

# Oxyfuel combustion of waste streams with oxygen from electrolysis and Analysis of utilization paths of captured CO<sub>2</sub> with H<sub>2</sub> (Short title: WOxyfuel)

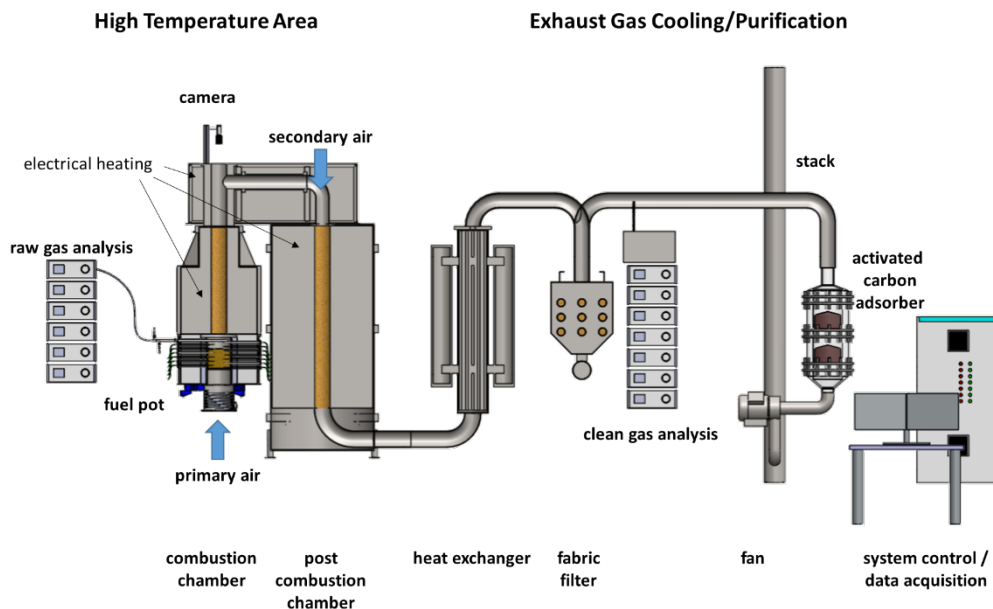
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## Project partners:

- University of Stuttgart, Institute of Combustion and Power Plant Technology (IFK) (*Project management*)
- Karlsruhe Institute of Technology (KIT), Institute for Technical Chemistry (ITC)

The introduction of oxyfuel combustion technology in waste incineration can enable, among other topics, more efficient CO<sub>2</sub> capture. Oxyfuel combustion uses a mixture of O<sub>2</sub> and CO<sub>2</sub>, such as recycled flue gas, instead of air. In addition to a more concentrated CO<sub>2</sub> material flow in the flue gas, ash qualities can be optimized and slagging/corrosion behaviour should be influenced depending on the combustion conditions in the system. The heat transfer in the boiler is also optimized by the CO<sub>2</sub> increase in the flue gas.



This project is a cooperation between IFK and ITC and aims to determine whether oxyfuel technology is suitable as a resource saving and energy efficient solution for grate firing systems. Therefore, tests will initially be carried out on a smaller scale at the ITC's laboratory plant KLEAA (see figure above). The results are then transferred to a pilot plant with a moving grate (ROFEA) at the IFK. Finally, the project will enable an economic study with a process simulation based on the experimental data as well as reference measurements in a waste incineration plant.

<https://dv-verbrennungsforschung.online/projekte/oxyfuel-waste-h2/>

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