Flue gas cooler

Project: Vattenfall, Uppsala Blok 5, Sweden - Installation of Danstoker Flue gas cooler for utilization of waste heat from incineration

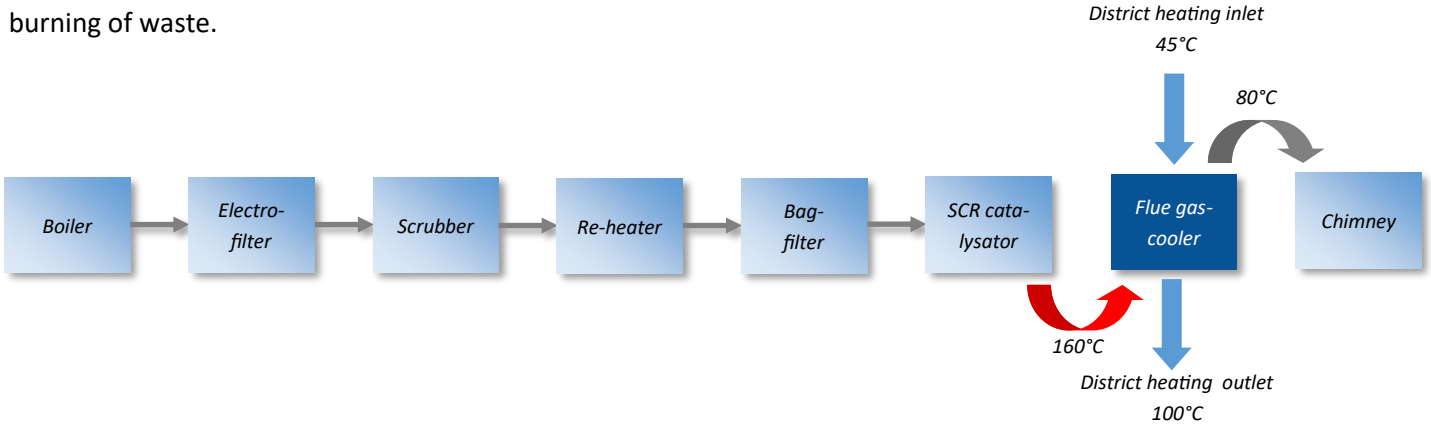
Process description

Flue gas after the incineration boiler goes through several cleaning steps consisting of scrubber, electro filter, bag filter and SCR (Selective Catalytic Reduction) for cleaning of the flue gas.

The flue gas is heated from 150°C to ca. 200°C after the last scrubber and before the bag filter (See illustration below) The flue gas after the SCR catalysator is 160°C and still contains a huge amount of energy.

Danstoker has designed, delivered og installed the fluegas cooler for utilization of the waste heat energy.

The flue gas cooler is designed with materials to resist the corrosive environment from burning of waste.



Utilization of waste heat

The energy in the flue gas after the catalysator is transferred to heating of district heating water. The flue gas is cooled from 160°C to 80°C and the district heating water is heated from 45°C to 100°C.

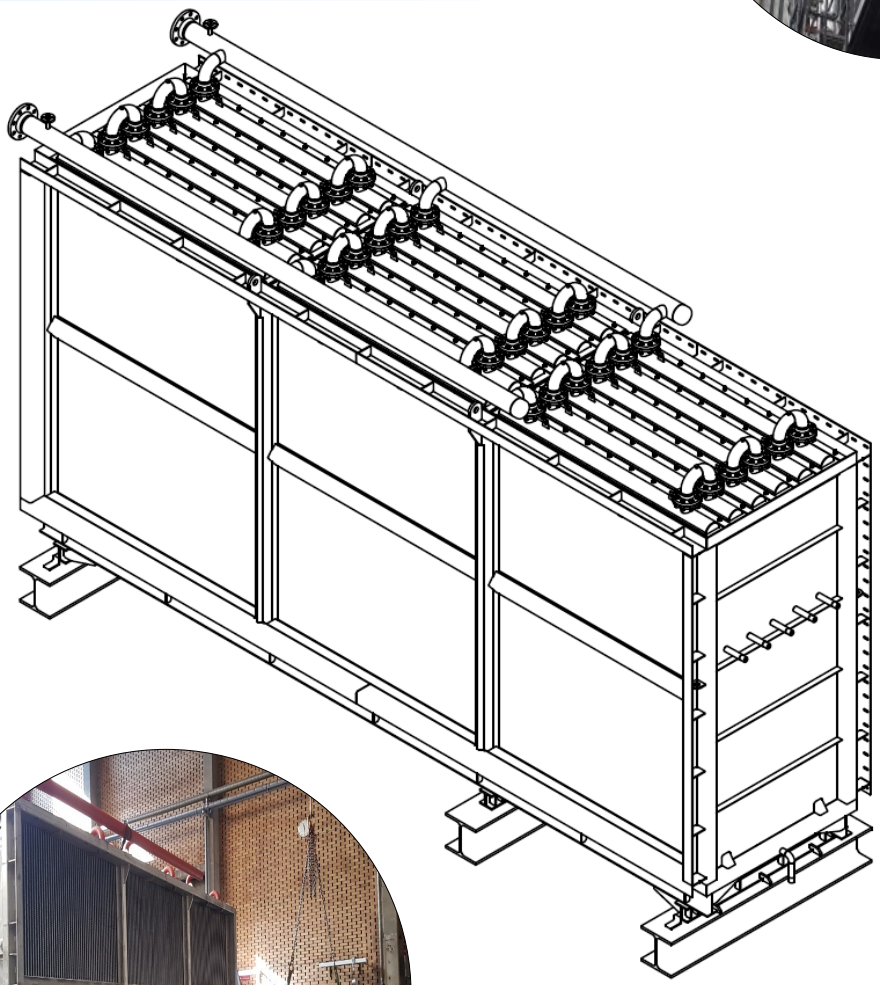
Yearly utilization of district heating:

- **900 household energy consumption**
- **5,5 MW utilization from waste heat**
- **Increased Efficiency**

Danstoker Flue gas cooler

The illustration shows the design of the flue gas cooler to utilization of waste heat.

Performance	**5.5 MW**
Fluegas flow	150.000 Nm^3/h
Fluegas flow	189.750 kg/h
Fluegas temp. inlet	155 °C
Fluegas temp. outlet	72 °C
Pressure drop	2.7 mbar
Water flow	80 m^3/h
Water temp. inlet	45 °C
Water temp. outlet	102 °C



Flue gas cooler in production

Element in production

Danstoker designs after clients require-ments.

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