

HERZ Poultry Litter Boiler



- **Eligible** for RHI Guarantee Scheme
- **2 year warranty** included, option to extend to 10 years



For more information call 0203 189 0665

Competence is our success ...

HERZ FACTS:

- 22 companies
- Group headquarter in Austria
- Research & development in Austria
- Austrian owner
- 2.400 employees in over 85 countries
- 22 production sites

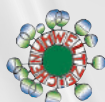


HERZ Armaturen GmbH - The company

Founded in 1896, HERZ has been continuously active in the market for more than 120 years. With 8 sites within Austria, another 14 in Europe and more than 2.400 employees at home and abroad, HERZ is the only Austrian manufacturer that produces equipment for the entire heating and installation industry and is one of the most important internationally.

HERZ Energietechnik GmbH

HERZ Energietechnik employs more than 230 staff in production and sales. At the company sites in Pinkafeld/Burgenland and Sebersdorf/Styria, there is state-of-the-art production as well as a research institute for new, innovative products. As a result, proven cooperations with research and educational institutions can be intensified. Over the years, HERZ has established itself as a specialist in renewable energy systems. HERZ places a great importance on modern, cost-effective and environmentally friendly heating systems which offer simple operator interfacing and a high level of convenience.



MYRIAD

HEAT AND POWER PRODUCTS

Myriad Heat and Power Products are at the forefront of biomass boiler and CHP system design. Specialising in commercial and industrial heating, supplying chip, pellet, recycled and re-classified waste wood solutions from 10 kWt up to 10 MWt.

Over two hundred Poultry farms have trusted Myriad Heat and Power Products, in partnership with HERZ to heat their growing facilities on biomass chips and pellets.

The 'Industrial Grade' Poultry Boiler from Herz is fully compliant with the strict Animal Plant & Health Agency requirements and features hard wearing Hardox and stainless steel components to cope with the corrosive and abrasive nature of the fuel, as well as a combustion chamber camera that provides live imaging inside the boiler.

Myriad offer a full turnkey service from feasibility, through full contract design and complete turnkey installation. Myriad Plant Room Services supply operator training for running and operating the boiler systems and supply the ongoing service and maintenance with a national network of trained biomass boiler engineers.



Minimum Criteria for project

- Site LPG consumption >350,000ltr per year
- Site litter production >1,250T per year
- Minimum bird capacity > 120,000 birds

Poultry Litter

The benefits of burning poultry litter are many, as not only does it provide a self sufficient heating solution which protects users from rising fuel costs, but it also offers an additional revenue stream through the Renewable Heating Incentive (RHI) as well as potential fertiliser sales from the ash created.

In addition to the above benefits, the birds welfare and crop performance is greatly improved through the removal of moisture and CO₂ in the sheds, which are both given off by traditional LPG burners.

We are happy to test your fuel in our test center and will advise you of your optimum combustion system.

Benefits to the Birds

- Food Conversion Ratio (FCR) improvement
- EPEF improvement (flock performance)
- Hock burn reduction
- Pododermatitis reduction

Additional Benefits

- Lower energy costs
- Energy cost certainty for 20 years
- Energy supply certainty for >20 years
- Lower LPG usage = better bird environment
- Dryer environment = bedding reduction

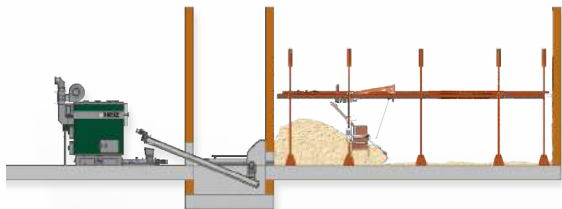
Case Study Assumptions

- Typical Internal Rate of Return for complete installation = 20%
- Bird improvement cost benefits not allowed for
- Current heat delivered by LPG boiler: 2.3m kWh/yr
- Proposed heat delivered by Biomass/litter boiler: 3.9m kWh/yr
- Site capacity: 160,000 birds, 7 flocks/yr
- Litter calorific value 2700 kWh/T
- Litter production: 1.5kg/bird/flock, 1,700 T/yr
- Biomass wood chip: 30% water content, 3500 kWh/T, £70/T
- LPG costs 27.5p/ltr
- £5k LPG maintenance & replacement cost
- Proposed litter income to the farmer £7/T
- Term: 20 years
- District heating and shed heating designed around 4 sheds



Discharge systems

TL - Top Loading System



- for granulated fuels up to P63*
- Height: 3m / Width 4-6m
- Filling length up to 20m*

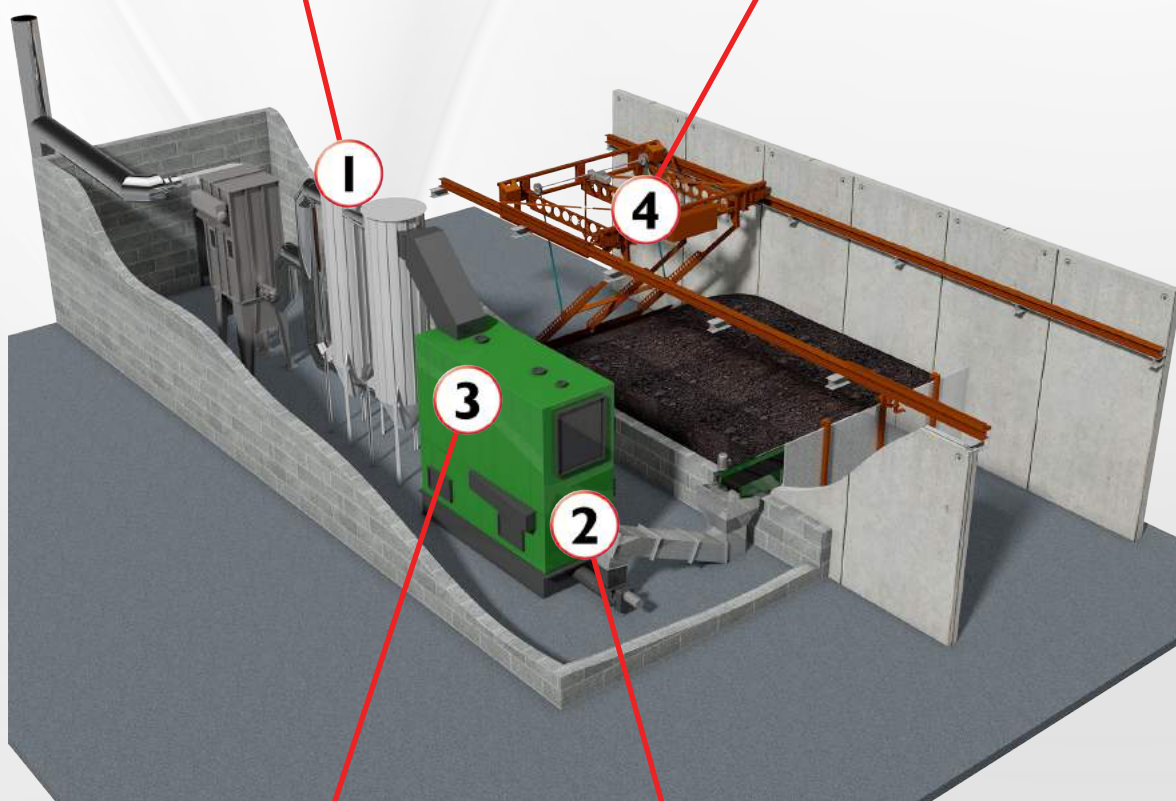
Transport systems

HERZ offers different types of transport systems like Transport auger (TS), direct hydraulic ram (QFE), chain conveyors (KKF) Spring arm agitators and crane systems.

These systems are suitable for the following max. size classes (acc. To OENORM EN 14961):

2 stage vertical heat exchanger

Toploader Fuel Delivery System



Water-cooled combustion grate and Chamotte high temperature bricks

Remote monitoring and combustion chamber camera

Combustion systems

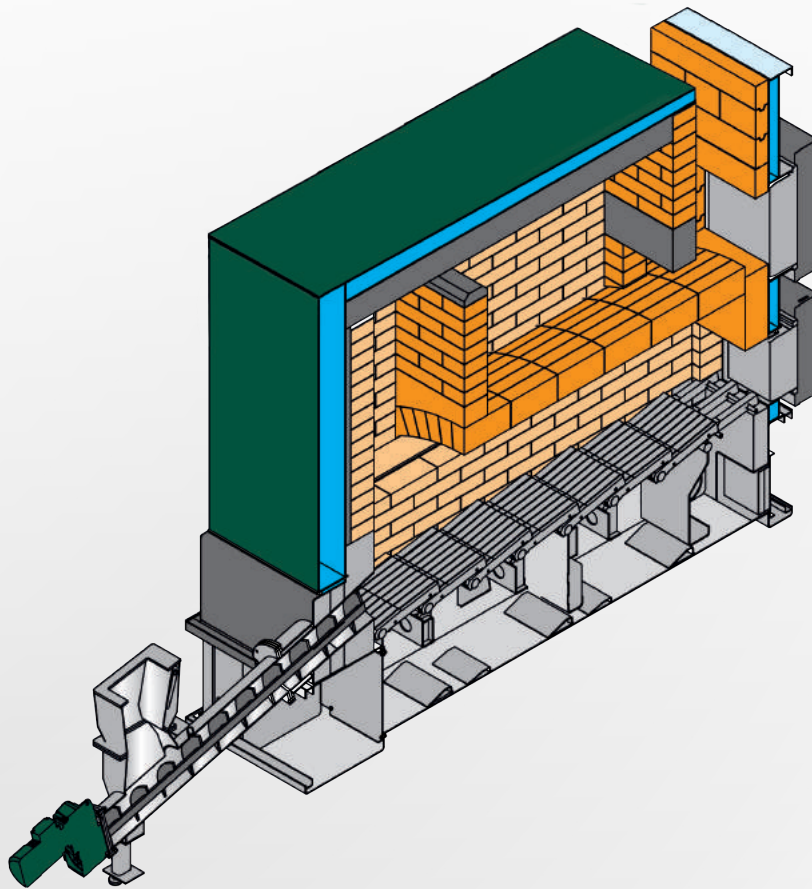
Moving Grate Combustion Unit

Combustion unit with hydraulically or electro-mechanically operated grate, for combustion of wet materials with high ash content. Fully automatic de-ashing of the combustion unit with ash scraper below grate and ash auger. Completely refractory lined and Stochiometrically designed primary and secondary combustion air zones.

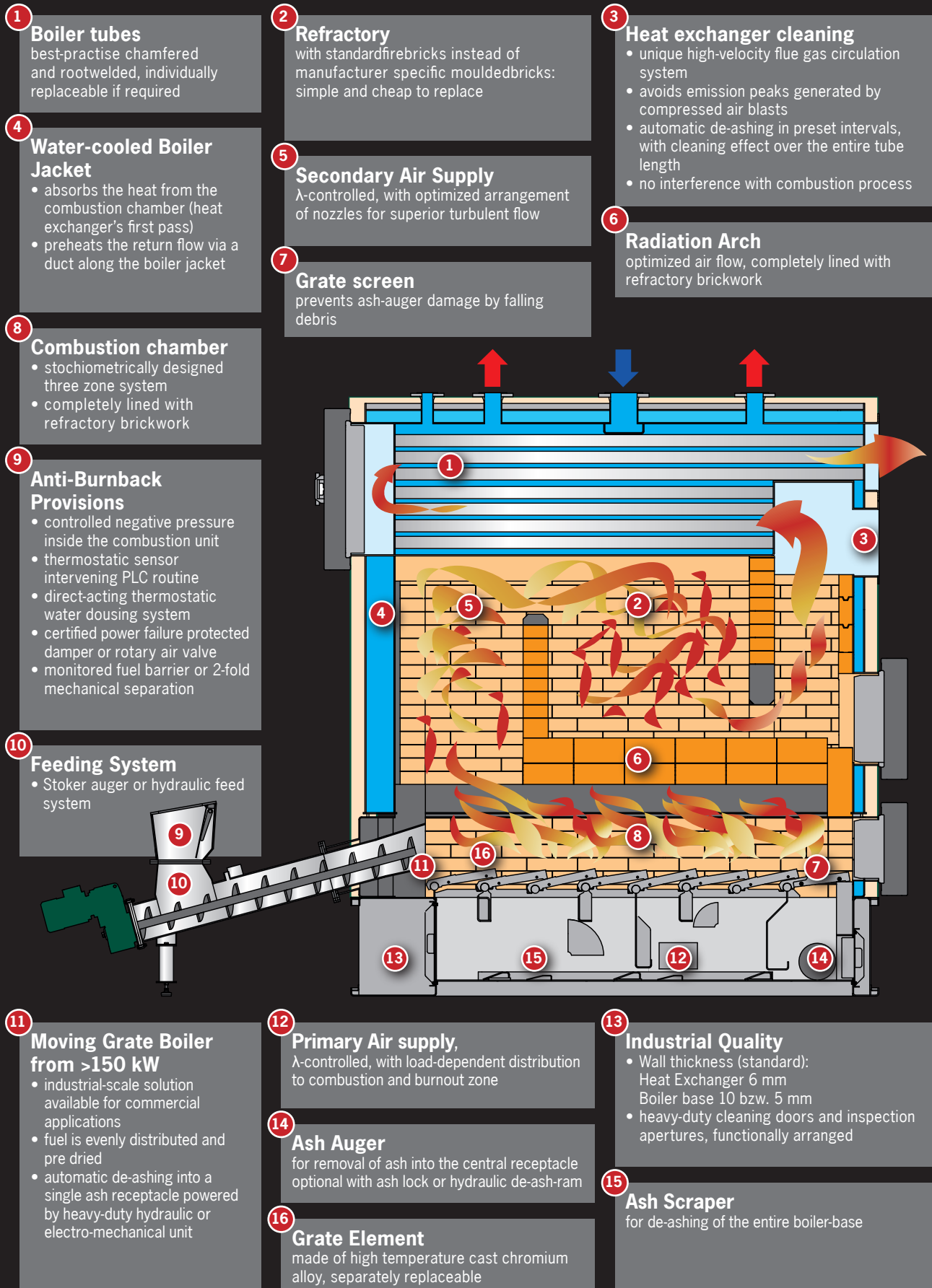
Alternatively with auger or hydraulic infeed.

max. fuel water content 50%

max. fuel ash content $\leq 20\%$



Warm and Hotwater Systems



MYRIAD & HERZ customer-oriented...



Consulting



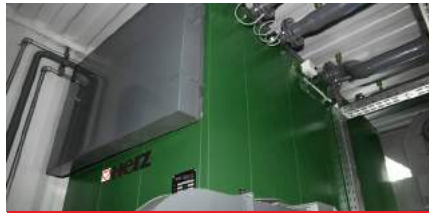
Planning



Project Management



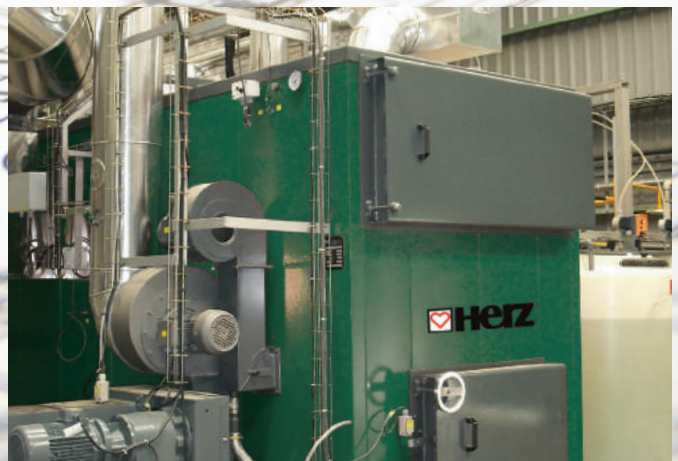
Assembling



Commissioning



Support



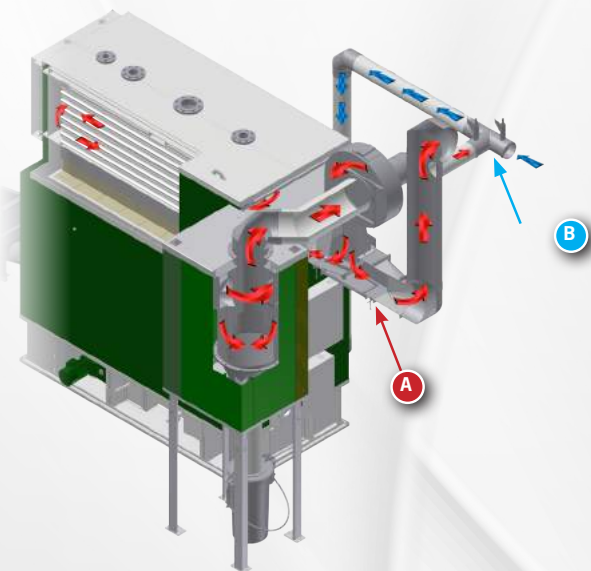
A

Automatic High Velocity Cleaning System HV

With the HV system the cleaned flue gases (after passing the cyclone separator) are blown back into the heat exchanger through a non-return flap at high speeds to clean the heat exchanger tubes.

High velocity cleaning at preset intervals without interfering with normal operation.

- Prevents dust deposition over the whole length of the heat exchanger pipes, maintaining a constant high efficiency
- Reduces maintenance to 1-2 basic procedures per year
- Protects against boiler corrosion



Capacity and Combustion Control CVP

Features a fully modulating computer control that permanently assesses the actual load, adjusts the fuel feed accordingly and matches it with the continuously variable air supply.

- Reacts dynamically to changes in the combustion process through the Lambda O₂ control
- Variable air volumes are automatically compensated by the integrated negative pressure control
- Speed-controlled fans minimise electric power consumption
- Provides an optimal efficiency over the entire output range of the boiler.

B

Flue Gas Recirculation

Depending on the temperature in the combustion chamber the recirculation system adds a regulated amount of flue gas to the combustion air.

Because of the greater volume of flue gas in the combustion chamber, more heat is dissipated from here towards the heat exchanger.



Lower temperatures also increase the lifespan of the refractory and the grate.

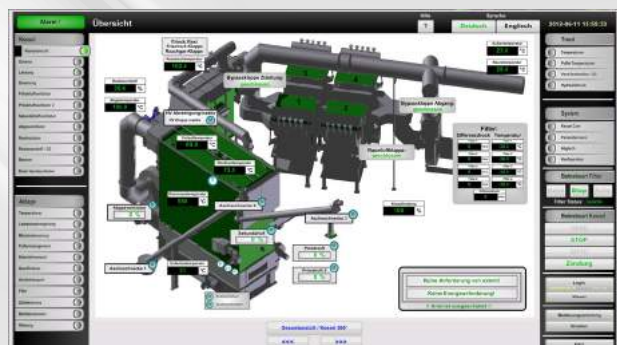
The flue gas recirculation system is particularly recommended for fuels with either a high calorific value, low ash fusion point, or a high nitrogen content.

3D Visualization

The innovative **HERZ 3D Visualization** is created from your individual layout plan.

Individually designed setting windows and the included data logging, and also the possibility to integrate the HERZ combustion chamber camera completed the package.

If an Internet connection is available it is possible to log in to the boiler control unit and make adjustments at any time you want.



Know-How & Reliability

High Overall Efficiency Across the Output Range

HERZ boilers achieve efficiency ratings of over 92 percent¹.

- The CVP control package gives fully modulating capacity control from 20-100%
- Speed-control on all fans minimises the electric power consumption
- The Lambda O2 regulation improves efficiency and brings out the most of your fuel
- High quality engineering with a minimum of maintenance required provides for high availability

1)...audit report A-1211-1/18d-06, NUA Umweltanalytik GmbH



Lambda O2 Regulation

Uses the exhaust O₂ level as an efficient indicator for complete combustion:

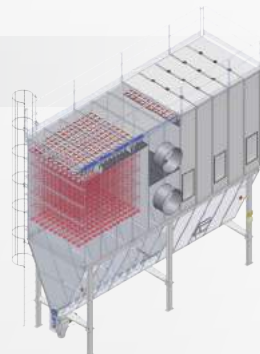
- Reacts to fuel variations by automatically adjusting the air intake and/or fuel supply
- Provides a stable combustion without emissions peaks even where fuel quality varies.

Flue Gas Cleaning

To comply with the legal emission limits, special filters have to be used. HERZ offers optimized filtration systems for your needs.










Electrostatic precipitators



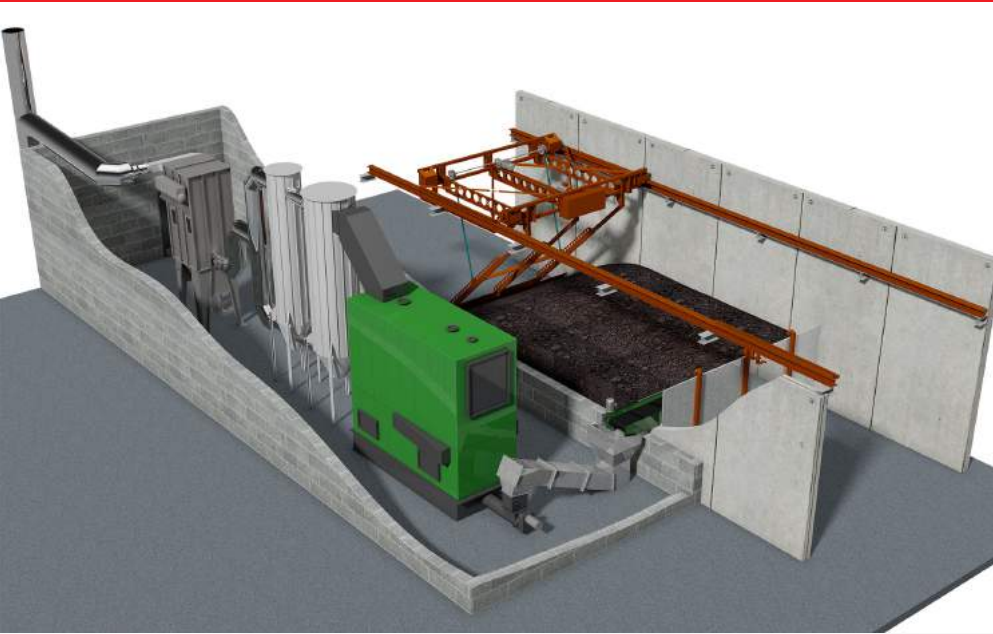
Metal Sleeve filters

Other Fuel Types Available

Combustion systems→		RRF	SRF-S	TSRF
	Shredded demolition & packaging wood	●	●	●
	Recycled Wood Waste		●	●
	Industrial wood chips		●	●
	Swarf	●		●
	Saw dust	●		●
	Shavings- millings	●	●	●
	Chipboard, MDF	●	●	●

Combustion systems→		RRF	SRF-S	TSRF	BLRF
	Bark		●		
	Virgin Wood Chip	●	●	●	
	Wood based energy crops (miscanthus)			●	
	Tree surgery cutting		●	●	
	Wood pellets	●		●	
	Industrial pellets	●		●	
	Turf pellets, agro-pellets			●	
	Broiler Chicken Litter				●

Poultry Litter - Case Study



The Herz UK poultry boiler is fully compliant with the strict Animal Plant & Health Agency requirements and features hard wearing Hardox and stainless steel components to cope with the corrosive and abrasive nature of the fuel, as well as a combustion chamber camera that provides live imaging inside the boiler.

The benefits of burning poultry litter are many as not only does it provide a self-sufficient heating solution which protects users from rising fuel costs, but it also offers an additional revenue stream through Renewable Heat Incentive (RHI) payments as well as potential fertiliser sales from the ash created. In addition, the birds' welfare and crop performance is greatly improved through the removal of moisture and CO₂ in the sheds which are both given off by traditional LPG burners

Paul Clark, Managing Director at Rural Energy, commented: "The Herz poultry boiler is an exciting new addition to our portfolio of products and I'm excited to see peoples' reactions at the fair. It offers a sustainable and potentially lucrative solution to poultry farmers and is a great example of how Herz responds to industry demand, creating bespoke solutions to fulfil specific needs. Our team will be available at the show to discuss their projects and respond to queries on the technology."

"...SUSTAINABLE AND POTENTIALLY LUCRATIVE SOLUTION..."

50% chicken litter. The chicken litter content is gradually increased over a number of days until the boiler runs completely on 100% chicken litter.

"...THE BIRDS' WELFARE AND CROP PERFORMANCE IS GREATLY IMPROVED..."

These Herz Industrial boilers can run on 100% chicken litter, however for commissioning purposes they need to be run on 50% wood chip and

CASE STUDY FOCUS

Providing

998kW

renewable heat

Heating

4 LARGE SHEDS

Fuel Used

Chicken Litter

SYSTEM SUMMARY

Boiler Type: 998kW Herz Industrial

Fuel Type: Chicken Litter

Fuel Feed: 2 x 3m rotary agitators

C Dicks & Son - Case Study



As with many poultry farmers in the UK, C Dicks & Sons was looking for a better way to heat their nine large sheds which would deal with the issues of humidity and harmful emissions which arise from using a traditional system of direct fired heaters. Saving money on fuel bills at the same time was also important.

With nine large broiler houses of 300x70ft each, the farm used 150,000 litres of LPG plus 65,000 litres of oil per year. Finding a more cost-effective heating system was very important.

Wood chip heating offered a significant pence per kilowatt (p/kW) saving. Myriad Heat and Power designed a Herz BioFire 995kW wood chip biomass boiler system to provide the necessary heat and hot water for the sheds and Draper ventilation system.

The fully automated Herz BioFire is able to burn chip with moisture contents up to 40% and a robust, heavy duty spring arm agitator with additional drive motor for the feed auger ensure reliable fuel delivery to the boiler.

Two ceiling-mounted ventilation units combined with the biomass boiler, which produces much lower emissions compared to traditional boilers, provide the best results within the broiler sheds for the chicks.

Dicks Poultry saves at least one day of feed per crop as the chicks will reach target weight quicker and with fewer losses in numbers due to the reduction in harmful emissions caused by the old heaters.

Overall there is a saving of over £120,000 per year on fuel and service costs, a day of feed per crop plus an earning of £126,000 from the Renewable Heat Incentive. C Dicks & Sons also has a service and maintenance contract with Myriad Heat and Power to ensure their investment is protected.

CASE STUDY FOCUS

Supplying a

995kW

Herz® BioFire

Installed to Heat

9 SHEDS

Earning

£126,000

Renewable Heat Incentive

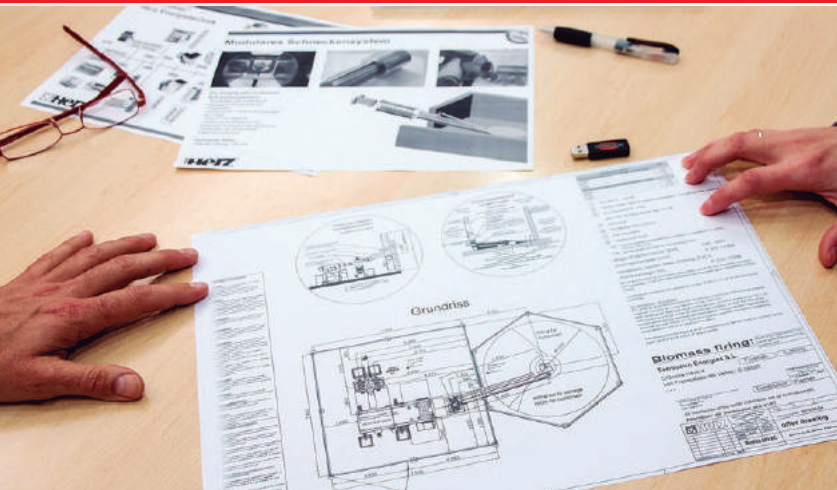
SYSTEM SUMMARY

Boiler Type: Herz® BioFire

Fuel Type: Wood Chip

Fuel Store: Purpose Built

MYRIAD & HERZ customer-oriented...



- Advice during the planning phase
- Planning of the plant and discharge system according to customer requirements and local conditions
- Comprehensive services
- HERZ trainings:
 - for the plant operators
 - for planners and technical offices
 - for installers and assemblers
 - as well as continuous training of the maintenance staff



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HERZ biomass systems fall below the strictest emission regulations.



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