



SUSTAINABLE WASTE MANAGEMENT IN THE CIRCULAR ECONOMY



SUSTAINABILITY REPORT 2015

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT



Indaver has always been keenly aware that it plays an important role for both its customers in particular but also for society in general. We have always been committed to treating waste in a sustainable and safe manner. With the transition to a circular economy, Indaver is now expected to make

a more particular and significant contribution to its development.

In order for our planet to be both clean and safe, our entire way of life, including production and consumption practices must be sustainable, now and in the future. Of utmost importance is the preservation of raw materials for the use of future generations. We must limit their use and recover as many of these raw materials as possible.

Indaver is rising to this challenge. It is constantly creating value from the commercial and local authority waste it treats by recovering high-grade raw materials and sustainable energy from it. As a waste management company, it is thus playing a key role in achieving a circular economy.

With these activities, Indaver is subscribing to the UN's Sustainable Development Goals, the development goals set out to preserve our world as a livable planet.

These development goals also reflect our core values: the safety of everyone involved; striving to minimise the impact of our activities on the environment by applying the highest safety and environmental standards; focusing on our process, product, service quality and results; striving for structural state-of-the-art environmental performance and for continuous improvement. These values are incorporated in our company code, which delineates our mission, our primary values, our responsibilities to and expectations of our stakeholders, and the

standards and rules that apply to each of our employees. This company code forms the basis for our sustainable business practices.

Building on its knowhow, Indaver aims to develop new service delivery models to continue to lead the field in sustainable waste management. We wish to respond quickly to the needs of both our customers and the society. Indaver wants to be a safe and good employer that attracts, develops, and retains talent. The health and safety of our staff, our local communities and of all those who are either directly or indirectly involved in our activities is an absolute priority.

Indaver has been in the waste market for over 25 years. In that time it has proven that a company can make striving for sustainability its core business and still achieve good financial results. It will continue to remain faithful to its pursuit of sustainability.

Paul De Bruycker, CEO

TABLE OF CONTENTS

POLICY

With its expertise and close collaboration with businesses and public authorities, Indaver is an ideal partner in working towards a circular economy.

[p. 4](#)

PEOPLE

Indaver continually invests in the development and the safety of its people who envision and implement the innovative solutions for its customers and for society.

[p. 20](#)

PLANET

In its activities Indaver does its utmost to keep our planet livable by recovering as many materials as possible and limiting our impact on the environment.

[p. 33](#)

PROSPERITY

Indaver has proven that a company can make striving for sustainability its core business and still achieve good financial results.

[p. 63](#)

PARTNERSHIPS

To help achieve a circular economy Indaver works together with partners in its own sector and across other sectors.

[p. 69](#)

(To go directly to a section, please click on a page number above)

POLICY

With its expertise and close collaboration with businesses and public authorities, Indaver is an ideal partner in working towards a circular economy.





WORKING TOWARDS THE CIRCULAR ECONOMY

OUR VISION

Our production and consumption practices have reached their limit. The supply of raw materials is being exhausted.

In 2015, the European Union presented its action plan for the circular economy: to close the materials chain through more sustainable production and consumption, recycling and re-use.

Reviewing our approach to waste will help us to live in a way that is sustainable. Whereas waste was considered to be a problem, it is now an opportunity, a source of raw materials.

Our vision of a circular economy is clear. The circular economy has to focus on both sustainability (maximising recycling and minimising risks) and value creation (financial and qualitative objectives).

As a waste management company, Indaver wants to play a key role in achieving a circular economy. As a leading company in the field of sustainable waste management it continues to create added value for all of its customers and for society.

In a circular economy, the key priority is to protect and secure the materials chains. It is thus imperative that these chains are not polluted or contaminated by undesirable or hazardous components. Therefore safe sinks are needed as safe storage places for undesirable substances. If not recyclable, Indaver destroys or isolates these harmful elements of residual waste in its high-tech plants.

Sustainability in the circular economy also means maximising recycling by recovering high-grade materials, so that the quality and safety of products is not compromised. The current mechanical recycling techniques will therefore need to be supplemented with chemical and thermal recycling techniques. Such innovative recycling techniques will break materials down to their basic building blocks which will then be used to create new high-quality products using primary raw materials.

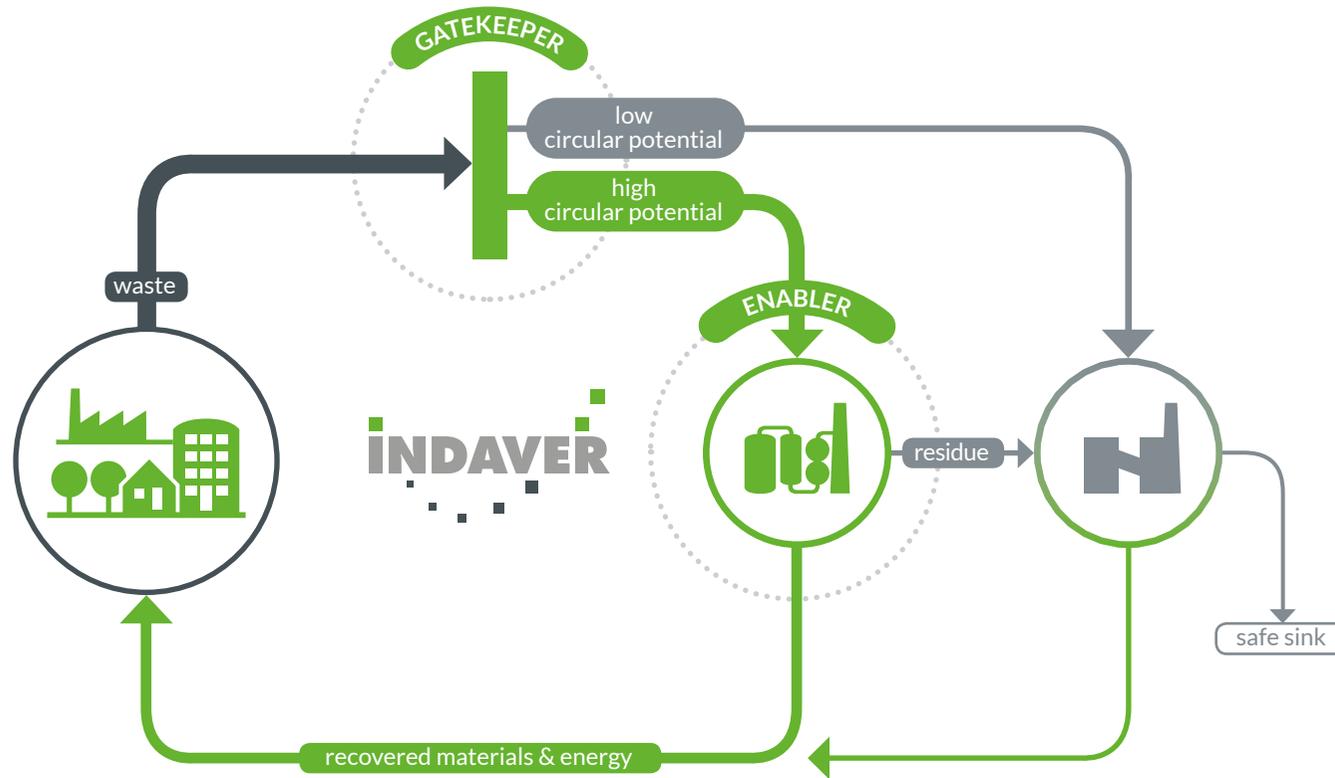
Indaver's core activity is the management and treatment of waste from local authorities and companies in specialist plants. The organisation has a policy of treating waste as a valuable resource and is already recovering components from the waste down to a molecular level and re-using them as new raw

materials in the cycle. Indaver encourages industrial symbiosis, in which raw materials are recovered from one company's waste to be used in another company's manufacturing processes. Indaver continually invests in the technological innovation needed to (continue to) close loops.

With its expertise and close collaboration with a large number of businesses and public authorities, Indaver is an ideal partner to help with the creation of a sustainable circular economy. Indaver's customers range from industrial multinationals to local and regional government bodies. We strive to find a sustainable and balanced total solution for every customer.

Indaver has its own clear and established view of the circular economy. Indaver's contribution to the circular economy can be sustainable only if three pillars are in balance: technology (the technology needed to treat waste safely and recover raw materials), economy (guaranteeing added value and affordability), and quality (high-grade materials, a pure materials chain and safe processing).

ENABLER AND GATEKEEPER OF THE CIRCULAR ECONOMY



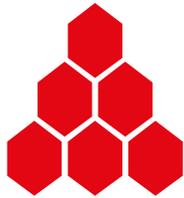
Managing hazardous waste involves risks. Understanding those risks and controlling them is Indaver's core business. With intelligent waste management systems and a strong base of our own and third party advanced treatment installations, we offer traceability and reliability.

We recover energy and materials from waste, but only if there is no risk for people, environment or society.

This way, Indaver acts as enabler and gatekeeper of the circular economy. Our knowledge and expertise in terms of waste, technology, legislation and market provide a solid basis for sustainable waste management.

► [Watch the video here](#)

NEW SHAREHOLDER KATOEN NATIE FACILITATES FURTHER GROWTH



KATOEN NATIE

In 2015, after a quick and efficient search, Indaver gained a new sole shareholder: the port and logistics firm Katoen Natie.

Two international players

Indaver and Katoen Natie both have their roots in Flanders and have become international players with total solutions tailored to their customers. Under the wings of Katoen Natie Indaver will be able to further its international growth and remain a leader in sustainable waste management for governments and businesses.

Goodbye to DELTA

Under the wings of DELTA Indaver became a market leader for the thermal treatment of industrial and hazardous waste. Its position in the field of thermal treatment of household and similar commercial waste and the treatment of biowaste was strengthened. For Indaver, DELTA was the right partner at the right time.

Meaningful synergies

The waste market is rapidly evolving and developing. The trend towards a circular economy has only just begun, presenting a great opportunity for businesses like Indaver.

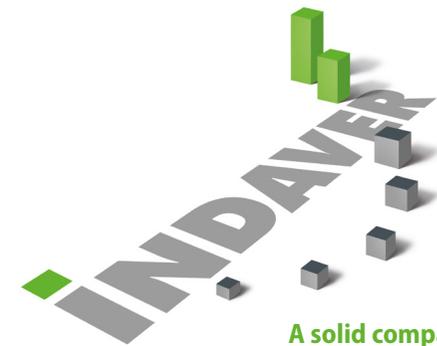
With its new sole shareholder Indaver can continue on its course of international growth. Both Indaver and Katoen Natie aspire to added value for the customer by applying knowledge and expertise throughout the whole chain. Indaver is therefore seeking meaningful synergies with Katoen Natie in order to better serve its customers.

International expansion

Katoen Natie operates worldwide in 33 countries. It combines engineering, technology and port activities to offer tailored solutions to the worldwide chemical and automotive industry and the consumer products, electronics and retail sectors. A number of those countries still have a way to go towards sustainable waste management. Indaver can utilise Katoen Natie's contacts in those countries, so its expertise can be deployed worldwide. Indaver is a strong brand in the waste sector and under Katoen Natie it will retain that individuality.

Stable shareholder

Indaver would like to use its expertise to develop new service provision models and thus continue to lead the field in sustainable waste management. It would also like to be able to respond better – and even faster – to the needs of its customers and of society. The network and experience of an industrial and stable shareholder such as Katoen Natie will support it in this.



A solid company with a focus on growth

VALUES-DRIVEN COMPANY

Indaver is a values-driven company. All actions of the company and its employees must reflect these values. They clearly indicate what we consider important.



Values-driven behaviour

Integrity and social responsibility are essential for doing business in a complex world. Indaver aims to be transparent about its ambitions and about how it fulfils them. This means all of the parties involved know what they can expect from Indaver and what we expect of them.

- We always employ the best available technology, in order to minimise the impact on people and the environment and maximise recovery of materials and energy.
- We monitor the safety of our employees and the environment.
- We work professionally and transparently and comply with standards and legislation.

Demonstrating concern for people, safety and the environment: we operate in a way that is safe, socially responsible and sustainable, with our activities having minimal impact on our surroundings.

Building relationships based on mutual trust: with mutual trust as the basis, personal reliability and integrity are the conditions for an enduring relationship with each of our stakeholders.

Ensuring transparency in communications and actions: “We do what we say and we say what we do.” This is our formula for an enduring bond of trust with all our stakeholders.

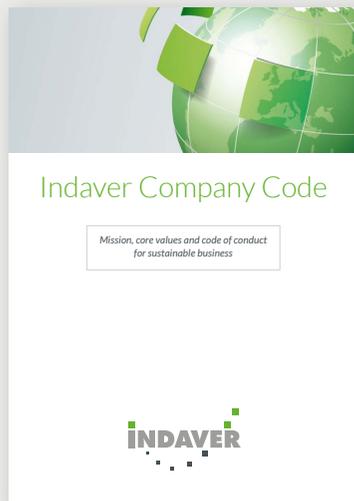
Concentrating on achieving results: we are result-oriented and cost-effective in everything we do. We strive to achieve an optimal balance for our customers between added value and cost.

Continuously improving: we continuously evaluate, check and optimise our service provision, operations and processes.

GUIDELINES FOR A SUSTAINABLE POLICY

Company code: values-driven behaviour

Integrity and social responsibility are essential for doing business in a complex world. A business cannot grow without an enduring bond of trust with all its stakeholders. Indaver aims to be transparent about its ambitions and about how it fulfils them. This means all of the parties involved know what they can expect from Indaver and what we expect of them.



The **company code** sets out our mission, our most important values, our responsibilities to stakeholders and the standards and rules that apply to every Indaver employee. So it demonstrates what we stand for and how we set ourselves apart.

► *To read more about Indaver's Company Code, please click [here](#)*

Cooperation between the regions: Cooperation Agreement

Indaver is an international organisation with subsidiaries and participating interests in various European countries. 'Think global, act local' is the way in which Indaver believes it can grow further. 'Thinking global' refers to the vision and the business strategy, supported by the right values and policy lines. 'Acting local' refers to the service provision concerning waste management for our customers and local stakeholders.

As a result of this growth the organisation has become more complex. Clear agreements are required which apply at all times and everywhere and which ensure uniform operating procedures. That is why the Cooperation Agreement exists.

This document sets out how Indaver works as an organisation, with a similar operational functioning and service provision across the various regions, which guarantee that Indaver always has its most important business processes firmly in hand. The commitments in the Cooperation Agreement are therefore applicable to all the regions. Thanks to this Cooperation Agreement Indaver approaches its stakeholders always and everywhere in the same way, always propagating its values consistently.



GUIDELINES FOR A SUSTAINABLE POLICY



Indaver uses its '10 Codes of Good Practice' as a reference when choosing the most suitable treatment method and when approving third parties' facilities and logistics services. Indaver expects its employees, suppliers, partners and subcontractors to adhere to these Codes in every action, operation, decision or practice.

10 CODES OF GOOD PRACTICE

- 1 Act according to the correct interpretation of the EU definition of waste.
- 2 Treat waste in dedicated and compliant facilities.
- 3 Don't dilute waste, it's no solution.
- 4 Guarantee quality, segregate waste at source.
- 5 Organics: destroy if hazardous; recover energy and material if possible.
- 6 Ensure that no hazardous components enter the food or product chain.
- 7 Be transparent in the way you treat waste, ensure full traceability.
- 8 Treat waste in state-of-the-art facilities using best available technology.
- 9 Treat waste in compliant and sustainable recovery: no sham recovery. Focus on sustainable waste management.
- 10 Comply fully with transboundary shipment of waste: no tool for eco-dumping.

OUR WORLD AT A GLANCE

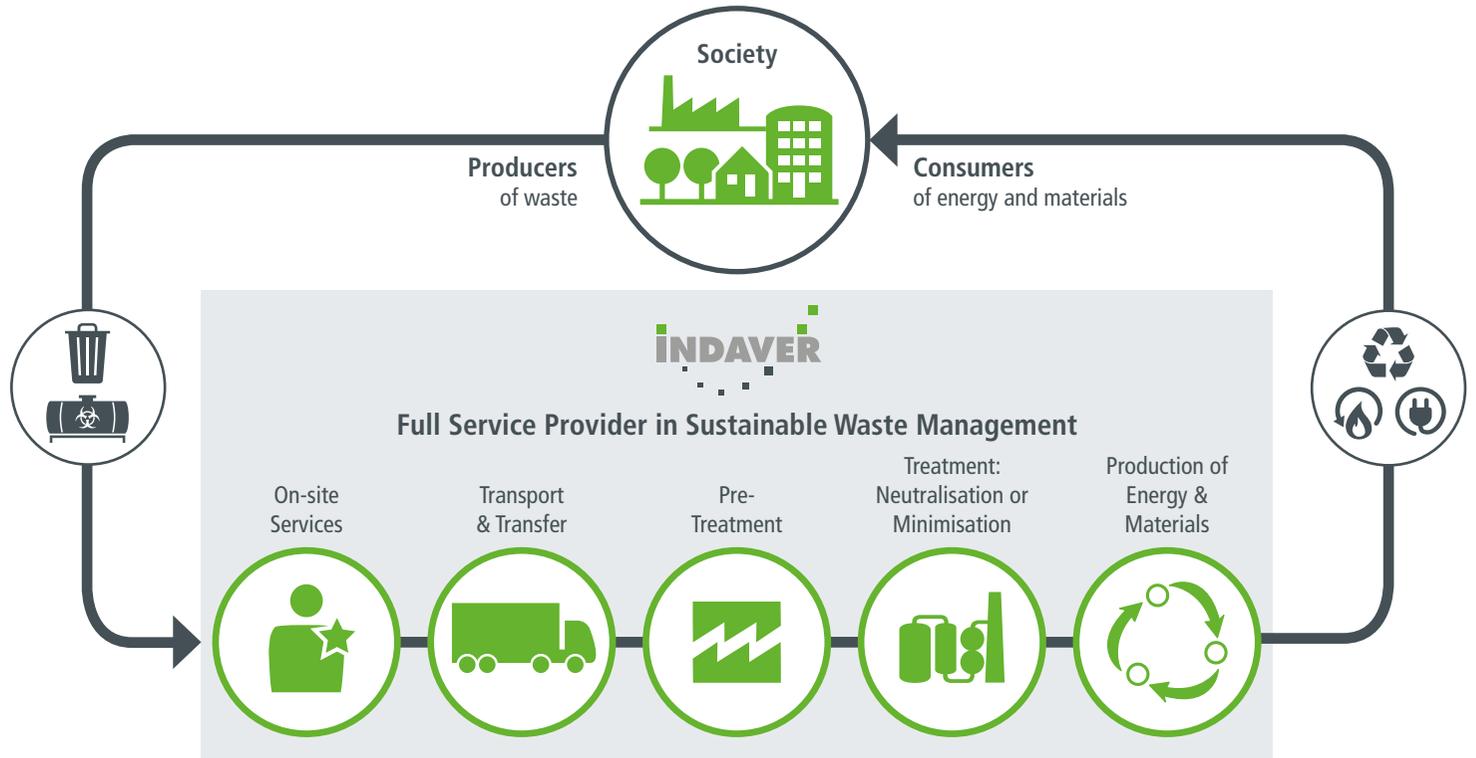
FULL SERVICE PROVIDER WITH A CLEAR STRATEGY

Our Role

Indaver has a clear strategy: to run specialised facilities and to manage intelligent waste management systems focusing on sustainable material and energy management. It works with waste producers, be it directly (industry) or through public institutions (municipal waste) and offers its sustainable waste management services as a full service provider.

Our Influence

As a full service provider with the ability to manage a portfolio of waste, Indaver can also advise its customers on Best Practical Environmental Option (BPEO) such as; the best solution for each waste stream given its characteristics and the possible environmental impact, options for recovery, available technology for treatment, logistics, cost of packaging, transport and treatment.



As a full service provider, we have direct control over the entire process including; efficiency of handling and treatment, quality of materials recovered and quantity of energy generated.

STRATEGY

TOTAL WASTE MANAGEMENT

Indaver operates **specialist facilities** and **effectively manages intelligent waste management systems**, with the emphasis on sustainable management of materials and energy.

We can provide our customers – businesses, governments and collectors – with a total solution for their industrial and hazardous waste, and household and biowaste.

Two separate markets

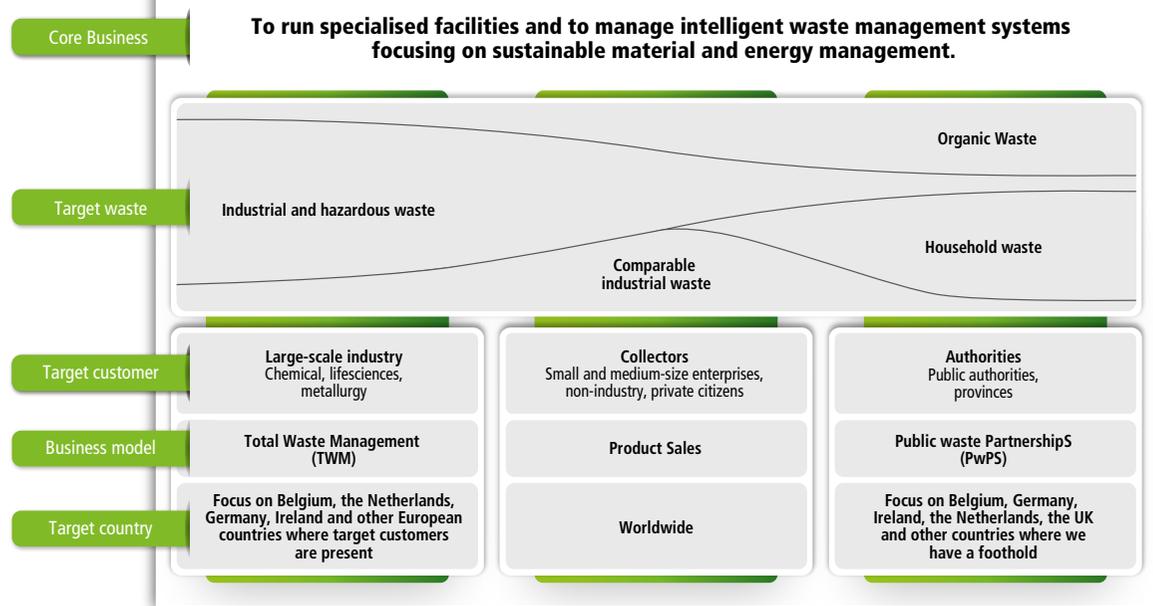
For **industrial and hazardous waste** Indaver is a market leader in north-western Europe with its Total Waste Management concept. Large industrial companies prefer to give their business to pan-European service providers. For that reason Indaver is systematically expanding its treatment capacity and commercial activities in Europe, through organic growth and targeted acquisitions. We are concentrating our operations in countries where our core

customers – chemistry, life sciences and metallurgy – have a strong presence.

For **household and similar commercial waste** we have deep roots in Belgium.

In Germany, Ireland, the Netherlands and the UK we are developing our position. Our objective, in the first instance, is to stand firm and to continue to do so in countries where we already operate. In this way, we can make optimum use of our own facilities, and continue offering our customers

Indaver Group Strategy



cost-effective packages. Public waste PartnershipS (PwPS) provide an appropriate and flexible response to the needs of municipal authorities and intermunicipal partnerships.

Innovative service concepts

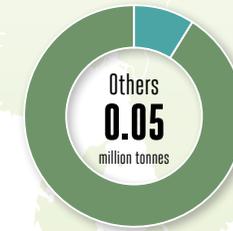
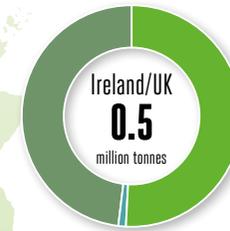
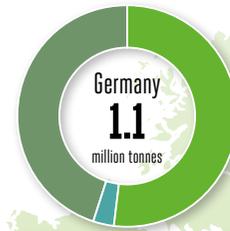
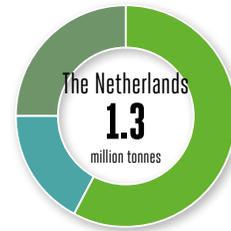
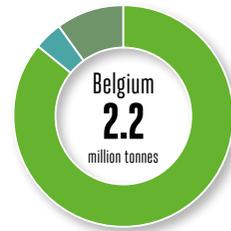
We offer our customers qualitative, sustainable and cost-effective solutions for their waste management. They choose the approach that best suits their needs. We offer a flexible package for every type of

waste thanks to a broad range of in-house facilities supplemented by third-party treatment capabilities.

Customers can count on the right services, the best price; efficient project monitoring and sustainable and effective waste treatment. We guarantee full transparency and traceability. If they wish, customers can have a complete, worry-free service in which we strive for the lowest possible Total Cost of Ownership.

THE INDAVER GROUP IN EUROPE

LOCATIONS AND VOLUMES MANAGED IN 2015



Belgium Antwerpen, Doel, Grimbergen, Kallo, Mechelen, Nivelles, Waregem, Willebroek

The Netherlands Alphen aan den Rijn, Bergschenhoek, Dordrecht, Goes, Hoek, IJmuiden, Koegorspolder, Moerdijk, Nieuworp, Rijpwetering, Rotterdam-Europoort, 's-Gravenpolder, Sluiskil, Voorschoten, Well

Ireland Cork, Dublin, Dun Laoghaire, Meath

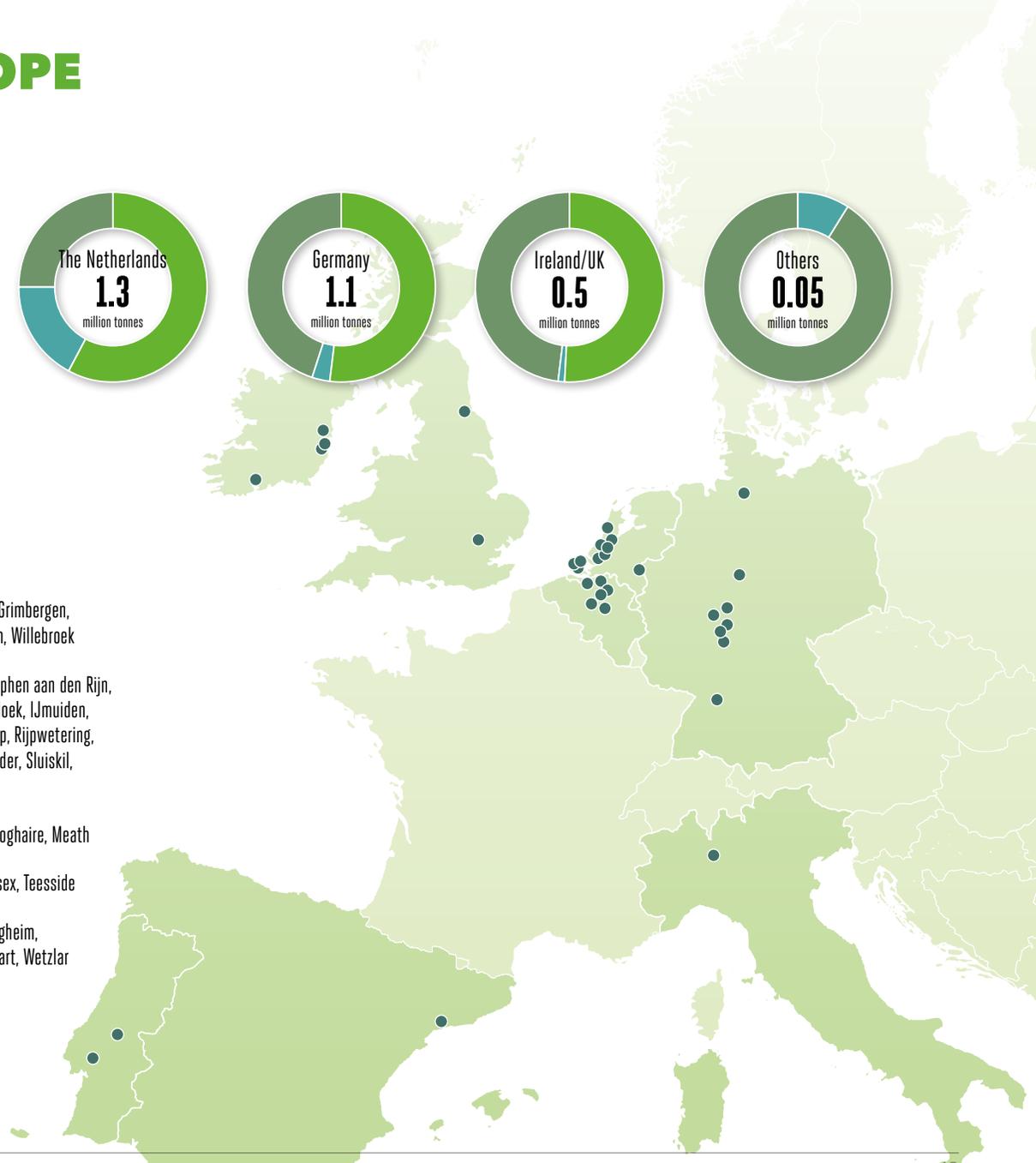
United Kingdom Essex, Teesside

Germany Biebesheim, Billigheim, Frankfurt, Hamburg, Kassel, Stuttgart, Wetzlar

Portugal Abrantes, Lisboa

Spain Tarragona

Italy Origgio



INDUSTRIAL WASTE SERVICES

TOTAL WASTE MANAGEMENT SERVICES



Sustainable and cost-effective customised waste treatment solutions

The chemical, pharmaceutical and medical industries have to contend with complex, often hazardous waste streams that require very careful and thorough treatment. That is a speciality that tends not to be part of our customers' core business. Indaver is a strong international player whose work area spans the whole of Europe. We have set up a partnership for large-scale industry that makes your waste management our concern.

We have a comprehensive knowledge of materials and production techniques, especially for critical, sensitive and complex waste streams from the chemical and pharmaceutical industries.

We monitor developments in the waste market, particularly in terms of legislation, technology, sustainability and innovation.

We supply our services via our 'Total Waste Management' model, providing our customers with a worry-free customised solution. We are able to assist the customer from the moment of production right through to recovery and/or treatment, including all the organisation, handling, administration and reporting. We have our own facilities, but also work with other parties where necessary. Because Indaver operates throughout the whole of Europe, it can always offer the best solution according to its motto: maximum safety for people and environment, maximum recovery of energy and materials and best possible TCO (Total Cost of Ownership).

Indaver creates sustainable, long-term relationships, because it is convinced that this delivers the best results. Where Indaver and customer teams work well together, the best connection is found between the specific customer

situation and Indaver's knowledge platform. Mutual trust is the basis for this; personal trustworthiness and integrity are the requirements.

Indaver will continue to invest in its treatment capabilities and e-systems, and will continue to encourage innovation to enable the management of ever more complex waste streams.

We strive for the perfect balance between achieving maximum recovery of energy and materials, whilst avoiding risks and offering the best price. We manage safety, health and environment and ensure reliability and efficiency to achieve optimum performance.

We continuously adapt to the dynamic market of industrial waste and the changing requirements of the chemical and life sciences industry.

PUBLIC WASTE PARTNERSHIPS

EXPERIENCED PARTNER FOR PUBLIC ADMINISTRATIONS



Indaver is an important and reliable partner for public authorities for a sustainable and cost-effective waste policy. Public waste PartnershipS (PwPS) provide a high-quality, cost-effective and flexible response to the needs of municipal authorities and intermunicipal partnerships.

Flexibility, free choice and trust

Flexibility, free choice and trust: this principle determines our service provision and ensures that public administrations and their citizens are well-served.

- **Flexibility:** public administrations choose what to outsource to Indaver. We advise them, based on our technical, administrative, legal and commercial expertise.
- **Free policy choice:** they determine what is the best solution for them, we advise them on the most appropriate services and technologies.
- **Trust:** open, prompt and accurate communication is crucial.

Three types of service provision

- **Treatment of household waste:** for example waste-to-energy, composting, preliminary treatment of biomass, sorting plastic, paper and cardboard, treatment of hazardous household waste.
- **Organisation of waste management systems:** for example management of waste services for local administrations, collection and transport, operation of transfer stations, talking to outlets for recyclable materials or residues, and support for waste prevention campaigns.
- **Management of infrastructure:** for example management or full operation, optimisation of capacity, formulas for co-ownership, joint projects.

Continuity and sustainability

Continuity and guaranteed sustainable treatment of waste are essential for public administrations. Indaver has its own facilities for treatment of municipal waste. High-quality recycling and recovery of energy are central to its operations. In addition, Indaver can be a partner in the construction and development of new infrastructure such as recycling facilities or waste-to-energy plants.

International expertise applied locally

Every public administration approaches its waste policy in its own way. In the process, they often join forces with neighbouring municipalities. Indaver has the necessary expertise to work with such complex partnerships. Our local people are on hand to be of service to public administrations and can call on Indaver's centrally managed know-how and expertise.

AUDITING

INDAVER CONTINUOUSLY IMPROVES THE QUALITY OF ITS PROCESSES

Indaver's integrated and uniform management systems ensure the safety, reliability and traceability of its processes. The application of these systems must be regularly checked. These audits are conducted for Indaver in-house as well as externally.

Internal audits

One of Indaver's core values is 'continuous improvement'. Internal audits help Indaver to continuously improve its business processes. The auditors come from all departments, to ensure a balanced approach. They have expertise, technical knowledge and analytical skills.

There are two different methods for internal audits:

- **Compliance audits:** the internal audit programme for quality, safety and the environment assesses whether Indaver's operations are being carried out in accordance with codes of good practice, operational procedures, legislation and the various accreditations and licences.
- **Risk-based audits:** these audits identify and quantify risks in the processes, and test the efficiency and effectiveness of the management systems.

External audits

Government audits

In all regions Indaver is controlled by public authorities that grant licences or supervise the correct compliance with such licences.

SEVESO audits

Due to the quantity of hazardous waste that is stored and treated, some Indaver sites (Hamburg, Biebesheim, Frankfurt, Stuttgart, Antwerp, Hoek and Dublin Port) are subject to the SEVESO Directive, a European Directive on the management of risks associated with the storage and handling of hazardous waste. The Directive aims to prevent serious accidents and minimise their impact on people and the environment. The preventive measures and the inspection and maintenance programmes on a SEVESO site are audited periodically by the competent authorities.



Audits by customers

Customers regularly make use of the opportunity Indaver offers to carry out (onsite) audits themselves. These audits are either part of the acceptance procedure for Indaver as a waste treatment company (pre-contractual audits) or of an interim supplier evaluation (post-contractual audits).

Audits by certification agencies

With the certification of Indaver's management systems, an independent and accredited certification body formally confirms that Indaver is operating correctly. Depending on the region, Indaver holds ISO 9001, ISO 14001, OHSAS 18001 certificates and specific regional certificates.

► [Please see the following page for an overview of all certificates](#)

In order to obtain a certificate, Indaver must demonstrate in a vetting process (certification audit) that it complies with these internationally recognised standards. The certificates are valid for three years. During annual follow-up audits the main aspects of the standards are verified on a sampling basis. Once the period of validity of the certificate has expired a full recertification audit will follow.

AUDITING

CERTIFICATES FOR EACH COUNTRY AND LOCATION



Country	Certificate holder	Certificate	Since
Belgium	Indaver nv (Antwerpen, Doel, Kallo, Willebroek, Grimbergen, Mechelen, TWM sites)	ISO 9001/14001	1991/ 1997
		OHSAS 18001	2011
	SVEX nv (Doel)	ISO 9001/14001	2008
		OHSAS 18001	2011
The Netherlands	Indaver Nederland B.V. (Indaver Recycling B.V., Indaver Waste to Energy B.V., Indaver Afvalberging B.V., Indaver Groencompost B.V., Indaver Compost B.V., Indaver Impex B.V., Indaver ARP B.V., Indaver Gevaarlijk Afval B.V., Indaver Bio Energie B.V., Zeeuwse Reinigingsdienst B.V.)	ISO 9001/14001	1995 / 1997
		OHSAS 18001	2012
		CO ₂ -bewust	2014
	Indaver Gevaarlijk Afval B.V.	SQAS-certificaat	2011
	Indaver Compost B.V. (Alphen aan den Rijn, Europoort, Nieuwdorp)	Keurcompost	2014
	Indaver Groencompost B.V. (Moerdijk, Rijpwetering, Voorschoten)		
	Indaver Bio Energie B.V., Indaver Groencompost B.V. (Moerdijk, Rijpwetering, Voorschoten, Nieuwdorp, Bergschenhoek)	NTA 8080	2010
	Indaver Compost B.V. (Alphen aan den Rijn)	NTA 8080	2014
	Indaver Impex B.V.	VCA petrochemie	1994
	Indaver Nederland B.V., on site TWM services (Sabic Innovative Plastics B.V., Bergen op Zoom, Dupont Dordrecht, MSD Oss, ICL-IP Terneuzen)	VCA petrochemie	2014

Country	Certificate holder	Certificate	Since
Ireland / UK	Indaver Ireland Ltd (Dun Laoghaire, Dublin Port, Cork, Meath, Killmallock, Newcastle West, Mungret, TWM activities, UK sites)	ISO 9001/14001	1994/ 2000
		OHSAS 18001	2002
Germany	AVG mbH	ISO 9001	1994
		ISO 14001	1997
		OHSAS 18001	2003
	HIM GmbH (Biebesheim)	EN 50001	2010
		EFB	1997
		ISO 14001	2001
	Panse Wetzlar Entsorgung GmbH (Wetzlar)	EFB	1997
		ISO 9001	2008
	Chemisch-Physikalische Behandlung Frankfurt	EFB	1997
		EFB	1997
	Chemisch-Physikalische Behandlung Kassel	EFB	1997
		EFB	1997
Chemisch-Physikalische Behandlung Stuttgart	EFB	1997	
	ISO 14001	2012	
Sonderabfalldeponie Billigheim	EFB	1997	
Gareg Umwelt Logistik GmbH (Hamburg)	EFB	1997	
Portugal	Abrantes	ISO 14001	2015
Italy	Indaver Italia (Origgio)	EMAS	2008
		ISO 1001	2007
		ISO 9001	2014

PROCESSES

INTEGRATED AND UNIFORM SYSTEMS

Indaver aims to operate the processes at its sites and facilities at their optimum while continuously improving them. It has integrated and standardised systems that monitor quality, the environment and safety and guarantee the reliability and traceability of its processes.

These systems:

- establish Indaver's sustainable approach in the organisation
- guarantee that the business is run efficiently
- increase the confidence of its stakeholders
- prepare it for further growth and more complex services.

Lean Six Sigma drives improvement processes at Indaver

Indaver is always strongly focused on improvement; this is one of its core values. In Lean Six Sigma (LSS) it has an instrument that allows it to approach projects more systematically and to pro-actively raise the quality of its operations.

To Measure is to Know

The projects relate to reoccurring problems, projects that are important for the organisation and increase customer satisfaction. They rely on practical research, measurements and experiments, to give them a solid foundation.

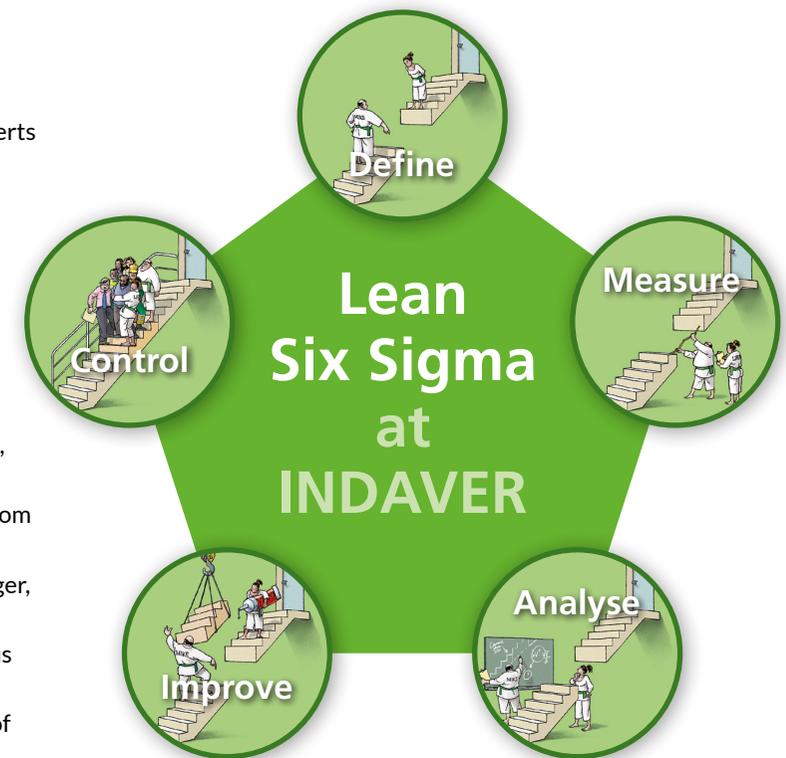
Green and black belts

The team leader follows the LSS training and becomes a green belt, who is partly freed up to concentrate on structural improvements and who also teaches the LSS approach to his or her team. The black belts are the experts in LSS in terms of large-scale process improvement. They also train and coach the green belts.

Lean Six Sigma in the regions

In 2015, project teams in the various regions pushed through improvements with this approach. Indaver Belgium set up 22 projects. In total, 12 projects follow the 'lean' improvement project method geared towards removing wastage in processes, the other 10 follow the 'six sigma' improvement project method that focuses on a consistent quality of output from processes.

In Ireland, under the guidance of a new black belt manager, the approach to projects will be reassessed in line with Indaver's core values of achieving results and continuous improvement. In 2015, 13 new projects were launched, with more than 30 projects live throughout the course of the year.



PROCESSES

INTEGRATED AND UNIFORM SYSTEMS



EcoVadis

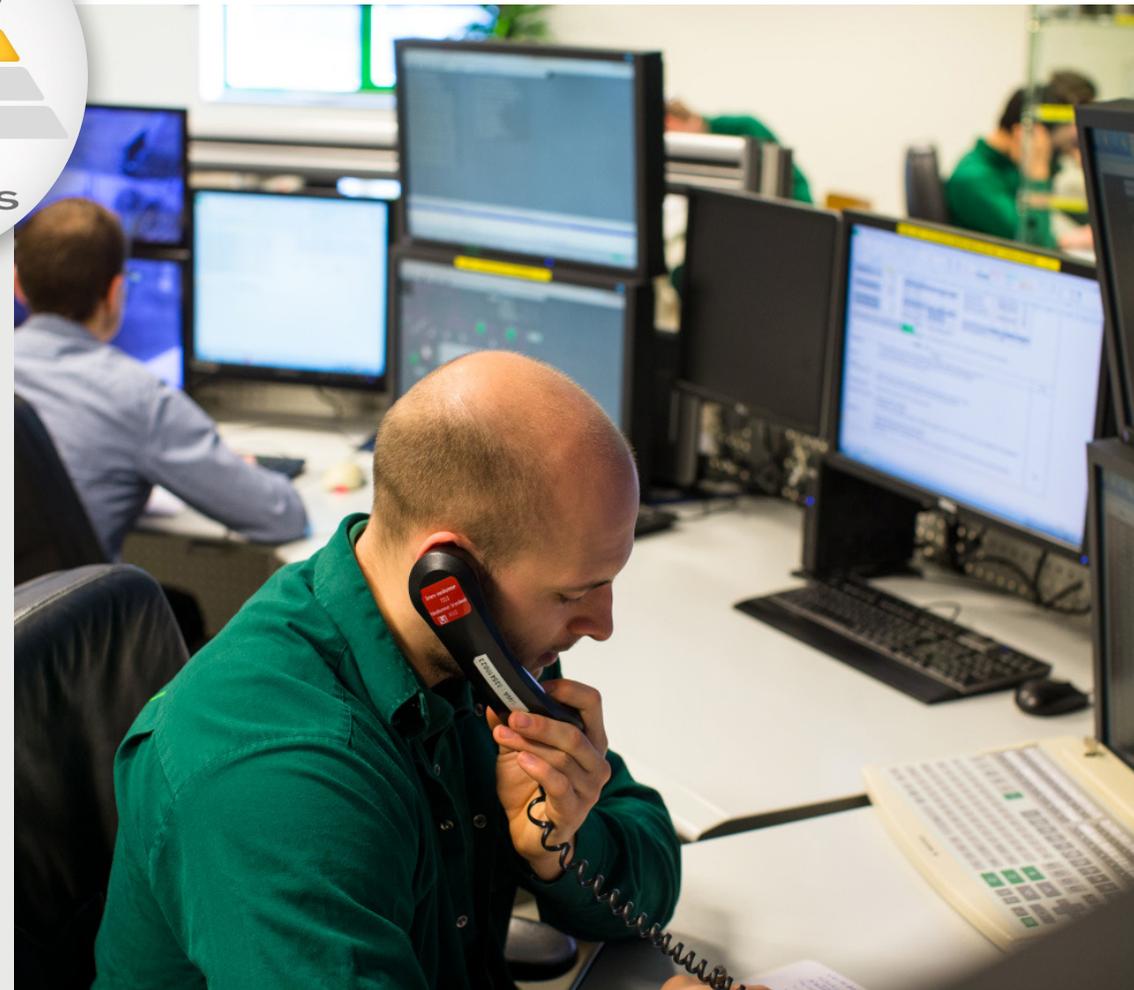
EcoVadis evaluates the commitment to corporate social responsibility of businesses worldwide under assignment to purchasing departments. You could say it is regarded as a Standard & Poor's® for CSR.

In April 2016 Indaver was awarded the EcoVadis Gold ranking with the mention 'Advanced Engagement'. We hereby retained our score from 2014. Indaver now belongs to the top 7% of suppliers to have been assessed by EcoVadis in the category of waste management.

During the most recent assessments we provided EcoVadis with extra information on environment (for example biodiversity), labour and human rights (for example anti-discrimination, structured employment relationships and employment conditions) and sustainable purchasing (for example suppliers' code of conduct).

Thanks to our effective reporting and our mentality of ensuring transparency in communications and actions we score very highly on themes such as environmental impact and employment practices/human rights. We score slightly lower in the area of fair commercial practices and sustainable purchasing.

We are committed to fair trade, but we have not documented this sufficiently in procedures and reporting. We have already developed these themes further in our updated company code and in the future we will take this one step further in concrete actions.



PEOPLE

Indaver continually invests in the development and the safety of its people who envision and implement the innovative solutions for its customers and for society.





ENVISIONING THE MOST INNOVATIVE SOLUTIONS

OUR VISION

Indaver is working towards increasingly innovative and ever safer solutions for complex and sometimes hazardous waste streams. But no matter how good Indaver's treatment installations and management systems are, ultimately it is its staff who make the difference. Indaver can only lead the way in sustainable waste management by continually investing in the people who envision and implement the innovative solutions for its customers and for society.

Indaver wants to be a safe and good employer that attracts, develops, and retains talent.

The health and safety of our employees, and that of everyone who is involved in our activities either directly or indirectly, is an absolute priority. By highlighting the importance of health and safety, we inspire our staff to behave in a safe and responsible manner. We provide our staff with the necessary safety training and health check-ups. We supply the required protective equipment and we ensure that each plant is a safe and fit working environment.

As a knowledge organisation, Indaver creates a climate in which employees are given every opportunity to develop and share their expertise

and experience. We provide a learning environment so that our employees can enhance their skills through training, on-the-job experience, coaching and feedback. We encourage formal and informal brainstorming sessions to search for better solutions. We have an Indaver leadership programme that both fosters aspiring leaders and gives those in management positions direction on how they can get the best out of their people.

Indaver must be innovative to keep up with the constant changes in a field as complex as waste management. We encourage internal knowledge-sharing through national and international platforms and International Operational Centers of Excellence, where information on the latest developments is exchanged.

We strive to create the right culture to retain, motivate and challenge our staff for the long term. Fast-changing conditions require versatile employees who can adapt, who can fill a range of roles, and who are resilient enough to deal with continuous change. We support our people to ensure they remain motivated and creative so that the knowledge they have acquired will stay within the organisation.



SAFETY

SAFETY FIRST AT INDAVER

For Indaver, health and safety at work comes over and above everything else. We need to have safe facilities, up-to-date training and correct procedures. But above all we need an open and critical culture in which every employee is encouraged to suggest improvements and to challenge each other about safe and unsafe behaviour.

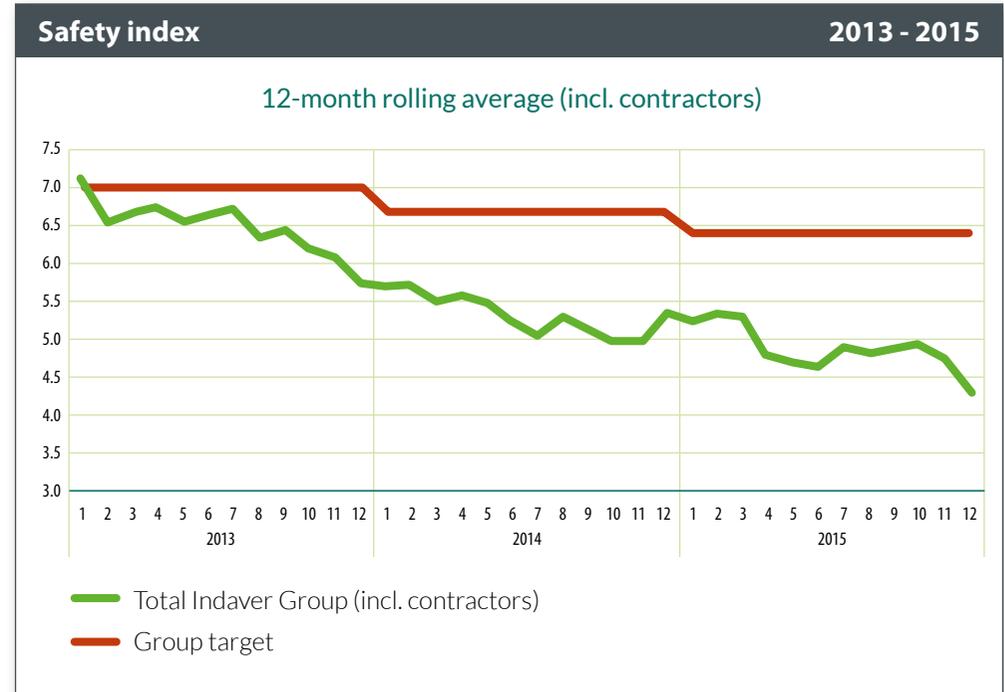
The management teams can show their involvement by personally seeking out staff on site and speaking to them about safety; Indaver wants to break through ingrained habits and guarantee health and safety at each of its sites.

Safety figures

In 2015 the safety trend, based on the yearly average for the number of lost time incidents and the safety index, further improved on the figures of 2014. The majority of incidents with lost work time at Indaver sites involved

minor injuries. There was a single accident with serious injury caused by a collision with a forklift truck. Trips, slips and injuries accounted for more than half of all reported injury incidents.

The safety campaign, running at all sites and which includes safety posters, draws specific attention to non-process related safety themes. Indaver believes it is important to register all incidents, even those with minor consequences. This provides an insight into unsafe situations, giving a better chance of



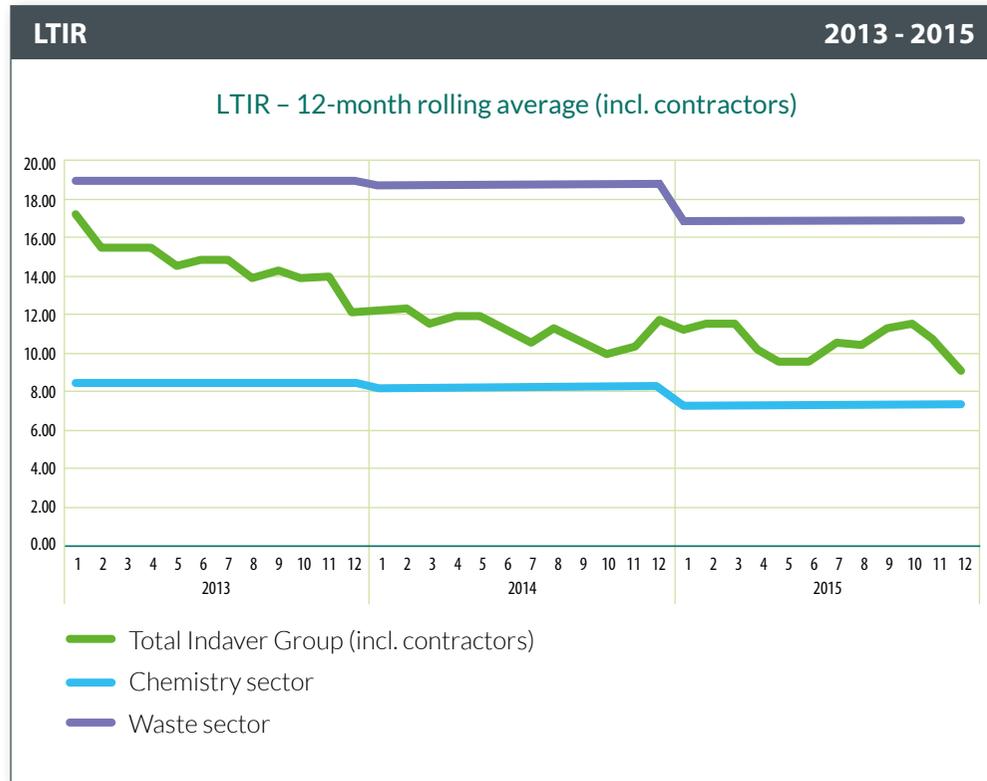
preventing them. The Indaver safety results shown relate to its own staff, and regular subcontractors.

In 2015, Indaver posted a personnel safety score that was significantly better than the average for companies in the waste sector. Indaver uses the experiences with unsafe situations and the lessons it has learned from these in poster campaigns and toolboxes. It also runs specific campaigns such as; a winter safety awareness campaign focused on being mindful of wet and slippery surfaces.

When incidents occur, Indaver reacts immediately. Half-way through 2015 several injury incidents occurred at various sites in a short time-frame. This prompted the safety board to circulate an additional general safety alert and closely monitor safety procedures and actions at each site.

SAFETY

LEARNING FROM SAFETY SCORES



LTIR (Lost Time Incident Rate) shows the frequency rate of the number of lost time accidents.

Number of accidents with lost work time

The frequency rate records the number of accidents with time off work sustained by personnel (more than 1 calendar day). Indaver reports this data by region and as a total for the group. In 2015 the Indaver Group noted 28 accidents (22 of their own personnel and 6 subcontractors), compared with 37 in 2014 (34 of their own personnel and 3 subcontractors). The frequency rate was 8.9 in 2015, an improvement on the 11.8 rate in 2014.

The severity is the number of days lost compared to the number of incidents. The severity of 0.20 in 2015 was at the same level as in 2014.

Comparison with the sector

There is no clear-cut publication of safety figures for the waste and chemical sectors internationally (or in Europe). In Belgium figures are available for the waste sector and the chemical industry, which can be compared with Indaver's results. According to the most recent data published by the Belgian federal government (2014) the average frequency rate in the waste

treatment sector is 25.8. With a frequency rate of 8.9, the Indaver Group scored significantly higher than the average in the waste sector (25.8) and the average for all Belgian companies together (FR = 17.05).

Actual severity

Actual severity provides an indication of the number of days of unfitness for work affecting employees. We can also compare the Indaver Group against Belgian statistics.

The 2015 actual severity for the Indaver Group was 0.20. According to the most recent data (2014) the current severity in the waste treatment sector is 0.86. With actual severity at 0.20 we therefore score as well as the chemical sector (NACE 20, AS = 0.24) and significantly better than the national average for all Belgian companies as a whole (AS = 0.44).

Both scores show that in the Indaver Group not only are there significantly fewer accidents than in the Belgian waste sector, but those that do occur also generally lead to fewer days off work than the average for the waste sector.

SAFETY

SAFETY CAMPAIGN: SAFETY IS WORTH THE ATTENTION

Attention to safety issues, via the international safety campaign and through the personal involvement of the management teams, strengthens the group-wide safety culture. This certainly has contributed to the falling trend in safety incidents. Nevertheless we have also established that this improvement is not being made proportionally at all

sites. Therefore there are additional local actions targeted at specific safety aspects. In 2015 Indaver continued its group-wide safety campaign. It continued to hammer home recurring safety issues, but in 2015 it also placed particular emphasis on challenging each other on the importance of working safely.

Safety during logistic TWM operations further tightened

In order to guarantee Industrial Waste Services (IWS) customers that the external logistics partners observe the same high standards with regard to safety and quality as our own drivers, Indaver has prepared a leaflet with clear safety guidelines. So in all countries where Indaver works with logistics partners at sites belonging to Total Waste Management customers the same arrangements and standards apply. By informing our partners and making them aware of possible risks and arrangements, we are looking after the safety of our customers, the drivers, and the Indaver operators in charge of the day-to-day waste management at the customer site.

The leaflet is being distributed to all our partners. With this initiative we are assuring ourselves that all drivers appointed for a TWM transport job have read and signed the leaflet. By highlighting how important it is to wear Personal Protective Equipment (PPE), to respect the traffic rules on customer sites, to know what to do in alarm situations, and to adhere to the 10 instructions for loading and unloading, we are tightening safety at the customer site. If, despite this, the driver is confronted with a situation where he doesn't know what to do, or if there is a problem, then he can call a central telephone number where Indaver logistics experts are on hand to assist the drivers.



Indaver investing in adjusting plate for blind spot mirrors

Indaver is also investing in the safety of third parties. An example of this is the specially designed adjusting plate for blind spot mirrors at Indaver Gevaarlijk Afval (IGA) in Hoek, the Netherlands which was set up in 2015. A truck's blind spot is a known hazard for truck drivers and the cause of many road traffic accidents. At IGA, drivers can now check the position of their mirrors and if necessary adjust them before they go back on the road. Indaver is thereby also doing its bit for safety beyond its own gates.

INCIDENT REPORTING AND MONITORING SYSTEM

Safety was also a priority in the regions in 2015. The success of the group-wide safety campaign and the efforts of each Regional Management Team are having a positive impact.



Prevention

The Business Support and Safety departments have developed a new system of reporting incidents and updating follow-up actions. Indaver thus hopes to create a common system for all regions. This system was introduced in the Netherlands in 2014 and in Ireland and Belgium in 2015. Germany will follow in 2016. The database is a welcome resource for evaluating and sharing findings on prevention.

Learning from accidents

After every accident Indaver conducts a detailed investigation into its cause. After that we set objectives and work out preventive actions to improve results and avoid accidents.

The receipt and treatment of many of the waste types at Indaver requires manual logistics handling; our installations have to be maintained. Yet many of the injury incidents noted appear to have minor causes.

From the analysis of accidents and unsafe situations in 2015 we have learned that more than half of the total of 28 noted injury incidents with absenteeism were the result of trips/slips (10) and hand injury/trapped fingers (8). Together they account for 85 % of the number of absent days as a result of injury. Also, lack of attention on stairs and not being mindful when exiting vehicles are recurring safety issues.

The group-wide safety campaign, first launched in 2013, was reformatted in 2015 and consisted of:

- **A video message** from the CEO about personnel safety.
- **Planned safety talks** by IMT members; visits to employees in their daily work environment to show that safety remains a top priority at all levels.
- **A series of posters** that focused on specific themes and the role of interaction between colleagues. The themes were chosen based on an evaluation of the safety figures and principal causes from 2014. Themes: the reporting of hazards, trips and falls, hand injuries, traffic management, working at heights/fall hazard, and contact with chemical products.

PROCESS AUTOMATION

IMPROVING SPEED AND FLEXIBILITY

New work permit software

In March 2015 the Antwerp and Doel sites in Belgium made the switch to a new work permit software system.

The main advantages of the new software are: a more detailed description of the operational start-up post site works, a more user-friendly form with pre-defined fields and direct links to our intranet and the option to create individual search lists.

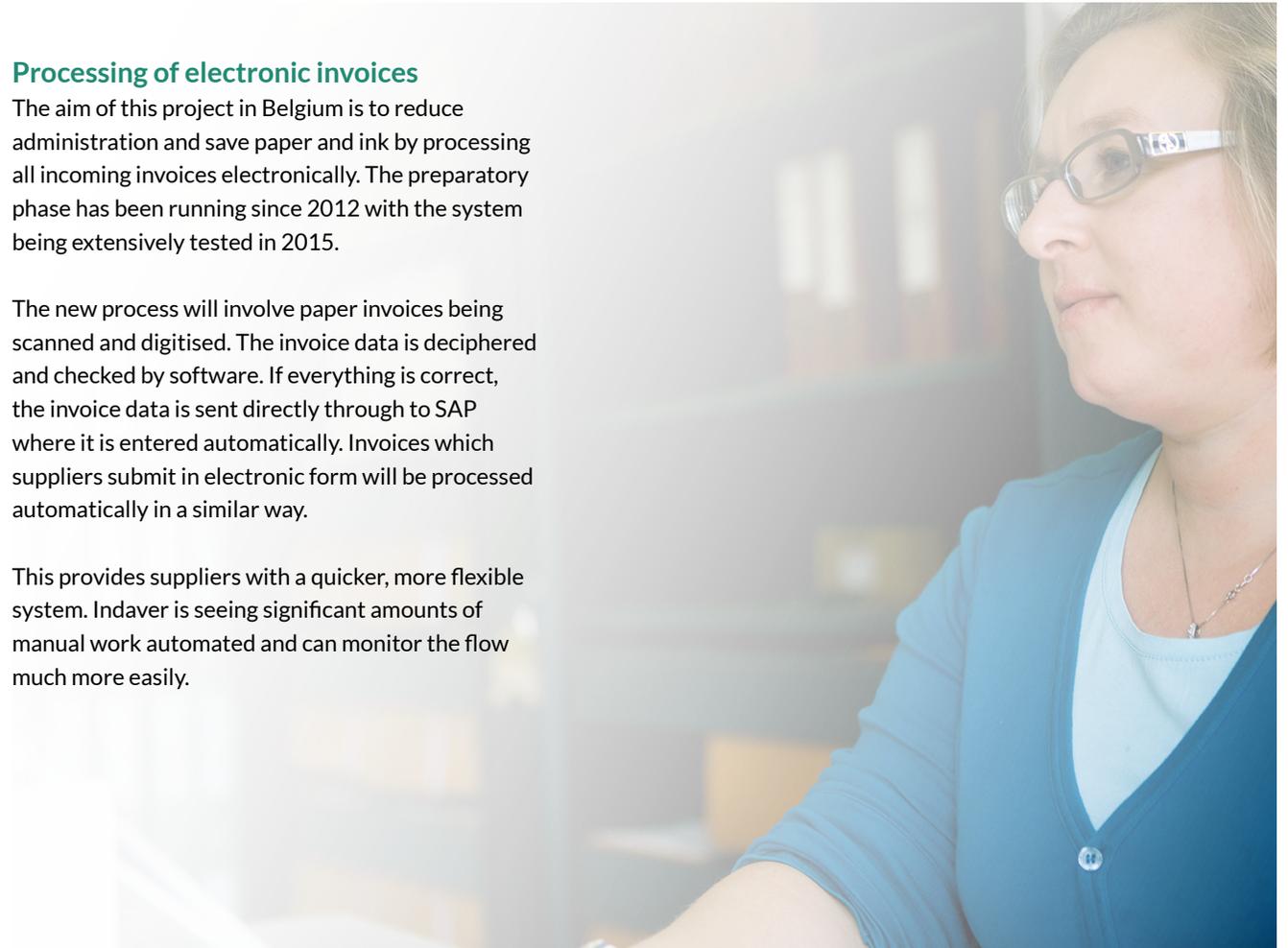
Users can also choose between low, high and ultra-high risk permits and there is an integrated last minute risk analysis (LMRA) for subcontractors/maintenance staff on the site. Incident reports have also been integrated into this package to provide a more comprehensive account.

Processing of electronic invoices

The aim of this project in Belgium is to reduce administration and save paper and ink by processing all incoming invoices electronically. The preparatory phase has been running since 2012 with the system being extensively tested in 2015.

The new process will involve paper invoices being scanned and digitised. The invoice data is deciphered and checked by software. If everything is correct, the invoice data is sent directly through to SAP where it is entered automatically. Invoices which suppliers submit in electronic form will be processed automatically in a similar way.

This provides suppliers with a quicker, more flexible system. Indaver is seeing significant amounts of manual work automated and can monitor the flow much more easily.

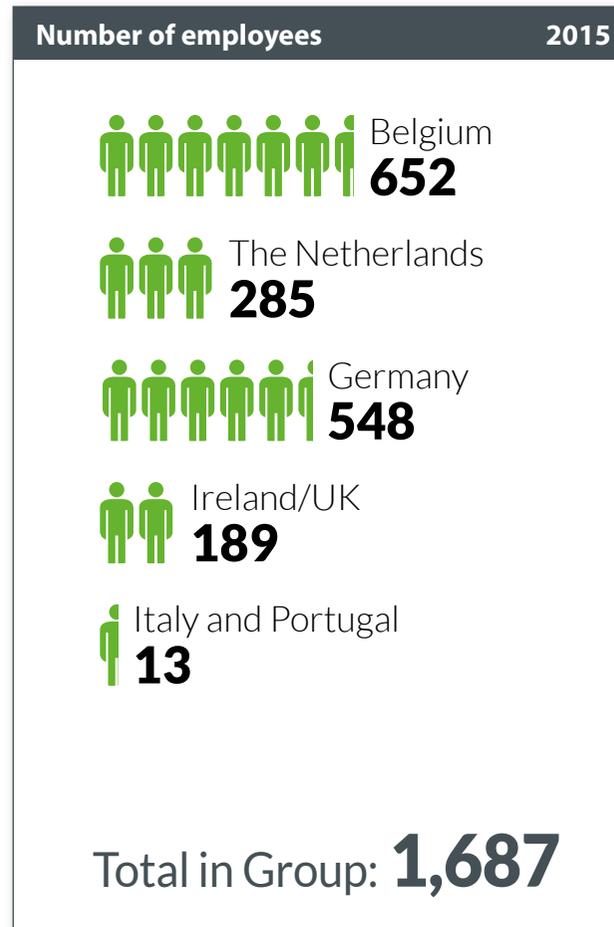


A COMPANY THAT INVESTS IN SUSTAINABLE DEVELOPMENT OF ITS ORGANISATION AND EMPLOYEES

A stable and well trained workforce

Indaver is a knowledge driven organisation and focuses on the retention of critical knowledge and the development of its employees. Indaver believes that continuously investing in its employees enhances the strength, flexibility and performance of the company. The robust competition and the globalisation in the waste market requires Indaver to act in an efficient and innovative manner to keep pace with the changing environment. To support this aim, we focus on cultivating an organisation where knowledge sharing and people development are key.

- **Number of employees:** 1,687 employees in the Indaver Group on 31 December 2015 which is 7 more than in 2014.
- **Average staff turnover** increased to 8.14 % (6.61 % in 2014) due in part to the improving economic situation and thus an increased demand on the labour market.
- The **average absenteeism** rates increased from 4.25 % in 2014 to 5.14 % in 2015 mainly due to a number of long term illness cases in Belgium, Germany and the Netherlands.
- In 2015, Indaver invested 57,869 hours of **training & development** of our people. This is an average of 34 hours per employee per year.



LEADERSHIP

STRENGTHENING THE INDAVER CULTURE

In line with Indaver’s mission statement, the HR approach aims for the sustainable development of our organisation and people.

One of the most important factors in achieving this mission is demonstrating quality leadership. Indaver Leadership is represented in ‘Leading by Triple C’: Care, Coach, Connect. The concept of ‘Leading by Triple C’ is incorporated in the Indaver competency model. By adopting a common leadership approach, we strengthen our team culture which is necessary to achieve our local and international strategies within our matrix structure. It provides the opportunity to further develop the Indaver culture in all regions. In 2015 we continued to train and develop our leaders throughout our operational regions.



Investing in sustainable employability

Indaver aims to have the right competencies available at all times to shape the business strategy and future international growth. This means that on the one hand we have to monitor our ageing workforce, ensuring retention of knowledge. On the other hand we have to focus on optimal and sustainable employability of our people to meet the demand for longer professional careers. We apply a pro-active approach, taking into account the diversity of the different age groups. We choose qualitative solutions aimed at job mobility, learning and developing resulting in a “learning and development approach”. This requires a joint commitment between both the employee and company. In 2014 we implemented a Group-wide strategy which was translated into regional strategies which varied depending on local context and legislation. In 2015 work continued across the regions on this programme.

► *Please see the next page for an overview of the 4 pillars of this strategy*



SUSTAINABLE EMPLOYABILITY

A STRATEGY BUILT ON FOUR PILLARS



Health & Well-being:

We make our employees aware of the importance of their physical and mental health, and encourage them to live a healthier lifestyle. We also offer health check-ups and relevant vaccinations. We urge our employees to pay attention to their physical and mental health, both at home and at work. In continuous dialogue with our employees we adapt working conditions and circumstances in order to attain long-term employment. Together, we strive to find a good balance to benefit both the organisation and the employees. We monitor work places and identify the necessary ergonomic resources for an optimal work performance.



Balance in work & life:

We clarify roles and responsibilities of our employees and the expected results. We ensure our people are well trained for the job and support them where necessary. We provide them with efficient and effective tools to perform their duties. We expect our employees to take ownership, to take the initiative to improve efficiency of work processes on the work floor. We offer, where possible, flexible working hours, working from home and part-time work opportunities. Through open and honest dialogues, we can ensure that their situation provides personal benefit, benefit for the organisation and for their team.



Competence & Career Development:

We offer our employees opportunities to continuously work on the development of their competencies and skills through training & development, on-the-job-experiences, coaching, feedback exercises and potential assessments. We help them to find their personal career anchors in each life stage and facilitate job mobility. We expect our employees to take the initiative and to understand that they are in the driving seat of their competence and career development.



Commitment & Engagement:

We support our employees in the Indaver way 'Care-Connect-Coach'. We respect and trust them. We clarify their personal contribution to the Indaver strategy and the team, and involve them in decision-making. We give them the autonomy and authority to act. We help them to develop and to deal with a changing environment.

SUSTAINABLE EMPLOYABILITY

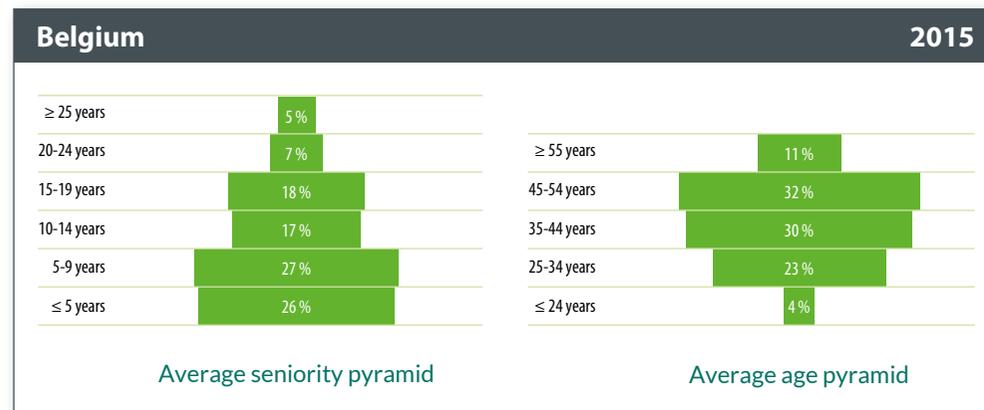
All regions work on sustainable employability with varying priorities.

Belgium

In 2015 a new learning management software program, entitled People Platform, was launched. The People Platform provides an overview of the educational background, job experiences, competencies and knowledge of its employees. It records the required training for each specific role in the organisation which enables our employees to further develop their talents in a structured

environment, allowing them to pursue other job mobility opportunities.

Trained onsite advisors were appointed to support and train employees in navigating this new system.



Average age
43.9 years

BE 42 years
NL 47 years
DE 46 years
IE/UK 40 years

Average seniority
11.6 years

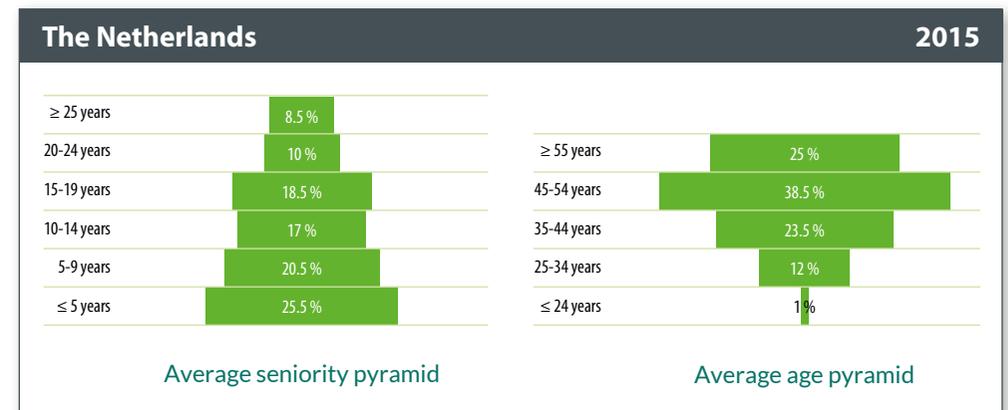
BE 11 years
NL 12 years
DE 14 years
IE/UK 6 years

The Netherlands

In 2015, there was a clear focus on health and well-being. An expert in ergonomics was invited to check each and every working place to suggest ergonomic improvements. Workshops were also organised to advise staff on how to sleep better, quit smoking and eat healthier.

Indaver places high value on Social Responsibility. A multi-disciplinary team is seeking to create appropriate work for

personnel with employment restrictions. They are specifically looking at suppliers and social labour companies. We strive to cooperate more closely with training centres to exchange knowledge. An active trainee programme provides internships and graduation project opportunities. The presence of students encourages the company to think outside the box and to be innovative.

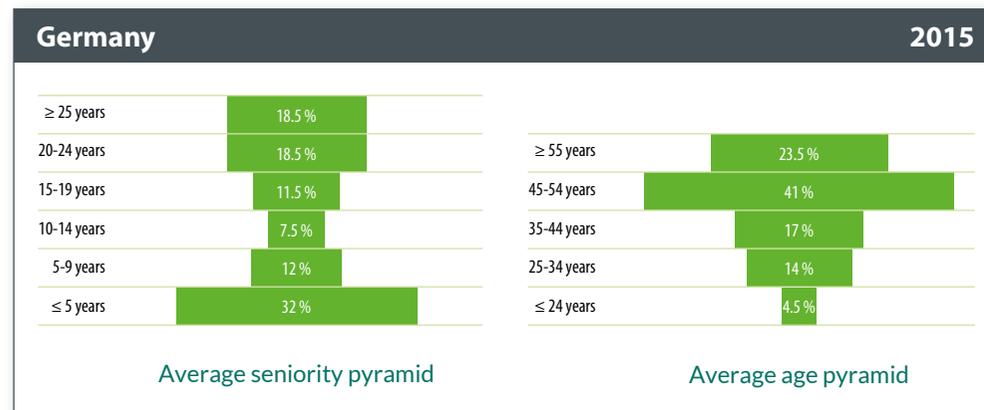


SUSTAINABLE EMPLOYABILITY

Germany

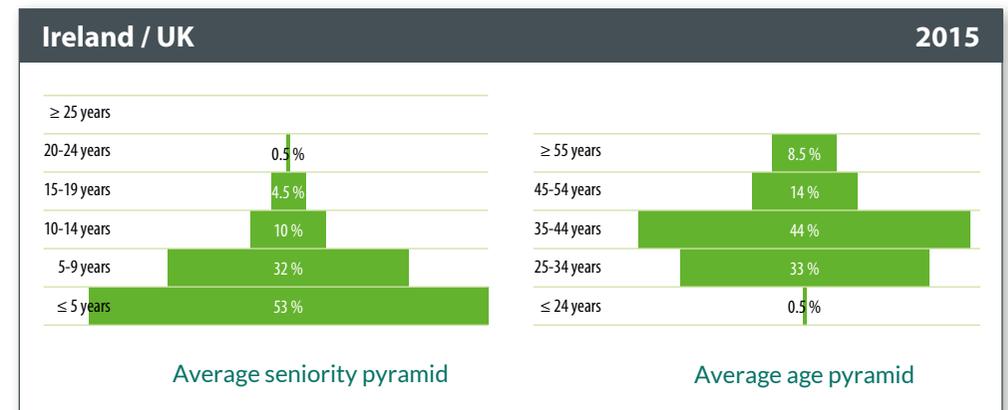
In 2015 AVG Hamburg adapted its 'shift work system' to meet the latest medical standards. The new system was developed in cooperation with shift workers, Betriebsrat, experts for occupational medicine and our HR team. It is a forward rotating shift system with 5 shift teams working no more than 4 night shifts in a row. This system is designed to alleviate medical problems related to shift work.

In addition, the HR team organized 'Health Days' at various office and site locations. The purpose of this initiative was to offer individual medical check-ups for all employees. Courses in preventing work related stress and an early retirement program were also launched in 2015.



Ireland

During the last two years Indaver Ireland put a lot of effort into the development of leadership capabilities and managerial skills. In 2015, the HR team developed a management toolkit booklet, a summary of the topics dealt with during the training program which brings together the ideas, strategies and resources to help managers tackle the challenges of people management.



ENCOURAGING INNOVATION

A LEARNING ORGANISATION

Process Academy

As a learning organisation, Indaver is constantly enhancing and expanding the knowledge and experience of its people.

This is the Process Academy. This training programme is part of a broader developmental path for our engineers and others. The Process Academy aims to impart knowledge and encourage more intensive communication. It will run for a two-year period, with six academy days per year. The purpose of the programme is not only to transfer knowledge but also to encourage colleagues to talk with one another and share different perspectives. In this way we will establish an effective in-house network.



Innovation contest:

Indaver is looking for 'breakthrough' innovation

The circular economy demands new solutions. Production processes need to become more efficient, service provision and business models more innovative.

Indaver has a role to play in this and is therefore also preparing a systematic approach for 'breakthrough' innovation.

'Breakthrough' innovation relates to solutions that are new for the Indaver organisation, both technological innovations and new forms of service provision. These are geared towards further growth, in addition to the efficiency gains and savings that are the object of Lean Six Sigma projects.

To set this approach in motion, Indaver organised an innovation competition in 2015. Interdisciplinary

teams, with members from International Competence Centres, Regional Management Teams and Business Teams, were challenged to come up with ideas and share these with others.

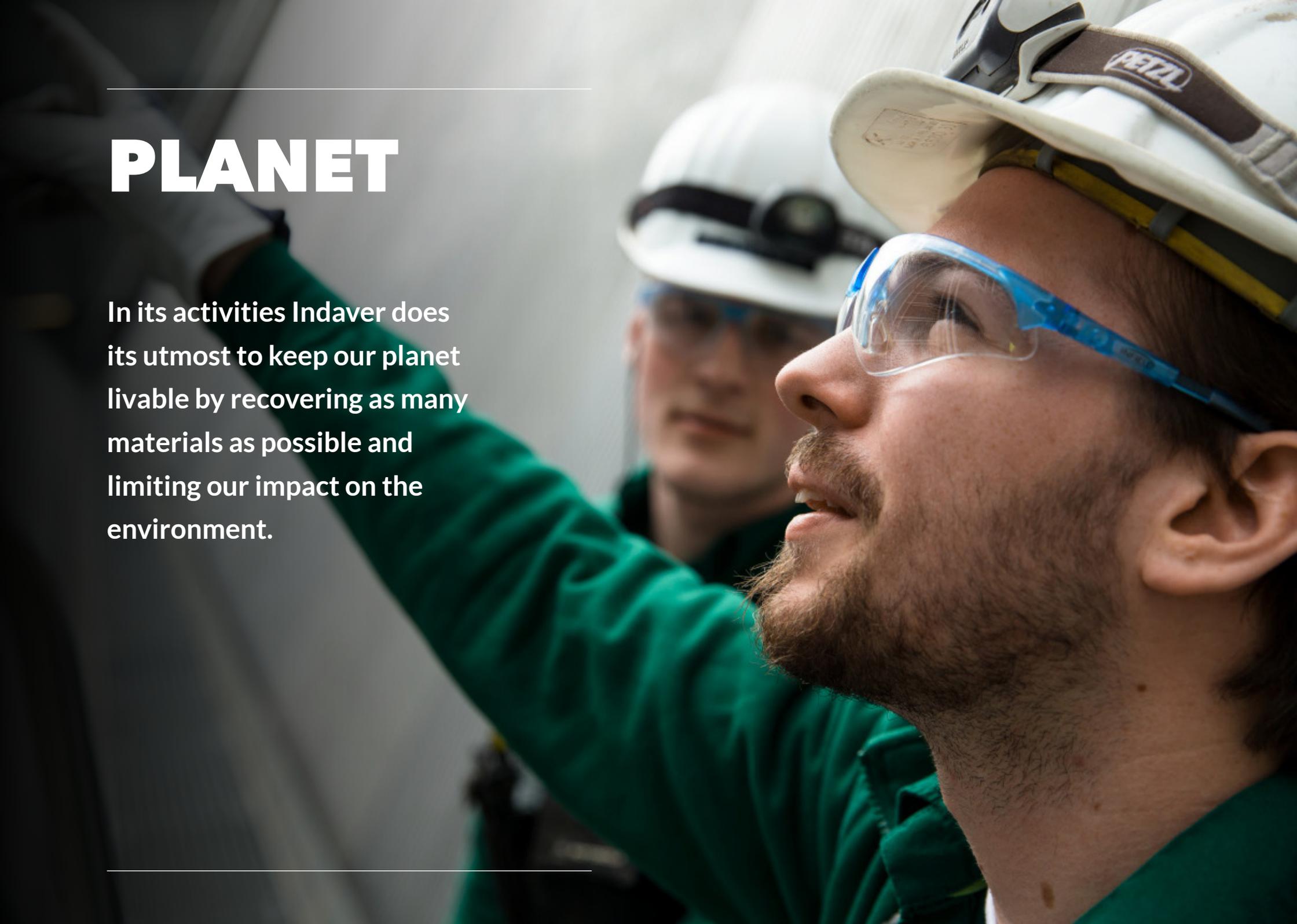
The organising innovation team received around 50 submissions, with a good balance between new and existing technologies and business models. Some submissions were developed in full, others were more conceptual; overall, the quality of the submissions was very high.

Via careful selection Indaver determined which ideas the organisation will develop. Future focus areas were also named and steps taken to apply innovation in a more systematic manner within the organisation.



PLANET

In its activities Indaver does its utmost to keep our planet livable by recovering as many materials as possible and limiting our impact on the environment.





MANAGING WASTE IN A SUSTAINABLE AND SAFE MANNER

OUR VISION

The growing world population and the increasing prosperity in large parts of the world are putting a strain on the Earth. We are using too many raw materials which is exhausting the supply, and we are producing too much waste that is being lost. The Earth is heating up and the CO₂ concentrations in the atmosphere are continuing to increase.



Waste management companies such as Indaver were set up to treat waste in a sustainable and safe manner. Through its high-tech facilities, Indaver diverts waste from landfill. Indaver processes recyclable material and is producing energy from residual waste. Waste companies are increasingly being expected to make a more fundamental contribution to the circular economy.

In fact, in order to create a clean and safe planet, our way of living, manufacturing and consuming has to become and remain sustainable. In order for there to be an adequate supply of raw materials for future generations, we have to reduce our consumption and recover as many of these raw materials as possible.

As a waste management company, Indaver is in a position to lead the way towards the creation of a circular economy.

Indaver wants to close the materials cycle in an energy-efficient manner whilst reducing CO₂ emissions. We extract the maximum amount of high-grade materials from the waste we treat. These can then be used as raw materials. Anything left

over, where appropriate, is thermally processed which produces energy. Indaver supplies this to district heating networks, electricity grids or to other businesses. During treatment, Indaver uses as few raw materials as possible and replaces precious raw materials with other products or waste products where possible. At Indaver we use the calorific value of waste to save on fossil fuels.

Indaver invests in advanced technologies to limit the impact of its activities on the air, water and soil. It also guarantees that it observes the strictest environmental standards. It is economical in its use of water, energy and raw materials. It takes the necessary measures to prevent contamination of the soil and groundwater on its sites and makes sure that waste which cannot be recovered or destroyed is stored safely on the landfill sites it manages.

Indaver limits its ecological footprint when transporting and treating waste. It analyses its plants and processes to see where it can improve its energy management.

WASTE AS A RAW MATERIAL

HIGH-GRADE MATERIALS FOR THE CIRCULAR ECONOMY

As far as Indaver is concerned its contribution to the circular economy is only sustainable if three pillars are in balance: technology (the technology needed to safely treat waste and recover feedstock), economy (ensuring added value and affordability) and quality (high-value materials, a clean materials chain and safe treatment).

Supplier of high-quality feedstock

Indaver tries to recover as many materials as efficiently as possible in all its activities and facilities. It believes waste is a valuable raw material. That is why it is working towards a society in which materials create a sustainable cycle.

Closing the loop means re-using materials without their losing value as lower-quality materials lead to lower-quality products. The products that are created from secondary materials must have the same high quality as products from unprocessed raw materials and they must be just as safe. Indaver supplies these high-quality materials which can be used to make the same product or another high-quality product.

Indaver

- has sorting, cleaning and recycling facilities for PMD, paper-cardboard, plastics, mercury-containing lamps, hydrochloric acid and solvents.
- with its Molecule Management looks at the smallest components of chemical and pharmaceutical waste, the molecules, in order to recover these as raw material for industry.
- converts biowaste such as vegetable, garden and fruit (VGF) waste and green waste into compost, biomass, green gas and liquid CO₂.
- with the thermal treatment of waste recovers materials by removing reusable and recyclable waste fractions beforehand and recovering materials after incineration via advanced ash treatment.



INDATUBE

IMPROVED FLUORESCENT LAMP RECYCLING

The new IndaTube, for the treatment of straight fluorescent lamps at the Indaver Relight site in Doel, Belgium, is a good example of a closed loop. Indaver treats 30 million mercury-containing lamps a year.

More efficient recovery

Indaver recovers the fluorescence powder, the lime glass – the glass from the fluorescent tube – and the caps from the lamps for re-use. With IndaTube it can remove the fluorescence powder more efficiently. We ensure the lime glass is ready to be sent back to the lamp manufacturers who use this glass to make new lamps. The fluorescence powder is sold, rare earth metals are recovered from these powders, and the caps go back into the metal processing circuit.

Less environmental impact from mercury

These lamps contain a small amount of mercury, a volatile metal that is harmful to people and the environment. Environmentally safe treatment is therefore essential. European legislation, regarding the impact from residual mercury, is becoming increasingly strict. With IndaTube, we can ensure the mercury concentrations in the fractions are below the newer and stricter European limits.



INDAVER MOLECULE MANAGEMENT®

RECOVERY AT A MOLECULAR LEVEL

Companies seek partners to find alternatives for primary raw materials, and in waste manager Indaver, with its Indaver Molecule Management®, they have a good match. In this way Indaver seeks opportunities to recover more and more valuable components from hazardous waste instead of destroying them.

The smallest components

Indaver manages over 5 million tonnes of waste every year. Although glass, paper and plastic are now widely recycled, it is more difficult to process hazardous waste streams. With its Indaver Molecule Management®, the company is now looking at the smallest components of chemical and pharmaceutical waste, namely the molecules. The intention: to safely recover materials such as hydrochloric acid, iodine, rare earth metals and precious metals.

Safety first

The remaining waste which may contain components harmful to people and the environment is then processed by Indaver in accordance with the strictest safety standards. The safest way is to break it down at a high temperature or, if this is not possible, to neutralise and/or solidify it before disposing of it responsibly. This helps to keep the cycle clean and safe.



Palladium: re-using precious metal from industrial waste

In 2015, Indaver has been recovering palladium from liquid pharmaceutical waste at its site in Antwerp, Belgium. This is used as a catalyst in processes in the pharmaceutical industry. The production unit, hooked up to a tank container, is sufficient for turning liquid waste into palladium. The palladium molecules are isolated via special innovative separation techniques from the liquid pharmaceutical waste, without affecting the quality of the end product. The intention is to extend these techniques to other precious metals, according to the needs of the industry. The industry can then re-use these recovered precious and valuable materials after they have been refined by one of our partners.

Indaver Molecule Management® garners FEBEM award

FEBEM (the Belgian Federation of Environmental Management Companies), who acts as a representative for waste treatment companies, highlighted Indaver's efforts in the field of sustainability via the FEBEM awards. Indaver was awarded in the category of best innovation or environmental project with its Indaver Molecule Management® for industrial customers. The jury praised "the innovative nature and the real added value of this innovation".



VEGETABLES, GARDEN AND FRUIT (VGF) WASTE

AT THE BASIS OF FOUR SUSTAINABLE PRODUCTS

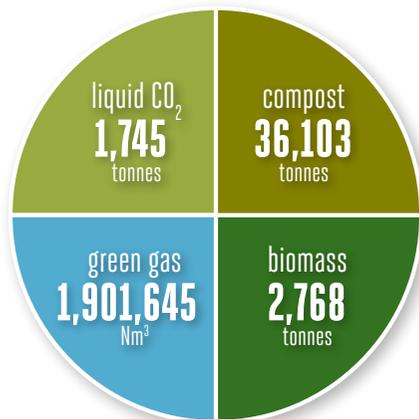
On 16 April 2015 Indaver officially opened its ultra-modern VGF digester Bio Power in the Dutch town of Alphen aan den Rijn.

The innovative digester is the only one in South Holland that can both digest and compost VGF waste, green waste and biowaste from the food industry; Indaver is emphatically opting for quality – i.e. high-value recycling – over quantity.

Four high-quality raw materials

Bio Power Alphen is the latest generation VGF digester from Indaver. Operational since June 2014 and opened officially in April 2015, Bio Power Alphen meets the highest expectations from the outset.

From the Vegetables, Garden and Fruit (VGF) waste from municipalities in the wider area, Indaver recovers four high-quality raw materials:



Alternatives to fossil feedstock

The compost is a natural soil improver and replaces fossil peat or fertiliser. The biomass serves as feedstock for energy generation and replaces fossil fuel. Bio Power Alphen digests the wet organic residue into biogas. This is then reprocessed into green gas. The green gas from Bio Power Alphen has the same quality as fossil natural gas and is therefore an excellent sustainable alternative.

CO₂ is released when biogas is refined into green gas. Bio Power Alphen compresses this into liquid CO₂. Greenhouse farming uses liquid CO₂ to stimulate plant growth. Liquid CO₂ can be reprocessed into dry ice, used to chill foodstuffs.

With these four high-quality raw materials from VGF waste Indaver once again closes a material loop.

► [Please click here to view the film on the digester.](#)



Mini-symposium on the Collection of VGF Waste

To celebrate the official opening of Bio Power Alphen in April 2015 Indaver organised a *mini-symposium* on 'a better collection of VGF waste, specifically in high rise buildings'.

At the invitation of Indaver four experts shared their knowledge and best practices concerning the collection of vegetables, garden and fruit waste.

ECOFUELS

COOPERATION LEADS TO NEW MATERIALS

Indaver works with strategic partners to produce secondary raw materials with the same quality as primary materials. Sharing knowledge and experience facilitates innovation in the field of sustainable waste management. One example of a sustainable collaboration is EcoFuels in the Netherlands.

EcoFuels innovative food and beverage (F&B) digester

Ten years ago in Well (Limburg), Laarakker Groenteverwerking together with Indaver Nederland designed and built the EcoFuels B&V digestion facility. Since then EcoFuels has been producing high-quality products from leftovers from the food and beverage industry (F&B) with a low dry matter content, and from agricultural residual flows.

Green energy

EcoFuels was the first large-scale digester to generate green electricity from biogas. Indaver and Laarakker used the knowledge gained with EcoFuels to expand the FDT digestion facility in 2011. EcoFuels also produces green natural gas and liquid CO₂.

Better Biomass certificate

In 2015 EcoFuels was awarded the NTA 8080 certificate, also known as the Better Biomass certificate. This certificate guarantees that EcoFuels has opted for the most sustainable method of treatment. For VGF waste this is a combination of digestion and composting.

For the acceptance and treatment of residual flows from agriculture and leftovers from the food industry, customisation is a requirement. For each residual flow presented, EcoFuels works towards the most sustainable processing route. This also means that EcoFuels will not take a residual flow if it can be used more sustainably elsewhere.

INDACHEM LIQUIDS AND INDACHEM SOLIDS

STRIVING FOR A SAFE AND SUSTAINABLE MATERIALS CYCLE

Indaver keeps the materials cycle safe and pure. Harmful or hazardous components in waste cannot be recovered for re-use. There is therefore a need for 'safe sinks', a type of safe storage facility, as a repository for unwanted components. Indaver provides the SafeSink guarantee: it captures or catches all potential hazardous components in high-tech final treatment facilities and thus removes them from the product chain.

In physicochemical facilities a chemical reaction is set in motion that neutralises and 'fixes' hazardous components of waste products. The physicochemical facilities at Indaver's site in Antwerp treat industrial, liquid and solid inorganic waste. Thanks to 25 years of experience and continually striving to improve, these have become high-tech innovative treatment plants that work closely together so that they can achieve more than other plants. Which is why they deserve a special name.

IndaChem Liquids processes liquid waste products such as wastewater from metal treatment. IndaChem Solids treats industrial, solid, inorganic waste that can not be incinerated, in addition to hazardous components from waste that are left in the filters after thermal treatment.

WASTE AS ENERGY

Each year, Indaver produces enough energy to supply power for around **255,000 households** from the thermal treatment of waste.

By 2020, Europe wants to see the emission of greenhouse gases cut by 20 % compared with their 1990 levels. Energy consumption has to be reduced by 20 % and 20 % of the energy must be sustainable. Indaver is playing its part towards this European climate policy with its waste-to-energy strategy.

Incinerating facilities = power plants

Indaver's incinerating facilities are real power plants given that they convert as much waste as possible into energy. We use this energy for our own facilities and buildings and we supply it to households and neighbouring companies.

Indaver connected to the electricity grid

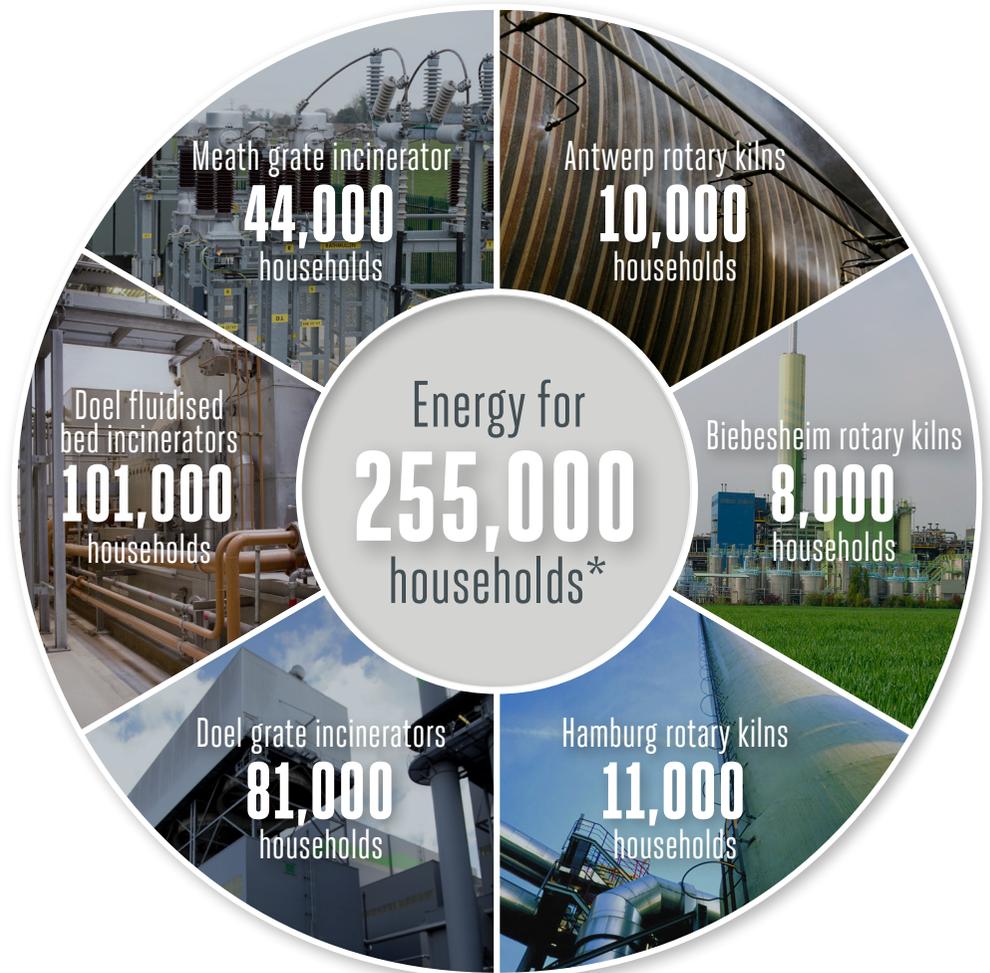
Indaver uses the energy it recovers not just for its own buildings and facilities, but it also supplies the electricity grid.

Biogas

Biowaste has great potential for green energy production. We recycle biowaste into biomass, among other things. This is used as a fuel in power plants. The digestion of biowaste produces biogas which can be converted into heat or electricity, or transformed into green gas and liquid CO₂. The waste dumped at our landfills is another link in our waste-to-energy chain, where we extract methane with which we can generate energy.

Energy clusters

We are continuously looking for new ways to use the energy that we recover. One possibility is energy clusters. To achieve this Indaver is developing a number of projects and studying their feasibility.



* Assuming that the total volume of recovered steam is transferred to electricity, calculated with an average consumption of 3.5 MWh/household per year.

ECLUSE, HEAT NETWORK IN PORT OF ANTWERP

FULL STEAM AHEAD

Six companies from the chemical and logistics sector in the Waasland Port near Antwerp, Belgium, signed letters of intent on 8 May 2015 for the supply of green heat by ECLUSE. This means the heat network is going full steam ahead. ECLUSE is set to become one of the largest industrial heat networks in Europe.

► www.ecluse.be

Flexible and reliable energy for businesses

Indaver and SLECO treat over a million tonnes a year of non-recyclable household and similar commercial waste in their grate and fluidised bed incinerators. ECLUSE, a joint venture comprising Indaver/SLECO, Infracore, Maatschappij Linkerscheldeoever [Scheldt Left Bank Corporation] and FINEG, will channel the steam generated during this incineration process through a 5-kilometre long steam pipeline to six chemical and logistics companies. These companies require large amounts of heat for their processes. This network offers them flexibility: they draw off steam whenever they need it. They are assured of a reliable energy provision at a uniform tariff.

One heat network = 50 wind turbines

Due to the fact that the participating companies are now able (partly) to shut down their gas-fired boilers, they will now be emitting 100,000 tonnes less of CO₂ – comparable with the CO₂ savings achieved by 50 standard wind turbines. Other emissions such as those consisting of nitrogen oxides and particulates will also decrease. Given that half the waste in the waste-to-energy facility is biowaste, an equal proportion of the heat generated may be described as ‘green heat’. Once ECLUSE goes into operation, it will produce at least 5 % of all green heat generated in Flanders. This means that with this heat network ECLUSE is giving Flemish climate targets a serious boost.

Indaver/SLECO's waste-to-energy facility in Doel is the starting point of a new industrial steam network

1
heat network
saves the equivalent of
50
wind turbines
in terms of CO₂

EXTERNAL WASTE TREATMENT CENTRES

TREATMENT BY THIRD PARTIES: INDAVER MONITORS QUALITY AND SAFETY



Indaver offers the most ecologically and economically responsible solution for waste from industrial customers and public authorities. There are two possible scenarios for this: treatment in our own or in third-party facilities, the external treatment centres.

Indaver believes it is very important that treatment by third parties is performed in an environmentally friendly way and therefore closely monitors these treatment processes.

What are external treatment centres?

Indaver currently has a network of approximately 500 external treatment centres in Europe to handle materials (waste and raw materials) from its customers. These range from very small, specific facilities (such as cleaning and repairing bins and large plastic containers) to very large, integrated enterprises (such as co-incineration plants with the associated pre-treatment platforms).

Why external treatment centres?

There are various reasons for treatment by third parties:

- External centres have more appropriate treatment technology, for treating gas cylinders, reconditioning drums or regenerating activated charcoal for example.
- To reduce transport costs, Indaver sometimes works jointly with local treatment centres. This is the case for instance for local treatment for specific foreign customers.
- An external centre can act as a backup in the event of maintenance work on Indaver facilities so as not to disrupt the regular supply and removal of waste.

Guarantee for the customer

Structured outlet management allows us to offer our customers the same guarantee for treatment of waste by third parties as for our own facilities. This is because Indaver checks that treatment is carried out in an environmentally safe manner, in accordance with current legislation. It has set up special mechanisms for this purpose.

Guarantees ("Qualification Guarantees (QG)") must be available for all external treatment centres before an agreement is drawn up between Indaver and the outlet. This (independent) guarantee provides formal confirmation that the waste material can be accepted and

treated by the external treatment centre. The guarantee varies according to the country of the region where the external treatment centre is based (e.g. EFB certificate (EntsorgungsfachBetrieb) in Germany; Vlacocertificaat in Belgium etc.). If there are no such guarantees, Indaver asks the treatment facility to confirm, using the 'Pre-Qualification Questionnaire (PQQ)' that it has the necessary licenses to be allowed to accept and treat specific waste.

In any processing route that Indaver views as critical, an additional 'QESH-approval' is required: 'Quality Environment Safety Health Approval'. An activity is considered critical if there is an elevated risk of contamination of the material chain or food chain, the existing legal framework is viewed as rather minimal and/or if it relates to specific critical waste streams (e.g. explosives, peroxides, radioactive waste, waste containing priority substances, etc.).

A 'QESH Approval' examines the applicable European and national waste legislation, Indaver's 'Best Practice Classification and Characterisation' procedure (BPCC) and its '10 Codes of good practice in waste management'. After this evaluation it is clear whether a particular critical activity can take place in the planned treatment centre. In certain cases an outlet's site will be subjected to a full audit.

SAVING RAW MATERIALS IN ITS OWN PROCESSES

COST EFFECTIVE AND CREATIVE USE OF ADDITIVES

Indaver is not only a supplier of secondary raw materials for the industry thanks to the high-quality materials it recovers, it is also frugal with raw materials in its own processes. It optimises the production processes so that it needs fewer raw materials and comes up with creative ideas about how to replace one raw material with another, more readily available raw material or with an alternative material such as waste.



Saving lime in the gas cleaning stations

In addition to calcium carbonate and sodium hydroxide, lime is used as an additive in the gas cleaning stations of the fluidised bed incinerators in Doel. The purpose of these additives is to extract the pollutants from the waste gases. Analyses of the waste gas residue reveal that this still contains unused lime, a consequence of the technology used and of process inefficiency.

Indaver estimates that it can save around 12 % of consumption, i.e. 960 tonnes of lime, annually. It will do this by lowering the minimum dose and preventing overdosing where there is a high presence of acid pollutants in the waste gases. To reduce lime use, Indaver bought a measuring instrument that continuously measures the composition of the untreated waste gases online. Each kilo of lime that Indaver saves counts as double because fewer residues are then required to be delivered from the gas cleaning stations for follow-up treatment at the site in Antwerp.

Study into limiting raw material consumption in rotary kiln incinerators

Several raw materials are used in the waste gas washing in the rotary kiln incinerators. The pH measurement is the most important parameter that influences raw material consumption. Indaver is currently examining the relationship between pH and the cost-effective use of raw materials.

Use of highly calorific waste in the firing of the rotary kiln incinerators

In addition the 'firing' of the rotary kiln after a shut down requires litres of heating oil. A test set-up looks at how specific high calorific waste can be used as an alternative fuel. As these alternative fuels are burned at low temperatures, we can only rely on very specific waste streams with a low level of contamination. It is anticipated that approximately 50 % of the primary fuel consumption or around 600 tonnes of heating oil can be substituted by waste.

MINIMAL IMPACT ON AIR, WATER AND SOIL

USING TECHNOLOGY TO LIMIT IMPACT ON THE ENVIRONMENT

Indaver continuously strives for the best technology to treat complex and ever changing waste streams with maximum recovery of energy and materials. We develop new and innovative technologies to limit our impact on the environment.

Air

Indaver wants to keep the impact of its operations on people and the environment as low as possible. We are investing in new technologies and methods in order to further limit our air emissions.

► *The environmental results of our key facilities can be found in the following pages*

Soil

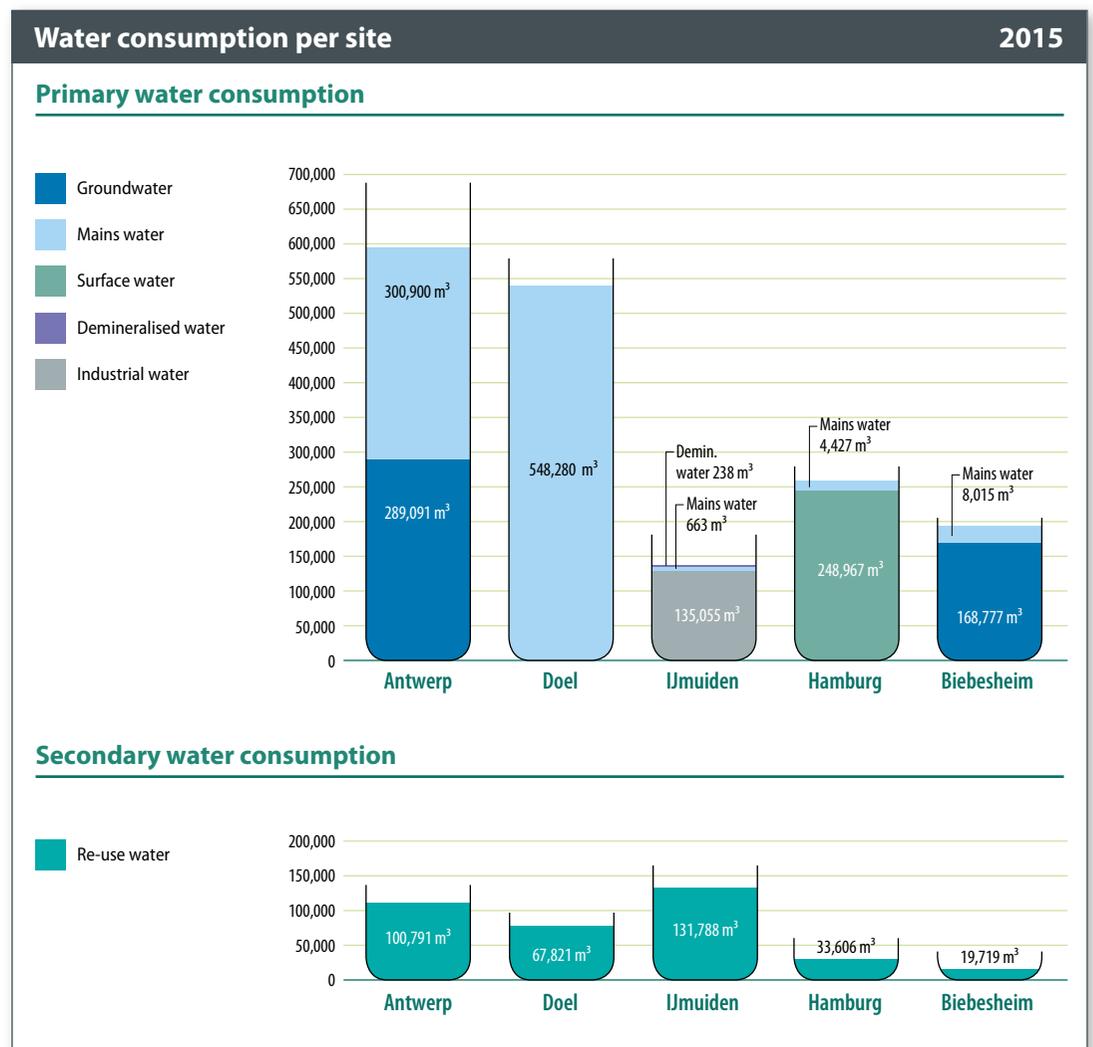
Indaver takes care that its activities have no impact on the soil. It takes the necessary preventive measures to prevent contamination of the soil and groundwater on its sites. Indaver ensure that waste is safely disposed of at its landfill sites.

► *You can read more on the Bonfol remediation project on page 78*

Water

Indaver uses water frugally. It invests in new technologies and methods in order to further reduce its impact on the water environment.

► *Please see graph*



ROTARY KILNS ANTWERP

EMISSIONS AND ENVIRONMENTAL IMPACT

1. Mass balance

IN		OUT	
Waste (*)	146,879 tonnes	Emissions to atmosphere	
Energy		Flue gases	1,037,441,124 Nm ³
Heating oil	1,189 tonnes	Energy	
Steam	141,541 GJ	Energy	1,055,247 GJ
Electricity	25,312 MWh	Water discharged	
Flue gas cleaning additives		Wastewater (**)	161,294 m ³
CaO-quicklime	834 tonnes	Residual products	
NaOH	3,425 tonnes	Bottom ash	26,562 tonnes
Chalk	5,073 tonnes	Fly ash and boiler dust	3,780 tonnes
TMT	45 tonnes	Wastewater purification residues	12,820 tonnes
FeCl ₃	479 tonnes		
DeNOx reagent	255 tonnes		
Water			
Mains water (**)	263,621 m ³		
Groundwater (**)	173,455 m ³		
Reused water (**)	88,867 m ³		



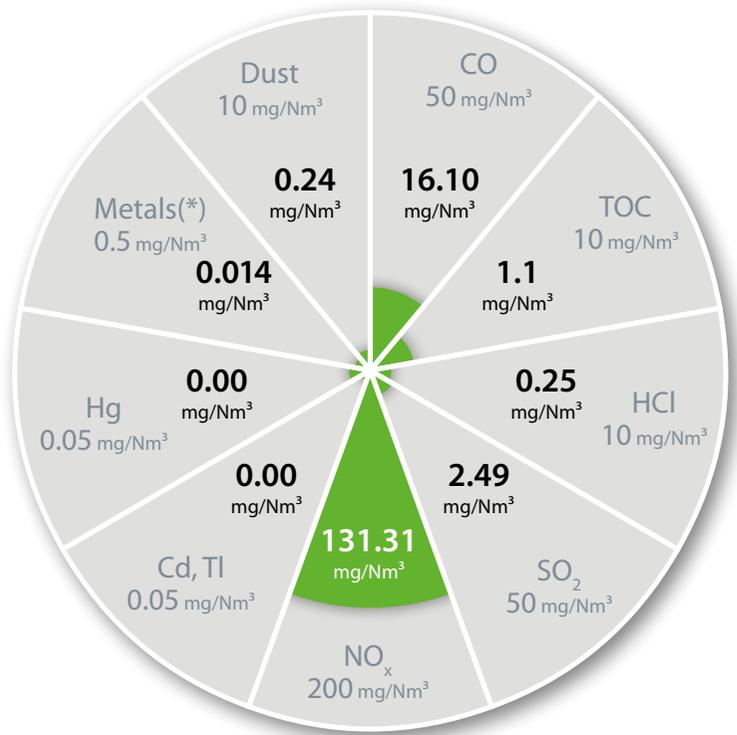
(*) Waste processed in the rotary kiln, includes lining material and waste oil, used instead of other primary materials.

(**) Calculated value

ROTARY KILNS ANTWERP

EMISSIONS AND ENVIRONMENTAL IMPACT

2. Performance relative to emission limit

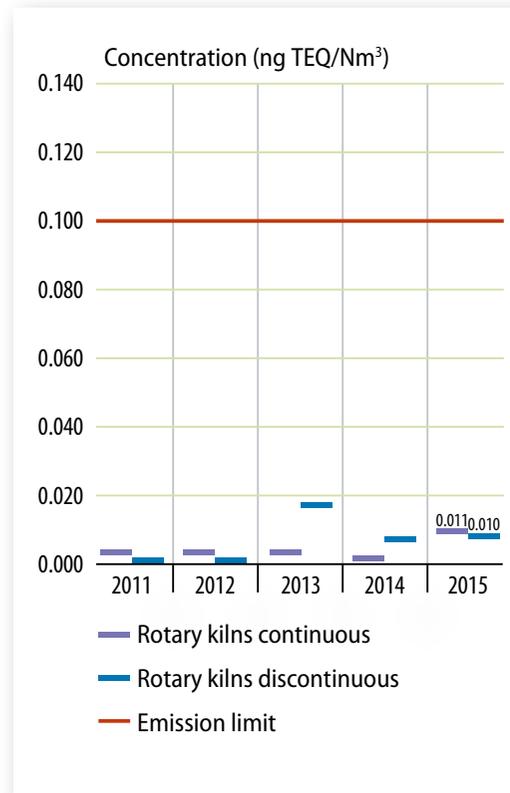


■ Daily average standard unless otherwise stipulated in environmental licence

■ Performance 2015

(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

3. Dioxin measurements



Dioxin pollutant volume = 10.2 mg TEQ (in normal conditions)

4. Volume of pollutants

Dust	0.2
CO	16.6
TOC	1.1
HCl	0.2
SO ₂	2.6
NO _x	136.8
Cd, Tl	0.00004
Hg	0.00109
Metals(*)	0.01136

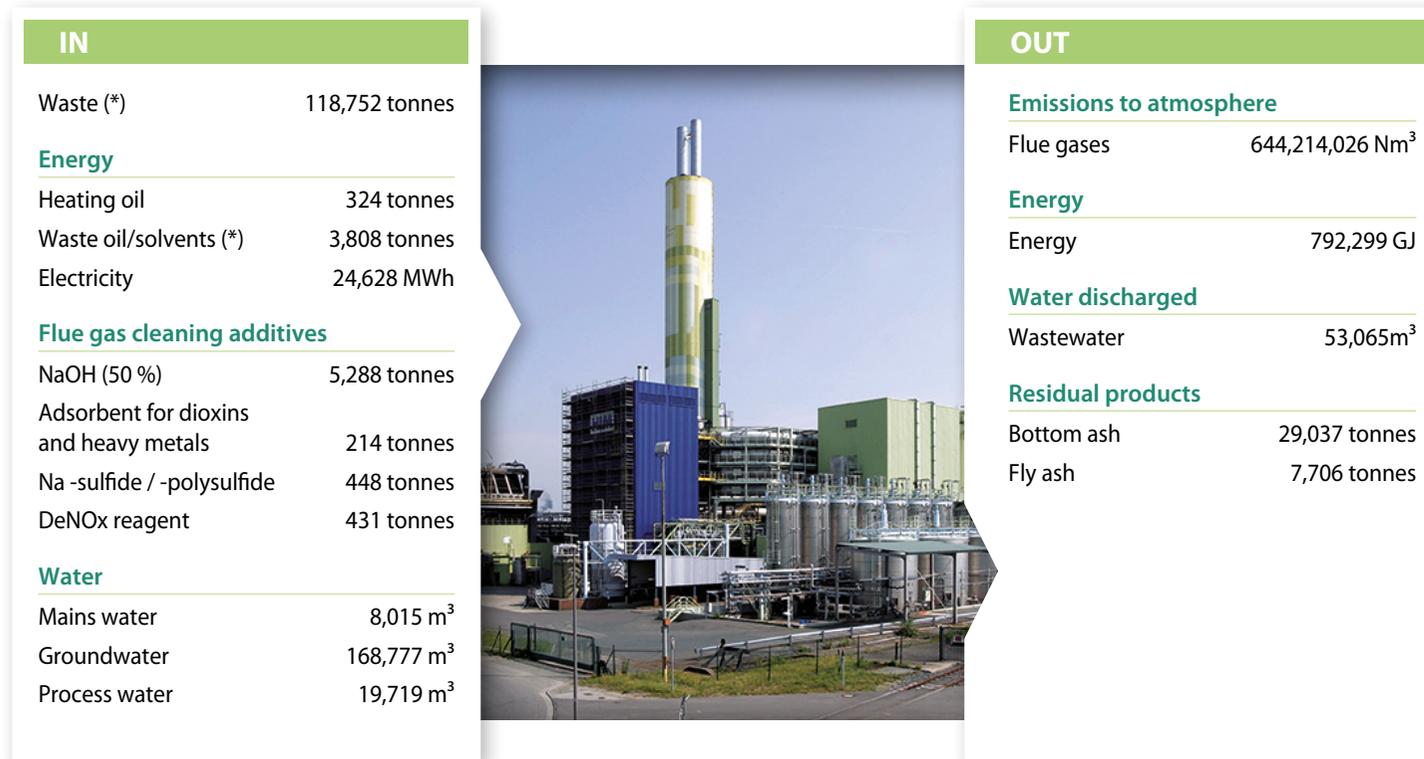
(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

Volumes of pollutants from contaminated components (in tonnes)

ROTARY KILNS BIEBESHEIM

EMISSIONS AND ENVIRONMENTAL IMPACT

1. Mass balance

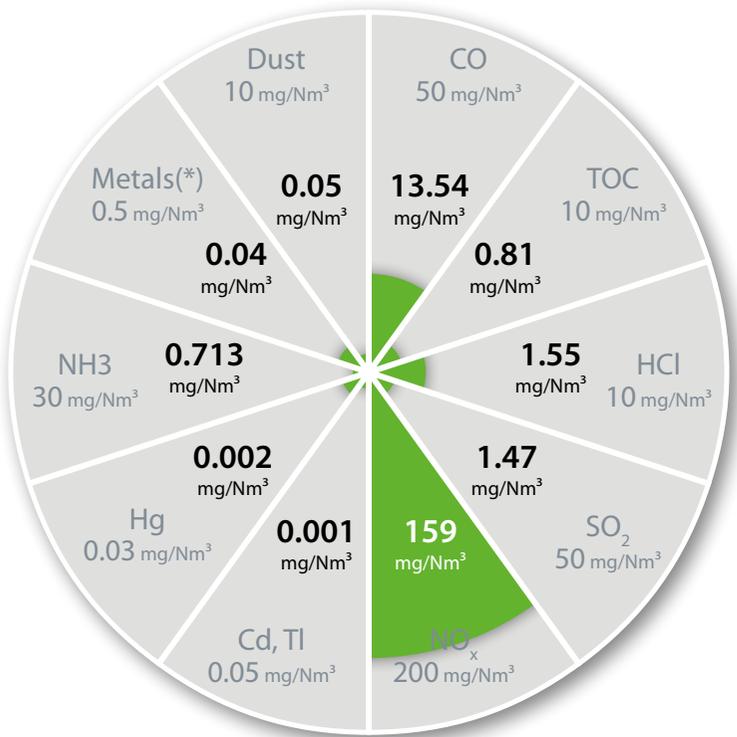


(*) Total volume waste processed in rotary kiln:
 $122,560 = 118,752 + 3,808$

ROTARY KILNS BIEBESHEIM

EMISSIONS AND ENVIRONMENTAL IMPACT

2. Performance relative to emission limit

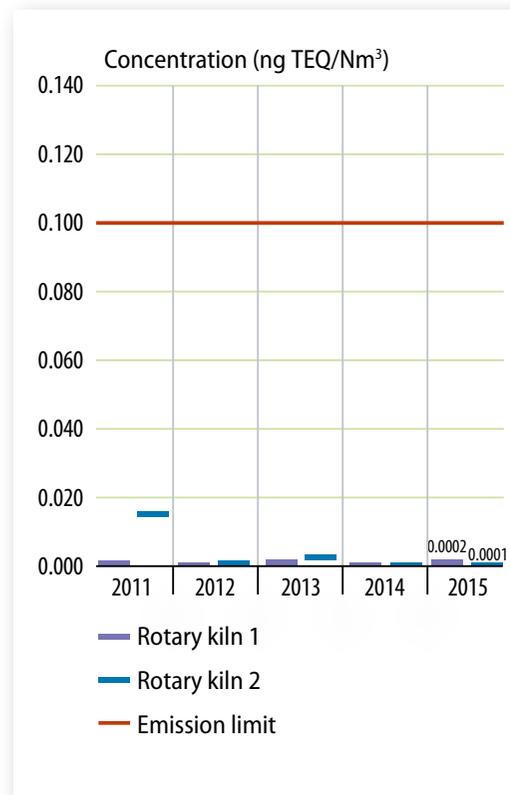


■ Daily average standard unless otherwise stipulated in environmental licence

■ Performance 2015

(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

3. Dioxin measurements



Dioxin pollutant volume = 0.1 mg TEQ (in normal conditions)

4. Volume of pollutants

Dust	0.0308
CO	8.7185
TOC	0.5209
HCl	0.9972
SO ₂	0.9465
NO _x	102.1829
Cd, Tl	0.0006
Hg	0.0016
NH ₃	0.4591
Metals(*)	0.0228

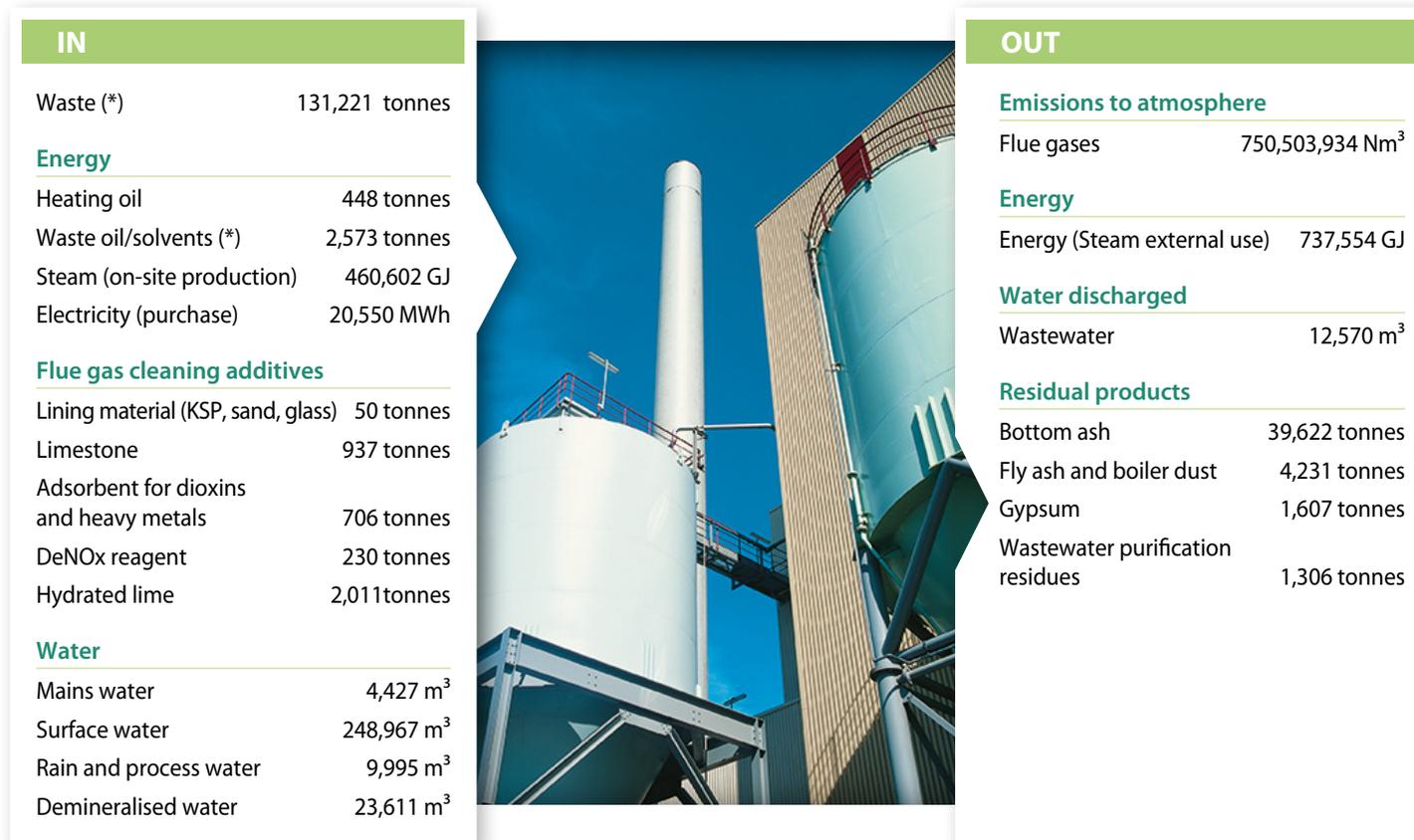
(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

Volumes of pollutants from contaminated components (in tonnes)

ROTARY KILNS HAMBURG

EMISSIONS AND ENVIRONMENTAL IMPACT

1. Mass balance

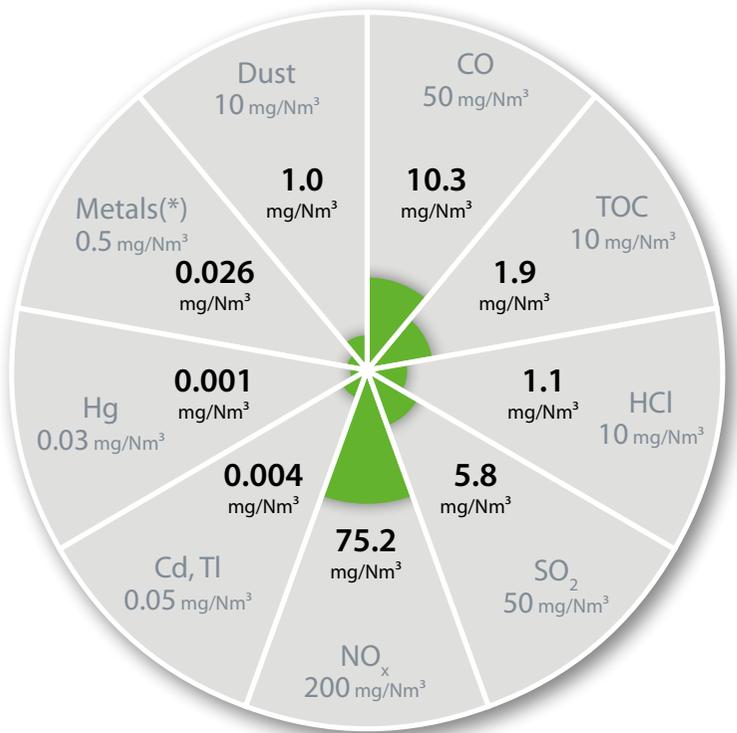


(*) Total volume waste processed in rotary kiln:
 $133,794 = 131,221 + 2,573$

ROTARY KILNS HAMBURG

EMISSIONS AND ENVIRONMENTAL IMPACT

2. Performance relative to emission limit

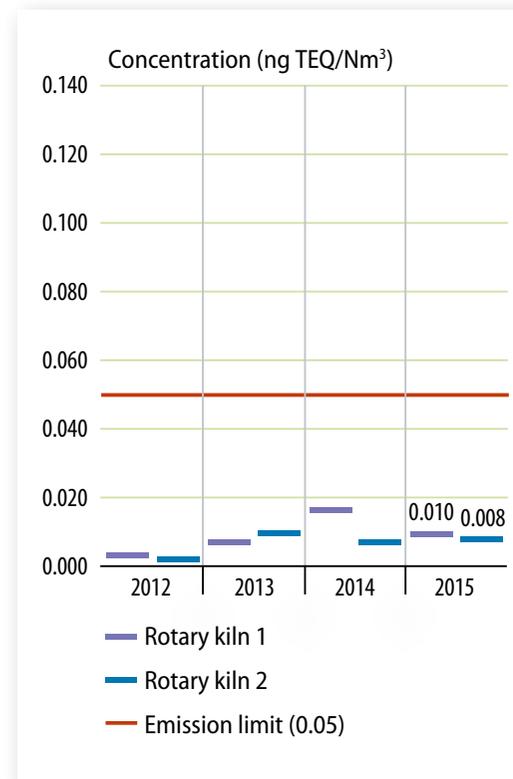


■ Daily average standard unless otherwise stipulated in environmental licence

■ Performance 2015

(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

3. Dioxin measurements



Dioxin pollutant volume = 6.7 mg TEQ (discontinuous measurements only)

4. Volume of pollutants

Dust	0.78
CO	7.75
TOC	1.42
HCl	0.83
SO ₂	4.36
NO _x	56.40
Cd, Tl	0.00
Hg	0.00
Metals(*)	0.02

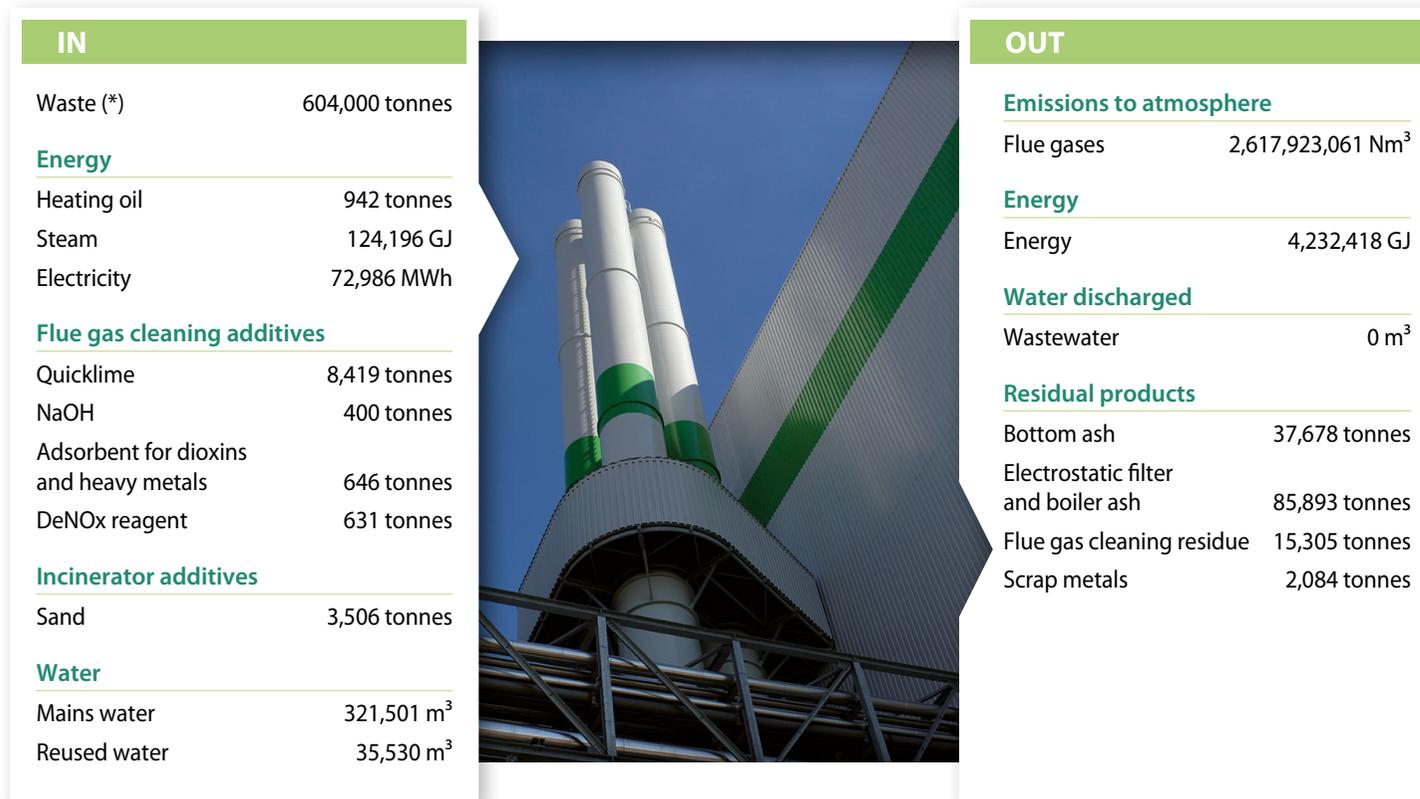
(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

Volumes of pollutants from contaminated components (in tonnes)

FLUIDISED BED INCINERATORS DOEL

EMISSIONS AND ENVIRONMENTAL IMPACT

1. Mass balance

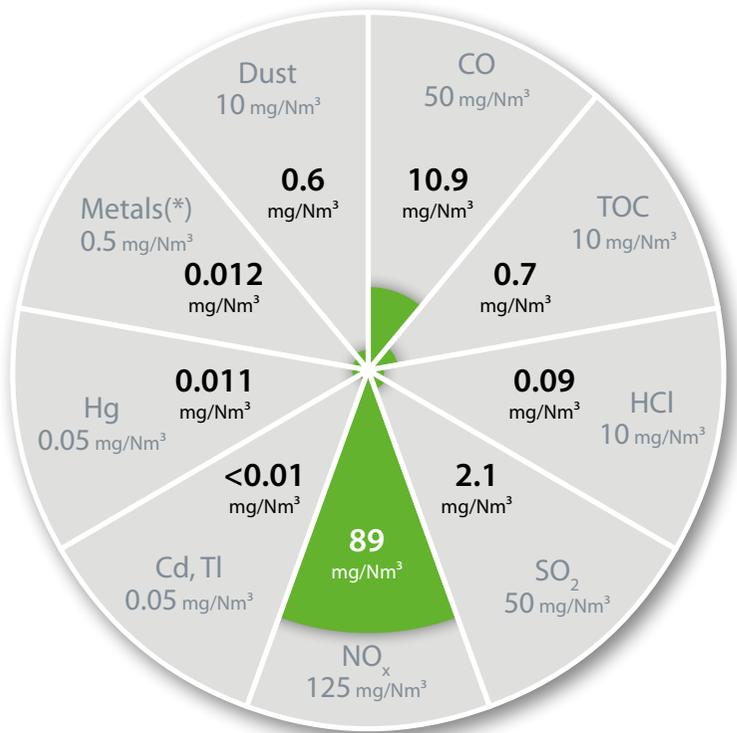


(*) Excl. scrap and contaminants removed during acceptance & pretreatment and excl. external storage

FLUIDISED BED INCINERATORS DOEL

EMISSIONS AND ENVIRONMENTAL IMPACT

2. Performance relative to emission limit

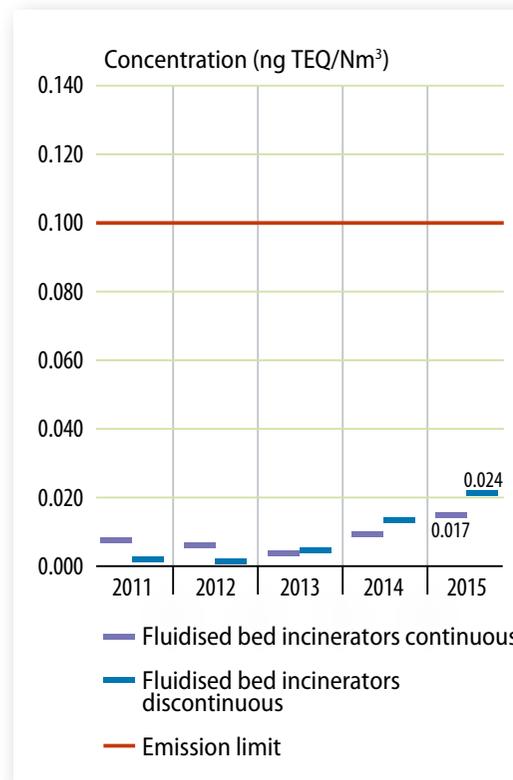


■ Daily average standard unless otherwise stipulated in environmental licence

■ Performance 2015

(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

3. Dioxin measurements



Dioxin pollutant volume = 53.6 mg TEQ (in normal conditions)

4. Volume of pollutants

Dust	1.7
CO	27.6
TOC	1.9
HCl	0.2
SO ₂	5.5
NO _x	233.1
Cd, Tl	< 0.016
Hg	0.029
Metals(*)	0.031

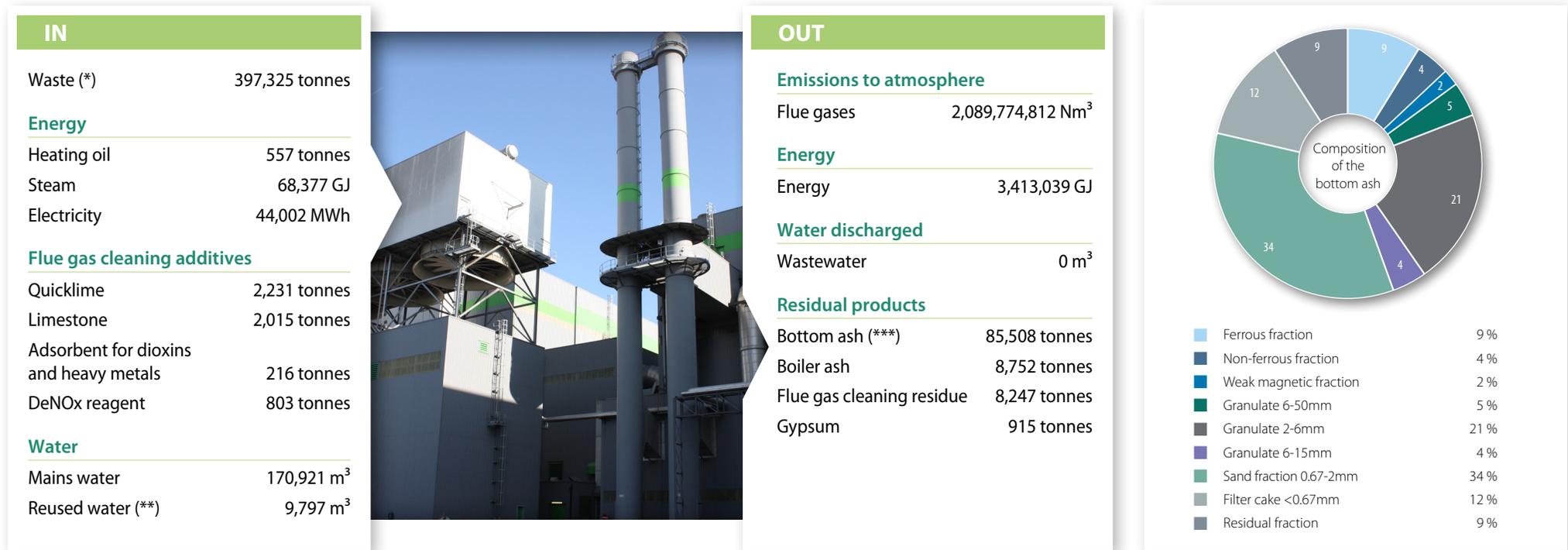
(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

Volumes of pollutants from contaminated components (in tonnes)

GRATE INCINERATORS DOEL

EMISSIONS AND ENVIRONMENTAL IMPACT

1. Mass balance



(*) Excluding contaminants

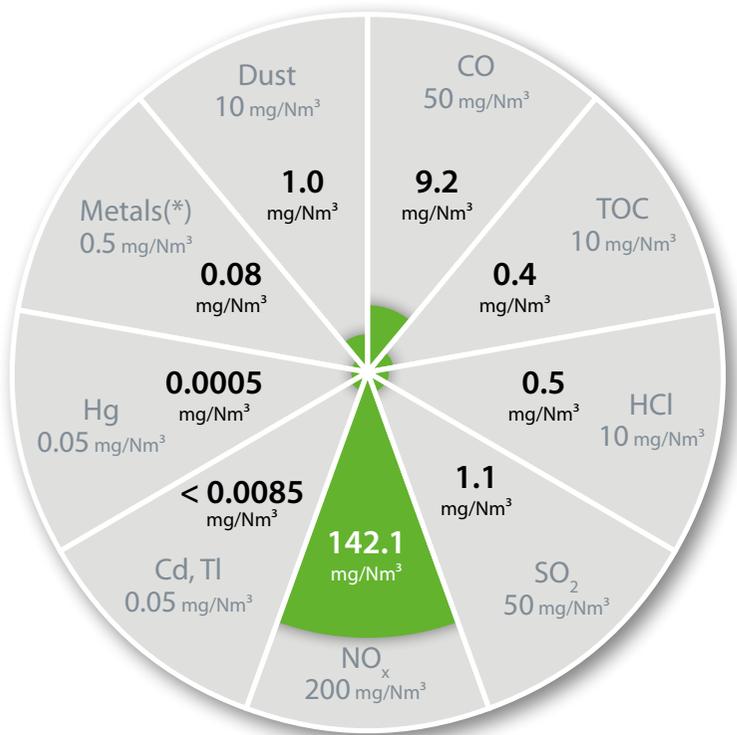
(**) Calculated value

(***) Composition of the bottom ash: see chart

GRATE INCINERATORS DOEL

EMISSIONS AND ENVIRONMENTAL IMPACT

2. Performance relative to emission limit

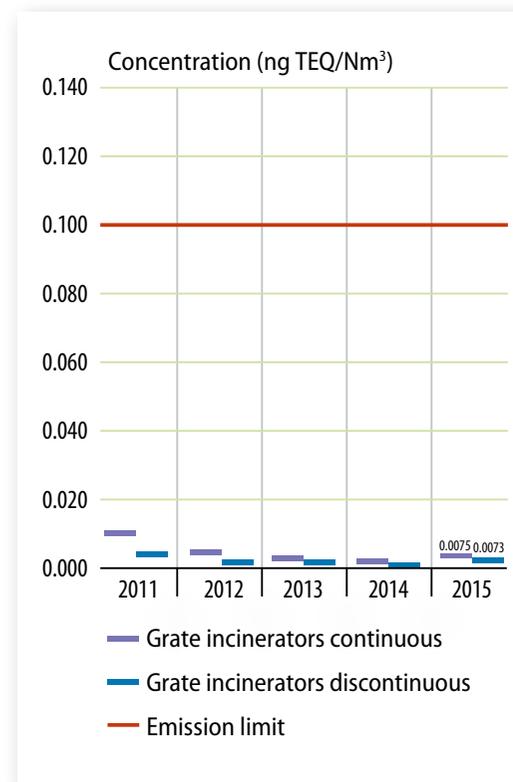


■ Daily average standard unless otherwise stipulated in environmental licence

■ Performance 2015

(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

3. Dioxin measurements



Dioxin pollutant volume = 14.5 mg TEQ (in normal conditions)

4. Volume of pollutants

Dust	2.1
CO	19.3
TOC	0.9
HCl	1.1
SO ₂	2.5
NO _x	298.1
Cd, Tl	< 0.01776
Hg	0.00104
Metals(*)	0.170619

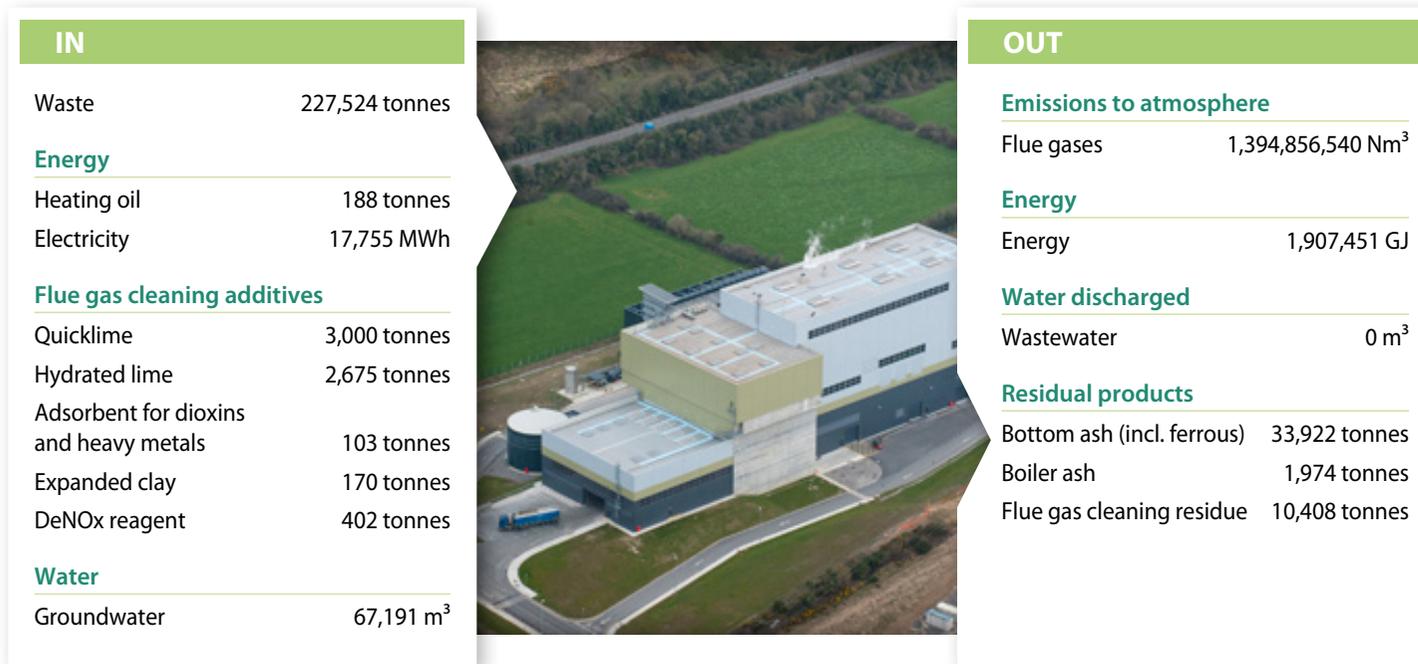
(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

Volumes of pollutants from contaminated components (in tonnes)

GRATE INCINERATOR MEATH

EMISSIONS AND ENVIRONMENTAL IMPACT

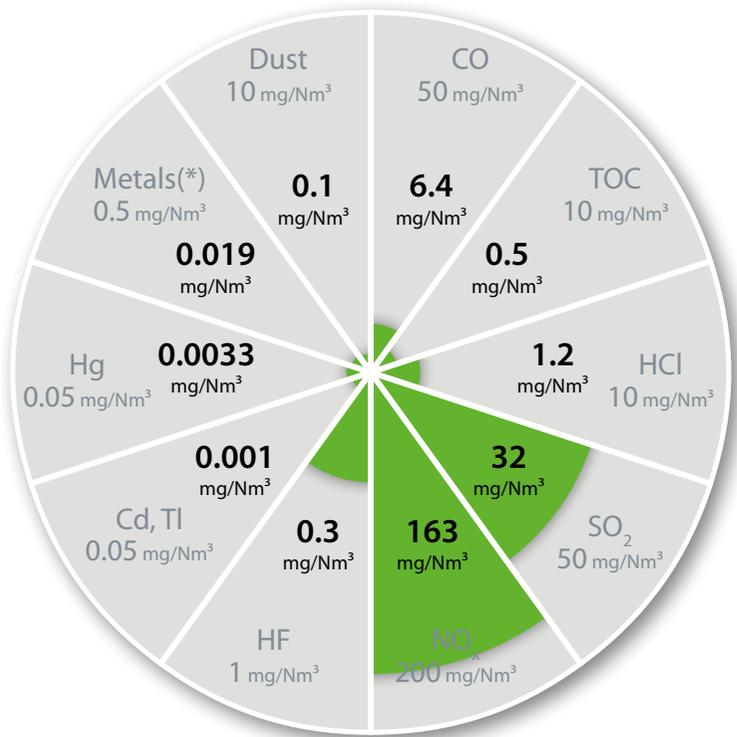
1. Mass balance



GRATE INCINERATOR MEATH

EMISSIONS AND ENVIRONMENTAL IMPACT

2. Performance relative to emission limit

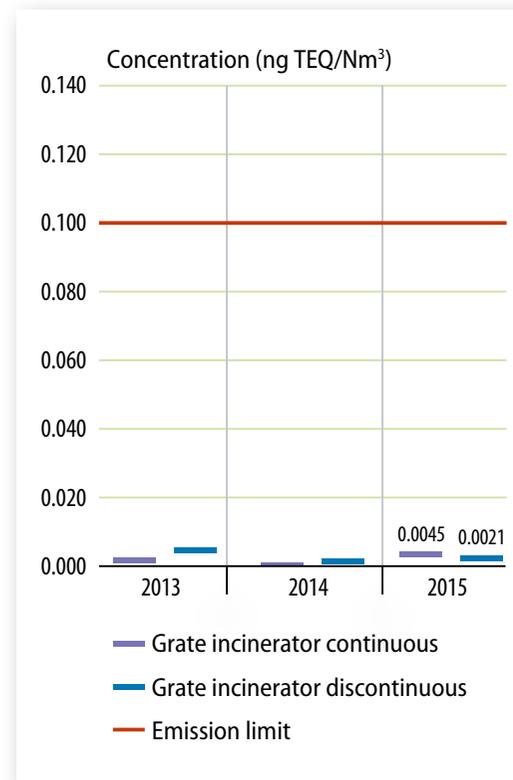


■ Daily average standard unless otherwise stipulated in environmental licence

■ Performance 2015

(*) Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

3. Dioxin measurements



Dioxin pollutant volume = 4.6 mg TEQ (in normal conditions)

4. Volume of pollutants

Dust	0.11
CO	9.03
TOC	0.71
HCl	1.71
SO ₂	44.82
NO _x	227.40
Cd, Tl	0.00
Hg	0.00
Metals(*)	0.03

* Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V, Sn

Volumes of pollutants from contaminated components (in tonnes)

ARP IJMUIDEN

EMISSIONS AND ENVIRONMENTAL IMPACT

Mass balance



INDAVER SAFEGUARDS THE SOIL FOR THE FUTURE

STRICT MEASURES TO PREVENT POLLUTION

Indaver takes care that its activities have no impact on the soil. It takes the necessary preventive measures to prevent contamination of the soil and groundwater on its sites. Indaver ensure that waste is safely disposed of at its landfill sites.

Indaver protects the soil against contamination

Indaver exercises stringent supervision at all its sites to ensure compliance with all statutory provisions governing soil remediation. It adopts all the necessary preventive and technical measures to control the risk of soil and groundwater contamination:

- all its operations take place on **paved surfaces**.
- storage tanks are installed **on the surface**, fitted with containment walls and equipped with the necessary monitoring and alarm systems.
- with **regular checks** it reduces the risks to an absolute minimum; comprehensive procedures ensure that it will take appropriate action at once.

Safe landfill disposal with the soil in mind

Landfill disposal is the last option in sustainable waste management, but it is still necessary for several types of waste that cannot be put to good use or treated thermally. Indaver strictly monitors the environmental security of its landfill sites.

In Belgium Indaver uses an **electronic leak detection system** to check whether the soil is sufficiently protected against the infiltration of waste. In Billigheim, Germany, there is a comprehensive monitoring system of the groundwater with onsite/offsite

control wells where regular samples are taken.

Indaver also ensures that there are adequate financial reserves for **final capping** and **aftercare** once the landfill site is no longer in use.



INDAVER REDUCES ITS ENVIRONMENTAL FOOTPRINT

Indaver wants to keep its environmental footprint as small as possible. We keep the environmentally-friendly flag flying high both when **treating** waste and when **transporting** waste or people.

Treatment

Indaver is trying to keep the CO₂ emissions from waste treatment in its facilities as low as possible.

BPEO

Indaver uses the Best Practicable Environmental Option (BPEO) to help its customers map their waste stream and waste treatment in order to find the best and most environmentally friendly option at the best price.

Avoiding fossil fuels

We aim to use fossil fuels as little as possible in the thermal processing of industrial and hazardous waste. We utilise high calorific-value waste as a substitute fuel for optimum operation of the incinerating facility. A good waste mix enables low calorific value hazardous waste to be destroyed in this way without the need for fossil fuels.

Green electricity

A fraction of the waste thermally treated in the grate incinerators and in the fluidised bed incinerators on the sites at Doel and Meath is biowaste; it is regarded as a source of renewable energy. An equal proportion of the electricity generated is therefore considered to be green electricity. Indaver is a major generator of green electricity through its sites at Doel and Meath.

CO₂ emissions

The CO₂ emissions are the total emissions from waste incineration that contain both a bio-organic and a fossil fraction. CO₂ is always produced in thermal treatment.

Transport

Working on the organisation

Indaver works continuously on its organisation and vehicle fleet to minimise its CO₂ emissions from transport. This includes seeking more efficient routes, ensuring it has an energy-efficient fleet and training drivers in green driving habits.



Lowering CO₂ emissions

Indaver is reducing CO₂ emissions from transporting waste with its own logistics resources by using low-carbon engines and/or vehicles. Indaver is opting for sustainable company cars in all regions.



Hubs

Indaver uses hubs, or interim storage centres, so that drivers do not need to travel unnecessarily and hence reduce CO₂ emissions.

Intermodal transport

Indaver is increasingly committed to 'modal shift': sustainable, safe and cost-conscious transport by rail or water combined with road transport. Indaver is researching whether waste transport could be made more environmentally friendly by using water and rail as well as road transport.



SUSTAINABLE PRACTICES IN THE NETHERLANDS

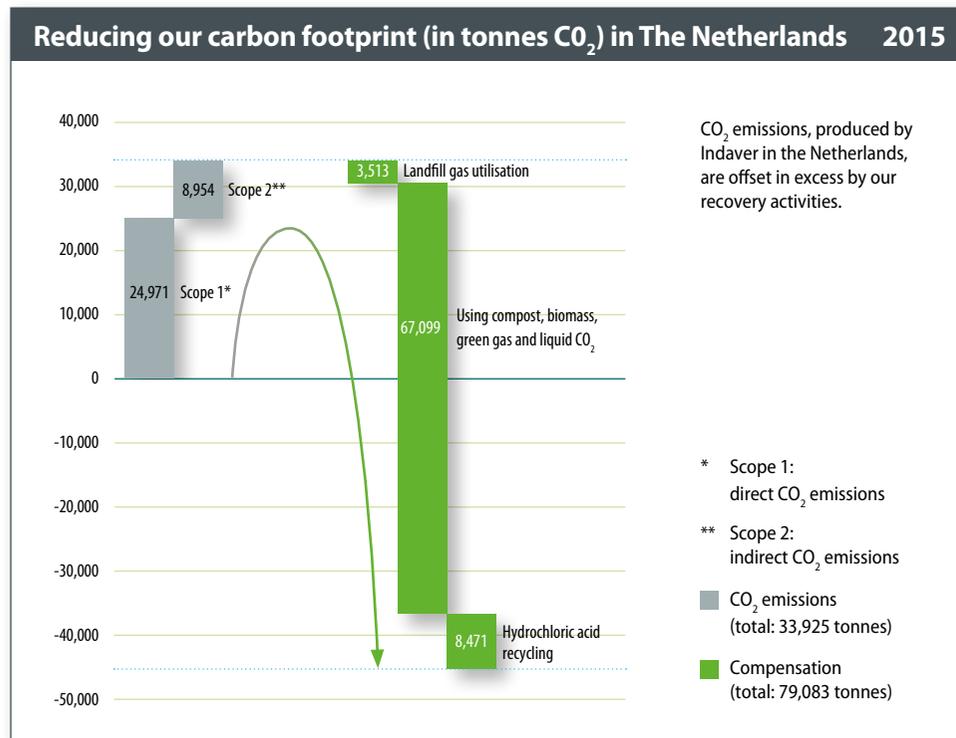
CO₂ PERFORMANCE LADDER RAISES AWARENESS

Indaver is working hard to raise awareness and to reduce energy consumption within its own organisation. Every year Indaver provides information regarding its performance via the CO₂ Performance ladder.



The CO₂ Performance ladder is the benchmark for environmentally aware businesses who want to perform more sustainably. The use of the CO₂ Performance ladder leads to lower costs of energy and materials, and therefore lower CO₂ emissions. The associated certificate is increasingly incorporated in the tendering process, in which the level the business has reached is taken into account.

first CO₂ certificate. The CO₂ certificate is evidence that Indaver is treating the organic material delivered to it by Binnenmaas in a sustainable manner and processing it into high-grade compost and biomass. This reduces CO₂ emissions; the compost replaces peat or fertiliser as soil improver, and biomass replaces fossil fuels in the generation of power.



Strong ambition to reduce CO₂ emissions

Indaver has formulated a strong ambition. Between 2014 and 2018 it hopes to achieve a reduction in CO₂ of 2 % per annum. This applies to both scope 1 (direct) and scope 2 (indirect) emissions, with 2012 as the reference year. In March 2016 the reduction figures for 2015 (the CO₂ footprint for 2015) were confirmed and validated.

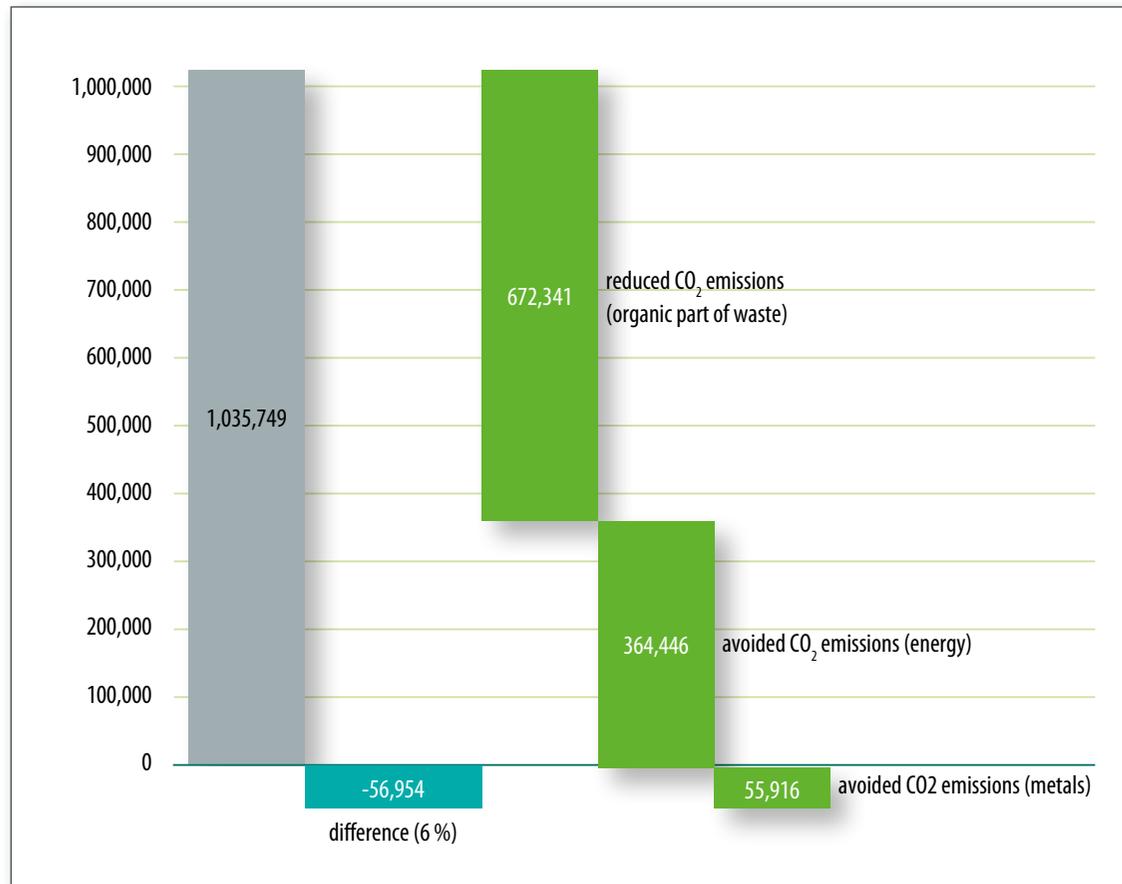
Chain deployment

Indaver also aims to raise our customers' awareness in relation to emissions. For this reason, Indaver issues CO₂ certificates to customers who opt for sustainable treatment of their waste. In November 2015 the municipality of Binnenmaas was awarded the

The New Driving Force eco-driving programme

The reduction of CO₂ can be achieved in many different ways. For example, the sanitation department for the province of Zeeland, the Zeeuwse Reinigingsdienst (ZRD), contributed in March 2015 to a new e-learning module for The New Driving Force (TNDF; 'Het Nieuwe Rijden' in Dutch). Truck drivers in particular can save fuel with TNDF and cut CO₂ emissions as a result. An added benefit is that TNDF is also safer. The e-learning module is specifically designed for drivers of waste collection companies.

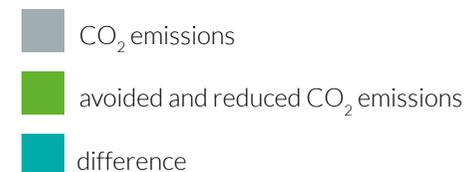
DOEL AIMING TO BECOME CLIMATE-NEUTRAL



Indaver's Doel site strives to be climate neutral. By recovering energy Indaver avoids the need for CO₂ to be emitted elsewhere for generating energy with fossil fuels. Around one-half of the waste treated is biowaste and is therefore regarded as CO₂ neutral.

The calculations are based upon scientific methods:

- based upon the "methodological agreements made by the International Panel on Climate Change (IPCC) in the framework of the UN Convention of Climate Change"
- and executed by KU Leuven.



CO₂ REDUCTION PROGRAM IN HAMBURG



The city of Hamburg leads the way in terms of climate policy and climate protection, demonstrated in its selection as European Green Capital in 2011. Business and industry such as Indaver have a key role to play in helping the city meet its ambitious goals as set out in its Action Plan.

Indaver's Role

AVG Hamburg, a member of the Indaver Group in Germany, voluntarily participated in the CO₂ reduction programme since its establishment in 2008 and renewed its commitment to the programme in 2013. AVG also implemented an energy management system, in accordance with the DIN EN ISO 50001 standards, to integrate energy management into its overall efforts to improve quality and environmental management. The CO₂ reduction program which will run until 2018, has resulted in the execution of at least one leading project for CO₂ reduction per year.

Improved energy efficiency

Since its recommitment in 2013, a CO₂ reduction in the range of 1,500 tonnes per year has been achieved by AVG Hamburg. The main factor in this success rate derives from the exchange of the sludge lances which require less steam, and an automatic boiler cleaning system which was

implemented on line 2 of the AVG-plant in August 2015. Not only has this led to a better efficiency of the boiler, but it also resulted in improved health and safety conditions during the maintenance of the boiler system. This project will continue on line 2 in 2016 and was also extended to line 1 of the plant in January 2016.

Small projects, large contribution

In addition to these large projects, a number of smaller projects also made a significant contribution to the total CO₂ reduction including; installation of heat exchangers in the air compressor system, upgrade of trucks, reduction of internal traffic and power production from the waste grippers.

New turbine project underway

In the next few years, the installation of a turbine, using part of the steam produced during the incineration process,



will be the largest project for CO₂ reduction in Hamburg. We are calculating a potential reduction of approximately 2,000 tonnes CO₂ per year via this initiative. While most of the steam is currently used in the district heating network in Hamburg, it is foreseen that some of the energy could be used in the future for power production with minor effect on the steam supply. This cogeneration will significantly increase the energy efficiency of the plant and reduce the purchase of power from the public network. In 2015, a feasibility study for the turbine project was developed by the engineering department of Indaver in Antwerp. The planning of the project will commence in 2016, with the aim of completing the project in 2018.

PROSPERITY

Indaver has proven that a company can make striving for sustainability its core business and still achieve good financial results.





CREATING ADDED VALUE FOR CLIENT AND SOCIETY

OUR VISION

In our economy, companies have to create added value with solutions the market actually needs and what society expects. Our industrial customers are active in an increasingly international market. They have to remain competitive and monitor their costs. Indaver helps them to do so with its affordable, sustainable waste management. Indaver has the scale and capabilities to ensure it can always offer its customers the best solution at the best price.

The waste sector is in flux – it is rediscovering itself in light of its role in the circular economy. There are plenty of development opportunities for companies that know what they want to achieve.

Waste management companies need to create solutions that are tailored to the market and the customers. They have to generate added value by helping customers find a sustainable solution for their waste and by extracting raw materials from it that can be re-used.

Indaver wants to be a leading waste management company by creating added value and offering affordable solutions.

With its experience and expertise, Indaver can support the circular economy by continuously developing new service provision concepts and technologies to recover even more renewable energy or raw materials from waste. Indaver wants to continue growing so that it can expand and improve its service provision to its customers. Indaver will only acquire companies that are in line with Indaver's strengths and that fit its strategy.

Indaver is a European organisation with activities in various countries. As a result of this scale, Indaver is able to provide customers with a solution for their

waste. It can use its expertise in countries that still have some way to go to achieve sustainable waste management.

Indaver is pro-active in providing its own solutions for the circular economy. Its research activities are embedded in its business structure, with multidisciplinary teams able to see beyond the confines of individual departments, to explore and to come up with creative solutions. The innovation projects that Indaver chooses are always focused on sustainable value creation. At Indaver, we always weigh up the costs and benefits of a new solution, the customer's expectations, and the feasibility; before embarking on anything, we ask who is the most appropriate and best party to get involved in a particular project.

For over 25 years, Indaver has proven that a company can make striving for sustainability its core business and still achieve good financial results, even in difficult economic times. Indaver has always remained faithful to its pursuit of sustainability.

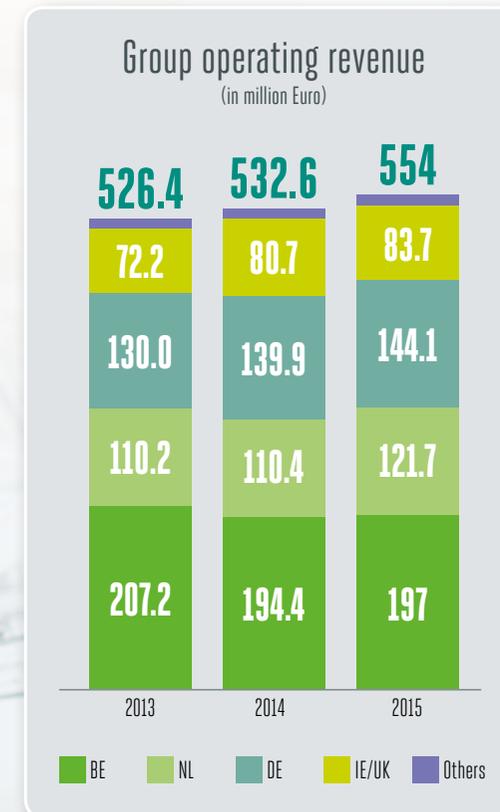
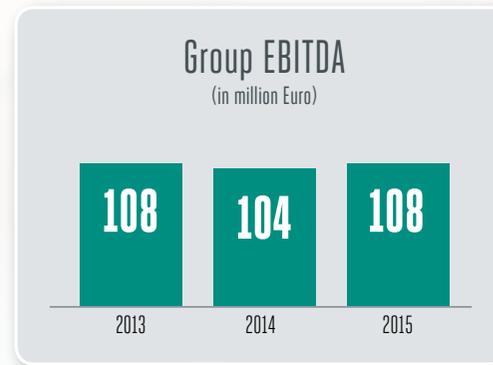
SOLID PLATFORM FOR FUTURE GROWTH

FINANCIAL RESULTS

Over the last three years, Indaver has achieved a stable growth rate in challenging economic conditions.

In 2015 Indaver achieved a turnover of **554** million euros and EBITDA of **108** million euros.

The financial results provide a solid platform to develop new investment and growth opportunities.



IRELAND: APPLICATION SUBMITTED FOR NEW WASTE-TO-ENERGY FACILITY



Artist's impression of the proposed Indaver waste-to-energy facility

On the 13th of January 2016, Indaver submitted an application to the Irish planning authority to develop a piece of strategic infrastructure in Ringaskiddy, Co. Cork. The infrastructure in question is a 240,000 tonnes per annum waste-to-energy facility (waste incinerator with energy recovery) for the treatment of household, commercial, industrial, non hazardous and suitable hazardous waste. Similar to Indaver's operational facility in Co. Meath and valued at €160 million, the proposed development in Ringaskiddy will treat non-recyclable waste as a resource, recovering electricity and other valuable materials from it. Using an indigenous source of energy, the facility will generate approximately 18.5 MW of electricity for export to the national electricity grid. This will be enough to supply the power needs of approximately 30,000 households.

INDAVER IMPEX

INTERNATIONAL AMBITION

Indaver Impex is the international expert on sludge dewatering for industry and business.

In 2015 Indaver Impex was able to further strengthen its international ambition with the acquisition of two businesses.

The expansion of the fleet and the growth in specialists and experts makes Indaver Impex an interesting, internationally-oriented knowledge partner.

Undisputed market leader in the Benelux region

In January 2015 Indaver Impex acquired the sludge dewatering operations of Befra Belgium bvba, thus strengthening Indaver Impex's position as the market leader in sludge dewatering in the Benelux region. The acquisition includes the customer portfolio, the specialists and three sludge dewatering installations. The expansion fits in with the growing demand for mobile sludge dewatering services in the Benelux region and surrounding countries.

Strategic partnership with Alfa Laval in the UK

Alfa Laval and Indaver Impex have been partners for many years. Alfa Laval develops and produces (mobile) sludge dewatering installations for Indaver Impex. In turn, Indaver Impex regularly tests Alfa Laval's latest dewatering techniques in practice. In June 2015 Indaver Impex acquired Alfa Laval UK's mobile sludge dewatering fleet (nine units), including the specialists. With this takeover

Indaver Impex has strengthened its position regarding sludge dewatering in the United Kingdom. The takeover, prompted by Alfa Laval's desire to concentrate on its core operations, further strengthens the relationship between both partners.

Wilhelmshaven dewatering project

One special international project was the dewatering of a slurry mass on board a ship in the German port of Wilhelmshaven in November 2015. Its cargo of fertiliser had been rendered unusable after a fire had to be extinguished on board. Due to the deployment of the experts and Indaver Impex's dewatering installation, both the volume of sludge to be removed and the associated processing costs were dramatically reduced.

Floods in the United Kingdom

At the end of 2015 the United Kingdom was hit by heavy flooding. Once the water had receded, the water boards (the regional authorities responsible for water quality and management) had to contend with water purification plants that were completely overwhelmed. Across entire areas wastewater from households and businesses could

no longer be purified. Yorkshire Water approached Indaver Impex to re-establish their operations as quickly as possible. Within two weeks Impex had built the first dewatering installation. Indaver Impex impressed with its smooth project management, high-tech equipment and the technical knowledge of its operators in building the installation and it was called on to build a second installation at the end of January 2016. Thanks to the rapid response of Indaver Impex the local authorities were able to resume services for local communities.



INDAVER ACID RECYCLING PLANT (ARP)

RENOVATION ENSURES LONG-TERM SERVICE PROVISION



Every year Indaver ARP converts at least 150,000 tonnes of waste pickling liquid into pure hydrochloric acid and iron oxide. It does so in its own reprocessing plant on the Tata Steel site in IJmuiden in The Netherlands. The waste pickling liquid comes from three pickling tanks that the steel producer uses to remove rust from steel plates with the help of hydrochloric acid.

Purified hydrochloric acid

The ARP facility – consisting of a reactor, cyclone, concentrator and absorber with post-switched gas washing – oxidises the purified pickling liquid. After reprocessing, the contaminated hydrochloric acid is 100 % clean and usable as feedstock for the pickling tanks. There is also pure iron oxide left over, which serves as feedstock for the melting furnaces and the pigment industry.

A sustainable partnership

In 2015 Indaver and Tata Steel reinforced their partnership with a contract renewal for the management and operation of the hydrochloric acid treatment plant. The two companies began working together in 2001 when Tata Steel outsourced the design, build and management of two facilities for the recovery of hydrochloric acid to Indaver. Also in 2015 Indaver completely renovated the ARP facility using the latest technical facilities and sustainable materials.

Long-term service provision

The renovation was a complicated logistical task. Steel production runs 24/7 and continuously needs purified hydrochloric acid. Indaver ARP was able to complete the task without disrupting the operations of Tata Steel. As a result of the renovation, the ARP facility can provide Tata Steel with purified hydrochloric acid efficiently and sustainably for the long-term.

Indaver ARP demonstrates that molecule recycling can lead to a 100 % closed material cycle, thus making a concrete contribution to the realisation of a circular economy, even with hazardous waste.

PARTNERSHIPS

To help achieve a circular economy Indaver works together with partners in its own sector and across other sectors.





WORKING TOGETHER TO MAKE A DIFFERENCE

OUR VISION

There is no single ready-made answer in the quest for more sustainable forms of production and consumption. There is no single player that can solve everything. The circular economy requires new, outside-the-box solutions that will have to come from all corners of the world, all industries and market segments, and at every stage along each product's life-cycle.

We have to show that we are prepared to convert waste into raw materials and energy. We must stop dumping our waste irresponsibly, and leaving it as an undesirable legacy for future generations.

Indaver takes this responsibility seriously. It is actively working on creating a shared awareness of the importance of sustainable waste management in the circular economy. It recognises that solutions are

needed in which government bodies, manufacturers, waste management companies, research institutions, consumers and citizens all work together. The best solutions can be achieved only by listening to all stakeholders.

Indaver wants to be a responsible waste management company that shares knowledge and encourages the development of sustainable technology and business models.

It is only by working collaboratively with all parties concerned that we can really make a difference. Indaver collaborates with research and knowledge centres. It finds allies in its own sector and across other sectors and works within consortia to design innovative projects.

Indaver shares its knowledge with its customers and society with a view to developing sustainable solutions. It supports social projects in which citizens

and organisations can encourage the necessary behavioural changes in their own way.

Indaver conducts an open dialogue with the world. It listens to and remains open to questions and comments from government bodies, neighbours, students and the citizens concerned.

Due to the nature of Indaver's and Katoen Natie's activities, we can keep a finger on the pulse of economic activities. This enables us to take immediate advantage of situations as they arise whilst ensuring our values remain paramount: demonstrating concern for people and the environment and strongly results-orientated. Being highly responsive and value-driven is how we create value for our customers, and makes both them and us stronger. Indaver's approach benefits everyone.

KNOWLEDGE AND THOUGHT LEADERSHIP

Sharing knowledge is one of Indaver's priority strategic competencies. We understand and recognise the importance of knowledge and thought leadership for our customers, our people and the waste sector as a whole. We also exchange this knowledge, internally and with third parties, in order to continuously improve and innovate our service offering.

Knowledge climate

We are creating a knowledge climate in which staff deepen their knowledge and share their expertise. This stimulates creativity and leads to innovative ideas for improving our operations and recovering even more materials and energy. These ideas are tested for their feasibility, usefulness for the customer, sustainability and risks, before we apply them.

Cross-border innovation

In the International Operational Competence Centres (IOCC), which operate across all the Indaver regions, internal knowledge and experience are collected, developed and shared in order to further improve our processes. New technological evolutions are monitored and new, creative ideas developed.

Industrial sector organisations and working groups

Indaver is represented as much as possible in relevant sector organisations. In this way it wants to be visible and exert an influence on the matters important to it. Indaver has an authoritative voice in the debate on sustainable materials and waste management. It is highly visible

in technical and policy arenas where it shares its knowledge with third parties.

Workshops, training courses and seminars

Indaver shares its knowledge with the sector, researchers, policy-makers, educational institutions and stakeholders. Indaver employees visit schools to talk about their work and students can visit the site. Indaver also attends job fairs and other events where companies exhibit to potential employees.

Advisory panels and consultative forums

Indaver strives to provide transparent communication always and everywhere. Advisory panels and consultative forums are valuable channels where Indaver can meet businesses, environmental organisations, neighbours and local government. Indaver listens to questions, provides up to date information and keeps them thoroughly informed about any new projects. Indaver has advisory panels and consultative forums with stakeholders in Belgium (Antwerpen, Grimbergen, Doel), Germany (Biebesheim), the Netherlands (Dordrecht, Alphen aan den Rijn) and Ireland (Meath).

BW2E, the federation of owners of waste-to-energy generating stations for household and similar commercial waste in Belgium, was set up in 2009 to exchange information and to seek common solutions for the sector. Indaver was one of the forerunners of this initiative.

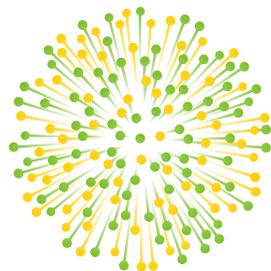
Members of BW2E share knowledge with one another, they closely monitor regional and European regulations and formulate common positions. Indaver takes on the role of secretary and is responsible for preparing the content of the case files.

In 2015 BW2E organised a study day with the 'safety' working group. Five BW2E members presented their practical examples on safety and measures taken. Alternative techniques and adjustments in the field of safety prevention were discussed in greater detail in a round table meeting. During a heating conference on 8 October the BW2E members prepared a progress update on the current projects and plans concerning heat networks. Most of the BW2E members have major plans afoot, are carrying out feasibility studies or have heat networks under construction. BW2E also invited speakers from Sweden, because of their years of experience and extensive expertise in heat networks.

ISWA 2015

INDAVER SHARES EXPERTISE FOR SUSTAINABLE WASTE MANAGEMENT WORLDWIDE

The annual international ISWA congress for the waste sector, which in 2015 took place in Antwerp, brought together a record number of participants from 92 countries for three days of presentations and discussions about the changing role of the sector. Indaver was the joint organiser.



ISWA'15
WORLD CONGRESS
ANTWERP

Saving the climate

Sustainable waste management can dramatically reduce greenhouse gas emissions, given that 70 % of waste is currently going to landfill which produces methane. Jan-Kees De Voogd (Business Developer Sales & Marketing) had the pleasure of introducing, on behalf of Indaver, the industrial electricity network ECLUSE, where waste is converted into (green) heat.

Health first

Sustainable waste management is also a matter of public health. Daniel Dirickx (Director of the intermunicipal company Hooge Maey) introduced Hooge Maey, an example of a sustainable landfill managed by Indaver. Indaver organised a tour of its site in Antwerp, where it destroys or neutralises hazardous components from industrial and pharmaceutical waste, thus keeping them out of the cycle.

Offering the circular economy quality

One of the priorities that ISWA pushed to the fore was the transition from waste treatment to materials management. In his contribution to ISWA2015 on the subject of Indaver Molecule Management® CEO Paul De Bruycker pointed out that the products derived from secondary raw materials

extracted from waste must have the same high quality as products derived from untreated raw materials, in order to achieve the circular economy in a sustainable manner.

Sharing expertise

At ISWA countries like Belgium were called upon to share their expertise with countries that still have some way to go. Indaver hosted a masterclass on the technological and economic aspects of waste-to-energy by Nick Alderweireldt (Lead Engineer Process & Mechanics), and a contribution from Claire Downey (Sustainable Business Planner), who warned that waste-to-energy plans must be flexible in order to be of interest to the energy market. Guido Wauters (Chief Organisational Development Officer) spoke about the revision of several BREFs; the guidelines on the Best Available Technology for the treatment of different types of waste.

RESEARCH AND DEVELOPMENT

Indaver invests in research and development so that it keeps setting the standard for waste management.

Our employees are trained with the idea of continuous improvement, and are encouraged to experiment with ideas of their own. Innovation relates not only to our facilities, but our processes, services and systems.

At present there are around 70 research and development projects under way. Experimental and industrial research and software development is a key factor in these projects. In general, we are focusing on:

- The use of **Life Cycle Analysis Research** in order to develop the Best Practicable Environmental Option (BPEO) to help customers chart their waste stream and treatment and to find the best and most environmentally-friendly option for the best price; research into the 'modal shift' (the shift from road transport to water transport) and into the improvement of the environmental performance of our facilities.
- The development of **efficient material recovery** for useful application or recycling; the improvement/reduction in use of primary raw materials; research in order to further reduce our impact on air, water and soil.
- Seeking new ways of using **recovered energy**; research in order to increase our energy efficiency and research into energy clusters.
- Cooperation with **research institutes**.

QPINCH

INDAVER TEST CASE FOR NEW HEAT RECOVERY TECHNOLOGY

Every year in Europe more than 360 gigawatts of industrial waste heat is lost. Approximately half of this, 180 gigawatts, is low calorific waste heat at 75 - 150 °C.

Qpinch, an external company, has developed an industrial chemical heat pump with which a significant proportion of this heat can be recovered. This technology was created together with the Department of Sustainable Organic Chemistry and Technology at Ghent University.



Now, Qpinch has chosen Indaver's site in Antwerp as the location for its trial project with the heat pump. The company chose Indaver's site because it can supply the necessary heat and will be able to use the recovered heat itself afterwards. The project was launched in the last quarter of 2015 and will run until the summer of 2016.

The new industrial heat pump is based on a thermally driven process, with low calorific waste heat being converted into high-quality industrial process heat. Thermally driven heat pumps are far more energy efficient than conventional heat pumps. The use of thermally driven heat pumps as the industrial standard has the potential to reduce industrial CO₂ emissions and energy costs by at least 10 %.

► www.qpinch.com

PLATFORMS AND MEMBERSHIPS

Indaver is working together with partners at international level to share knowledge and experience concerning sustainable waste management, and to monitor the development and application of the legislation for the sector, by providing information to the most important European institutions. That way, these European sustainable waste management partners seek to continually tighten up standards in this area.

Eurits: gatekeeper of the circular economy

Indaver was one of the founding members of Eurits, the European Union for the Responsible Incineration and Treatment of Special Waste.



Eurits represents more than 90 % of the specialist waste incineration sector in the European Union. It

holds a watching brief on safe, lawful and environmentally sound waste incineration. Indaver has held either the chairmanship or the technical directorate since 1997.

Eurits offers Indaver a European platform to communicate its vision. For Eurits, hazardous waste incineration facilities are like the 'gatekeepers of the circular economy'. This waste incineration prevents hazardous waste from ending up in recycled products or in the food chain.

It offers a forum for the exchange of technical and operational information to encourage good practices. It represents the specialist waste incineration sector and monitors the development and application of the legislation for the sector by providing information to the most important European institutions.

ISWA: sustainable waste management worldwide

Indaver cooperates on an international level with partners to share knowledge and experience in the area of sustainable waste management. One such platform is ISWA (International Solid Waste Association).



ISWA strives towards sustainable and professional waste management worldwide. It promotes efficient

use of raw materials via sustainable production and consumption, improves waste management via education and training, and promotes the most appropriate and Best Available Technology and practices.

ISWA offers scientific, economic and social instruments, such as an international network for sharing knowledge and experience in the field of sustainable waste management and the battle against climate change; working groups of experts to increase knowledge and expertise; education and training; and professional publications and partnerships with all stakeholders in waste management, in particular with the national ISWA members as well as with international organisations and institutions.

CEWEP: focus on waste-to-energy

Through the recovery of energy and materials, Indaver's waste-to-energy plants contribute to a sustainable society. Indaver also shares its expertise on the international stage. One platform for this is CEWEP (Confederation of European Waste-to-Energy Plants).



CEWEP is the umbrella association of owners and operators of waste-to-energy plants in Europe,

representing 394 waste-to-energy plants from 18 European countries. Together they make up 86 % of the waste-to-energy capacity in Europe. Indaver, via BW2E (Belgian Waste-to-Energy), and CEWEP Ireland are members.

CEWEP aims to give alternative energy from waste a boost and demonstrate that waste-to-energy plants reduce dependence on dumping and fossil fuels. It represents waste-to-energy plants at European level and takes part in the decision-making process. Furthermore it promotes the exchange of experience, research and development between members.

INDAVER TO DEVELOP TEN NEW RECYCLING PLANTS FOR PLASTIC WASTE

Now that Europe is going to take a stricter view on the treatment of plastics waste, a sustainable solution has become even more important. Indaver will recover raw materials from plastics for the chemical industry in ten new European plants.

Decentralised treatment

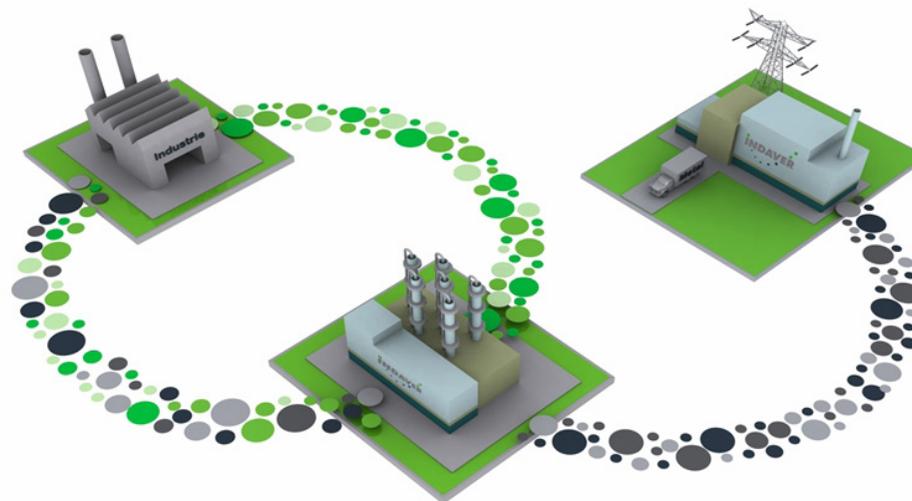
Indaver will build the new facilities with the support of its new shareholder Katoen Natie. Each facility, which has the capacity to treat 100,000 tonnes of mixed or lightly contaminated plastics, will cost 80 million euros and provide employment for 40 people. The first facility will be built in Flanders, with the remainder in industrial areas of Europe, so that treatment can be decentralised. This will limit environmental and traffic pollution.

Opportunities for Indaver

Europe is tightening legislation for plastics waste to discourage landfilling, which continues to be the trend in some European countries. Improved and increased sorting will therefore be necessary. In particular, for selectively collected yet slightly mixed and lightly contaminated plastics this offers opportunities that Indaver would like to take full advantage of. This concerns an estimated 2 million tonnes of waste per year, of which Indaver hopes to be able to treat half.

High-quality materials

With its Molecule Management Indaver will use the new facilities to depolymerise plastics, or in other words, to break the plastics down into shorter hydrocarbon chains that can serve as feedstock for the chemical industry. This thermal molecular recycling produces high-quality materials that can be used to make high-quality products, thus contributing to the circular economy.



OPEN DAYS AND SITE VISITS

Open days and site visits are an ideal opportunity in all regions to allow Indaver's stakeholders a glimpse behind the scenes and give Indaver a chance to profile itself as the partner of choice for waste management.

Indaver Antwerp Open Day

On 10 May 2015, Indaver threw the doors of its Antwerp site open to the general public. The Antwerp site is where Indaver treats hazardous and industrial waste. In the process, it generates steam, some of which it supplies to its neighbour, the Antwerp port dewatering company Amoras, and some of which it converts into electricity for its own use and for supply to the grid. In the treatment of industrial and hazardous waste, Indaver implements strict safety measures, so a visit to the facilities is an exception. An interesting tour took the visitors through all the facilities. Demonstrations and information showed how Indaver safely treats hazardous waste and how, at the same time, it looks after people and the environment.



Social role

Indaver is not limiting its social responsibility to minimising its impact on people and the environment. It also supports social projects and sponsors good causes that are aligned with its core values and are of benefit for the region where it operates.

► You can find more information on the Indaver regional websites.



Bio Power Alphen opens with mini-symposium

On April 16th Indaver officially opened its ultra-modern VGF digestion facility in Alphen aan den Rijn in The Netherlands. The official opening was accompanied by an open day for neighbours and staff.

BONFOL: ONE OF THE LARGEST REMEDIATION PROJECTS IN EUROPE ALMOST COMPLETE

Indaver is a major partner in the remediation of the landfill site for hazardous waste in the Swiss municipality of Bonfol. That Indaver is involved in the remediation of this site, one of the largest in Europe, demonstrates its expertise in this field.



The project

In Bonfol, waste from the production of paint, pharmaceutical products, detergents and pesticides, most of it originating from the chemical industry in the Basel region, was dumped in this former clay pit. Indaver in Germany was approached to organise the removal, transport (via rail) and the preliminary treatment onsite, with the Indaver incineration facilities in Biebesheim, Hamburg and Antwerp being used to treat the waste. The energy released during this incineration is converted into steam and electricity.

Preliminary treatment of waste

Due to the nature of the excavated waste it must undergo preliminary treatment before transport to the treatment installations. A moisture absorbing agent is added and mixed with the waste in the Bonfol preparation hall. A specific waste fraction from a municipal mechanical-biological waste facility in the south-west of Germany is used as an absorbing agent.

Onsite safety

Due to the concentration of volatile contaminants, high-quality ventilation systems were installed in the waste treatment sites. Strict safety standards are respected during operations.

Special container system

Customised containers (624 in total) were developed for the safe and sustainable transport of the waste from Bonfol by rail to Indaver's installations for the thermal treatment of hazardous waste. By developing these containers, Indaver can safely manage the Bonfol project and other remediation projects. The containers safeguard against leaks and spills. As a result of our success at Bonfol more customers are asking for these containers for their projects.

Completion in 2016

In 2015 Indaver removed an additional 41,000 tonnes of contaminated chemical waste. In total, since the beginning of the excavation works in 2010, 180,000 tonnes of waste have been removed. On completion in mid-2016 200,000 tonnes will have been recovered. It will take a further six months to decontaminate the buildings and technical equipment, to remove all equipment and to restore the site to its original state.

DECLARATION OF VALIDATION BUREAU VERITAS

BUREAU VERITAS
Certification

Declaration of Validation

Awarded to
Indaver nv

Bureau Veritas Certification Belgium NV/SA hereby declares that the 2015 Sustainability Report, online and printed (in summary) was verified and validated on 12/04/2016 with the Bureau Veritas reference BE010038-1.

The report is well structured, is easily readable and is well-organised, both on the website and in the printed brochure.

The text, data and facts in the online 2015 Sustainability Report are relevant, verifiable, reliable and reproducible. All of the selected items for the environmental, social and economic aspects are of sufficient importance and are dealt with adequately in the Sustainability Report. The printed brochure is a true summary of the full online reporting.

Data and facts can be systematically kept and reported as a result of the management systems which Indaver nv uses. The integrated management systems which Indaver nv uses fit into the ISO-9001, ISO-14001 and OHSAS-18001 approach.

Validatieverklaring nr: BE010038-1

Date: 23/05/2016

*Sebastiaan ter Horst – Certification Manager
Bureau Veritas Certification Belgium N.V./S.A.*



BELGIUM www.indaver.be

THE NETHERLANDS www.indaver.nl

GERMANY www.indaver.de

IRELAND www.indaver.ie

UNITED KINGDOM www.indaver.co.uk

PORTUGAL www.indaver.pt

ITALY www.indaver.it

SPAIN www.indaver.es

www.indaver.com

