Energy ON

BIOMASS ENERGY EQUIPMENT

ABOUT US

Energy ON has an energetic team of pure biomass energy professionals who has extensive experience of over 25 years in this field. Our people create solutions for high-potential biomass energy equipment, specialized efficiency solutions and emissions control projects for a wide range of industries.

Converting biomass into clean energy with a minimal environmental impact is a huge challenge that requires complex engineering of combustion processes with the highest standards. Energy ON is a reliable partner in biomass energy solutions - the company is compliant with the ISO and OHSAS quality standards.

SOLUTIONS

- WATER HEATING BOILER UNITS (5 – 50 MW HEAT)
- SATURATED HEAT BOILER UNITS (8 – 25 T/H)
- SUPERHEATED BOILER UNITS (8 – 25 T/H)
- CHP (2.5 – 20 MWE; 10 – 80 MW HEAT)
- THERMAL OIL BOILER UNITS (8 – 20 MW)

- FUEL HANDLING EQUIPMENT AND SYSTEMS
- ASH REMOVAL EQUIPMENT AND SYSTEMS
- FLUE GAS CLEANING EQUIPMENT AND SYSTEMS
- HEAT RECOVERY EQUIPMENT AND SYSTEMS

INDUSTRIES WE WORK IN

AGRICULTURE | WOOD & PAPER | HEATING SUPPLY | POWER PRODUCTION | FOOD & BEVERAGES | CHEMICALS

PRINCIPLES OF OPERATION

INNOVATIVE SOLUTIONS

We can use our long-term experience in the completion of projects to offer innovative and unique solutions for the delivery of projects of various sizes and types.

FLEXIBILITY

The priority of the company's qualified specialists is to provide professional services that meet the client's individual needs.

WIDE CHOICE OF SERVICES

By delivering the complex services, we can fully accomplish the project targets, reach the accepted management, and control standards and ensure technological compatibility.

RESPECT FOR THE ENVIRONMENT

Biomass is one the largest and still growing sources of energy. The use of biomass fuels for heating and for electricity generation is increasing in many developed countries as a means of avoiding carbon dioxide emissions from fossil fuel use. While carrying out our biomass-based energy solutions, we focus on the fulfilment of high environmental requirements.

FUEL RANGE

Biomass combustion properties can be species-specific and site-specific. Fertilization and the characteristics of the ground, where the biomass is grown, have an effect on ash content and ash melting, fouling and slagging temperatures, as well as emissions. For example, properties of tree bark, branches and stem wood are all different. Energy ON fuel range consists from various biomass-based fuels to solid waste fuels. We can provide a range of combustion technologies suited for agricultural and wood residues, recycled wood and energy crops.

BIOMASS	TYPE
Stem wood	Deciduous and coniferous trees
Wastes from sawmills and wood processing	Plates Slices Cutting dust (limited quantity) Chips (limited quantity) Bark (limited quantity)
Trees found	Deciduous trees Coniferous trees Mixed
Deforestation waste	Tops, branches, trunk trim, stumps Small trees Shrubs
Non - forest wood	Wastes from unloading, self - sowing and road cutting

SOLUTIONS

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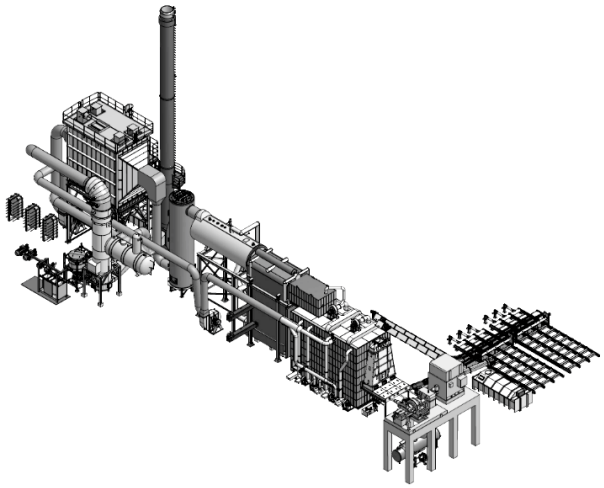
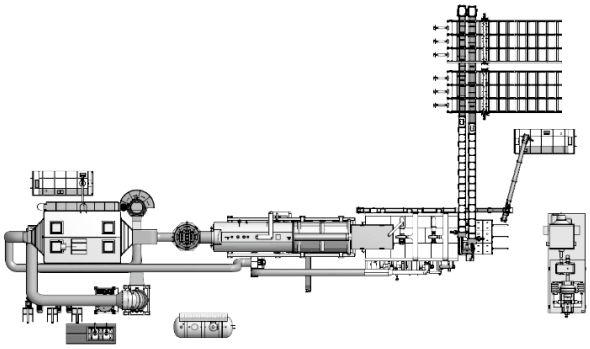
BIOFUEL-FIRED COGENERATION HEAT AND POWER PLANTS





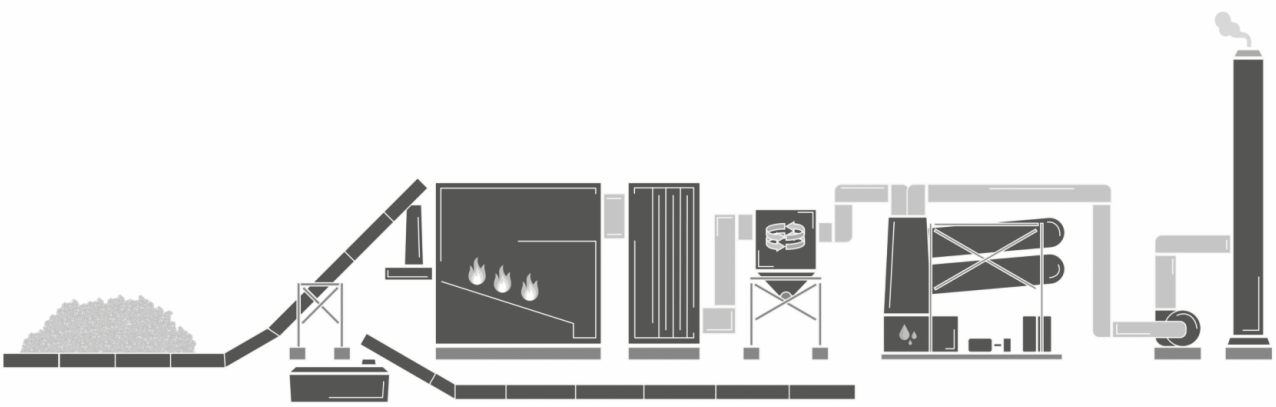
- Furnace
- Electrostatic precipitator (ESP)
- Ash removal system
- Water and steam pipelines
- Steam boiler
- Condensing economizer
- Electric and automatic devices
- Biofuels storage and transport systems
- Steam turbine with generator
- Flue treatment duct and chimney
- Water treatment system with degasser

Standardised biomass heat and power plants employ the principle of cogeneration. Cogeneration is a process where electric energy and heat are produced simultaneously in a single process. The thermal energy of biofuels burnt in a cogeneration heat and power plant is used for water evaporation. The additional thermal energy is produced in the condensing economizer and it is also transferred to the boiler water.

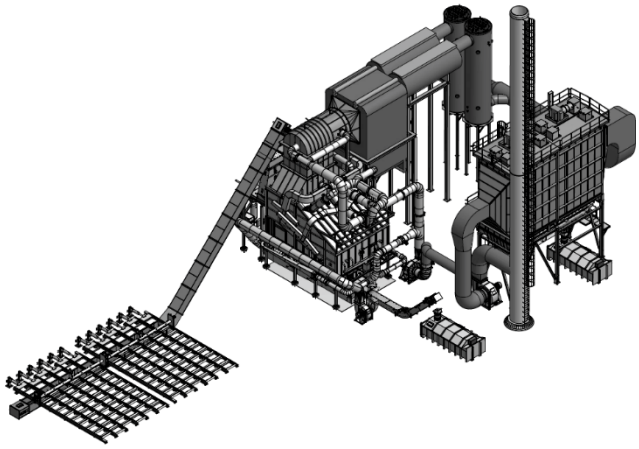
ADVANTAGES

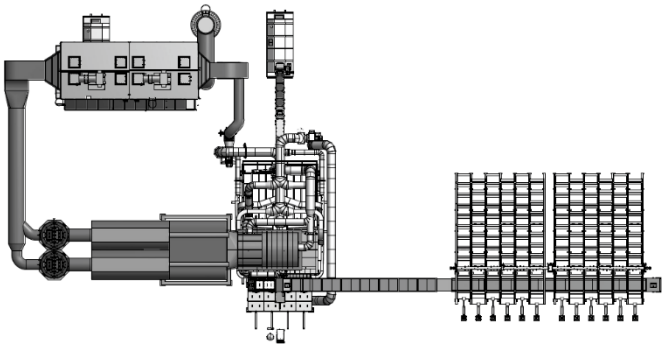
- Fast project completion with minimised costs.
- Equipment energy specifications guaranteed in the design are ensured.
- High environment protection indexes: < 100 mg/Nm³.
- Easy maintenance and repairs.
- Faster and easier completion of the project ensured thanks to the use of reliable standardised solutions.
- High efficiency level: > 8000 working hours per year.
- Possibility to burn low quality fuel wood and peat.

Heat and power plant type	Electric power, MWe	Thermal power, MWh
2.5	1-2.5	12
5.0	1.5-5.0	20
10.0	3-10	40
20.0	4-20	70



STEAM SUPPLY PLANTS





System for the storing and transporting of fuel to the furnace

Flue gas treatment system

Flue gas condensing economizer (if necessary)

Chimney

Furnace

Water treatment system and degasser

Ash removal system

Control system

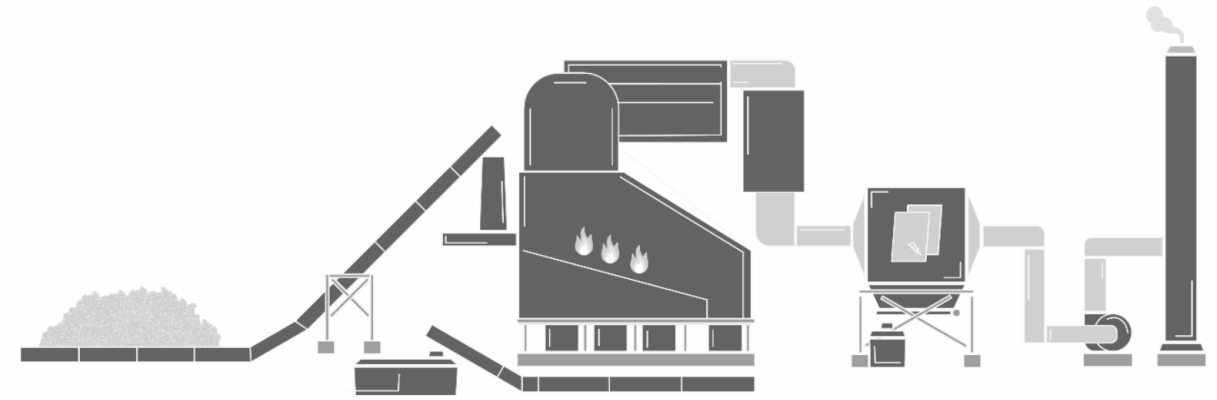
Boiler

The steam produced in steam heat plants can be used both for heating (external networks) and for process purposes in industrial facilities and heat and power plants.

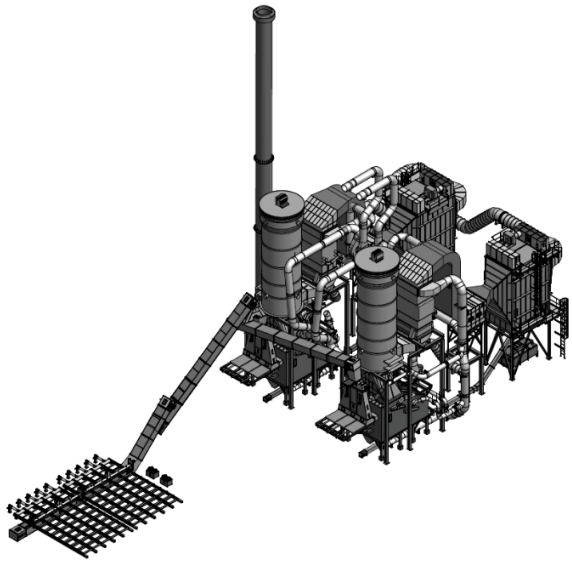
ADVANTAGES

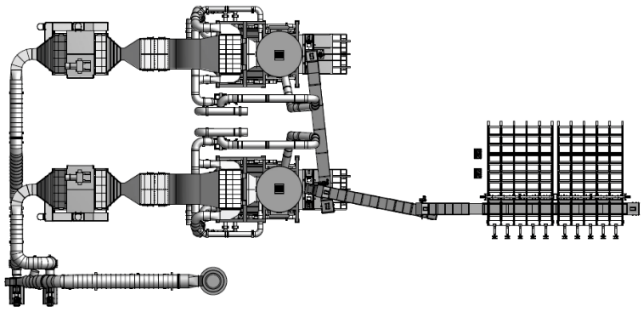
- Faster and easier completion of the project ensured thanks to the use of reliable and standardised solutions.
- Stability of parameters guaranteed through the use of a fully automated control system.
- High efficiency level: > 8000 working hours per year.
- Easy maintenance and repairs.
- Conformity of the systems to the highest environmental requirements.

Characteristics	Unit of measure	Value
Furnace (boiler) power range	t/h	1-30
Load range	%	30-100
Steam temperature	°C	to 500
Boiler general efficiency coefficient depending on the type of fuel	%	~ 87
Nox concentration (downstream of the boiler, at the nitrogen content in fuel up to 0.3 %)	mg/Nm^3	< 300
CO concentration (downstream of the boiler)	mg/Nm^3	< 200
Dust concentration (solid particles) in chimney flue gases	mg/Nm^3	< 30



THERMAL OIL HEATING PLANTS





System for the storing and transporting of fuel to the furnace

Boiler

Flue gas condensing economizer (if necessary)

Chimney

Furnace

Flue gas treatment system

Ash removal system

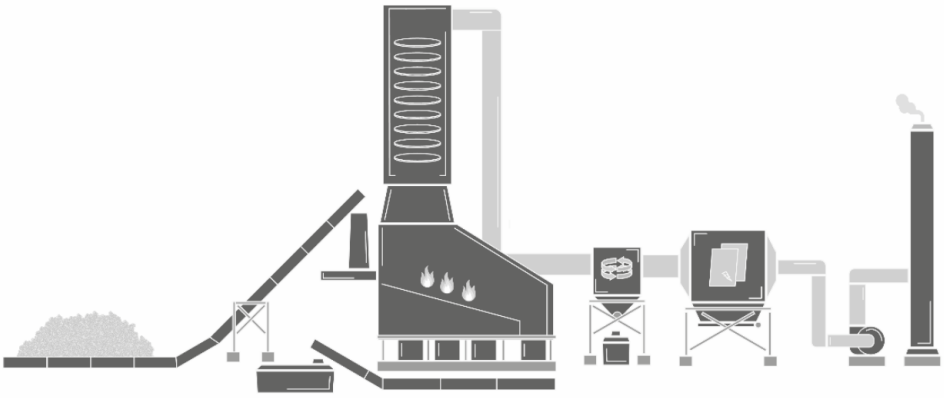
Control system

Thermal oil heat plants use thermal oil as heat medium, which makes it possible to obtain high temperature without using water steam and high pressure.

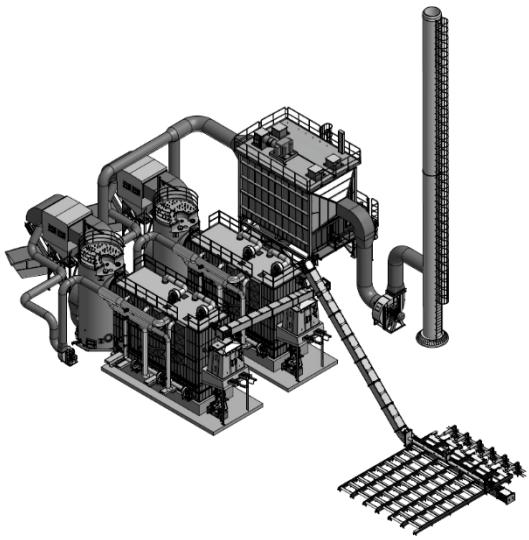
ADVANTAGES

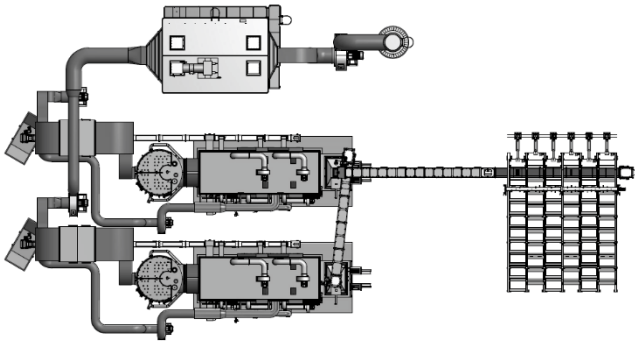
- Temperature up to 350 °C at low operating pressure (up to 10 bars).
- Stability of parameters guaranteed through the use of a fully automated control system.
- Conformity of the systems to the highest environmental requirements.
- Easy maintenance and repairs.

Characteristics	Unit of measure	Value
Furnace (boiler) power range	MWt	1-20
Load range	%	30-100
Thermal oil temperature	°C	to 350
Boiler general efficiency coefficient depending on the type of fuel	%	> 80 %
Nox concentration (downstream of the boiler, at the nitrogen content in fuel up to 0.3 %)	mg/Nm^3	< 300
CO concentration (downstream of the boiler)	mg/Nm^3	< 200
Dust concentration (solid particles) in chimney flue gases	mg/Nm^3	< 30



WATER HEATING PLANTS





System for the storing and transporting of fuel to the furnace

Boiler

Flue gas condensing economizer (if necessary)

Chimney

Furnace

Flue gas treatment system

Ash removal system

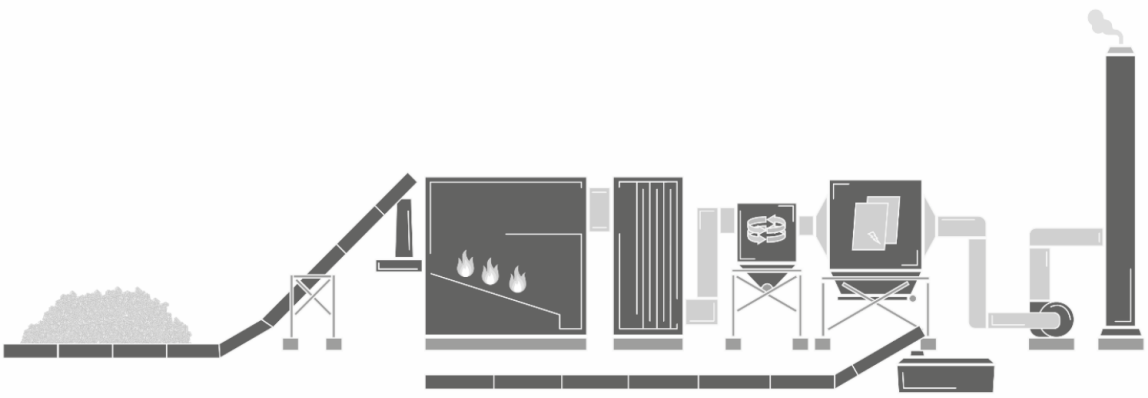
Control system

Warm water produced in water heat plants can be used both for interior space heating and for the preparation of warm utility water.

ADVANTAGES

- High efficiency level: > 8000 working hours per year.
- Faster and easier completion of the project ensured thanks to the use of reliable and standardised solutions.
- Conformity of the systems to the highest environmental requirements.
- Guaranteed stability of parameters through the use of a fully automated control system.
- Low operation costs
- Easy maintenance and repairs.

Characteristics	Unit of measure	Value
Furnace (boiler) power range	MWt	5-20
Load range	%	30-100
Water operating temperature	oC	to 150
Water operating pressure	bar	to 16
Boiler general efficiency coefficient depending on the type of fuel	%	~ 87
Nox concentration (downstream of the boiler, at the nitrogen content in fuel up to 0.3 %)	mg/Nm^3	< 300
CO concentration (downstream of the boiler)	mg/Nm^3	< 200
Dust concentration (solid particles) in chimney flue gases	mg/Nm^3	< 30



PELLETING LINE

Raw material and fuel storages with moving floor

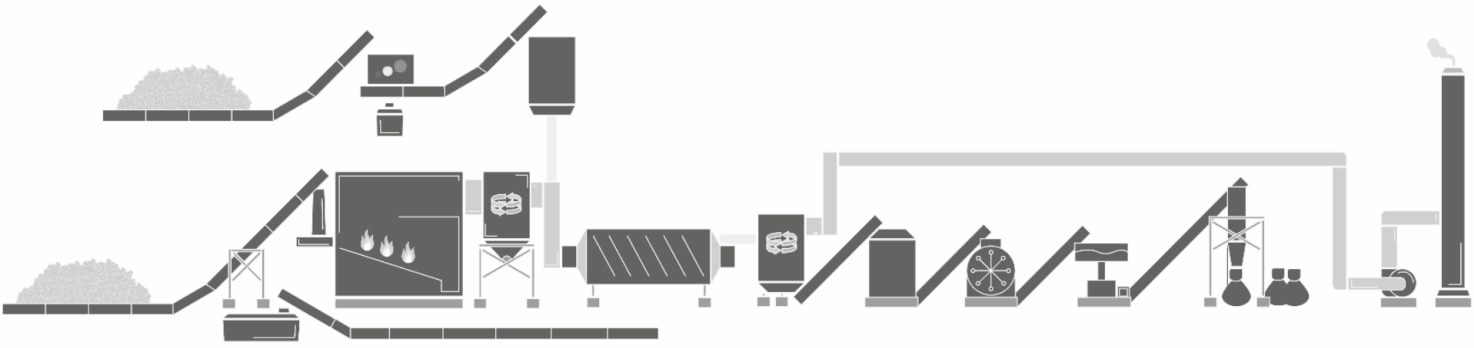
Raw material drying and sawdust transport systems

Sawdust granulation systems

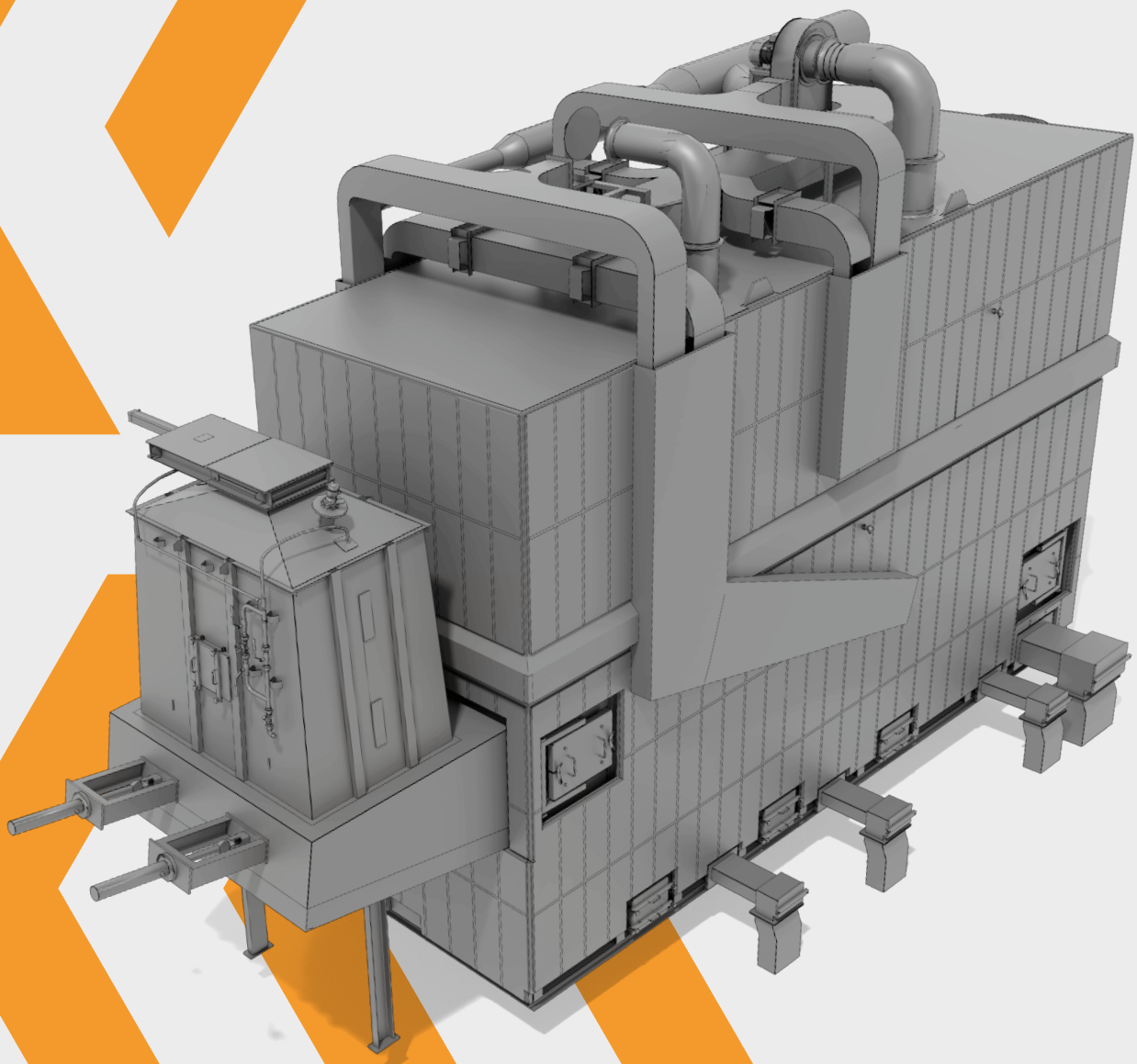
Granulate transport and packaging systems

Raw materials from the warehouse with a moving floor are supplied to transporters which convey them to granulators. Sawdust is compressed in granulators and then transported, as granules, to packaging systems.

Characteristics	Unit of measure	Value
Drying line furnace power	MWt	7
Granulation line output capacity	t/h	6
Annual granulate production	t	50 000
Fuel		sawdust, woodchips, bark
Relative fuel moisture	%	35-55
Fuel calorific value	MJ/kg	7.16
Fuel tank capacity	m^3	150
Raw materials		debarked conifer sawdust, shredded wood (woodchips)
Raw material storage capacity	m^3	200



PRODUCTS



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PRACTICAL SOLUTIONS

SM2 AND SM3 FUEL DIFFERENCES

- Maximum fuel moisture content increases from 55 to 60%
- Ash content increases between 3 and 5 %
- Fine fraction increases between 10 and 25%
- Chlorine content increases between 0.02 and 0.03 %
- Potassium can increase between 2000 and 4000 mg/Kg (0.2–0.4%). LST EN ISO 17225

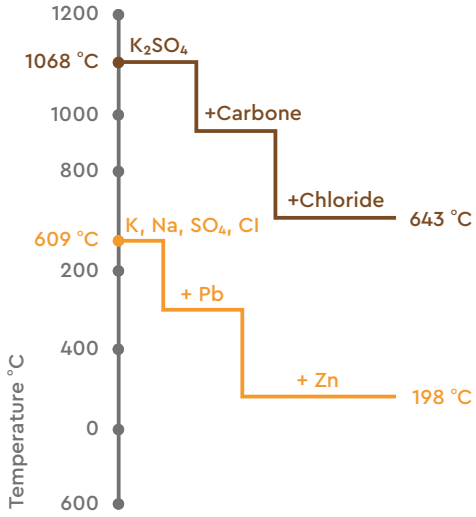
K, NA IN SM3 FUEL

HIGH POTASSIUM AND SODIUM CONTENT

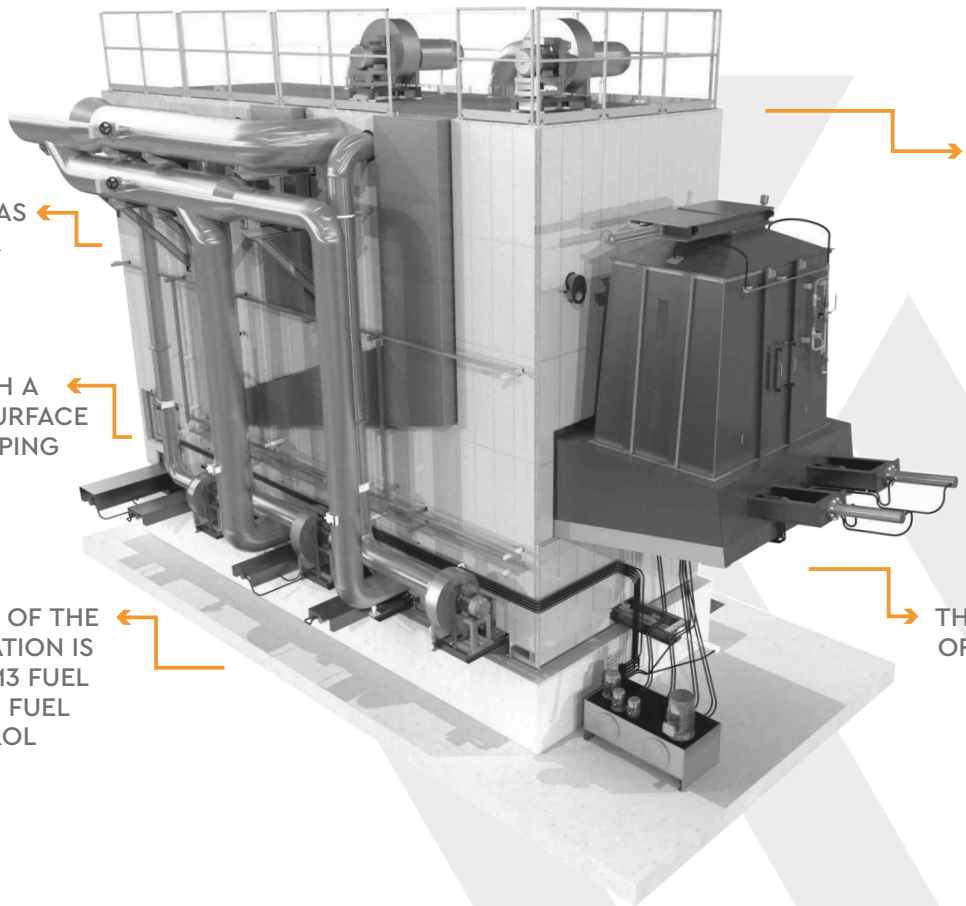
can lower the melting point of ash to as low as 600 °C. According to the SM3 combustion experience, the K, Na content lowers the melting point to 800°C.

WE THEREFORE MAINTAIN A TEMPERATURE

of 700 – 750 °C in the combustion zone above the furnace.



EON_BioT Adiabatic furnace with the counter current



THE FURNACE HAS A PRIMARY AIR HEATER

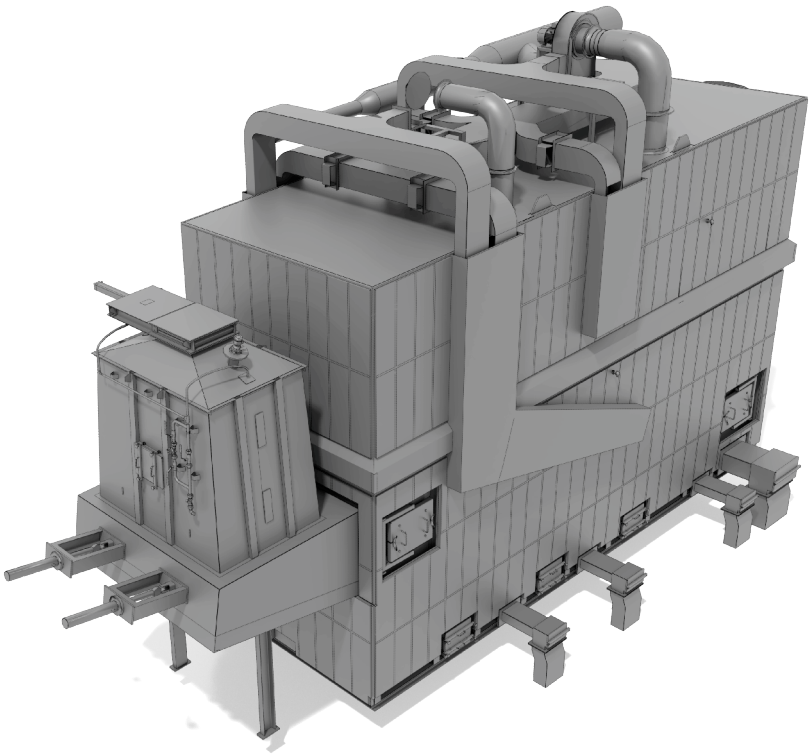
GRATES WITH A 'ROUGHENED' SURFACE AND OVERLAPPING

THE ALGORITHM OF THE GRATING OPERATION IS ADAPTED TO SM3 FUEL COMBUSTION, FUEL BED CONTROL

PRIMARY AIR SUPPLY FROM THE FRONT OF THE GRATE

THERMAL STRESS OF THE GRATING LESS THAN 400KW/M²

FURNACE WITH MOVING GRATE



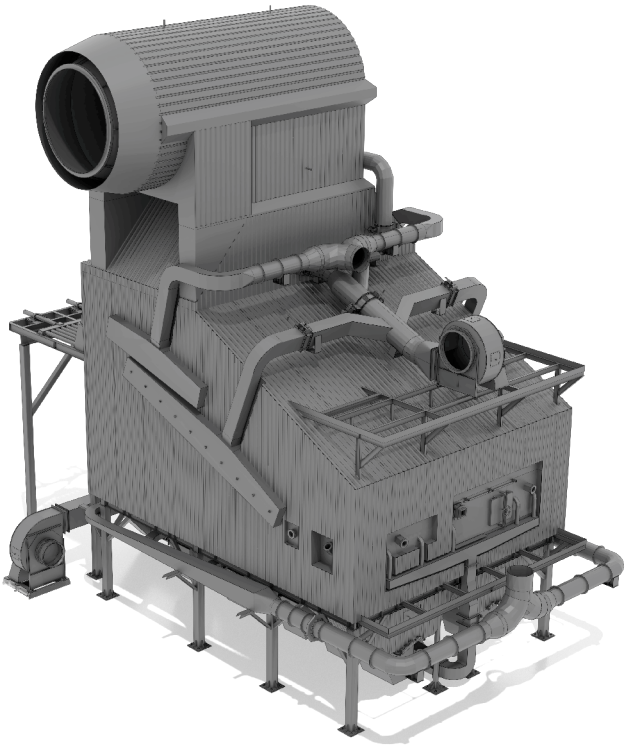
Furnaces are a modern solution for burning biofuels with a moving step grate, designed for burning shavings, sawdust, shredded wood waste, bark and peat with 30-60 % humidity and up to 65 % with an air preheater. Depending on the temperature in a specific firing zone, moving grate elements made of a cast iron alloy containing 16-25 % chromium are used, which ensures durability of the moving grate even at the highest temperature in the furnace. Temperature and pressure sensors installed inside the furnace as well as the permanent supervision system for the furnace operation contribute to the high quality of the furnace operation.

ADVANTAGES

- Thanks to the installation of an additional combustion chamber, combustion of unburned fuel components is ensured while maintaining the highest environmental requirements.
- By dividing all the air required for the combustion of biofuels into primary, secondary and tertiary streams, high quality fuel combustion can be achieved and the amount of harmful waste emissions can be reduced.
- Automatic operation of the furnace and of the entire combustion system according to specified parameters.

Characteristics	Unit of measure	Value
Possible furnace (boiler) power	MWt	6(5)-15(13)
Load range	%	30-100
Fuel moisture	%	30-60 and up to 65
Fuel consumption (at 50 % humidity) per 1 MWt	kg/h	~ 530
	(m^3/h)	~ 1.7
Excess air coefficient		1.4 (O_2 = 6 %)
Demand for air per 1 MWt	Nm^3/h	1700
Debit of combustion products per 1 MWt	Nm^3/h	3180
Temperature of combustion products downstream of the furnace	°C	900-1000
Emission factors (dry smoke, at O = 6 %): NOx concentration (downstream of the boiler, at the nitrogen content in fuel up to 0.3 %)	mg/Nm^3	< 300
CO concentration (downstream of the boiler)	mg/Nm^3	< 200
Dust concentration after the furnace	mg/Nm^3	< 600-1000

FURNACE WITH MOVING GRATE



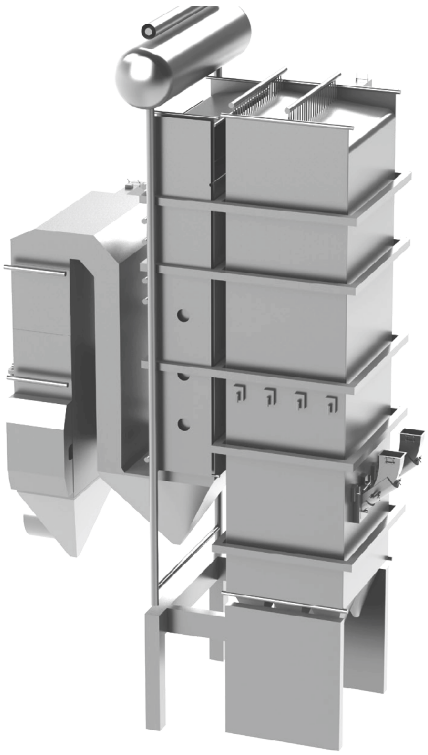
Furnaces of this type can offer power ranging from 9 to 30 MWt and are compatible with various boiler types. Biomass of various kinds: wood chips, bark, sawdust and wood dust, logging waste, etc. is used as fuel in such furnaces. The furnace makes it possible to maintain the pre-set parameters of the boiler operation with a maximum biofuel humidity of up to 30-60 % and up to 65 % with an air preheater. Moving grate elements made of a cast iron alloy containing 25-27 % chromium are used in the furnace which ensures durability of the moving grate. The patent-protected design of the moving grate contains replaceable components, which makes it possible to double their operational lifetime.

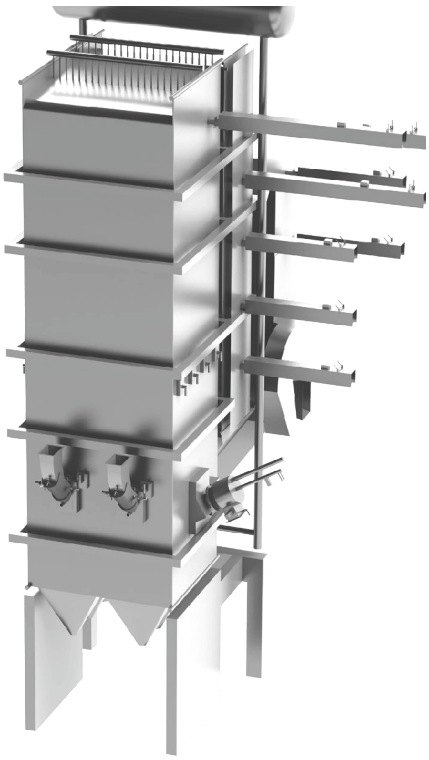
ADVANTAGES

- The increased thermal power of the furnace is achieved through the use of a step moving grate only for fuel combustion (the grate is not designed for supplying fuel).
- More precise supply of the fuel to the furnace thanks to an improved geometry makes it possible to control the combustion process on the moving grate.

Characteristics	Unit of measure	Value
Possible furnace (boiler) power	MWt	6(5)-15(13)
Load range	%	30-100
Fuel moisture	%	30-60
Fuel consumption (at 50 % humidity) per 1 MWt	kg/h	~ 530
	(m^3/h)	~ 1.7
Excess air coefficient		1.4
Demand for air per 1 MWt	Nm^3/h	1700
Debit of combustion products per 1 MWt	Nm^3/h	3180
Temperature of combustion products downstream of the furnace	°C	900-1000
Emission factors (dry smoke, at O = 6 %): NOx concentration (downstream of the boiler, at the nitrogen content in fuel up to 0.3 %)	mg/Nm^3	< 300
CO concentration (downstream of the boiler)	mg/Nm^3	< 200
Dust concentration after the furnace	mg/Nm^3	< 1000

FLUIDISED BED FURNACE





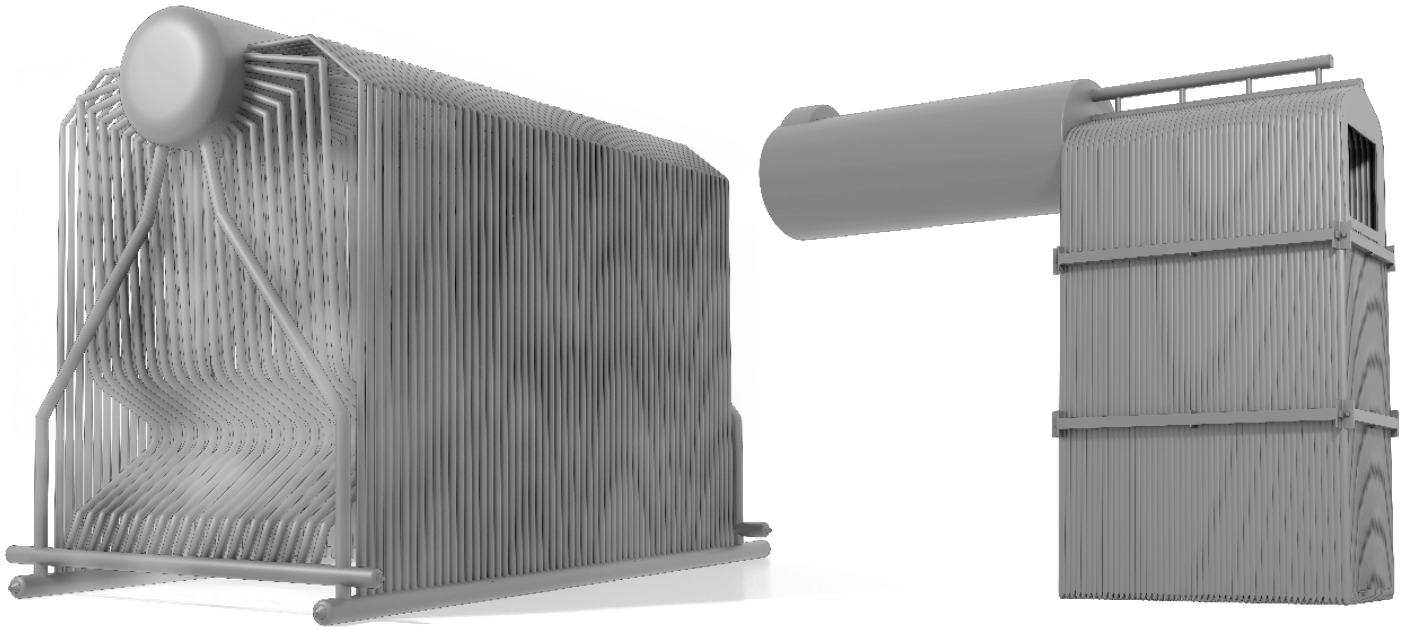
Furnaces of this type can offer power ranging from 5 to 50 MWt and are compatible with steam or water boilers. Fuel is burnt in a fluidised furnace in space between walls cooled with water. The fluidised bed consists of sand with a grain size of 0.5 - 1.2 mm and a layer thickness of 300 - 600 mm. The primary sand stream scarifies the sand layer, in result of which it then begins to rise and "boil", forming a suspension of air and sand. The boiler screens in the "boiling" layer zone are covered with a fire-proof concrete.
Biomass of various kinds: wood chips, bark, sawdust and wood dust, logging waste, etc. is used as fuel in such furnaces. The furnace makes it possible to maintain the pre-set parameters of the boiler operation with a maximum biofuel humidity of up to 60 %. The "boiling" layer is controlled depending on the aerodynamic resistance value of the layer by adding or removing a proportional amount of sand.
In a fluidised bed, less fuel is simultaneously consumed as compared to a furnace with a moving grate and therefore it is highly compact and dynamic.

ADVANTAGES

- High reliability level: > 8000 working hours per year.
- Small amounts of harmful CO and NOx emissions.
- Wide power adjustment range of 25 - 100%.
- Very small amount of unburnt fuel.
- Fast power adjustment 4 %/min.
- Low repair and maintenance costs due to no wearing moving parts.

Characteristics	Unit of measure	Value
Available furnace (boiler) power	MWt	6-60 (5-50)
Load range	%	25-100
Fuel moisture	%	30-60
Excess air coefficient		1.2
Temperature of combustion products downstream of the furnace	°C	900-1000
Emission factors (dry smoke, at O = 6 %): NOx concentration (downstream of the boiler, at the nitrogen content in fuel up to 0.3 %)	mg/Nm³	< 300
CO concentration (downstream of the boiler)	mg/Nm³	< 200
Dust concentration after the furnace	mg/Nm³	< 1000-4000

STEAM BOILERS



Boilers of this type are highly popular due to their reliability, durability and easy operability. The standard equipment includes the ash removal system which cleans the boiler tubing surface of residual ash by blowing and transfers more heat to water or steam.

Vertical, horizontal

Flame

With moving step grate BFB, CFB

Water-pipe (water in pipes, smoke outside the pipes)

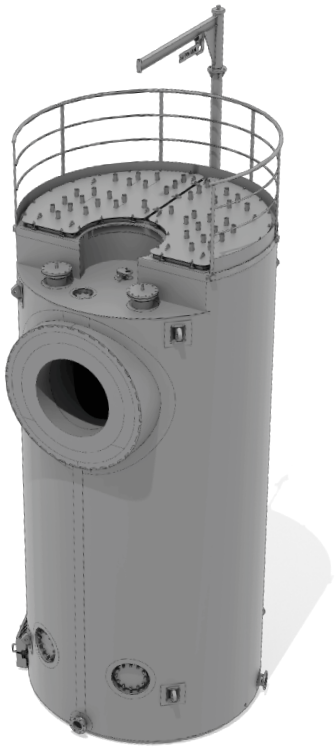
Producing saturated or overheated steam

ADVANTAGES

- Possibility to adapt old gas boilers to biofuels.
- Variant with modified furnaces which accommodate an additional combustion chimney installed above the ceiling of the main combustion chamber.
- High efficiency demonstrated by the thermal energy output increase at a smaller fuel consumption.
- Reduced thermal losses by better thermal insulation.

Characteristics	Unit of measure	Value
Output capacity	t/h	1-30
Steam temperature	°C	up to 500
Steam pressure	bar	up to 60
Temperature of the water supplied to the boiler	°C	104-130
Boiler efficiency	%	87

WATER HEATING BOILER



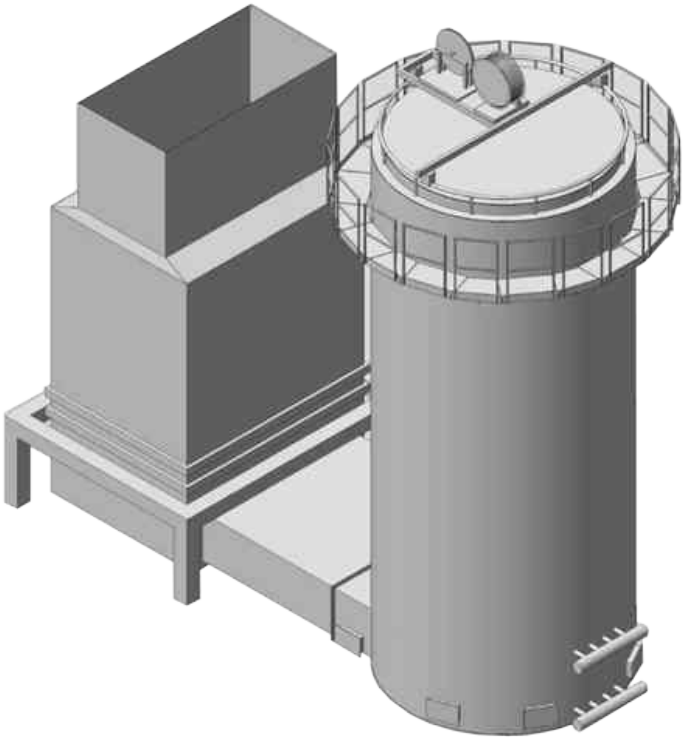
Water boilers can have a vertical or horizontal structure. The former have 3 passes and their minimal power is 5 MWt. The set also includes furnaces with a moving step grate. The key component of these boilers is a drum with flame tubes and an overheating protection installed in the lower part. Boilers with the horizontal structure can offer power from 5 to 20 MW. A boiler of this type consists of a cylindrical body with a chamber and two vertical ducts of flue convectors.

ADVANTAGES

- Installation of boilers including all required sensors (automatic control).
- Easy maintenance and repairs.
- Full protection ensured in case of a failure by explosive valves installed in boilers.
- Reduced thermal losses by better thermal insulation.

Characteristics	Unit of measure	Value
Boiler type		water-tube or flame-tube (smoke-tube)
Furnace type		moving step grate
Boiler purpose		water heating
Furnace and boiler power	MWt	5-20
Load adjustment range	°C	30-100
Furnace and boiler efficiency	%	~ 87

THERMAL OIL BOILERS



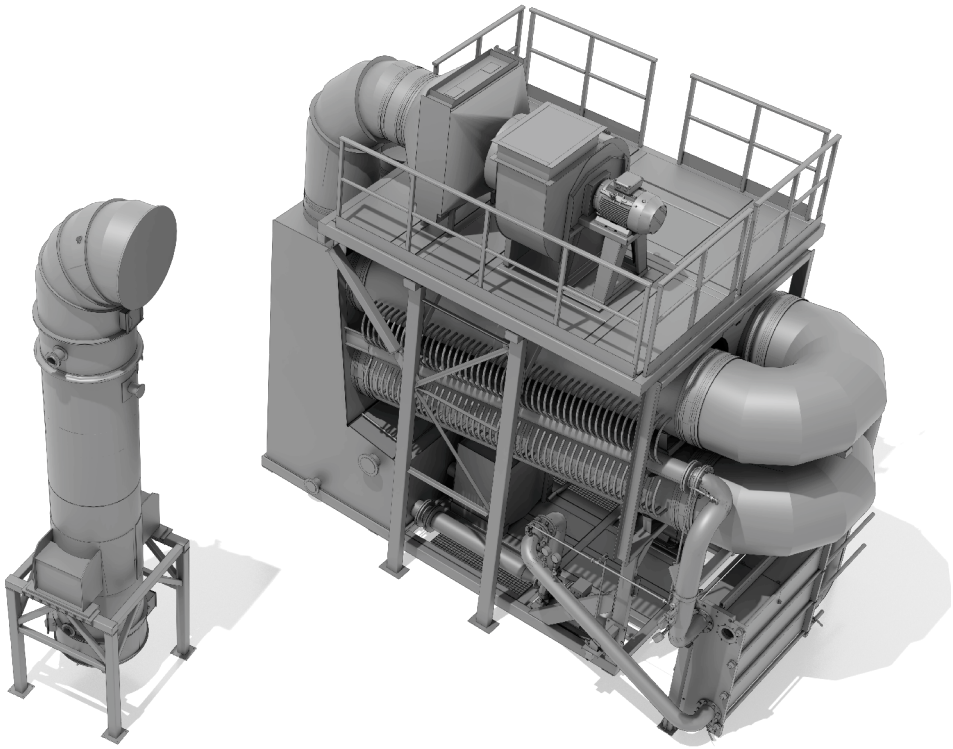
Boilers of this type employ the principle of transferring the thermal energy of the smoke to the thermal oil. These boilers have to comply with particularly high requirements concerning safety and reliability and therefore they are manufactured in conformity with the Pressure Equipment Directive of the European Union, AD-Merkblatter and DIN 4754. Thermal oil boilers are installed on steel structures. The heat exchanger consists of concentrically arranged pipes which are installed in an unstrained state in a welded housing. In order to ensure permanent flow, the tubes are interconnected in a serial mode. The boilers are equipped with a patent-protected ash blow system to ensure long-lasting an effective operation.

ADVANTAGES

- Temperature up to 350 °C at low pressure (up to 10 bars).
- In case of a varying demand for heat, it is possible to use the ORC cycle (Organie Rankine Cycle) in which electric energy can be produced.

Characteristics	Unit of measure	Value
Furnace type		moving step grate
Boiler type		spiral
Boiler purpose		thermal oil heating
Furnace and boiler power	°C	5-20
Thermal oil temperature	°C	350
Load adjustment range	%	30-100
Furnace and boiler efficiency	°C	> 80
Type of fuel used		woodchips

FLUE GAS CONDENSING ECONOMIZER



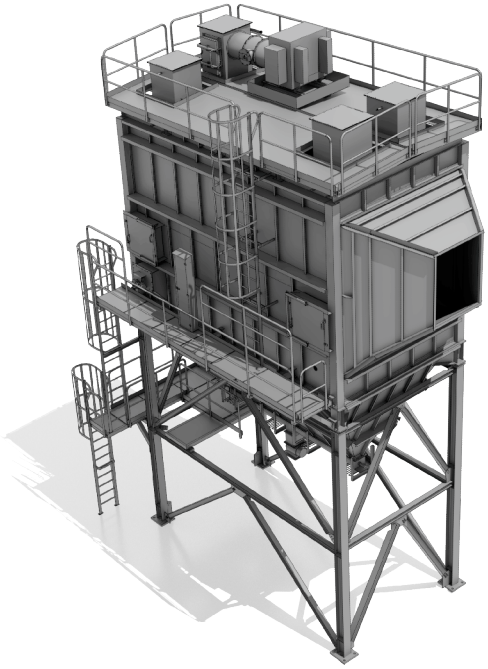
Flue Gas Condensing Economizers (hereinafter: FGCE) recover energy while condensing water steam produced in the biofuel burning process and contained in flue gas going out of the boiler. The condensing system recovers energy from flue gas by cooling down the smoke gases going through the economizer chamber made of stainless steel. Water particles atomised in the flue gas stream by means of specially designed nozzles form mist with a very large heat exchange area. Hot flue gases intensely give away heat when coming in contact with water spray drops, which makes the water steam contained in the flue gas condensate. The liquid condensate produced in this way is used in a closed circuit where it transfers heat through a plate exchanger e.g. to a central heating system. Depending on the degree of contamination and the type of flue gas cleaning system used, equipment for cleaning water from solid particles (suspended solids) and for precipitating sludge may be installed together with the condensation flue gas energy recovery system (economizer).

ADVANTAGES

- Increase of the overall efficiency of the heat plant even by 25% by cooling down the products of combustion and using the condensation heat.
- The so produced and treated condensate can be used to refill circulating water, which significantly reduces freshwater consumption.
- Additional flue gas treatment e.g., when multicyclones are used, the content of solid particles in smoke gases downstream of the economizer is up to 50 mg/Nm3 and less.

Characteristics	Unit of measure	Value
Boiler power range	MWt	5-20
Range of thermal power recovered in FGCE	MWt	1-7.5
Fuel moisture, average	%	50
Returning water temperature	°C	45
Flue gas temperature downstream of the boiler (upstream of FGCE)	°C	180
Flue gas temperature downstream of FGCE	°C	48

ELECTROSTATIC PRECIPITATOR



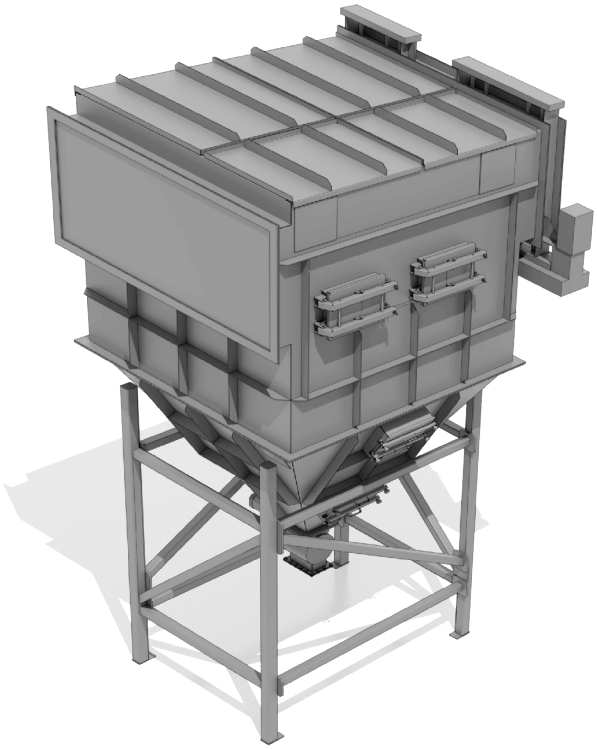
The electrostatic precipitator (hereinafter - ESP) is intended for the treatment of biofuel combustion products which were produced in the furnace and gave off a greater part of energy in the boiler from solid particles (dusts) contained therein. Depending on the amount of solid particles contained in the flue gases and the degree of cleaning required, the electrostatic precipitators may have one or two fields or, in exceptional cases, a precipitator with three fields may be necessary. The precipitator design and the number of fields are determined for each project on an individual basis depending on the flue gas stream size, the composition of the fuel used, the concentration of solid particles upstream of the precipitator and the required concentration of solid particles downstream of the precipitator.
The electrostatic precipitator is equipped with a totally automated control system.
Ash is removed from ESP in two ways: by means of a bottom scraper or conical ash containers. In the former case, a bottom scraper with a hydraulic drive and a control system is installed inside ESP. The ash is scraped into a screw conveyor which transfers it to a centrally located dispenser. In the latter case, the ESP bottom design is not flat but it consists of several conical ash containers interconnected at their lower part with a screw feeder.

ADVANTAGES

- Highly purified smoke which meets the most stringent requirements.
- Possibility to use low quality fuels leaving large quantities of ash.
- Intuitive range of supply, proven solutions and equipment.
- Simple operation.

Characteristics	Unit of measure	Value
Filter inner pressure	Pa	± 2500
(Design) temperature	°C	350
Smoke velocity inside filter	m/s	~1.0
Aerodynamic resistance	Pa	200-300
Content of solid particles in ESP	mg/Nm^3	20-30

MULTICYCLONE



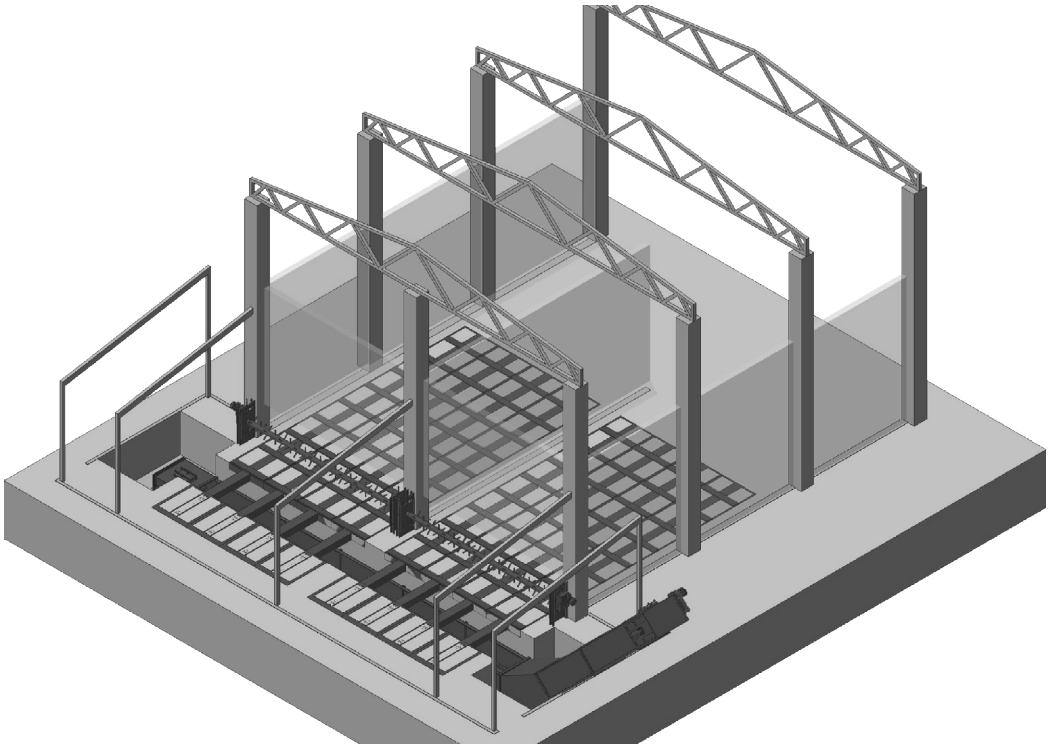
The cyclone housing is made of sheet steel. The centrifugal force in the cyclone's working elements is generated by means of guides installed in a star or screw arrangement. Under the centrifugal force, dust settles on the cyclone outer wall and falls into a collecting bin. The installation height is adjusted by supports of variable height by means of screws. After the supports height has been adjusted, they are permanently welded together.
To remove ash, a hopper with a pressure compaction function is usually used, or ash is removed from the hopper by means of a geared motor driven dispenser. Door installed in the cyclone housing make it possible to inspect, clean or repair inlet and outlet flue gas chambers.

ADVANTAGES

- Fast project completion with minimum effort and resources.
- Intuitive range of supply, proven solutions and equipment.
- Compact structure and installation design.
- Simple operation.

Characteristics	Unit of measure	Value
Type of cyclone		set (battery) of flow-through cyclones
Type of operating element		propeller
Amount of treated flue gases in one element	m^3/h	~ 700
Maximum temperature of treated flue gases	°C	200
Flue gas flow velocity in the element	%	4.5 m/s ± 15
Aerodynamic resistance	Pa	550-700
Amount of solid particles downstream of the multicyclone	mg/Nm^3	100-300

STANDART FUEL SUPPLY SYSTEM WITH OVER-GROUND STORAGE UNIT



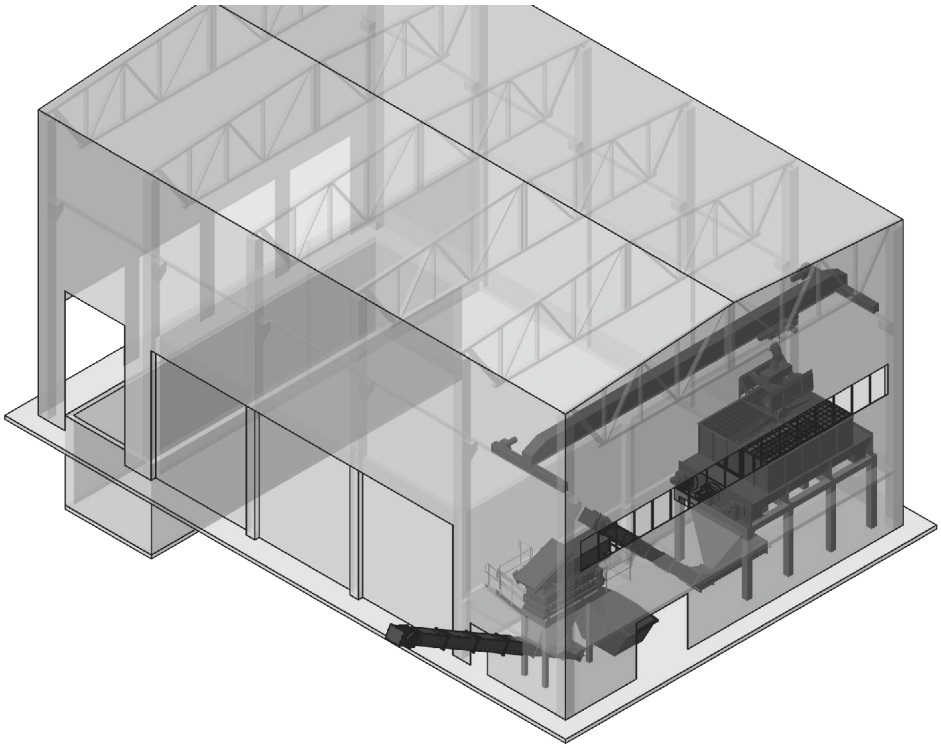
The fuel storage unit and transport devices are intended for storing fuel and supplying it automatically into the combustion chamber. The storage unit capacity and the number of moving fuel platforms depend on the heating system power (demand for fuel). The storage unit hopper size is usually designed so as to ensure that the boiler can work under a regular mode during 24 hours. Fuel reserve is stored on a site nearby.

- Automatic scales for fuel registration
- Storage unit fuel platforms with a front-end loader
- Recessed scraper conveyor with a rising part
- Intermediary fuel conveyors (if needed)
- Fuel warehouse - roofed steel structure fenced with walls
- Cylinders and central control facility for the hydraulic cylinder drive
- Fuel sorting system (vibration sifter)

ADVANTAGES

- Convenient fuel supply to the warehouse.
- Possibility to store various types of fuels on separated sections of the storage unit.
- When fuel is pre-sorted on a vibrating grate in the sifter, oversize fuel is retained. The risk of the fuel conveyors getting damaged or broken down is minimised in this way.
- Only sorted fuel of a required size is supplied to the furnace.

FUEL SUPPLY SYSTEM WITH GRAB CRANE



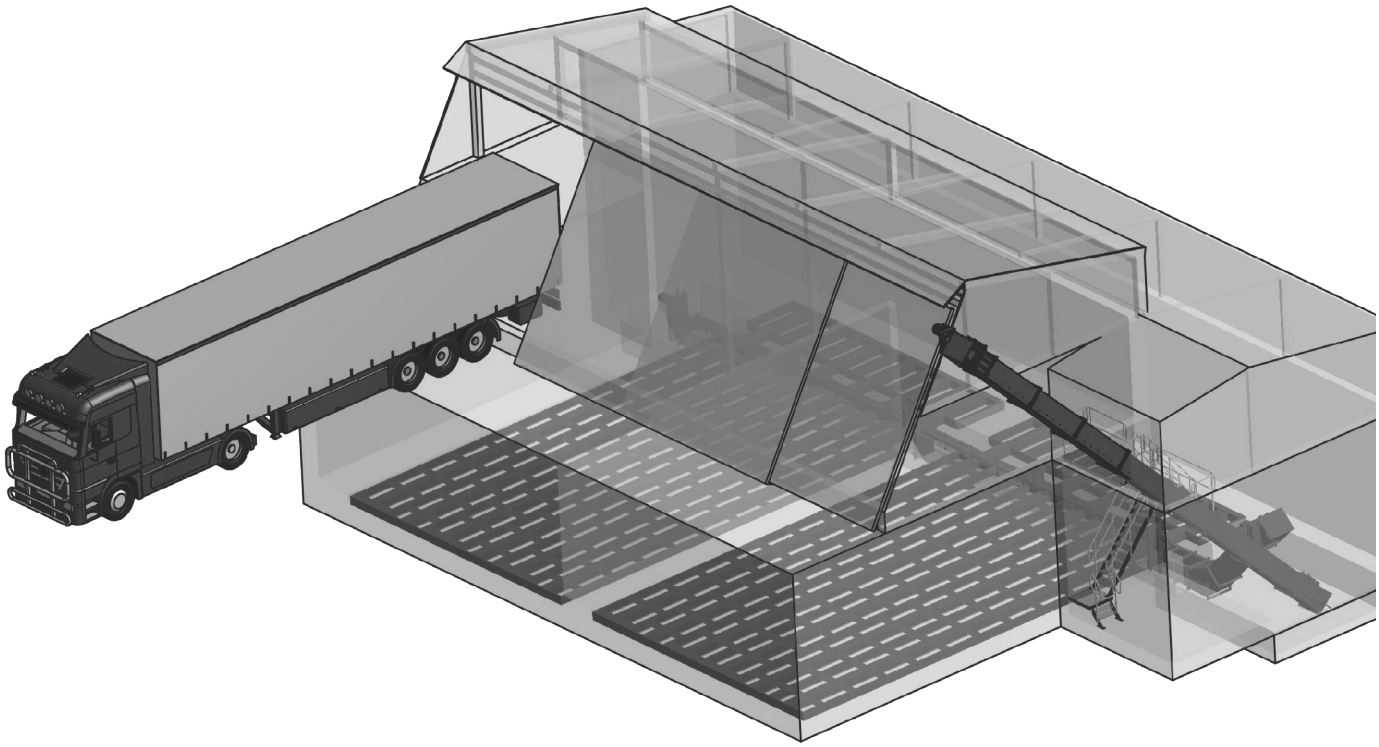
The supplied fuels are usually unloaded directly to the pre-hopper. Various types of fuels can be stored in various sections of the fuel storage unit. Mixing various types of fuel is acceptable. Fuel is weighed before being fed into the boiler. Fuel waste is separated from the required fuel size on the intermediary fuel tank vibrating grate.

- Fuel storage unit with a capacity up to 6000 m³ (or bigger if necessary)
- Intermediary fuel hopper
- Container for metal contaminations
- Bucket gantry crane
- Disc sorter
- Scraper fuel conveyors
- Sorter with magnetic separator
- Recessed pre-hopper for fuel delivery
- Sorted fuel bin
- Belt conveyor (if required)

ADVANTAGES

- Possibility to store more fuel on a smaller site.
- The fuel supply system is not hazardous to the natural environment. The storage unit is fully closed which minimises the dust and noise emissions to the environment.
- Possibility to provide a boiler facility which does not need to be attended by operation personnel.
- Only sorted fuel of a required size is supplied to the furnace.
- Easy and convenient fuel delivery to the storage unit.
- The use of the multi-stage sorting significantly reduces the risk of the fuel conveyors getting damaged and broken down.
- Small number of moving mechanisms.
- A front-end loader with a driver is not required to supply the fuel.
- Possibility to keep permanent and accurate register of fuel and to monitor boiler output capacity indicators.

FUEL SUPPLY SYSTEM WITH UNDERGROUND STORAGE



The supplied fuels are usually unloaded directly to the storage unit. The fuel is fed by means of the front-end loader onto the conveyor which takes the fuel to the sorter. Adequate fuel sizes are separated and metal contaminations are removed in the sorter. Sorted fuel is transferred to the furnace or buffer hoppers. Small fuel fractions and metal impurities are collected in special containers. Various types of fuels can be stored in various sections of the fuel storage unit.

- Automatic scales for fuel registration
- Storage unit fuel platforms with a front-end loader
- Recessed scraper conveyor with a rising part
- Intermediary fuel conveyors (if needed)
- Fuel warehouse - roofed steel structure fenced with walls
- Cylinders and central control facility for the hydraulic cylinder drive
- Fuel sorting system (vibration sifter)

ADVANTAGES

- Convenient fuel supply to the warehouse.
- Wchile fuel is pre-sorted on a vibrating grate, oversize fuel is retained. The risk of the fuel conveyors getting damaged or broken down is minimised in this way.
- It is not hazardous to the natural environment. The storage unit is fully closed which minimises the dust and noise emissions to the environment.
- No loader is required to supply fuel to the moving conveyors of the storage unit platform.
- Only sorted fuel of a required size is supplied to the furnace.
- It is possible to store various types of fuels in separate sections of the storage unit.

GET IN TOUCH!

UAB „ENERGY ON“
V. Krėvės str. 26a - 2, LT-50412 Kaunas, Lithuania
+370 640 75762 | info@energy-on.lt | www.energy-on.lt