2024 at the earliest. AVR was able to resume providing a small part of the supply of heat and steam in November 2023, thanks to the deployment of our own biomass plant (BEC) and Vortexoven 14. That enables us to once more supply our neighbouring company with process steam and Eneco with roughly 20-25% of their district heating demand.

Recovery project Phoenix naturally focuses in the first instance on the restoration of our primary

activity - processing residual waste for our clients. The focus in the energy production is on completely restoring the steam supply to our industrial clients and of the district heating to Eneco and Warmtebedrijf Rotterdam. Depending on the situation and the lead time of restoration of our turbine park, we will be able to resume production of electricity in the course of 2025.

Energy supply

The fire had a very severe impact on AVR's entire energy portfolio. Heat and steam supplies from Rozenburg were disrupted for many months. We were able to restore supply of steam to our neighbouring company from the BEC, but the supply is currently coming from a single source. That means that certainty of supply is not optimal and fully dependent on the availability of the BEC. Our client has taken back-up measure until more sources become available at AVR.

After the fire, we were forced to stop supply to NetVerder's communal steam pipeline (see below). Affiliated partners and grid operator NetVerder are working on a plan for resumption of the steam supply from another external industrial source. It's expected that AVR can resume supply of steam to this network in the second half of 2024.

At present, AVR is supplying Eneco with a limited amount of sustainable heat from the BEC and industrial residual heat from the Water Treatment (WT). Natural gas-fired emergency boilers have been installed on our grounds to enable a part of the supply to Warmtebedrijf Rotterdam in the first six months of 2024.

Production of electricity at Duiven and Rozenburg is normally offered as a single portfolio on the spot

market. Financial sales positions, based on risk management, were sealed on this in the past. AVR has brought the 2023 and 2024 positions into line with the expected production. The financial impact of this is included in the result.

Definition of renewable energy

AVR follows the official definition of sustainable (renewable) energy used in the Electricity Act and by Statistics Netherlands (CBS): energy to which society has access for an unlimited period and the use of which is not to the disadvantage of the living environment or the possibilities for future generations.

Every year the government determines the energy percentage that is fixed in the biodegradable fraction, known as the fixed part. This was 58% in 2023. That means that 58% of the energy output of our waste incineration installations was classified as renewable and certificated with guarantees of origin. The energy we generate in the thermal conversion installation (TCI) in Duiven and in the bio-power plant (BEC) in Rozenburg is 100% sustainable.

The part of the residual waste that is not bio-degradable is also converted to energy in our EfW installations. According to the definition, industrial residual heat and energy from non-biodegradable residual waste do not constitute renewable energy, but they do reduce the use of fossil resources. We also process industrial waste water to recover industrial residual heat that we then supply to households in the form of district heat.

Developments surrounding energy in the Netherlands

We're seeing the electricity grid in the Netherlands

becoming overfull, in terms of transport. At our locations in Duiven and Rozenburg, both the regional grid operators, Liander and Stedin, and the national grid operator, Tennet, have announced transport-restricting measures. For AVR, this means that in the event of calamities, there is a restriction on the electrical capacity that can be extracted from the regional high-voltage grid. Solutions must be found for this, since in the event of a disruption or partial disruption in our own electricity production, electricity must be available to keep installations running in compliance with the valid environmental regulations. AVR is aware that the grid operators are facing big challenges and that realising requests for expansion in the short term is impossible to realise. But AVR also believes that existing contract agreements on transport must be respected. In Duiven, AVR and Waterschap Rijn en IJssel (water authority) are in talks with grid operator Liander to reach a tailored solution for the sharing of existing connection and transport capacity on the 10,000-volt distribution network. The aim is to contract a virtual exchange point at the grip operator with the help of bilateral agreements. That way, optimum use is made of the existing infrastructure, because the existing individual reserve capacity can be divided between the parties. The parties concerned hope to be able to pre-sign the necessary pilot agreements early in 2024. Later, this can be the basis for more collaboration in the Innofase industrial estate in Duiven, where AVR is located. It could be the creation of an energy hub.

Expansion of NetVerder steam network

In November 2023, after years of research and negotiations, expansion of NetVerder communal steam network in de Botlek was signed for. To that end, AVR signed an extension of the connec-



tion and transport agreement with NetVerder, concluded a steam purchase contract with a nearby industrial partner and reached agreement on extension of the contract with an existing steam client. All parties in the steam chain aim for maximum use of the available steam sources connected to the steam pipe. That enables a reduction in emissions of large quantities of CO₂ en NO_x in the chain. According to planning, the expansion will be put into operation in 2025.

Innovation

In the Phoenix recovery project, there will be focus on improved monitoring of energy flows. And energy efficiency will be an important factor in the choice of new equipment, such as frequency regulators, pumps and motors.

At our Duiven location, we gave Carbonoro the opportunity of building and testing a demonstra-

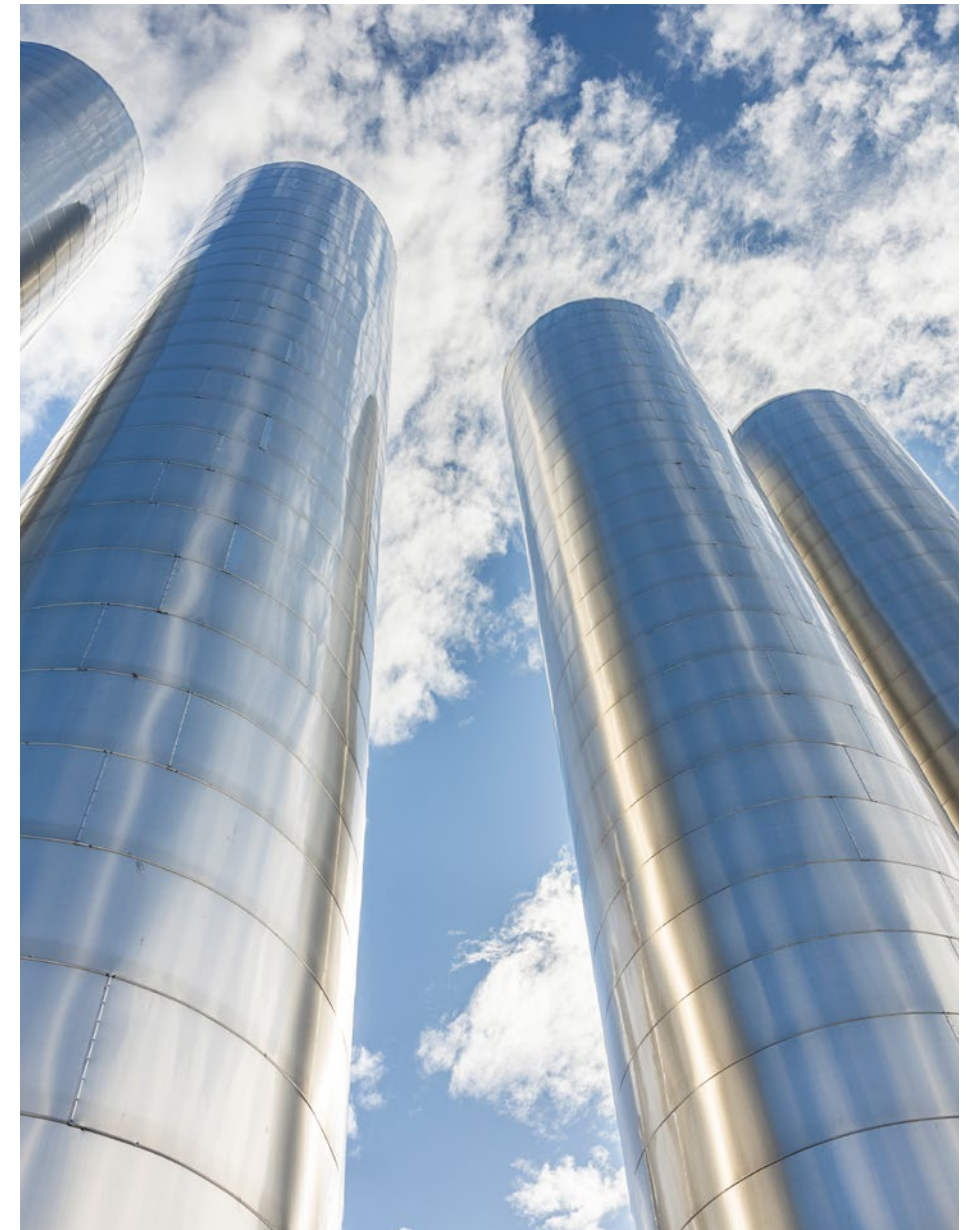
tion installation for the capture of CO₂. The aim of this demonstration factory is to reduce both the specific energy consumption per tonne of captured CO₂ and the emissions into the environment, by means of what are known as new-generation amines. Amines are substances that can absorb CO₂ at low temperatures and emit it at higher temperature. Research into these parameters is hugely important, given that AVR already captures CO₂ on a large scale and intends to expand this significantly in 2024. With this collaboration, AVR hopes to gain insight into the performance of the process. The demonstration factory will be put into operation in the course of 2024.

Future prospects for renewable energy

AVR wants to recover the maximum energy and raw materials from residual waste. Monitoring the progress in the improvements in energy efficiency is part of the quality management system ISO 50.001.

At present, the energy that AVR produces is used to avoid a lot of CO₂ emissions in the chain. But with the growth in sustainable production of electricity (wind, solar) and making heat production more sustainable, the effect on emissions of the energy provided by AVR will decrease in coming years. That's why the capture of CO₂ in our incineration processes is essential if we are to retain this added value. The capture of CO₂ also offers possibilities for further optimising the use of residual heat that results from cascading. This is how that works. In

our boilers, we produce steam with a relatively high temperature and pressure. Due to the energy this steam contains, diverse processes can be driven, including turbines that produce electricity. This leaves heat flows with a lower temperature and pressure. By deploying these flows in other processes, we make maximum use of the energy produced by converting waste into steam. To capture CO₂, the flue gases have to be cooled and we may be able to apply this condensation heat in the district heating supply.



“Exploding laughing gas cylinders damage the incinerator”



Jason Ramdajal

Assistant foreman/waste receiver at Rozenburg

Frank Dekker

Assistant foreman at Duiven

Frank: ‘I’ve been working at AVR for 23 years and still enjoy it 100%.’

Jason: “Then I can shake your hand, because I’ve been working here just as long and with just as much pleasure!”

Frank: “I work in Duiven at the bunkers where the waste arrives. We mix it thoroughly to ensure a stable incineration. That way, you get the fewest emissions and a uniform production of energy. Waste that is dark is damp and low-calorie. That produces less energy. If we mix it with light waste, that is high-calorie, we get a homogeneous mix that lets us produce a lot of sustainable energy.”

Jason: “That usually goes well, but this year we’ve had a lot of problems with laughing gas cylinders in the waste, that explode in the incinerators. The deposit system for those cylinders stopped when laughing gas was made illegal, early in 2023. Now, the cylinders get dumped all over the place, in nature, in waste containers... There are explosions in the incinerators every day.”

Frank: “We have to actively search for those cylinders in the waste. You might think: you can easily spot those blue cylinders with the yellow caps surely? But they’re also in boxes or bags. There’s always one that manages to slip through.”

Jason: “At first, we used to take them out at Rozenburg with a crane. But the magnetic band in the post-separation installation, that separates metal, was recently modified so that it takes out the cylinders too.”

Frank: “I wish we had that in Duiven... We have to hire extra people, and that’s expensive. The waste is turned over rollers with cast-iron grids. An explosion can crack such a grid. In that case, the incinerator has to be switched off for repairs. The stoppage itself costs around 45,000 euros a day, and that’s before the costs of the repairs. We do everything in our power. We have a sorting crane and everyone is trained to tackle this. But sometimes, the waiting times are too long and the bunkers too full. Now that Rozenburg is out of operation, extra waste is being delivered to Duiven. We’re keen to help each other out, but we have much less room for sorting.”

Jason: “Sometimes there is something we can do. For example, if we come across a number of them in a waste collection truck, we can reject the load.”

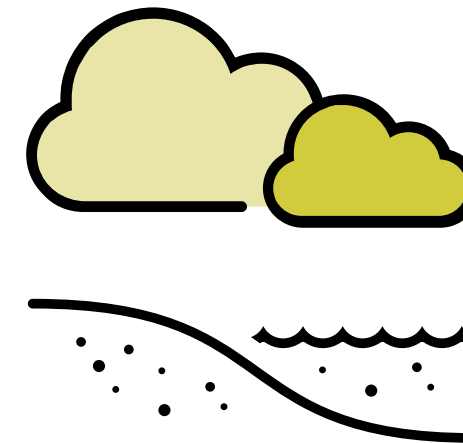
Frank: “Here, the waste often comes from a transshipment. If we see cylinders, the waste goes ‘return to sender’, because they need to remove the cylinders themselves.”

Jason: “It doesn’t get any easier, because the problem doesn’t go away. We’re going to be stuck with it for a while yet.”

Other emissions

Minimising impact

AVR plays an important role in society. We have a positive impact on society and equally, a responsibility to minimise the negative impact as much as possible. That concerns the emissions of harmful substances that are released during waste processing. Our flue gases are cleaned and we invest in technologies that help us keep the emissions as low as possible.



Rozenburg

NO_x emissions
(kg/tonnes waste)

0.34 +0.03

2023: 0.34
2022: 0.31
2021: 0.29

Fine particulate emissions
(kg/tonnes waste)

0.0028 +0.0002

2023: 0.0028
2022: 0.0026
2021: 0.0024

Dioxin emissions
(kg/tonnes waste)

0.0000000048 -0.0000002752

2023: 0.0000000048
2022: 0.000000028
2021: 0.00000012

Duiven

NO_x emissions
(kg/tonnes waste)

0.28 +0.02

2023: 0.28 *
2022: 0.26
2021: 0.24

Fine particulate emissions
(kg/tonnes waste)

0.0017 -0.0006

2023: 0.0017 *
2022: 0.0023
2021: 0.0017

Dioxin emissions
(kg/tonnes waste)

0.00000028 +0.00000016

2023: 0.00000028 *
2022: 0.00000012
2021: 0.00000017

* Emissie uit de afvalverbranding, exclusief de TCI-installatie



Definition of other emissions

Our process results in the release of not only CO₂ (see the section on CO₂ emissions) but also of other harmful substances such as nitrogen oxide (NO_x), particulates and dioxins. To this end, we have established KPIs on which we report in this annual report. The residual waste we receive also contains substances of very high concern (SVHC). We call the emissions of all substances other than CO₂ 'other emissions'. Under this heading, we also include the smell from the residual waste we process, the noise made by our activities and litter on our grounds.

The fire and our emissions

Due to the fire, installations at Rozenburg that release emissions are mostly out of operation, so in an absolute sense, our emissions have been drastically reduced. However, we show the emissions per tonne of processed waste, and the figures show that most emissions have increased, at both Rozenburg and Duiven.

Dioxins

Despite all the focus on and measures against it, emissions of dioxins have exceeded the norm. At the end of 2022, our supervisory body DCMR

Mileudienst Rijnmond imposed an LOD (Last onder Dwangsom) on AVR for the emissions of dioxins from the biomass plant (BEC). That means that every time the norm for emissions of dioxins into the air is exceeded, we are fined. The norm was not exceeded in 2023, so the LOD has expired. The most recent measurements in 2023 actually show positive results that are well below the current norms. Looking closely at the dosage of a substance that removes the contamination from the air, plus the care we took to ensure the efficiency of the active carbon filters made the emissions more manageable, contributing significantly to those positive results.

During the current stoppage of the flue gas cleaning installation of the EfW at Rozenburg, much attention is being paid to the active carbon filters. The filter on Line 2 is being renewed, project-based (interior work). The others are being emptied and inspected.

In 2026, we will start on the first housing for a boiler which will ensure that the flue gases are cooled even more before they reach the electrostatic filter (E filter). That will significantly reduce the formation of dioxins in the E filters. In addition, we are developing options for the active carbon filters in the EfW installation, to further increase the capture yield for dioxins and ultimately succeed in meeting completely the stricter emissions requirements for dioxins.

Nitrogen (NO_x)

The NO_x load (the absolute figure of nitrogen emissions) was lower in 2023 than in 2022 since, due to the fire, there were fewer hours of business operations. There has been a slight increase in the NO_x emissions per tonne of processed waste in

recent years. A number of factors are important in lowering these emissions again. If the temperature in the DeNO_x installation of the EfW becomes too low, it powers down and the injection of ammonia stops - and precisely that injection lowers the NO_x emissions. So we have to regulate the temperature better. We can also improve the effect of the ammonia injection in the EfW and the BEC. And the quality of the catalytic converter in the EfW is an important factor. Lastly, we're trying to restrict the formation of NO_x in the grid incinerators by adjusting the stoking. Controlling the primary incineration air also has a positive effect on the formation of carbon monoxide (CO) and the 'burn-out' quality of the bottom ash. Good 'burn-out' quality is important not only because it releases fewer emissions but also because it allows better raw materials to be recovered from the bottom ash.

The nitrogen is a problem mainly at AVR in Duiven, because that installation is close to a Natura 2000 area. At both Duiven and Rozenburg, we are developing technical and technological measures to reduce nitrogen emissions.

And the nitrogen emissions can also be reduced through good preventive maintenance. The flue gas cleaning installation at Rozenburg is now out of operation, as a result of the fire. We're taking advantage of this situation to get this installation completely ready for the start-up later in 2024.

Particulates

All sorts of initiatives are running for the reduction of emissions of particulates. One is a study into the use of humidification systems, which produce a mist. The particulate emissions attach themselves to the minuscule drops and subsequently fall to

the ground. Later in 2024, we will be assessing more concrete proposals for tackling the particulate emissions.

Substances of Very High Concern (SVHC)

We already drastically reduce emissions of what are known as Substances of Very High Concern (SVHC) in our processes. These substances are harmful to people and environment because, for example, they impede reproduction, are carcinogenic or they accumulate in the food chain. Some time ago, AVR applied to DCMR for a new environment permit. In the application, AVR had to demonstrate that they meet the current technical requirements with regard to emissions and discharge, and also new statutory requirements and regulations. One example of this is the reduction in the emissions and discharge of SVHC. In that context, AVR submitted to the appointing authority an avoidance and reduction plan describing a number of initiatives to further reduce the emissions and discharge of SVHC in the coming years. We will explain the implementations of these projects in the annual reports of the coming years.

PFAS is another well-known problem. PFAS is the collective name for poly- and perfluoroalkyl substances (or Forever Chemicals). It is a group of man-made chemical substances that do not naturally occur in the environment. Long exposure to some PFAS can endanger health. PFAS can be found in the foam-creating substance used in fire extinguishing foam, for example. That foam is used by many companies in the industry, including AVR. Sales of foam containing PFAS are banned from 2024, and from 2026, the foam may no longer be used. So we've started looking for alternatives.

Flies

Since we removed the waste storage bins next to the boundary with a neighbouring company at Rozenburg, that company's complaints about flies have greatly decreased. We continue to make an effort to restrict nuisance from flies to a minimum.

Wind-blown and water-borne waste

The major cause of the occurrence of wind-blown and water-borne waste is transport of waste. During the transshipment of waste from quay to ship or vice versa, and during transport across the grounds, spillages occur into environment and surface water. This is particularly the case at the transshipment stations Brielselaan and Keilehave in Rotterdam and to a lesser extent at Rozenburg. DCMR and Rijkswaterstaat have warned AVR several times about the substandard 'housekeeping' at the Rozenburg location, and that resulted in two LODs. We've taken a number of direct measures which have reduced the distribution of wood dust from the BEC's disc sieve. And we have been searching for more structural measures. We started the Good Housekeeping programme at the end of 2023, and the first step was to hire a firm to give the grounds a thorough cleaning. We then divided the grounds into logical areas that will be monitored by internal supervisors. The supervisor will be the point of contact if the housekeeping in their area is not up to standard. AVR and Rotterdam Municipality also have a joint initiative running at Rotterdam's Keilehaven, which involves an annual clear-up campaign.

Nuisance from odour

In 2023, DCMR received many complaints about odour from Rozenburg, Maassluis and

Vlaardingen. In many cases, the timing of the complaints corresponded with very hot weather. We're considering appropriate measures to effectively reduce the odour nuisance from AVR such as, for example, covering storage bins, checking baled waste for tears, making sure warehouse doors are kept shut and spraying with a substance that absorbs odour.

Management of the surrounding area

AVR is an active participant in the Burengesprek Botlek Europoort. The goal is to have open and constructive dialogue between businesses, government and neighbourhood residents. By talking to each other, sharing ideas, asking questions and pooling information about safe working and living, we are keeping the area around the Botlek and Europoort liveable and safe. In this 'Burengesprek', AVR gave the 'neighbours' the chance to ask questions about the fire.

In Duiven too, a great effort is being made to improve collaboration with the surrounding area. One example is the Synergiepark InnoFase, where our AVR location is. On this industrial estate, the companies join forces to restrict the CO₂ footprint. Duiven Municipality, the businesses on InnoFase and the knowledge partners involved are working together closely on this. By making smart use of energy, water and raw materials, entrepreneurs on InnoFase produce at lower costs. Another example is the cooperation with the Stichting Milieuvrienden Duiven (Environmental Friends Duiven). That association strives for a good working and living environment for residents of Duiven and the surrounding area and for the preservation

and improvement of nature, the landscape and nature historical values. The spearheads are flora and fauna, environmental quality of soil, air and water and responsible zoning. We also collaborate with the Natuur- en Milieufederatie in the province of Gelderland. This association has both individual members and member organisations, and AVR is one of them. The federation actively focuses on four themes linked to the mission for nature and environment in Gelderland: nature and landscape, energy and climate, agriculture and food and living environment and participation.

Control of Major Accident Hazards Directive

A company falls under the COMAH (Control of Major Accident Hazards Directive) depending on the quantity of hazardous substances it has stored there. This concerns the risk to the surrounding area. Our Rozenburg location falls within the COMAH category. In November, DCMR and the Dutch labour inspectorate carried out the annual COMAH inspection. Given that a large part of the business was out of operation, the inspection was different this time. The inspectors focused mainly on the installations that pose the greatest risk to the surrounding area. The inspection found six Category 3 infringements, whereby the threat of a serious accident is very slight, and three supplementary actions were established. They have to be dealt with within three months.

“The release of dioxins is intrinsic to fire”

Richard Kooijmans
SHEQ Coordinator

“I started working as a temp in the laboratory at AVR in 1991. I came back there later as an analyst. At the time, I wrote in my letter of application that I wanted to contribute to a better environment. The application of analyses has always interested me more than the analyses themselves, so I was always to be found in the factory. I was made head of the laboratory in 2006 and became SHEQ Coordinator in 2017. I often have to figure out how to do things that are not specifically described in legislation and regulations. Government officials sometimes say: “You come to us with questions that no-one else asks and problems that no-one else has”. That’s because we work with raw materials - read: waste - that change every second. That’s tense.

After the fire in September, GGD staff and our supervisory body DCMR Mileudienst Rijnmond asked whether dioxins had been released. The image was that our plant had burst into flames and the incineration process and flue gas cleaning had been disrupted, causing emissions of dioxins from our flues. In fact, our incinerators had ceased to function because of fire in a part of the electricity supply, which allowed the flue gas cleaning to continue to operate so that no increased emissions of dioxins were released through the flues. The DCMR wanted to know how the incineration process had gone and that can be traced in all the process data. I explained the situation to DCMR, after which they were also convinced that no dioxins had been released through the normal incineration process.

There were, however, dioxins in the extinguishing water. They can occur in every fire, under certain conditions, so it’s not strange that they were found in the extinguishing water. Dioxins can also be formed during incineration of the insulating sheaths of electricity cables that contain PVC. We collected all the extinguishing water released: there are 30,000 tonnes of polluted water stored in ships and pontoons. In addition to low concentrations of dioxins, it also contains low concentrations of PFAS, which are found in the foam used by fire fighters to combat fires. AVR originally only had a permit to process this water as long as it is ‘incinerated’, destroying PFAS. But we now also have a temporary water permit with extra monitoring obligation to process the water in our own water purification without incineration, in which dioxins and PFAS are removed through active carbon filters.”

ESG

Social

Theme 2 of the ESG

Themes with a social impact, in particular, are covered by the S in ESG, for Social. At AVR, those are Safe Work Environment, our most important material theme and Sustainable Deployment of our Employees.

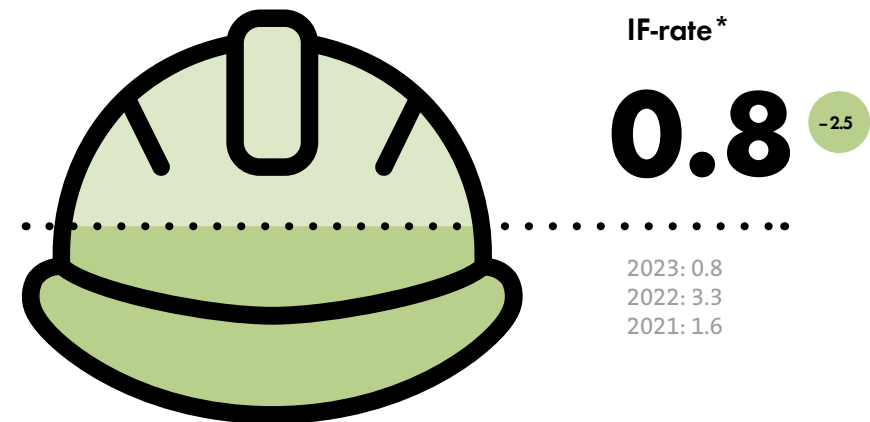
Safe working environment

Sustainable employability

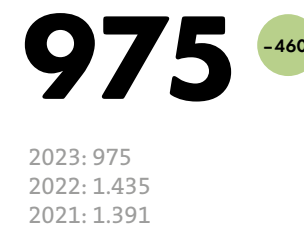
Safe working environment

Safe every day

Our goal: to send everyone home safe and healthy after every workday. We have to pay a lot of attention to that, because we have complex installations that are in operation night and day and there is always a lot of flux on our grounds. Our employees and contractors must be able to work safely there. That's why safety is our priority and why we are working on the safety awareness of everyone on our grounds.



Number of Safety Observation Rounds (SOR)



* The IF rate (Injury Frequency rate) is the number of accidents resulting in sick leave per million hours worked (throughout the calendar year).

Safety after the fire

The fire had an effect not only on AVR business operations and our employees but also on safety on the grounds. Immediately following the fire, we had diverse experts join us in assessing which installations and buildings were safe to enter and which were not, or only under certain conditions. That might mean wearing PPE, for example. In addition, the Purchasing division, in collaboration with the SHEQ division (Safety, Health, Environment and Quality), has been busy involving our contractors as much as possible in relevant safety matters at AVR. Partly because there are many contractors at work on the restoration of the installations. For example, contractor firms have been given access to an intranet environment where they can view such documentation as the AVR V&G (Safety and Health) plan. They can also view the relevant

safety procedures and stay up to date with current communications, also on safety. In 2024, in the context of a new safety campaign, we will be focusing more on safety for contractors.

KPI: IF rate

In 2023, our IF rate was 0.8, a significant drop compared to previous years. One possible explanation is the improvement processes we put into practice in 2023 in the area of safety, which mean more focus on safety in the workplace.

Controlling an IF rate is tricky, because such an indicator only reveals something about accidents that have already happened. In order to control the IF rate well, it's important to look at how this indicator can be influenced positively. That's possible by steering in three areas: technique, organisation and humans.



Technique: it's important that installations are designed correctly and that preventive and corrective maintenance is carried out on time.

Organisation: we have to make sure that all employees and third parties working in our plants have the up-to-date knowledge and skill necessary to carry out work in both normal and abnormal circumstances and that they maintain that knowledge and skill so that minor and serious accidents and their consequences are limited. The organisation also ensures that hard and software systems, procedures and instructions and other aids are up to date and adjusted to the capabilities of the employees.

Humans: humans are obviously a major factor. Creating a good safety culture by agreeing clear safety standards with each other and calling each other to account for unsafe behaviour are important themes. It's also very important to make sure communication between management and employees and vice versa is good, and also between employees and contractors.

We started working on the last two areas in particular in 2023, beginning with setting up a Safety Steering Group. Based on a quick scan, carried out by an external expert in the field of safety, improvements have been established around work permits, learning from accidents, communication (about safety), orderliness and tidiness and contractor management (and safety). One principal aspect in this is the renewed reward and sanction policy, which describes following rules (compliance policy) and a stimulation policy linked to that. These topics recur in the new safety campaign we started at the end of 2023.

Ultimately, initiatives like this must lead to an improvement in the IF rate. But more importantly: it must contribute to the entire safety culture at AVR.

KPI: Number of Safety Observation Rounds

The number of safety observation rounds (VOR) was 975 lower in 2023 than in previous years. The main reason for that is the fire, which meant fewer regular work activities being carried out over a long period. When doing a VOR, the emphasis is on working safely, but even more important is engaging in dialogue with each other. If there's a reason for carrying out a more theme-related VOR, that can always be agreed ad hoc.

Working safely with contractors

Since the end of 2022, we have paid more attention to working safely with the contractors who carry out work on our grounds. We aim to increase the involvement of contractors, for a variety of activities, in our safety policy and promote safe collaboration. This has been delayed somewhat, due to the fire, but we had focused a lot on it in 2023 and will be expanding on that in 2024.

The very first thing we did was to update the AVR Safety and Health plan. The plan contains our safety policy and all procedures and rules that contractors have to comply with when carrying out their work. It also contains specific safety indicators of KPIs where the performances of contractors in the field of safety are measured. Another key development is the possibility for contractors of reporting accidents, near accidents and incidents in our incident registration system (Ultimo). This gives the contractor direct insight into the follow-up on that report. We are also working on a new safety instruction including exams for contractors and our own employees, and we intend to start up periodic contractor safety meetings and audits.



Laughing gas and safety

The presence of laughing gas cylinders in our household waste leads to many explosions. They constitute a danger to the employees and cause severe damage to the installations. (For an explanation of this issue, see Page xx and Employee's stories 'Jason Ramdajal and Frank Dekker' on Page xx.) The explosions in the incinerators are a big problem at our Rozenburg and Duiven installations. We're doing everything in our power to prevent these explosions but unfortunately, that's not always successful. The divisions of Production, Maintenance and Logistics have assessed the work activities and risks and taken a number of actions to protect employees against the explosions. One important measure is the modification of the magnet band in our post-separation installation (NSI) to separate metal. We can now extract cylinders from the residual waste that we separate for the municipalities. This has led to demonstrable success, but the problem isn't over yet. Together with the municipalities and national politicians, we are searching for solutions for this shared problem. We transport the laughing gas cylinders we find in the waste to licensed processors.

Incidents

Leaving to one side the fire, AVR has had a reasonably good year in terms of safety. We had one accident to report that resulted in sick leave, compared to four such accidents in 2022. With regard to the total number of accidents for which reporting is compulsory, 2023 went a good bit better than 2022. In total, ten accidents resulted in sick leave, medical treatment or modified work, as opposed to 18 in 2022. Naturally, every incident is one too many but we are seeing a positive trend compared to previous years. That confirms that we're working on the right things.

Looking to 2024

In terms of safety, 2024 is going to be an extremely busy year. We are making a concerted effort to adapt the SHEQ division to this and reorganise, so that we can be flexible in dealing with all the topics we are involved in. And that's necessary because, in addition to the aftermath of the fire, we are dealing with all the structural SHEQ activities that are continuing as usual, such as our audits, the inspections by the appointing authority and the implementation of new permits.



“There were no real safety issues involved with the fire”

John Mol
Manager SHEQ and laboratory

“There were no real safety issues involved with the fire. After the fire alarm on Thursday 21 September at around 07:17, there was very little we could do apart from send the employees home. There were no flames to be seen, because the fire was burning in a closed building. The fire fighters flew a drone equipped with infra-red above it, to search for sources of heat. They moved around constantly. It turned out that they were cable trays that were sliding around in all directions.

Late on Thursday afternoon, when the fire appeared to be out and the fire fighters had left, a specialised firm monitored heat and smoke from a distance. In the evening, there was smoke again and that’s when the fire really broke out. On Friday afternoon, after consultations, the façade was opened up and the fire fighters could extinguish more directly. It wasn’t until Saturday morning that the fire fighters gave the all clear.

With an external expert, we then looked to see if the building was safe to enter. Certain parts were off bounds due to damage to the construction. And we were only allowed to enter wearing protective clothing and respiratory protection. The heat had been incredible: steel beams, 60 cm in diameter, were misshapen and all the cables were smelted.

There are still four steam turbines in the building, but the tap for removing them has been destroyed. We need to come up with a safe plan for getting the turbines out of the building. We’ve had checks done for the presence of asbestos and Chromium 6 to see if it’s safe to work there.

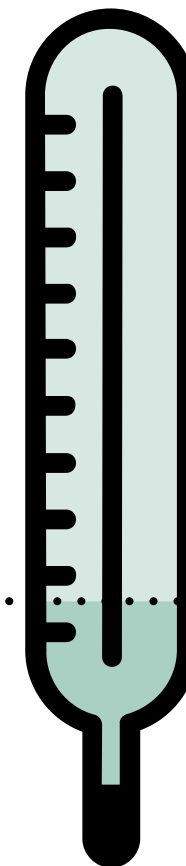
We started restoring the steam supply in December. We see that as separate from the other activities on our grounds. It’s fenced off and has been issued its own work permit and safety supervision.

Our safety policy and procedures have not changed since the fire. Even before the fire, we were working on improving safety, because the number of accidents had increased in previous years. At that time, external experts carried out a study and gave us recommendations. The implementation of those recommendations has now been speeded up.”

Sustainable employability

Fit and energetic employees

AVR's success is dependent on the efforts of its employees. And they can only give their best if they are fit and energetic and able to develop personally. So we focus a lot on their health, both physical and mental, and we offer many opportunities for taking courses and training. That way, they can enjoy their work for a long time, deploying their knowledge and skills for AVR.



Sick leave

5.4% -0.3

2023: 5.4%
 2022: 5.7%
 2021: 5.0%

Education and training

3.2% =

2023: 3.2%
 2022: 3.2%
 2021: 2.4%



Definition of sustainable employability

Sustainable employability is a material theme because energetic, fit employees form the basis of our company. Our success depends, to a great extent, on how resilient, energetic and knowledgeable they are. That's why we focus a lot on our employees' health and well-being.

The fire and our employees

The impact of the fire on our employees was, and still is, enormous. First of all, there was the emotional impact; employees who have been working at

AVR for year saw the heart of the company being lost. That touched them deeply. After that came the realisation of the impact on their work, their jobs and the future. Some of them were no longer able to do their usual work. The culture at AVR is a big help here: we look together at what is possible. Colleagues showed great flexibility and helped out in other divisions where there was, on the contrary, a lot of work to be done. At the end of the financial year, there are still a number of colleagues who are fulfilling another role than the one they had in their own work.

We've kept everyone as well-informed as possible about everything regarding the reconstruction, the Phoenix Project. And we'll continue to do that, so that all employees know where they stand and what they can expect.

Immediately after the fire, the Board announced that there would be no redundancies. And HR followed this with a vlog distributed among the employees by email, intranet and WhatsApp. That was a relief for many employees.

Number of employees

At the end of 2023, AVR employed a total of 484 people (471 FTEs). This includes interns in the BBL (professional practical skills course) but not other interns.

KPI: Sick leave

The average figure for sick leave in 2023 was 5.4%, slightly lower than in 2022. We took action in a number of ways to get the figure down in the financial year. We involved management more in sick leave. Managers and supervisors took a sick leave training course through the health and safety service. The course offered them more information about sick leave, trained them to deal with it and gave them insight into their own role in sick leave. The focus is on prevention: start taking action before someone falls ill.

HR constantly monitors sick leave. HR business partners engage in dialogue with managers and colleagues about how employees can keep working in a healthy way and which actions are needed in the case of sick leave. We are supported well by our health and safety service. We have an employability coach/case manager at our disposal who knows our organisation well. That is a great

addition for both managers and employees. The preventive medical exam (PMO) was postponed, in connection with the fire. Employees will be invited to attend it mid-January 2024.

KPI: Education and training

Training and education	2023	2022	2021	2020
Training costs as % of gross wages	3.2%	3.2%	2.4%	2.5%

In 2023, more than 1,000 courses were taken and 8,500 hours of training done. The peak is in the last quarter, because colleagues had more time to invest in training and courses. That was more difficult in previous years because in general, it's not easy to schedule free time for employees to take courses or do training, particularly if they work in shifts. After the fire, we consciously encouraged this and invested time in it. In addition to the compulsory training and courses, it made clear which other courses can still be taken. We focused actively on this.

Inflow, through flow and outflow of employees

At AVR, the shortages in the employment market can really be felt: we have too many job vacancies. In the first quarter, recruitment failed to provide the inflow we needed. So we made changes to that. We brought in new recruiters and reviewed the process. We interact faster with each other. And the results could be seen in the last quarter of 2023: we've been able to welcome more good, experienced colleagues.

There are many possibilities for progress at AVR and there was a lot of through flow in 2023. We encourage that, so in 2024, we're going to pay



more attention to promotion tracks and make employees aware of what they themselves can do to develop personally.

Unfortunately, we've also seen colleagues leaving. We can't point to one unambiguous reason for that. When employees leave, we ask them if they would like to cooperate with an offboarding interview, in which we ask about the reason for leaving, about strong points and points for improvement. We take this input on board so we can tackle matters.

And HR has started up the project Employer Value Proposition, in which we look into what distinguishes AVR from other companies and what our key values are. We aim to use this information for recruitment and in our internal arrangements.

Naturally, filling vacancies will remain important in 2024. We're working on modifications to the website and intend to be proactive in the market in 2024, in order to have talents commit to us.

AVR is very happy to offer internships. Interns form an important source of recruitment for new and good employees and help raise awareness of the name of AVR. Successful internships often result in a positive appearance to the training institutes. In 2023, 31 students had an internship at AVR.

Retaining knowledge

Due to the turnover in personnel, it has turned out to be difficult to effectively retain knowledge relevant for AVR. Throughout the year, there were many unfilled vacancies and very experienced employees left AVR, in some cases due to

retirement. We need to do more to safeguard knowledge and to organise the efficient transfer of that knowledge. This is a big challenge, because AVR is a knowledge-intensive company and very experienced employees are important. We want to make progress with this in 2024, possibly with the help of counsellor positions, where time would be freed up for experienced employees to transfer knowledge to less experienced colleagues. By recruiting for those jobs at a very early stage and filling the vacancies, we want to create scope for this.

In 2024, we're going to take things even further with the Young Potential Programme, which was introduced in 2022 and implemented in 2023. The Young Potentials have been trained and discussed case histories together. We're taking it a step further in 2024: the group of Young Potentials will be challenged even more in what they've learned and on their potential. And we aim to start up a new group.

Employee satisfaction survey

In June and July of 2023, we held an employee satisfaction survey (MTO). The participation rate was on the low side, at 53%, but we're glad that 86% of the participants indicated that they come to work with pleasure and are proud to work at AVR. This is a rise compared to the same survey in 2022. But the overall score for satisfaction shows that there are still some improvements we can make. Consequently, we have started tackling this based on the results. One of the things to come out of that is a leadership programme, aimed at safety, that will begin early in 2024. We will carry out an MTO again in 2024.

For 2023, we switched from the Employees Net Promoter Score (eNPS). In order to meet the

requirements for the upcoming ESG reporting, we are starting a project in 2024 with the goal of improving the assessment of employee satisfaction, in line with the ESG reporting and with what is right for AVR.

Connection Project

We initiated the Connection Project shortly after the results of the MTO in 2022. The aim was to create a better connection between the Board, management and the workplace. The project has succeeded in getting colleagues with colleagues and colleagues with management and the Board engaging in dialogue in a pleasant way, achieving more insight into and understanding of each other's challenges in the work. After the evaluation, it seemed like we were ready for a next step. We completed the Connection Project in 2023, and as a follow-up, will be starting a leadership programme in 2024, focused on safety.

Diversity and inclusiveness

Our workforce consists mainly of male employees. We'd like to welcome more women to the ranks, but given the jobs at AVR, that's unlikely. This is partly because proportionally more boys/men are graduating from engineering programs. We'd also like our workforce to reflect the diverse society as much as possible. We adapted our job vacancy adverts in order to appeal to more target groups.

Social Return

AVR feels it is important to fulfil a social role in relations to people with a distance from the employment market. We use the Social Enterprise Performance Ladder (SEPL), the scientifically substantiated quality mark of TNO (Dutch research organisation) that objectively measures and makes comprehensive the degree of social enterprise. At

the beginning of 2021, we reached Aspirant status on the SEPL. That means that AVR has a plan of action for increasing employment possibilities for that target group in our organisation. We do that not only by facilitating jobs in our own organisation but also by stimulating our suppliers and clients to enterprise socially. At the end of 2022, a new reading was taken, the result of which was made known in 2023: we are on Rung 1 of the PSO with ease. This indicates that we perform above average in helping people with a vulnerable position in the employment market to find a job, in a sustainable and qualitative way.

In the last reference year (from 01-10-2022 through 30-09-2023) AVR employed 45 people from the target group. That means 1.98% direct social contribution which, if we were to have ourselves certified now, would take us to Rung 2. Our current certification expires on 1 October 2024. We aim to continue in 2024 the line we set out in 2023.

Looking to 2024

The year 2024 inevitably centres around the reconstruction following the fire. Our goal is to be able to have at least three incinerators operating in a safe and responsible manner by 1 October 2024 at the latest. HR is offering support in this, with several themes.

Safety will be the most important cornerstone at AVR in 2024. And that means physical and social safety. Employees and contractors should feel safe and be able to work safely at AVR. For more about this, see Safe working environment. We focus on mental safety in the leadership programme. In 2024, we aim to offer the confidential counsellor a training course, so that they are able

to offer even better support to employees who come to them for help. And we will appoint an external confidential counsellor whom employees can approach if they would rather talk to someone outside the organisation.

The CLA runs the job performance evaluation procedures for CLA positions, that have to be completed by 1 April 2024. In addition to the CLA positions, we also want to revalue the positions above CLA.

There will be a lot of attention for vitality and sustainable employability in 2024. We will be taking on board any recommendations from the PMO offered at the beginning of 2024, and also following up on the action plans drawn up based on the MTO.

And talent management will be a topic in 2024. One element of this will be the introduction of a new training and development vision, with which we make more comprehensible which promotion tracks there are at AVR and which options we offer for progress and development. We aim to implement an expansion of a training module, linked to our current HR system. That makes it easy for us to roll out the compulsory training courses, but also enables us to create and roll out training courses, and make it accessible for employees to apply for and start courses and training.

We're also going to take a close look at our employment conditions, how AVR compares to other companies and how we can remain attractive as an employer. HR Analytics is also a topic on the agenda: we want to make better use of HR data and manage more based on figures.





“We put a positive twist on the situation”

Cocky Stijger
Training Coordinator

“On the day of the fire, ‘rescuing safely from lifts’ training was scheduled. That teaches our employees to take action themselves if someone is stuck in a lift. The trainer phoned me that morning, because he couldn’t enter the grounds. I had the day off and had just read about the fire in our company app, where it had been announced early. It was a terrible shock. The first few days, all I was doing was phoning people to cancel training sessions. It was hectic, because I had to tell the story over and over again. Luckily no-one was hurt, but it was intense.

I had to gauge what we could and couldn’t schedule, but nobody knew how long it was going to last. So I cancelled all training sessions. The training firms cooperated wonderfully. Unbelievable, so much sympathy. It really gets you, a company that doesn’t charge you, even though they had a trainer planned for multiple days.

When something like a fire happens, all sorts of things go through your mind: the huge amount of damage, the company’s future, your job... And that was the case for a lot of people. Which is why a meeting for all personnel was quickly set up. There, the Board guaranteed that no-one would be made redundant. After that, HR manager Cynthia confirmed it in a vlog. We can carry on, because our shareholder has our back and has faith in us. That puts things into proportion. We’re a strong company. It’s unthinkable that we wouldn’t survive.

At HR, we took advantage of the situation to give internal courses and training. A lot of new, not yet certified people had just been taken on at logistics. We fast-tracked 60 training courses for the vehicles they use. And as long as we’re unable to process waste, the crane drivers can’t work. The shifts asked if we could deploy those drivers at logistics. We offered a training course for that too.

At the beginning of 2024, we’ll start up basic training at production, because there are a lot of new employees there too. And we intend to reinforce the basic knowledge about waste incineration, something there was too little time for before. In short, we put a positive twist on the situation.”

ESG

Governance

Theme 3 of the ESG

The last letter of ESG stands for Governance. This is where we place the material theme of Financial Stability.

Financial stability

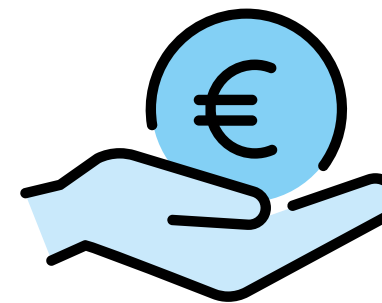
Other chapters

Corporate governance

Financial stability

Sound basis

A healthy financial foundation is the basis for a sound company. For AVR, financial stability is the bedrock of the business operations, partly because with a good financial basis, we're able to invest in innovations with which we can continue to achieve our goals in the long term. And absorb setbacks (such as the fire). A good reason for AVR to continue working on our financial stability.



EBITDA
(in millions of €)

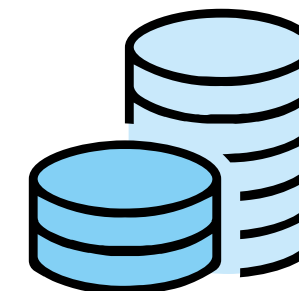
69.1 -81.7

2023: € 69.1 mln
2022: € 150.8 mln
2021: € 138.7 mln

Net result
(in millions of €)

-99.7 -146

2023: -99.7 mln
2022: 46.3 mln
2021: 42.6 mln



Revenue
(in millions of €)

292.3 -60,1

2023: € 292.3 mln
2022: € 352.4 mln
2021: € 317.5 mln

EBIT
(in millions of €)

-104.3 -197.6

2023: € -104.3 mln
2022: € 93.3 mln
2021: € 79.9 mln

Investments
(in millions of €)

77.3 +9.9

2023: € 77.3 mln
2022: € 67.4 mln
2021: € 57.7 mln

Cash flow
(in millions of €)

45.0 +52.9

2023: € 45.0 mln
2022: € -7.9 mln
2021: € 0.3 mln

Cash position
(in millions of €)

67.2 +45

2023: € 67.2 mln
2022: € 22.2 mln
2021: € 30.1 mln

Definition of financial stability

We define financial stability as a solid financial basis which guarantees that AVR can continue to exist, is profitable, can make strategic investments and can absorb unexpected set-backs. We have budgets for our goals and KPIs approved by our regulatory body. Those KPIs are driven by our activities, which we have described in the other sections of this Annual Report.

Our financial stability and the consequences of the fire

The results and financial position in the 2023 Annual Account are coloured by the fire that broke out on 21 September at our plant in Rozenburg. An incident of that magnitude, that put our biggest

installation - the Energy from Waste installation in Rozenburg - out of operation for an extended period, isn't something you just absorb. On the one hand, we have less income because part of our production is out of operation, while on the other hand, expenditure is increasing, in part due to ensuring a solution for the waste flows and the investments in the reconstruction of our installations. We expect to be able to absorb this setback with our good financial position as a basis and the predicted coverage from the insurance and support from the shareholders, in combination with the cash flow from the operational activities of our installations in Duiven and the remaining ones in Rozenburg.



Results

A negative net result of – € 99.7 million has been realised for 2023 compared to a positive result of € 46.3 million in 2022. The operational result (EBIT) is € 197.6 million lower than in 2022, mainly as a consequence of the fire. The fire resulted in a drop in turnover and higher costs, leading to an EBITDA that is € 81.7 million lower than in 2022. In addition, the amortisation of the damage to the installations has been debited for an amount of € 96 million and life span adjustments have been carried out for € 16 million. As well as the effects of the fire, the problems with laughing gas cylinders have led to lower volumes and higher costs, which were partly compensated for by higher prices, particularly the revenue from energy.

KPI: Revenue

Revenue (including other income) decreased from € 352.4 million in 2022 to € 292.3 million in 2023. The total volumes of waste processed decreased compared to 2022 as a consequence of the stoppage of the installations at Rozenburg and a fall in the volumes delivered for our water plant. The lower volume of waste processed means we also supplied less energy. The lower revenue was partly compensated for by higher prices. On the other hand, a result of the high energy tariffs in 2023, we received no subsidy on energy (SDE subsidy).

KPI: EBITDA and EBIT

As well as the decrease in income by € 60.1 million, the operational costs also rose by € 21.6 million, so that the EBITDA in 2023 comes out at € 69.1 million, € 81.7 million more than in 2022 (€ 150.8 million). The higher costs are, to a large extent, the consequence of a change in contract form for the processing of bottom ashes, which

led to a modified classification in 2022 in both revenue and costs. And the variable costs have decreased as a consequence of the stoppage of some of the activities. On the other hand, there were extra costs involved in resolving the consequences of the fire, such as diverting and storing waste, emergency facilities and cleaning up extinguishing water.

Due to amortisations that were € 115.9 million higher than in 2022, the operational result (EBIT) for 2023 comes out at € – 104.3 million. The higher amortisations mainly concern the damage and lifespan adjustments as a consequence of the fire.

KPI: Cash flow

AVR realised a positive cash flow over 2023 of € 45.0 million. The positive cash flow contains a draught of € 51 million euros from the bank facility in October, in anticipation of the necessary cash for loss of turnover and restoration costs after the fire. The total cash flow over 2023 consist of a positive cash flow from operational activities of € 105 million, expenditure for investments of € 72 million and a cash flow from financing activities of € 12 million. The cash flow from financing activities consists of interest payments (€ 17.9 million), dividend payouts (€ 18.5 million), lease payments (€ 3 million) and a drawdown of a banking facility (€ 51 million).

The planned dividend payout and the payment of interest on the shareholders' loans in the second half of 2023 (a total of € 28.5 million) as a result of the fire incident did not take place. The unpaid interest on the shareholders' loans (€ 9.8 million) was added to the principal sum of the loans concerned.



KPI: Cash position

The cash position at the end of 2023 is € 67 million compared to 22 million euros at the end of 2022.

KPI: Investments

In 2023, AVR invested € 77.3 million compared to € 67.4 million in 2022. These were investments in both the existing installations and in innovation and optimisation, such as the new slag transport system in Rozenburg, the renovation of the transfer station in Utrecht (OSSU) and the first recovery investments following the fire.

Financing structure

AVR has a prudent financing structure: nearly 50% of the financing is through shareholder equity and subordinated loans from the shareholders. This financing structure is reflected in the relationship

between the company's debt and its operating result before depreciation and amortisation (EBITDA) – known as leverage. At the end of 2022 and before the fire incident in 2023, AVR has a leverage ratio of around 2x, - the net debt amounts to approximately twice the EBITDA. AVR strives to achieve the long-term retention of a maximum leverage of 3x.

The low leverage ration and the availability of unused credit meant that AVR could strengthen its liquidity position immediately after the fire through the draught of € 51 million from a bank facility.. This shows once again that our strategy is focused on long-term stability, where we can absorb unexpected negative financial effects, such as the fire incident, and invest permanently in AVR's future. Nonetheless, the fire incident means that the credit

risk for banks has increased in the short term. Shortly after the fire, banks were therefore more hesitant about concluding new, long-running financing agreements with AVR. For that reason, the existing liquidity facility (€ 20 million) that expired as of October 2023, has been extended by two banks for a period through 31 March 2024 (€ 14 million). In 2024 the facility was extended to October 31.

At the end of 2023, AVR's outstanding loans and credit facilities with banks and investors amount to € 394 million. As of December 2024, loans from institutional investors, amounting to € 125 million, will expire. Despite the recent development, we expect there will be enough interest by institutional investors to refinance the loans.

Financiers have faith in AVR's innovative strength, the steps we are taking towards a circular and climate-neutral world and the results of these steps. As a result, AVR was advanced what is known as a Green Syndicate loan by five banks. We have linked sustainable targets to this loan and receive discount on the interest rate if we achieve those goals. This form of financing shows that banks recognise the importance of the steps AVR is taking to promote a circular economy. We intend to further 'green' our financing in future financing rounds.



“Two years from now, we want to be where we had aimed to be, without the fire”



Wim Geuze
 Manager Controlling & Financial Support

“I’ve been working here since 2010 and I never thought I would work so long in the same place, but there’s always something special happening here. Something intense too, like the fire.

We were always well-practised in predicting our production but suddenly, a large part stopped. For us, the financial division, the permanency was gone. Everyone wanted to know everything - what’s it going to cost, where are we for next year? - while there was so little we already knew. Apart from the fact that we were barely able to generate income, but had a lot of extra costs with the logistics involved in the waste and investments in the reconstruction. We’ve always been good at involving stakeholders and have built up a lot of trust with shareholders and financiers. That doesn’t just disappear. But we had to become predictable in the new reality too. So we told everyone what we did and didn’t know, as far as possible.

When we were allowed to get into the office, shortly after the fire, the conference room was full of experts and insurance company advisors, and the shareholders’ international experts. We later got more structure and started coordinating with everyone on a weekly basis. The technical investigation took a long time. We have various insurers, most of whom often came back with follow-up questions, and that was very time-consuming. After the investigation was completed, at the beginning of 2024, we knew that a large part of the damage was covered and we got advances. We can’t book an insurance payout in the 2023 accounts, so that’s a loss-making year, but the insurance payout in 2024 will compensate for that.

AVR is financially stable and has always been able to invest to grow. Now that our basis is temporarily gone, we still want to be where we would have wanted to be, without the fire, two years from now. For example, the CO₂ capture project mustn’t suffer because of this.

And we have to meet certain conditions for financiers. Which we still can, because we are prudently financed. We have the insurance and despite the loss, we comply with all the ratios. In the meantime, we are constructing and there’s dynamic, because we want to start processing waste and supplying energy as soon as possible.



“We feel only understanding and support from our shareholders”

Bram Witsenburg
General Council/Executive Secretary

“I used to alternate between being a solicitor and being a corporate lawyer, and since 2016, I have been responsible for legal matters and I am executive secretary. I really enjoy working here. It’s a great organisation with short lines.

AVR is an extremely relevant company where a lot happens. You only realise how big and relevant we are in the event of a serious calamity as in September. The fire shut down everything in one go. But if we get through this, we’ll be stronger than ever. As a committed management team, we are also growing closer. Thankfully, there were no personal injuries.

In November, the Board travelled to Hong Kong, for the first time since corona, for the meeting with our one-tier Board. That’s normally a ceremonial meeting in which the budget for the coming year is approved. This time, it was mainly about the consequences of the fire. We felt only empathy, understanding and support from our shareholders.

Luckily, we are well-insured. The insurance covers the material damage, such as that to buildings, installations, turbines and cabling, and also lost turnover. The latter requires a complex calculation. We are now in the process of obtaining permits for the restoration work. We expect to be able to start building in January, so that we can resume processing waste in October 2024.

In the meantime, other matters continue. I am updating our Code of Conduct, for example. It applies to all employees and since 2022, to our contractors too. It contains our norms and values, translated into rules for behaviour. So no discrimination, no bribery, treat each other, each other’s property and that of the company with respect. The Code has several sub-regulations, including the drug and alcohol policy and the whistle-blower scheme. We are adjusting the latter in the light of recent legislation. It will organise the reporting of malpractice by employees, temps and interns even better.

The Code of Conduct is a part of our ESG policy (Environment, Social and Governance). As of 2025, AVR must report on our impact on people and climate on the basis of European legislation. In preparation for that, we started reporting on ESG themes a few years ago. That way, we build up a structure that will stand us in good stead later.”

Corporate governance

Governance, supervision and accountability

AVR stands for good corporate governance, proper supervision and transparent accountability to all its stakeholders, also in respect of the social role the company wants to play.

Legal structure

The ultimate holding company of AVR, Dutch Enviro Energy Holdings B.V. (DEEH), is a private company incorporated under Dutch law to which the structure (partially exempt) regime is applicable. On the grounds of this regime, a Supervisory Board was appointed in 2017. AVR applies the Anglo-Saxon model of a one-tier Board in which the Supervisory Board members (or non-executive directors) and the Directors (executive directors) work together in a single Board. The executive directors are responsible for the day-to-day management of the company and the non-executive directors supervise the executive directors.

One-tier Board

The one-tier Board comprises nine directors: four non-executive and five executive. The Board meets at least six times a year. The Board has formed four sub-committees of its members giving scope for a more in-depth appraisal of specific topics: the Remuneration Committee, the Audit & Treasury Committee, the Sales & Operations Committee and the ESG committee. The members of this committee are directors from the one-tier Board.

The members of the one-tier Board are CEO Yves Luca, CFO Rob de Fluiter Balledux, six representatives of the shareholders and a non-executive member nominated by the AVR Works Council.

Shareholders

Since 2013 all the shares in AVR capital have been held by a consortium in Hong Kong led by Cheung Kong Infrastructure Holdings Ltd. (CKI). CKI, a Hong Kong listed company with over 130,000 employees spread across participations in Hong Kong, China, Europe (including the UK), Canada, Australia and New Zealand, is a world player in the field of infrastructure. Other shareholders are CK Hutchinson Holdings Limited, Power Assets Holdings Limited and CK Asset Holdings Limited.

Personalia

Currently the one-tier Board of DEEH comprises the following members:



Neil McGee

Chair and non-executive director

Neil McGee (72), Australian national, has a long track record in the CK Hutchison Group. Neil's other positions include Executive Director of Power Assets, the energy company in Hong Kong. Neil has a Bachelor of Arts degree and studied Law.



Hing Lam Kam

Non-executive director

Hing Lam Kam (77), Chinese national, has been the Group Managing Director of Cheung Kong Infrastructure since it was established in 1996. He is also Deputy Managing Director of CK Hutchison Holdings Limited and Deputy Managing Director and Executive Committee Member of CK Asset Holdings Limited. He studied construction and business administration.



Duncan Macrae

Non-executive director

Duncan Macrae (53), British national, is Head of International Business at CK Infrastructure. He has over 28 years of experience in the field of infrastructure investments. Duncan is a member of the Institute of Directors in the United Kingdom. He studied philosophy, politics and economics.



Ed Nijpels

Non-executive director

Ed Nijpels (73), Dutch national, is a former Minister of the Environment and Queen's Commissioner in Friesland and the Chairman of the Progress Consultation Climate Agreement. He is appointed member of the Dutch Social and Economic Council (SER). He studied Law.



Andrew Hunter
Executive Director

Andrew Hunter (65), British national, is Executive Director of CK Infrastructure and Executive Director of Power Assets. Andrew is also a member of the Scottish Institute of Chartered Accountants and the Hong Kong Institute of Certified Public Accountants. He has almost 40 years of experience in accountancy and financial management. Andrew has a Master of Arts degree and studied business administration.



Simon Ka Keung Man
Executive Director

Simon Ka Keung Man (66), Australian national, is the Alternate Director of CK Infrastructure and General Manager of CK Asset Holdings Limited. He has a long track record within the CK Hutchinson Group and more than 40 years of experience in accounting, auditing, taxes and financing. He studied economics.



Charles Tsai
Executive Director

Charles Tsai (66), Canadian national, has worked for Power Assets since 1987 and since 2014 as CEO with responsibility for all foreign participations. Charles is a Registered Professional Engineer and Chartered Engineer. He studied mechanical engineering.



Yves Luca
Executive Director

Yves Luca (58), Belgian national, is the CEO of AVR and a member of the Board of the Dutch Waste Management Association. Yves has 25 years of experience in the waste sector. His previous positions included COO of Van Gansewinkel. Yves studied economics.



Rob de Fluiter Balledux
Executive Director

Rob de Fluiter Balledux (60), Dutch national, is the CFO of AVR. Rob's positions prior to joining AVR included Financial Director of Martinair and CFO of Van Gansewinkel. He studied business economics.



Bram Witsenburg
General Counsel-Company Secretary

Bram Witsenburg (52), Dutch national, acts as Secretary of the one-tier Board. Previously, he was attorney-at-law and company lawyer for companies including ARCADIS and McGregor Fashion Group. He studied Law.

Message from the Board

On behalf of AVR's one-tier Board, it's my pleasure to present you with the AVR Annual Report 2023.

It turned out to be an extremely challenging year for AVR.

Before the summer holiday, the Dutch monopolies and mergers authority, the ACM, forbade the intended acquisition of Amsterdam EFW company, AEB. That was naturally really disappointing, given the time and effort put into the process.

Despite various operational problems, the company was on track to once again exceed the financial goals in 2023. Until the catastrophic fire in the E building of the Rozenburg plant on 21 September 2023 changed everything. The main thing is that no-one was injured in the fire. However, the financial and operational consequences are considerable. Although the smaller installations, such as the bio-mass plant, the water purification installation and the post-separation installation are operational again, as things look now, the EFW activities at Rozenburg will not be able to resume before the third quarter of 2024.

AVR is insured, so the financial losses will be largely covered by the applicable insurance policy.

Since the fire, AVR has been doing its utmost to meet the needs of its existing waste clients. Large volumes of waste are being diverted daily for storage or processing. This secures the continuation of our commercial relationships for the coming years with our valued waste clients. Following the restart of the water purification installation and the bio-mass plant in December 2023, AVR was once again able to supply steam and heat to a number of clients.

I would like to thank each and every one of our dedicated staff for their hard work, enthusiasm and perseverance. Particularly under the extremely challenging circumstances after the fire. I have every faith that AVR will survive the incident. After the conclusion of the restoration work, AVR will be well-prepared for the immediate future with a better and more efficient EFW installation at Rozenburg.

The employees and the broad range of skills and experience they bring with them to their work every day remain the motor of AVR's success.

On behalf of the Board,
Neil McGee, chairman DEEH

Compliance

AVR's Directors and shareholders set great store by the correct adherence to the applicable legislation and regulations. To safeguard this compliance, the organisation has drawn up internal policies and procedures for its operating processes. Compliance is a continuous process of improvement, certainly given the increasing regulatory pressure and its complexity.

A number of spearheads in the area of compliance apply to AVR: compliance with environmental law (licences), public procurement law, accounting law, energy law, consumer law, financial law and privacy law.

Compliance with the legislative fields mentioned above has direct consequences for AVR's 'licence to operate'. Preventing fines and other enforcement measures is also essential, to maintain the Company's good reputation. The SHEQ (Safety, Health, Environment and Quality), IT and HR departments and the General Council support the organisation and its operations with solicited and unsolicited advice and, when necessary, the knowledge required.

AVR has further defined its ESG policy in 2023. ESG stands for Environmental, Social and Governance. This is in preparation for the obligations under the Corporate Sustainability Reporting Directive (CSRD). As of 2025 and on the basis of the CSRD, AVR, as a large company, will have to communicate its sustainability policy and the results achieved. With the integration of the CSRD directive, large companies are obliged to report more transparently on the impact of their policies and activities on people and the environment.

Safety, Health, Environment and Quality (SHEQ)

In 2023, AVR successfully completed the ISO audits for the recertification for ISO 9001 (quality management system), ISO 14001 (environment management system), ISO 45001 (health and safety management system) and the interim audit for ISO 50001 (energy management system). In the annual COMAH (Control of Major Accident Hazards directive) inspection at Rozenburg, five infringements were noted and four actions reported. These deviations will be dealt with in the course of 2024. The COMAH does not apply to Duiven.

Integrity

Integrity is an important theme for AVR. Our Code of Conduct demonstrates which rules of conduct we have at AVR, so that everyone is aware of which behaviour is acceptable and which is not. This provides clarity and a pleasant working atmosphere.

In 2023, we were also a victim of a limited number of theft at our facilities. They concerned the theft of such things tools and items of personal property. We drew up a security plan in 2023, that is now in the implementation phase, to combat theft. The plan contains various measures, such as stricter control of access to the site, camera surveillance and inspections.

Participation

AVR has active Works Councils at Rozenburg and Duiven that are involved in AVR decisions and policy.

At the beginning of 2023, the Works Councils were expecting a positive ruling from the ACM on the acquisition of AEB. Sadly, in April, it turned out that the ACM had denied permission. The Works Councils were kept closely informed about this process and the financing.

The Works Council at Rozenburg had wanted to postpone the Works Council election for a year, due to the expected acquisition of AEB, but after the ACM ruling, a new Works Council was elected in May. No elections were necessary at Duiven.

There was a challenging task for the Works Council: to set up an SHE committee (Safety, Health, Environment). Following a positive response from the manager, the Works Council developed these plans further. The committee consists of colleagues from various divisions and can count on broad support. The task is to increase social and physical safety at AVR. Three improvement projects were started in 2023. The Works Council realises that improvements in the workplace need to be felt and visible and expects the Board and management to demonstrated to the Works Council and employees that steps have to be taken.

The fire at Rozenburg had an impact on all of AVR. The employees' uncertainty was eliminated very soon. The Board kept the Works Council informed of the plans and the intention of AVR being better

and stronger when we start up again in 2024. Fortunately, our Hong Kong shareholders were behind us and we are well insured. That gives confidence for the future. There were doubts in the Works Council about whether AVR would be able to take on all projects simultaneously and about how AVR was going to retain employees and keep them motivated. Although all this is still a challenge for 2024, the future of AVR is secure, thankfully.

Requests for advice 2023

1. Request for financing advice AEB
2. Request for advice on a change within LTM -Asset management
3. Request for advice on changes in Logistics
4. Request for advice on intended changes IT division
5. Request for advice on structure NSI division
6. Request for advice on Plant Performance Division Rozenburg
7. Request for advice on bank refinancing
8. Request for advice on Plant Performance Division Rozenburg 2

Requests for approval 2023

1. Request for approval of Mobility budget
2. Request for approval of Lease scheme 2.0
3. Request for approval of adjusted company scheme BHV (in-house emergency responder) remuneration
5. Request for approval of adjustment to company scheme Allowances and provisions
6. Request for approval of extension of contract HBS (health and safety services provider)
- 7.

Risk management

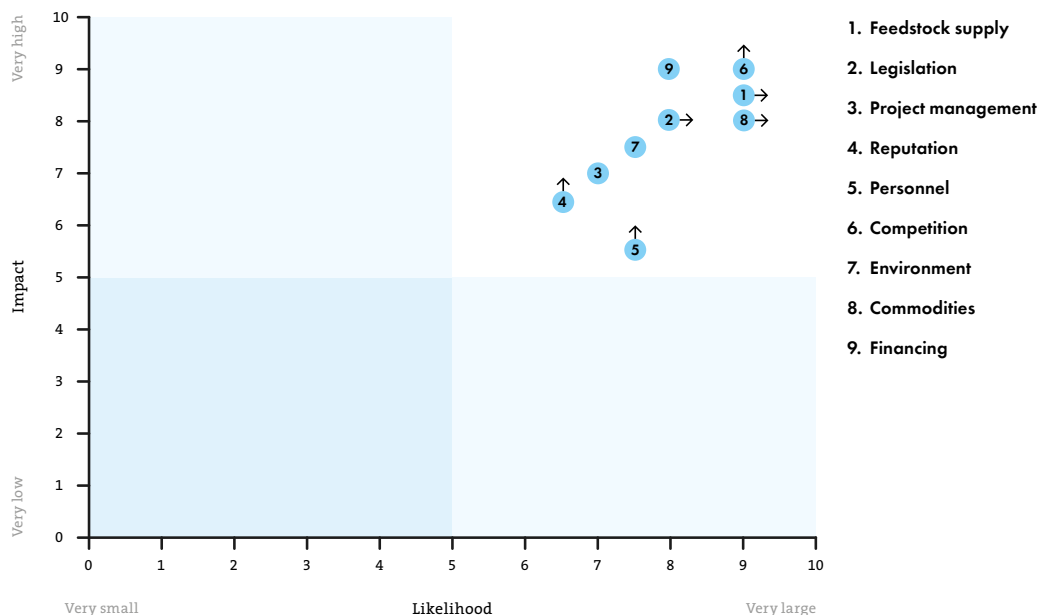
Operating risks

The risk areas that are the most important for AVR on the basis of its strategy have been identified. Each year the risks related to those areas and the effect of the measures in limiting the risks are evaluated.

This Annual Report discusses the major nine operating risks for AVR, and changes in them, and describes the measures the company has implemented to mitigate these risks. The most recent evaluation of the business risks took place at the end of 2023, and the consequences of the fire were taken into consideration.

Risk matrix

The likelihood of preventing the risk versus the impact of the risk (without taking control measures into account)



Risk matrix

The risk matrix includes the nine major risks identified by AVR in the assessment by the end of 2023. Compared to 2022, three new risks have been included in this Top 9 (Financing, Environment and Project Management) and three risks are no longer listed in the Top 9 (IT, Procurement and Operational Excellence).

It indicates the likelihood of the risk being prevented versus the impact of the risk, without yet taking into account the internal control measures implemented by AVR. This is followed by descriptions of the control measures.

Commodities

This is the risk that AVR will suffer losses as a result of the volatility of commodity prices (electricity, gas, diesel and metals). This risk applies particularly to the prices of the energy and residual materials supplied by AVR. We follow an active hedging policy, intended to cover at least 80% of the raw material price risk for one year ahead through hedging contracts and 40% of it for at least two years ahead. This policy is included in the financing conditions that AVR has agreed with its banks and investors.

Gas and electricity prices fell in 2023, following explosive price increases in 2021 and 2022. The increases in 2021 and 2022 were due to an increasing demand for energy and a slower-than-expected supply. A growing global economy and the conflict in Ukraine were to blame for this. Although the market stabilised in 2023, volatility, and the

risk of volatility, of the prices remains high. The result of this development is that the inherent risk for AVR in respect of commodity price volatility remains high.

Waste offered

This is the risk of volatility in the volume and quality of the residual waste offered by waste customers in both the short and the long term. We regularly check the balance between our contract portfolio and our medium/long-term capacity. We aim to achieve an optimum mix of various streams (domestic residual household waste, domestic commercial waste and imported waste) in order to limit, as far as possible, the volume and quality of residual waste being dependant on individual streams.

The estimation of this business risk has risen due to the fire at Rozenburg. Since we are currently not yet able to process domestic and commercial waste at Rozenburg, there is a risk that we will be unable to take delivery of our clients' waste. We're trying to mitigate this risk as far as possible by still accepting the waste offered by clients, even though we are unable to process it ourselves at present. We do that mainly by storing the waste temporarily, but also by having it processed by third parties. That way we aim to make sure our clients continue to bring us their waste. The estimate of this business risk is, as a consequence of the fire, higher than in 2022.

Regulations

This is the risk that the introduction or extension of

legislation or regulations will have a negative effect on the stability and development opportunities for AVR's activities. We are represented in various branch organisations and also maintain contacts with regulatory bodies and policy makers so we can promote our interests. In our communications strategy, we strive to make the outside world aware of the leading role AVR can play in themes such as circular economy and energy transition.

On 1 January 2021, the CO₂ tax came into force in Dutch Law, which has a significant impact. AVR responds to this with the current capture of CO₂ in Duiven, the large-scale capture of CO₂ at our Rozenburg facility and an increased CO₂ capture in Duiven. The CO₂ tax and investments in CO₂ capture and storage were already taken into account in our risk analysis of 2022. Our assessment of the risk in respect of legislation and regulations has, therefore, remained the same (and high).

Financing

This concerns the risk that AVR will be unable to grow enough, because of insufficient financial resources (in both the short and long term) or be insufficiently able to meet the business goals set. The estimate of this risk has risen due to the fire. The earning power of a large part of the organisation has been temporarily lost and we are confronted with extra costs and big investments. In practice, however, this risk is under control; in February 2024, AVR received confirmation that the major part of the lost turnover and the extra expenditure will be covered by the insurance.

Personnel

This is the risk of AVR being unable to recruit or retain sufficient competent, motivated and professional employees to enable it to carry out its activities. Employee health is also covered by this risk. We endeavour to ensure that we retain existing employees and attract potential new employees through our 'Be your best' programme.

The current scarcity in the employment market has also made it more difficult for AVR to attract well-qualified personnel. By using specialised recruiters and employment market campaigns, AVR is still able to keep the number of open vacancies limited. Retaining employees who, as a result of the fire, have temporarily been given less or different work is a new aspect of this risk. AVR is trying to keep those employees involved in the organisation and to use this temporary situation to encourage taking courses, or example. The estimate of this business risk has risen compared to that in 2022.

Competition

This is the risk that AVR's competitiveness will deteriorate. To limit its dependence on individual waste streams as far as possible, AVR strives for an optimum mix of several streams (domestic residual household waste, domestic commercial waste and imported waste). We also strive to gain a competitive advantage in the provision of services to municipal waste customers through the post-separation of waste and the partial capture of CO₂ emissions from the incineration process.

The estimation of this business risk has risen due to the fire at Rozenburg. Since we are not yet able to process domestic residual and commercial waste at Rozenburg, there is a risk that clients will go looking for other parties to process their waste. By temporarily storing waste and personally looking for alternatives for processing, we aim to ensure that our clients can still bring their waste to us. The estimate of this business risk is, as a consequence of the fire, higher than in 2022.

Reputation

This concerns the risk of external communications about AVR's goals and developments being insufficiently effective, resulting in the concept of or support for them being undermined. Our communication strategy is aimed at making the outside world aware of the trend-setting role we can play in the circular economy and the energy transition. The fire and its consequences can affect our reputation. The assessment of the impact of this risk therefore increased.

Environment

This concerns the risk of the business operations causing damage to the environment, and the organisation consequently being faced with clean-up and restoration costs which would negatively influence the company's reputation and in extreme cases even see it lose its permits. By measuring emissions of substances and monitoring constantly, AVR is able to intervene in the production process in a targeted way where necessary. This prevents undesirable emissions as far as is possible.

Project management

Restoration work as a result of the fire and the construction of new installations form a very big and complex project, particularly when combined with the ongoing investments resulting from our long-term goals. Restoration work and the new construction will have an impact on the timing of all current projects and available resources. The risk for project management has therefore also risen since the fire.

Financial risks

AVR's business activities mean it is exposed to financial risks of which the most important are:



Price risk

This is the risk of price fluctuations on both the sales (energy and waste) and purchasing sides. For commodity prices, a hedging policy is applied, as is also described under the operating risk Raw Materials. For energy prices, AVR reduces their dependence on counter parties by working with at least three different brokers. The risk related to waste prices is limited because AVR has many long-term contracts with fixed price agreements and indexing.

Due to inflationary pressure, prices rose sharply in 2023 on the procurement side. AVR mitigates this risk through 'supplier management' and entering into sustainable relationships with suppliers.

Interest rate risk

This is the risk of interest-rate fluctuations. Based on financing documentation with banks and investors, AVR is obligated to cover 75% of the interest rate risk. At the end of 2023, AVR had over € 351 million in outstanding financing of which only € 61 million with a variable interest rate and € 290 million with a fixed interest rate. The interest rate risk on current financing is therefore covered for 83%.

At the end of 2024, existing loans amounting to € 125 million will expire. Because of the sharp rise in interest rates in 2022 and 2023, AVR may have to refinance these loans at a higher interest rate. AVR reduces that risk by splitting the total financing requirement into separate parts, each with a different maturity and repayment date. This reduces the likelihood of total interest costs rising sharply.

Credit and counterparty risk

This is the risk that counterparties cannot make good on their financial obligations to AVR. AVR works with creditworthy parties (D&B reports of credit ratings) and avoids the concentration of major credit with individual counterparties.

Liquidity risk

This is the risk of a shortage of liquidity that results in AVR being unable to meet its immediate long- and short-term payment obligations. The risk is obviated by AVR's current financing structure, which in the short term gives AVR access to sufficient unused credit facilities and in the long term limits the refinancing risk by splitting the total financing requirement into separate parts, each with a different maturity.

Currency risk

AVR received financing in American dollars. The currency risk on those loans in foreign currency is fully covered by means of cross currency swaps. Apart from those loans, AVR is not involved in any transactions in foreign currency.

Condensed financial statements

This is a condensed financial overview.
These statements have not been audited.
Audited financial statements have been
filed with the Chamber of Commerce.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION AS OF 31 DECEMBER 2023 (x € 1,000)

	31 December 2023	31 December 2022
ASSETS		
Non-current assets		
Property, plant and equipment	445,400	534,554
Right-of-use assets	15,396	15,678
Goodwill	316,417	316,417
Other intangible assets	32,614	36,103
Deferred tax assets	78,497	39,384
Derivative financial instruments	11,479	12,119
Total non-current assets	899,803	954,255
Current assets		
Inventories	10,347	10,603
Trade and other receivables	42,627	34,112
Derivative financial instruments	4,467	1,874
Prepayments	2,354	1,317
Cash and cash equivalents	67,197	22,194
Total current assets	126,992	70,100
Total assets	1,026,795	1,024,355

CONSOLIDATED STATEMENT OF FINANCIAL POSITION AS OF 31 DECEMBER 2023 (x € 1,000)

	31 December 2023	31 December 2022
EQUITY AND LIABILITIES		
Capital and reserves		
Issued capital	100	100
Share premium	260,364	260,364
Cash flow hedge reserve	11,696	(50,624)
Retained earnings	4,708	(23,089)
Unappropriated result	(99,722)	46,298
Equity attributable to the parent	177,146	233,048
Non-current liabilities		
Borrowings	473,618	538,096
Lease liabilities	15,820	16,449
Derivative financial instruments	-	14,827
Deferred tax liabilities	61,973	36,828
Provision for jubilees	1,080	1,046
Other provisions	19,459	18,403
Total non-current liabilities	571,950	625,649
Current liabilities		
Trade and other payables	47,603	36,874
Borrowings	127,104	(610)
Lease liabilities	2,414	2,222
Current tax liabilities	6,064	14,149
Derivative financial instruments	-	43,309
Amounts payable to shareholders	3,663	3,520
Other provisions	12,374	9,640
Other liabilities	78,477	56,553
Total current liabilities	277,699	165,658
Total liabilities	849,649	791,307
Total equity and liabilities	1,026,795	1,024,355

CONSOLIDATED INCOME STATEMENT AND OTHER COMPREHENSIVE INCOME FOR THE YEAR 2023 (x € 1,000)

	2023	2022
Revenue	292,208	352,654
Other income	66	(208)
Raw materials, supplies and energy	(29,938)	(59,408)
Third-party processing	(56,766)	(24,777)
Third-party maintenance	(22,337)	(25,288)
Employee benefit expenses	(50,036)	(47,970)
Depreciation, amortization and impairment	(173,420)	(57,541)
Impairment loss on financial assets	(10)	-
Other operating expenses	(64,099)	(44,207)
Operating result	(104,332)	93,254
Financial income and expenses	(31,027)	(30,024)
Result before tax	(135,359)	63,231
Taxes on result	35,637	(16,933)
Profit / (loss) for the year	(99,722)	46,298
Attributable to: Owners of the Company	(99,722)	46,298
Other comprehensive income:		
Gain/(loss) on cash flow hedges taken to equity	83,821	(18,276)
Income tax direct through equity	(21,501)	4,715
Total attributable to the Owners of the Company	(37,402)	32,737

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE YEAR 2023 (x € 1,000)

	2023	2022
Result before tax	-135,359	63,231
<i>Adjustments for:</i>		
– Depreciation, amortization and impairment	173,420	57,541
– Change in provision for jubilees	34	(240)
– Change in other provisions	3,350	4,005
– Financial expenses	31,027	30,024
– Change in other financial assets	-	-
– Changes in working capital	32,972	(21,652)
Cash flow from operating activities	105,445	132,908
<i>Investments in:</i>		
– Property, Plant & Equipment	(71,158)	(67,366)
– Intangible Fixed Assets	(918)	-
Cash flow from investment activities	(72,076)	(67,366)
Payment of current lease liabilities	(2,978)	(2,755)
Interest paid	(17,888)	(28,006)
Capitalized financing costs	-	(1,128)
Repayment of borrowings	51,000	-
Dividend paid	(18,500)	(41,533)
Cash flow from financing activities	11,634	(73,422)
Net increase in cash and cash equivalents	45,003	(7,881)
Cash and cash equivalents at 1 January	22,194	30,075
Cash and cash equivalents at 31 december	67,197	22,194

In conclusion

Looking forward to 2024

After a year of unpleasant surprises, we're putting our shoulders to the wheel again in 2024, as we always do. With the Phoenix Project, we're focusing on the reconstruction of the power plant that was destroyed in the fire in 2023. And we continue to work as ever on the construction of the CO₂ capture installations and pay extra attention to safety.

During the last months of 2023, much of AVR's attention was aimed at repairing the damage caused by the fire. In the meantime, the organisation (Phoenix Project) has been set up and we can once more focus on AVR's other business divisions which have either restarted since the fire, or have not been affected by it, such as our activities in Duiven. We expect to continue this dual approach, with a project organisation next to the usual organisation, throughout all of 2024.

Reconstruction Rozenburg plant

We expect to have repaired the fire damage by the second half of 2024 to such an extent that we can resume processing of residual waste (EfW). According to our planning, this will be the case as of 1 October 2024.

Of the seven of AVR's incinerators, five will very probably start operating on 1 October. The last two will resume processing waste towards the end of 2024. To that end, we are building a new steam-water plant, powered by a new electrical infrastructure. With this plant, we will be supplying steam and heat to our clients later. We don't expect to be able to supply electricity straight away, because we won't have the turbines necessary for that operational by 1 October 2024.

We are taking greater efficiency into account with the new installation. The installations will also be safer. And the new electrical infrastructure will be given a back-up structure. The steam plant, the electronic facilities and the turbines will be placed in separate buildings. That spreads the potential risks for the future.

CO₂ capture

Although the CO₂ capture projects have been slightly delayed due to the fire, our plans for the capture and storage of CO₂ remain unchanged. The subsidies have been granted and the preparations for the construction of the CO₂ installations at Rozenburg and Duiven are fully under way. Our aim is to achieve the start of the new installations at Duiven (in 2026) and Rozenburg (in 2027) as originally planned.

Safety

At the end of 2023, we initiated a safety campaign with which to raise awareness of safety in our employees, and also the contractor. In this way, we support our goal: to send everyone home safe and healthy after every workday. We're going to continue this in 2024.

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