



The global energy landscape is changing

The push towards alternative energy sources is in full swing: green electricity, green hydrogen and synthetic fuels will replace fossil fuels worldwide.

What needs to be done during this time if a thermal oxidation system is to be introduced? What should be done with existing plants? Should they be converted to new fuels, or should an electric, flameless technology be chosen?

Green hydrogen

Using green hydrogen instead of natural gas is a reliable way to move away from using fossil fuels for thermal equipment altogether. Tests carried out at a regenerative oxidiser have shown that this is also very feasible in existing plants and leads to very positive results.

But only if the hydrogen has been produced sustainably and all tasks regarding availability have been clarified, does the use of hydrogen make sense with regard to the reduced CO₂ footprint.



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Electrical heating of exhaust air treatment units originally designed to operate with a burner can be very daunting: The connected loads for the power supply are large, the warm-up times are long, the temperature control in the combustion chambers is slower to respond, which is very problematic when VOC concentrations change.

The heating elements have to reach very high surface temperatures, which can lead to an increase in NO_x emissions. Due to the high surface temperatures, the heating elements are exposed to high thermal loads and need frequent maintenance. For each maintenance, the complete system must be cooled down and warmed up again afterwards.

In systems that are specifically designed for electrical heating, such as an E-RTO, the disadvantage is mainly the 2-chamber design and also the high cost of replacing the heating elements, which have a high probability of failure when VOC concentrations vary greatly.

All this has to be considered in conjunction with the rising cost of electricity. As with hydrogen, the only advantage in terms of CO₂ reduction is the use of electricity generated from renewable sources.