

BABCOCK & WILCOX VØLUND  
PRESENTS

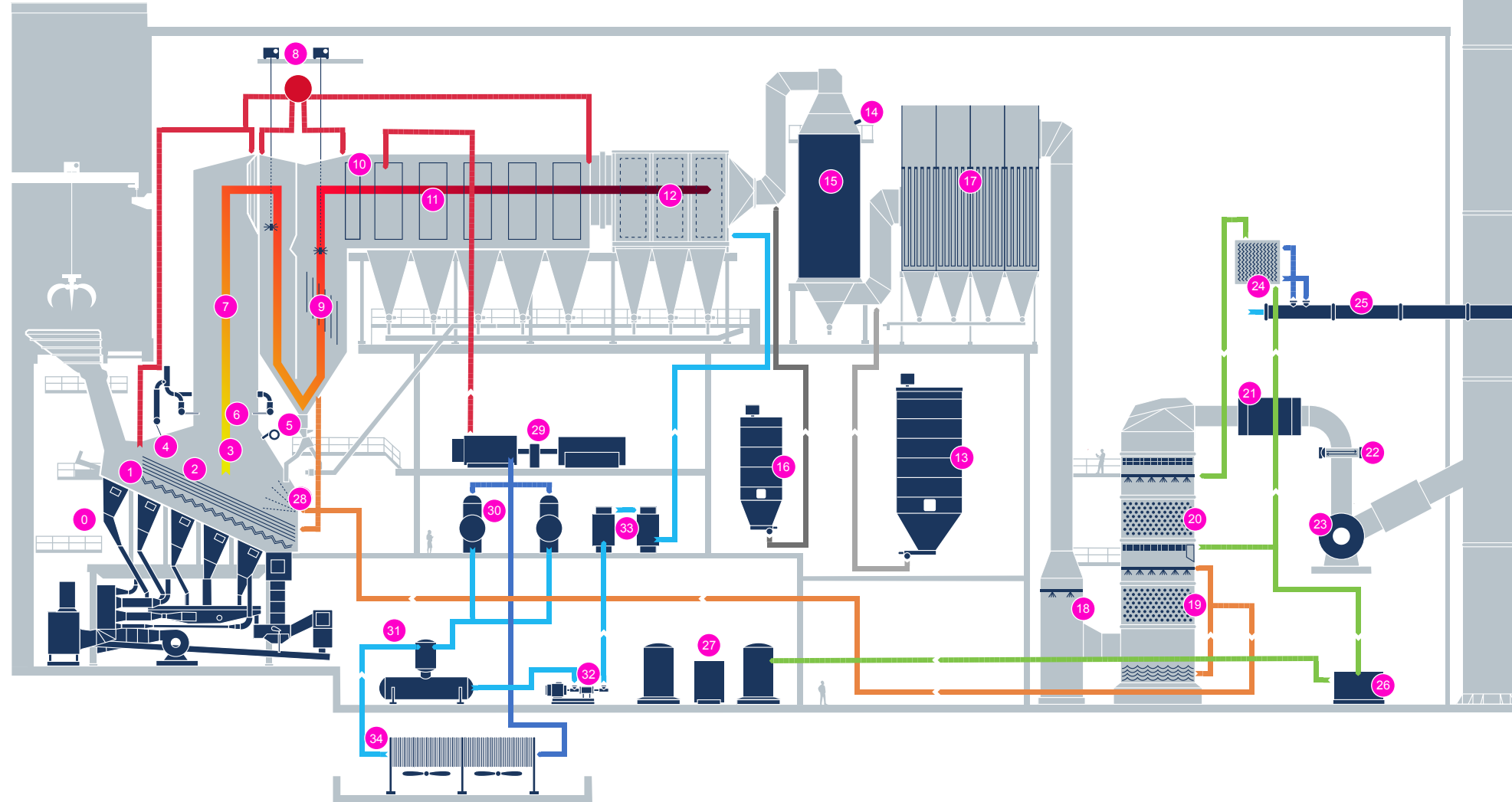
# NextBAT®

The next generation of Best Available Technology standards (BAT) will be presented in the coming update of the Waste Incineration BREF. The revised BREF will set new and higher standards for waste-to-energy plants in terms of higher efficiency and lower emissions.

NextBAT® is the B&W Vølund solution to the next generation of Best Available Technology. B&W Vølund has a long tradition of focusing on high efficiency and low emissions, and together, we have a solution for future waste-to-energy plants.

# NextBAT® – FROM CRANE TO STACK

The B&W Vølund solution to the next generation of Best Available Technology



- 0 Ash conveyor
- 1 Water-cooled DynaGrate®
- 2 Separately cooled wear zone in furnace
- 3 Combustion chamber with Inconel® clad walls
- 4 Ignition control with air
- 5 Advanced flame front control
- 6 VoluMix™ zone in 1<sup>st</sup> pass
- 7 Inconel clad 1<sup>st</sup> and 2<sup>nd</sup> boiler pass
- 8 On-line boiler washing system
- 9 Integrated baffle walls in 3<sup>rd</sup> pass
- 10 Evaporator section
- 11 Superheater sections
- 12 Economizer sections
- 13 Silo for lime
- 14 Water injection
- 15 Conditioning tower
- 16 Silo for powdered activated carbon (PAC)
- 17 Fabric filter baghouse
- 18 Quenching
- 19 Polishing scrubber stage with ADIOX® packing
- 20 Energy recovery stage with ADIOX® packing
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- 24 Heat exchanger in energy recovery stage
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- 27 Waste water treatment
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- 30 Condenser
- 31 Deaerator/feed water tank
- 32 Feed pump
- 33 Feed water heat exchangers
- 34 Air-cooled condenser

## Higher plant efficiency with NextBAT®

A waste-to-energy plant's level of efficiency in recovering energy from waste is measured by the R1 formula. High overall energy efficiency ensures maximum substitution of fossil fuels and thereby reduces the impact of greenhouse gases (GHG). NextBAT® ensures that plant owners achieve a high R1 rate because of our unique technologies:

- DynaGrate® is the most advanced grate on the market renowned for its maximum burnout.
- Water-cooled wear zone minimizes slag accumulation in the combustion zone.
- Inconel® in furnace walls provides high protection against corrosion.
- ACC (Advanced Combustion Control) maintains a stable combustion process by controlling the coefficient of resistance and combustion air.
- CFD simulation is an effective method for achieving the most efficient design and heat transfer in the boiler.
- RESOX™ is a unique technology for decreasing the corrosion rate for superheaters or for allowing higher steam temperature, thereby increasing the electricity production.
- The flue gas condenser recovers an additional 20–25% of energy by condensing the water vapour.

## Unique and reliable technologies that bring several environmental benefits:

- **ADIOX®** is a widely recognized method to remove dioxins and prevent memory effect.
- **MERCOX™** removes mercury, primarily at plants with a high level of metallic mercury in the flue gas.
- **Multistage scrubber** – a compact and highly effective wet flue gas treatment system.
- **VoluMix™** forms a complete burnout in the gas phase by injecting secondary air into the combustion zone.
- **Flue gas condensation** – separated or integrated in multiscrubber for enhanced energy recovery.

NextBAT, ADIOX, MERCOX, VoluMix, CUTNOX and RESOX are trademarks of Babcock & Wilcox Volund A/S.

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SP201-101

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