



Doosan Lentjes
Press kit
2023

DOOSAN

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Photo on the right: Visualisation of the new WtE plant, Warsaw, Poland

Credit: MPO Sp. z o.o. w m.st. Warszawie



DOOSAN Lentjes

About Doosan Lentjes



About Doosan Lentjes

Who is Doosan Lentjes?

Doosan Lentjes provides proprietary environmental technologies for thermal waste treatment and energy generation. Our areas of expertise include the incineration of renewable fuels such as waste, sewage sludge and biomass, heat recovery systems and flue gas cleaning equipment. We deliver flexible solutions for long-term waste disposal safety and climate-friendly steam and power generation.

As a member of the globally acting Doosan Group, Doosan Lentjes is part of a strong international network of companies providing complementary technologies, skills, and value to customers the world over.

Integrated solutions

Doosan Lentjes has a long history of project management experience. The company offers integrated customised solutions and expertise for the waste management and energy generation industry from a single source. Solutions are synonymous with technological leadership and developed on the basis of a true understanding of individual customers and their business requirements.

Key milestones in our company history

1928	Ferdinand Lentjes founds boiler-manufacturing company
1982	Company designs, builds, and commissions the world's first commercial CFB (circulating fluidised bed) boiler
1984	Acquisition of Gottfried Bischoff GmbH – a specialist in flue gas cleaning (FGC) technology
1989	Company enters the grate-based waste-to-energy (WtE) market
2011	AE&E Lentjes GmbH became proud member of Doosan Group to form Doosan Lentjes GmbH
2016	Doosan Lentjes celebrated the 40 th anniversary of its CFB combustion technology
2018	90 th company anniversary & re-entry into the market for the incineration of municipal sewage sludge
2020/2021	Doosan Lentjes expands its market leadership in thermal waste treatment in Poland with further orders in Olsztyn and Warsaw

We are part of Doosan Group

As a member of the global Doosan Group, the environmental technology specialist Doosan Lentjes provides the resources to deliver complete process solutions from one trusted source.

With Doosan's global network, Doosan Lentjes combines international market know-how with German state-of-the-art engineering — a winning combination for providing innovative solutions for customers the world over.

Doosan Lentjes benefits from the Group's international sourcing and manufacturing capabilities. High quality workshops under the full control of Doosan in Changwon/Korea and Vina/Vietnam provide best practice procurement of goods and services while maintaining and ensuring compliance with laws, regulatory guidelines, and internal control procedures. Procurement hubs in Beijing and Shanghai/China underline Doosan Lentjes' efforts for cost optimised solutions.



Top left: Changwon, Korea
Bottom right: Vina, Vietnam

DOOSAN Lentjes

Doosan Lentjes at a Glance



Doosan Lentjes at a Glance

Full company name and address

Doosan Lentjes GmbH
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40880 Ratingen, Germany
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dl.info@doosan.com
www.doosanlentjes.com

Board of management

Dirk Stokvis
Managing Director (CEO)

Areas of activity

Doosan Lentjes offers proprietary environmental technologies for thermal waste treatment and energy generation.

Products

Waste-to-energy (WtE) technologies
Sewage sludge incineration (SSI) technologies
Circulating fluidised bed (CFB) boilers
Flue gas cleaning (FGC) technologies

Media contact

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DOOSAN Lentjes

Industry &
Technologies



Industry & Technologies

Our industry

The environmental technology industry is a key sector when it comes to reducing humanity's ecological footprint and stopping climate change.

Due to climate change and global population growth, the demand for environmentally friendly waste disposal and energy generation is increasing. While waste can no longer simply be dumped in landfills but must be treated in a way that conserves resources, energy generation must be as clean as possible. Here, it is important to support the ideas of the circular economy and implement the global energy transition.

Our technologies

The company's product portfolio includes proprietary environmental technologies for thermal waste treatment (waste-to-energy) and sewage sludge incineration, circulating fluidised bed boilers and flue gas cleaning systems.

Waste-to-energy

Doosan Lentjes waste-to-energy technologies help to treat non-recyclable waste in a safe and environmentally friendly way. Doosan Lentjes has been contracted to provide more than 80 plants worldwide that reduce the volume of waste and harness the energy contained in the fuel. In addition, the residues from incineration can be fed into recycling processes to recover valuable materials such as metals and minerals.

Various flue gas cleaning processes are available that meet the requirements of the 13th, 17th or 44th BImSchV or the revised European BAT (Best Available Techniques) documents.

Technologies for the incineration of sewage sludge

Doosan Lentjes' proven sewage sludge incineration technologies have been developed to realise safe treatment of municipal sewage sludge according to the latest legal guidelines: The use of mono incineration solutions enables the recovery of valuable phosphorus from the incineration ash in a separate process step. Reliable flue gas cleaning systems help to meet the requirements of the German 17th BImSchV or the European BAT directives.

Doosan Lentjes has built more than 10 incineration plants in Germany and beyond, all of which ensure safe and legally compliant disposal of municipal sewage sludge.

Circulating fluidised bed boilers

Doosan Lentjes circulating fluidised bed (CFB) boilers offer maximum flexibility in the combustion of renewable or alternative fuels whose combustion characteristics are often difficult. No matter how low the calorific value, reactivity value or ash melting temperatures, CFB boilers ensure efficient use of fuels for steam and power generation.

To meet strict emission regulations, limestone can be added to the furnace to capture sulphur dioxide. A low combustion temperature prevents the formation of thermal NO_x.

Doosan Lentjes CFB boiler technology contributes to efficient and environmentally friendly power generation to meet energy needs while taking climatic aspects into account.

Flue gas cleaning systems

Doosan Lentjes offers advanced flue gas cleaning technologies for waste and sewage sludge incineration plants, power stations and industrial facilities. The (multi-stage) solutions include dry / semi-dry processes (Circoclean® & FER-DI®), technologies for particle separation, denitrification and heat extraction as well as wet scrubbers.

These processes are used to remove acid gases, hydrocarbons, heavy metals, dust as well as nitrogen oxides from the flue gases. The strict emission regulations according to the revised BAT reference documents or the 13th, 17th and 44th BImSchV are reliably complied with.

Worldwide, Doosan Lentjes has more than 650 reference units that reliably reduce emissions to the applicable guidelines.

DOOSAN Lentjes

Press Releases



Focus on health promotion at Doosan Lentjes

10th May 2023, Ratingen, Germany

The Germany-based environmental technology specialist Doosan Lentjes held a health day for its employees on Tuesday, May 09, 2023. The focus of the event, which was held in cooperation with a German health insurance company (Techniker Krankenkasse), was primarily on exercise, physical health and health-conscious nutrition.

The aim of the health day was to sensitize the workforce to the issue of health and to make a positive contribution to job satisfaction and motivation. Against this background, specialist presentations and consultations were held on the subject of ergonomics in the workplace, as well as workshops on back and fascia health. A so-called „Neck-Check“ offered the opportunity to check the ability to control the deep neck muscles and to measure their holding power and strength endurance. A few moments of deep relaxation were brought about by various breathing exercises and sensory journeys, during which employees were able to switch off and concentrate only on themselves. A rich fruit and vegetable buffet rounded off the offer.

The health day attracted a great degree of interest among the workforce, says the event's organizer, Christine Göbel, QHSE (Quality, Health, Safety and Environment) department at Doosan Lentjes. „Almost 80 colleagues took advantage of what our health day had to offer and used the opportunity to gain important ideas for a healthier and more active lifestyle, both in their professional and private lives.“

In addition to the health day, Doosan Lentjes implements a number of other measures to actively promote employee health. For example, a weekly so called “moving break” is currently offered in cooperation with the Techniker Krankenkasse health insurance company, in which employees can easily participate digitally - even from the home office. The „moving break“ is an exercise program to prevent and reduce health risks to the musculoskeletal system that arise in everyday life, among other things due to predominantly seated activities. In addition, the company offers flu vaccinations and eye examinations for its employees and subsidizes the purchase of workplace glasses. To get more exercise in everyday life, employees have the option of purchasing a bicycle from their employer under a leasing agreement (JobRad).

Linda Azmee, HR Specialist Recruiting & Employer Branding at Doosan Lentjes, who co-organized the day, adds: „It is important to us that the people who work for us feel good in their workplace. That’s why we launched the #YourVoiceMatters corporate strategy about two years ago, which focuses on our most important resource - our employees. The aim is to sustainably optimize our corporate culture and improve employee recruitment and retention as well as performance. At the core of #YourVoiceMatters is our conviction that the voice of each and every individual counts and that we can only be successful together. Health promotion is an important concern for our colleagues and so it is for us. With the action day, we would like to show once again that we take the ideas and wishes that reach us from our workforce seriously and put them into practice.“

Doosan Lentjes is to deliver the new mono sewage sludge treatment plant in Flanders

09th September 2022

Doosan Lentjes has been awarded the contract to supply the new sewage sludge treatment plant in the Belgian region of Flanders. As part of the overall turnkey project, Doosan Lentjes will be responsible for the design, supply, erection, and commissioning of all process, mechanical and electrical equipment. The commissioning of the new plant in the port of Ghent is scheduled for 2026.

One process line will be supplied, including a stationary fluidised bed furnace, steam generator, multi-stage flue gas cleaning and water-steam cycle. The Flemish municipal wastewater treatment company Aquafin has awarded the DBFMO contract for the new plant to FOSTER, a consortium consisting of BESIX Group and Indaver NV.

Recovery of phosphorus

After completion, the new sewage sludge treatment plant, which will be one of the largest in Europe, will thermally treat 65,000 tonnes of dry substance per year. Mono-incineration will enable valuable phosphorus, which is listed by the EU as a critical raw material, to be extracted from the separated ash in a further process step.

Compliance with all emission directives

The modern flue gas cleaning system consists of selective non-catalytic reduction and a combination of wastewater-free dry and wet processes. Two heat exchangers are installed for optimum utilisation of the residual heat contained in the flue gas. The recovered heat is used for feedwater preheating.

The multi-stage gas cleaning process reliably removes all relevant pollutants such as nitrogen oxides, acid gases, hydrocarbons, and heavy metals from the flue gas. Strict emission requirements in accordance with the European BREF (Best Available Techniques Reference) directives are fully complied with.

High plant efficiency

„Our customer will be in a position to realise a reliable and future-proof disposal of municipal sewage sludge in the Ghent region with the help of our technologies,“ explains Sebastian Seibel, Bid Manager at Doosan Lentjes. „In this context, the fluidised bed process used offers extensive advantages: excellent heat and mass transfer conditions in

the fluidised bed furnace maximise combustion efficiency. This not only ensures self-sufficient plant operation, but also makes it possible to use the steam produced with the waste heat from the flue gas for external applications. Steam that is not needed for plant operation is fed to the high-pressure turbine of a neighbouring industrial plant that uses the energy as part of its steel production.“

Re-entry into the market for sewage sludge treatment

Dr. Thorsten Becker, Division Manager Sales & Proposals at Doosan Lentjes, adds: „With this latest order, we have succeeded in re-entering the business field of thermal sewage sludge treatment. The success shows that our technologies, which cover the entire process chain of sewage sludge incineration, are in demand on the market and meet the requirements. As an experienced plant manufacturer, we are pleased to handle the project while considering the objectives of all the stakeholders involved.“

In 2018, Doosan Lentjes had resumed its earlier involvement in the market for the thermal treatment of municipal sewage sludge. The background to this decision was corresponding new legal regulations, which led to the expectation of a positive market development in Germany, but also in Europe.

In re-entering the market for the thermal treatment of municipal sewage sludge, Doosan Lentjes draws on extensive experience. For many years, the company designed and built plants for customers in Germany and Europe as a general contractor. A declining market volume prompted Doosan Lentjes to reduce its involvement in this business field a few years ago. Since then, however, both fluidised bed and flue gas cleaning technology have continued to be used in various areas.

Doosan Lentjes is headquartered in Ratingen, Germany, and is part of the Korean Doosan Group.

Doosan Lentjes is to supply flue gas cleaning for new enfinium waste-to-energy plant in the UK

23rd June 2022

Doosan Lentjes, a specialist in environmental technologies, has been contracted by the general contractor Acciona to supply the flue gas cleaning system for a new waste-to-energy plant in West Bromwich, UK. The owner and operator of the new plant is enfinium Kelvin Limited.

The proven Doosan Lentjes Circoclean® flue gas cleaning technology is applied to ensure that the new waste-to-energy plant will comply with all emission limits according to the stringent European BREF requirements.

Doosan Lentjes' scope of supply includes the design, manufacture, and delivery of the entire flue gas cleaning system as well as support for the general contractor during installation and commissioning.

„The latest order intake shows that our flue gas cleaning technology meets the high demands of the highly competitive European market,“ says Daniel Borke, Product Manager Air Quality Control Systems (AQCS) at Doosan Lentjes. „Moreover, we see the current order as an important step towards our future business activities, which will focus on the process chain of thermal waste treatment. Our highest priority will be the successful execution of the project in compliance with specified time and economic targets. In doing so, we draw on decades of experience with this type of project, from which both the general contractor and the end customer will benefit.“

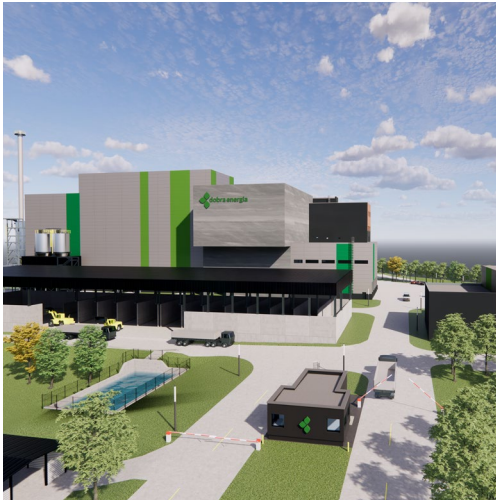
Doosan Lentjes is headquartered in Ratingen, Germany, and belongs to the Korean Doosan Group. The company's areas of expertise include flue gas cleaning systems, the combustion of renewable fuels such as waste, sewage sludge and biomass, and heat recovery systems.

DOOSAN Lentjes

Selected Case Studies



Selected Case Studies



Waste-to-energy plant, Olsztyn, Poland

Contract award: 2020

Fuel: Refuse derived fuel (RDF)

Doosan Lentjes, in consortium with Doosan Heavy Industries & Construction, supplies the new turnkey waste-to-energy plant in Olsztyn, Poland. The new plant uses Doosan Lentjes' proven water-cooled reciprocating grate, boiler and flue gas cleaning technologies. All BAT emission limits will be met.

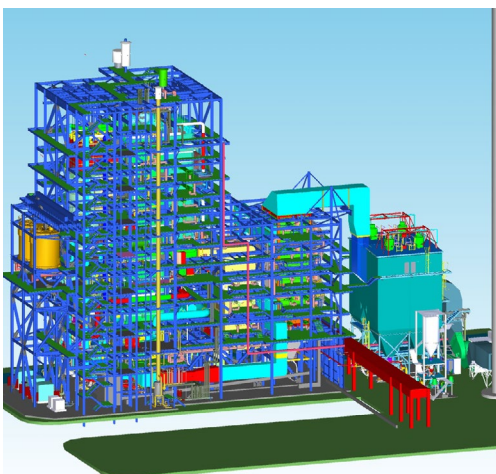


Sewage sludge incineration plant, Flanders, Belgium

Contract award: 2022

Fuels: Dewatered and dried sewage sludge

Doosan Lentjes has been contracted to supply the new sewage sludge treatment plant in the Flemish region of Flanders. As part of the turnkey project, Doosan Lentjes will be responsible for the design, delivery, installation and commissioning of all mechanical and electrical equipment.



Circulating fluidised bed boiler plant

Contract award: 2018

Fuel: Biomass

Doosan Lentjes is supplying the CFB boiler technology for the new 75 MW_e biomass power plant in Sodegaura, Japan. The order includes the engineering and procurement of the boiler island including the key boiler and flue gas cleaning equipment.

DOOSAN Lentjes

Environmental Technologies in 360°

Doosan Lentjes –
Your forward-thinking partner
for Waste-to-Energy

Become free of the laws of gravity...



...immerse in unique perspectives.



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Member of

ESWET

Environmental Technologies in 360°

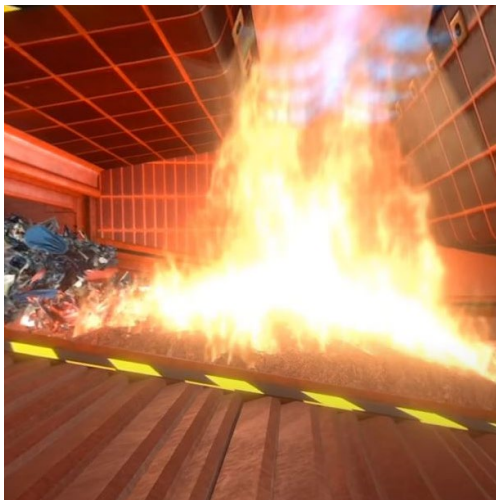
Experience our environmental technologies in a 360° environment



Virtual Doosan Lentjes reference list

Visit our website

<https://www.doosanlentjes.com/en/> and open the Virtual Doosan Reference List. There you will have the opportunity to visit our reference plants worldwide and experience the technologies applied.



Virtual 360° flight through a waste-to-energy plant

Visit our YouTube channel and open the following video: <https://www.youtube.com/watch?v=lxfb33EC0Lw>. Here you have the opportunity to experience the path of waste through the entire process of thermal waste treatment.



Construction progress of the waste wood incineration plant Dinslaken in 360°

Open the following link <https://vrs.link/doosan-lentjes/dinslaken/> and take a 360° look at our construction documentation of the Dinslaken facility. Walk (virtually) across the construction site in great weather.

DOOSAN Lentjes

Corporate Social Responsibility (CSR)



Corporate Social Responsibility (CSR)

We take our corporate responsibility very seriously, which is we do not see CSR activities as an „add-on“, but as an integral part of our business activities and processes. In doing so, we strive for a world that is characterised by mutual respect. In this world, people live and do business in harmony with the environment and nature. To this end, our CSR strategy is based on three main pillars developed in accordance with these goals: People, sustainability and charity.

People are at the centre of everything we do. Our efforts are directed at all people we influence through our entrepreneurial existence. The goal is to create an environment that promotes motivation and creativity and gives the highest priority to physical and mental well-being.

The second pillar focuses on sustainability. Here, we not only implement individual measures to achieve improvements in our environmental performance, but also understand sustainability as the foundation of our business model and activities. Along our entire value chain, we emphasise the highest environmental standards and the reduction of our CO₂ footprint.

Charity is the third pillar on which our CSR activities are built. With this element of our social responsibility strategy, we follow our conviction that it is our corporate duty to make a positive difference for others. In doing so, we do not limit ourselves to our communities, but help where help is urgently needed.