Zürcher Hochschule
für Angewandte Wissenschaften

School of
Engineering

IEFE Institut für Energiesysteme
und Fluid-Engineering

SCHMID
energy solutions

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Kommission für Technologie und Innovation KTI

„co-financed by KTI“

Energy optimisation of a wood-fired system

Initial conditions

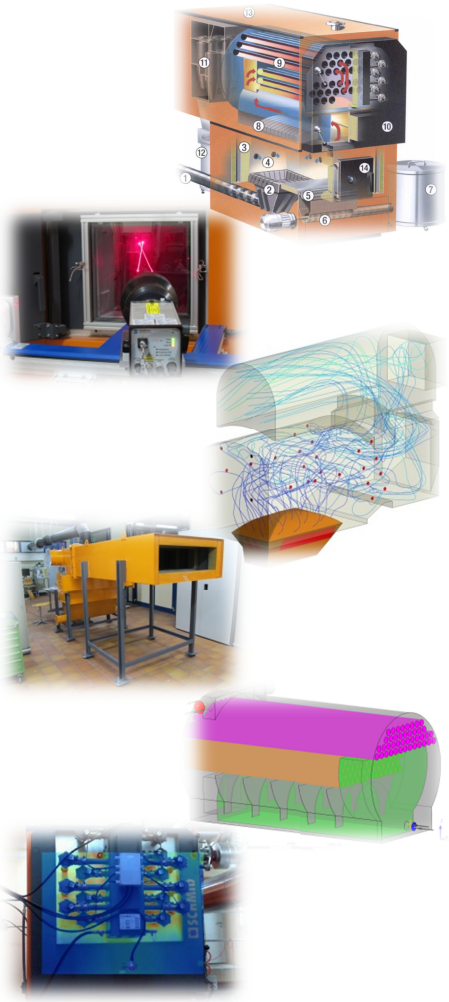
In the context of a 2-year project, which was in part funded by the Swiss Commission for Technology and Innovation (CTI), Schmid AG collaborated with the Institute for Energy Systems and Fluid Engineering (IEFE) of Zurich University of Applied Sciences (ZHAW) at Winterthur.

This project developed measures to increase the total effectiveness of the Schmid wood-firing systems type UTSR/K (550-900 kW). In particular, this was related to the optimisation of the secondary air flow in the combustion chamber, a new design of the multi-cyclonic particle separator, a revision of the hot water boiler for heat extraction, as well as a reduction of heat loss.

Results

Across the total project, total efficiency was increased by 2.3 % whereas the auxiliary energy consumption was lowered by 3 %.

Through various experimental tests, Schmid was able to test the suggested enhancement measures tested in real life. Practically all optimisations generated the desired and expected outcomes.



ZHAW School of Engineering
Technikumstrasse 9
8400 Winterthur
info@engineering.zhaw.ch
www.engineering.zhaw.ch

IEFE Institut für Energiesysteme
und Fluid-Engineering
Prof. Dr. Frank Tillenkamp
Technikumstrasse 9
8401 Winterthur
Telefon +41 58 934 73 61
frank.tillenkamp@zhaw.ch
www.iefe.zhaw.ch