



REDUCTION IN EMISSIONS BY 40 PER CENT FOR THE SAME POWER

DDG-LN burner for modernized power plant: Paper producer UPM in Schongau (Germany) for its own supply and that of the region

The UPM site in Schongau, near Munich, is one of the largest paper production sites worldwide with a production capacity of up to 750,000 tons of paper per year. A power plant provides the energy required for the factory and also supplies the surrounding region. Good reasons for making the factory fit for the future through efficient modernization.

A COMPLETE SYSTEM FROM A SINGLE SOURCE

A total of eight DDG-LN burners were installed on two water-tube boilers. Other equipment includes: one economizer, coordinated gas valves and fittings and a powerful S7 control with PCS7 display for each. Unlike to the 250 mg/m³ NO_x emissions prior to the modernization, now the same level of power output is achieved for just 150 mg/m³ – and that is entirely without any secondary measures such as external flue gas recirculation.

THE SAACKE SOLUTION IN DETAIL

The DDG-LN is an advanced development of the proven SAACKE steam-assisted pressure jet technology, which externally offers an impressively rugged exterior, but internally also sets very high

KEY FACTS

UPM Schongau

Paper industry,
Utility company

DDG-LN burner

» *The project was handled extremely professionally and the team from SAACKE did everything possible given the short timeframe. And of course we are more than satisfied with the capacity of the plant now.* «

Rainer Häring – Project Manager UPM Schongau



TASK

Energy-efficient and low-emission modernization of a power plant for industrial and regional power supply. Consistent adherence to the limit value of 150 mg/m³ NO_x.

SOLUTION

Eight SAACKE Low-Nox burners with graded combustion including economizer, gas valves and fittings, high-performance S7 control and PCS7 display.

standards. Multiple staged combustion allows extremely low NO_x values: The fuel, natural gas is divided into primary and secondary sub-streams, which can be controlled together or alternatively independent of one another. Optimized, internal flue gas recirculation ensures a low-emission combustion reaction. The swirl-stabilized primary area is responsible for producing a very stable flame.

SAACKE was also responsible for designing and implementing the firing concept and fuel-air compound control. The combustion air is supplied through a joint fan for all burners and preheated by a heat exchanger, before the correct quantity is then stopped by a fan inlet vane controller. This is how the SAACKE solution generates the optimum conditions. Its simple modular construction also allows very short project turnaround times from award of the contract to commissioning. Due to the high control range and efficient combustion technology of the DDG-LN, the ideal cost-benefit ratio can be achieved – which benefits the environment as well as the operator.

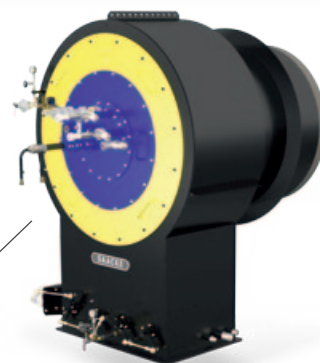
THE MULTI-TALENTED DDZG

The DDG-LN is a component of the subsequently developed DDZG burner series, which is suitable for a variety of custom solutions:

- Standard fuels and almost any special fuel
- Simultaneous combustion of gases and liquids in any combination (gas/gas, liquid/liquid, gas/liquid)
- Variants for use in potentially explosive atmospheres

CONCLUSION

Quick and tailored solutions of exceptional “Made in Bremen” product quality are a given with the DDZG-series from SAACKE. This is equally true of the installation and commissioning, as well as its convenient operation and efficient heat supply with the lowest possible NO_x values.



DDG-LN 450

Key technical data

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|---------------------------------|---|
| Application | Water-tube boiler, very narrow clearance between burner rows |
| Burner type | 8 x DDG-LN 450 |
| Boiler steam output | each with 123 t/h |
| Total firing rate | each with 105 MW |
| Fuel | Natural gas |
| Peripherals | Display, gas valves and fittings, economizer |
| Control range | 1:4 |
| NO_x-emissions | Safely under 150 mg/m ³ (based on 3% O ₂) without secondary measures |
| Design | Internal gas grading, single-entry air with moderate pressure loss |

ADVANTAGES AT A GLANCE

- Consistent adherence to the limit value of 150 mg/m³ NO_x (without secondary measures, with preheated air (200°C) and refractory at the furnace bottom)
- Highly efficient combustion technology with fuel grading
- Convenient operation and maximum availability
- Smooth project management and fast order tracking
- Extremely durable and easy to maintain

