

A WIRTGEN GROUP COMPANY



BENNINGHOVEN

EVO JET 3

 **BENNINGHOVEN**

BURNER - BIOMASS TO LIQUID



Energy plants



Organic waste



Straw



Wood waste



STILL BURNING IN THE FUTURE.

BENNINGHOVEN EVO JET BURNER | FUEL: BTL (BIOMASS TO LIQUID)



EVO JET BURNER

Innovative burner technology

BENNINGHOVEN is a world market leader in burners for asphalt mixing plants and a manufacturer of multi-fuel burners with up to 4 fuels. The complete know-how and wealth of experience from over 70 years of burner competence support the development of unique burners with excellent properties.

01 Unique burners with excellent properties

- > Modular design with good retrofit options
- > Compact and clearly structured design
- > Easy maintenance
- > Reliable performance
- > Long service life, low wear
- > Highly efficient consumption (frequency controlled)
- > Minimum emissions output thanks to state-of-the-art control technology
- > Inspection openings on both sides
- > Movable burner for better accessibility
- > Internal fan (exclusive to BENNINGHOVEN)
- > Combination of in-house manufacturing and proven components from renowned manufacturers
- > Everything from one source - engineered + made in Germany



Sustainable asphalt production

02 High level of flexibility and a future-proof solution

The days where companies did not have to worry about their energy supply are coming to an end. Many markets are phasing out coal as a fuel, while systems running on oil are subject to increasingly more stringent regulations and restrictions.

The use of renewable energy sources prepares asphalt mixing plants for the future and decreases the dependence on conventional, i.e. fossil energy sources.

03 Environmentally friendly technology

When it comes to operating asphalt mixing plants in the most environmentally friendly and sustainable way possible, burner technology combined with fuel choice offers the greatest potential.

These were all good reasons for BENNINGHOVEN to further develop the EVO JET multi-fuel burner for another, more promising fuel such as biomass to liquid (BtL). This biofuel can be produced from plant waste such as straw and wood or from energy plants such as maize and oilseed rape.

When it comes to modernising existing systems and optimising them economically and ecologically, the EVO JET burner is therefore the number one choice as a retrofit solution.



BENNINGHOVEN
SUSTAINABILITY



THE BTL PRINCIPLE

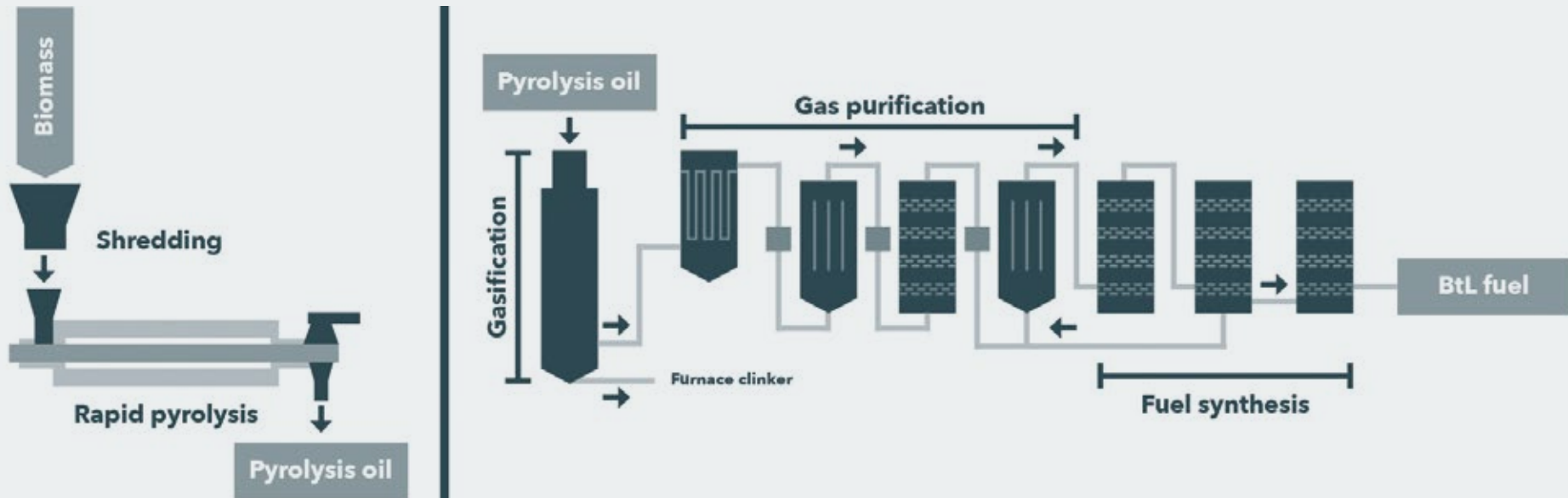
Energy from biomass

04 Process example: from wood to fuel

The principle of producing BtL fuels is based on liquefying biomass.

In the case of wood as a starting material, thermo-chemical conversion processes in a reactor use high temperature and high pressure to turn the cellulose-rich wood into pyrolysis oil.

The further processing steps are cleaning, synthesis and refining of the pyrolysis oil to produce BtL fuels.



Decentralized

Centralized

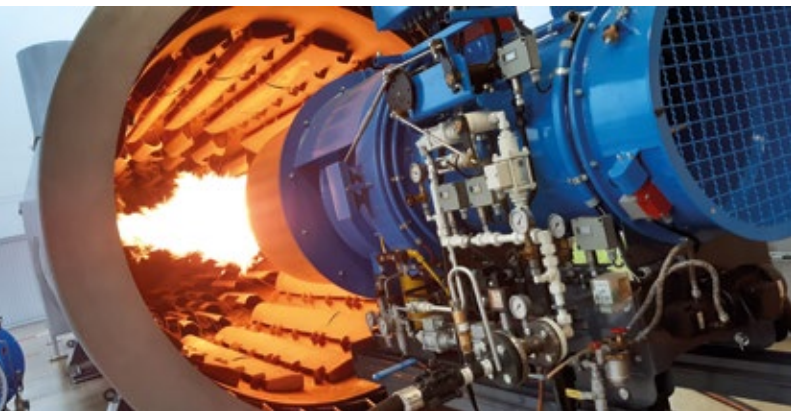
BURNER TEST RIG

For safe and reliable performance

05 Customer-specific burner settings on the burner test rig

For wood or wood waste as a starting product, the challenge lies in the processing of the natural material that can vary greatly in its chemical composition. These fluctuations affect the final BtL product. Smaller fluctuations can be compensated by adapting the preheating temperature. Larger fluctuations or fuel changes, however, require adjustments on site.

Customers therefore send their heating medium to Wittlich in a stainless steel container so the correct basic parameters for the burner can be determined at the BENNINGHOVEN factory for new fuels. The fuel is tested extensively and the optimum burner settings are identified.



06 Main container, BtL test periphery

- > BtL container as a supplement to the burner test rig, primarily for function tests and presets for the burners before delivery
- > In addition, it is used for testing new developments as part of the further development process.

- 01. Output to the burner
- 02. High-pressure pump
- 03. Supply pump
- 04. Final pre-heater
- 05. Collection trays
- 06. Control cabinets
- 07. Intake line
- 08. IBC transport tank
- 09. 20-foot container



BENNINGHOVEN



BENNINGHOVEN
Branch of Wirtgen Mineral
Technologies GmbH

Benninghovenstraße 1
54516 Wittlich
Germany

T: +49 6571 6978 0
M: info@benninghoven.com

 www.benninghoven.com