



E-BOILER SOLUTIONS

There has been a tremendous growth in the use of renewable energy worldwide. Renewable energy is no longer a buzz word but has led to new opportunities that evolve around balancing environmental benefits and economic competitiveness. To maximize return-on-investment, you strive for maximizing energy-efficiency against the lowest production costs, while complying with regulations and improving safety performance.

CHALLENGES

A smooth energy transition sets new requirements for boiler plants and energy consumers. High contributions of wind and solar energy will increasingly disturb the electricity market and introduce more volatility in the energy supply. Unpredictable (over)production sets a basis for electricity storage and flexibility techniques. At the same time the energy transition requires you to rethink your energy usage and sources, forcing you to make tradeoffs between security of supply, flexibility and costs.

FULL PROJECT MANAGEMENT - COMPLETE UNBURDENING

Are you considering E-boilers but struggling with the business cases and project development?

We can help you develop a robust investment strategy and improve your business cases with energy flexibility and smart operation of the E-boiler. Our support can vary from feasibility studies to turnkey retrofit projects, including engineering, procurement, on-site construction and commissioning.

Zeta E-boilers – A collaboration that works

Stork is your partner in the UK, Netherlands and Belgium for the implementation of Zeta E-boilers. Zeta is a world leader with an installed base of more than 1000 E-boilers, the World's largest E-Boiler (67MW) and the World's largest E-Boiler Plant (150MW). Multiple references in the Power Industry, Nuclear Power Plants, District Heating, Paper, Food and Chemical Industry endorse this leading position.

Stork Hybrid E-boiler solutions

For large-scale heat or steam consumers, Stork developed a patented unique hybrid boiler concept that accommodates the flexible operation of E-boilers and reduces operational costs (OPEX). This hybrid demand-response technique makes use of the volatility in large-scale electricity production. When electricity prices decline, the hybrid boiler system will instantly switch from traditional to electrical heating.

PRODUCT INFORMATION

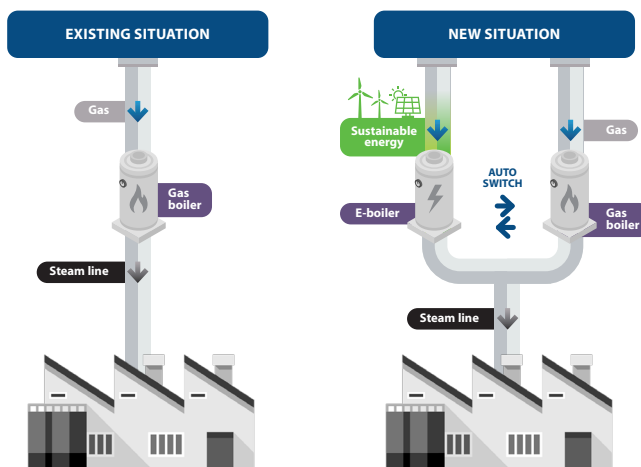
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ZETA E-BOILER

The Zeta E-boiler is made in two basic designs: one is for steam production in industries and power plants, the other is for hot water production in heating plants and hot water networks. The Zeta boiler from Zander & Ingeström transforms electricity to steam or heat that can be utilized in district heating networks and industrial processes. This is a technical solution that, among others, appeals to the power and process industries. The Zeta boiler can replace all steam and hot water boilers powered by oil, coal and other fossil fuels. In other words, a Zeta boiler is a farsighted investment in a cleaner environment.

WHY E-BOILER SOLUTIONS

- Reduce CO₂ emissions by up to 50%
- Proven technology, low maintenance and easy install
- Instant access to hot water
- Save up to 10% on energy costs
- No air supply, flue gas outlet and gas connection required
- A smart boiler can handle heating and energy consumption in a smart way
- 99% energy efficiency, resulting in low electricity consumption



STORK HYBRID SOLUTIONS

For large scale heat or steam consumers Stork developed a unique hybrid boiler that accommodates the flexibility demand and reduces costs. Our patented hybrid boiler uses both traditional fuels and electricity as energy sources for the generation of heat and can instantaneously switch over from one source to the other.

The ultra-rapid response time is one of the key successes for proper integration in any system. Simultaneously the hybrid boiler enables you to replace large amounts of fossil fuels by renewable electricity, adding to your sustainability goals and reducing your CO₂ footprint. The hybrid boiler is suitable for multiple processes and offers profitable business cases, whether you are in district heating, steam production, food, paper or chemical industries. The payback time depends on obtaining subsidies and the development of the imbalance in the electricity market; payback within 3-5 years is feasible.



Traditional boiler	
Speed:	Rapid
Response time:	<900 sec
Heat:	Up to 500°C
Pressure:	Up to 50 bara
Turndown:	1:10
Technique:	Gaseous and liquid fuel combustion

Hybrid boiler	
Speed:	Ultra rapid
Response time:	<10 sec
Heat:	Up to 500°C
Pressure:	Up to 50 bara
Turndown:	5-50 MWe per unit
Technique:	Combustion + Electrode

ABOUT STORK

Stork is a global operations, maintenance and modifications provider. To accommodate the energy transition Stork designs, builds and services state-of-art clean energy plants converting biomass, fuels, waste streams and biofuels into heat and power.

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