

EXHAUST GASES HEAT RECOVERY APPLICATION IN COMBUSTION PROCESSES

There are numerous industrial processes that require combustion systems as an indispensable part of their production process. In many of them, exhaust gases are evacuated with a high temperature into the atmosphere, dissipating thermal energy which is susceptible of being converted into an energy vector with a higher added value such as electricity, by means of HRU technology.

In some cases, it is necessary to reduce the temperature of these exhaust gases in order to treat them later, through dilution processes, which represents an oversizing of the ducts and tail exhaust systems, as a higher flow than initially has to be conveyed.

Combustion gases from melting furnaces for different materials (steel, glass, aluminium) and thermal treatments, exhaust gases from boilers, gas turbines and internal combustion engines make up examples of processes in which, on most occasions, thermal energy is lost without being recovered.



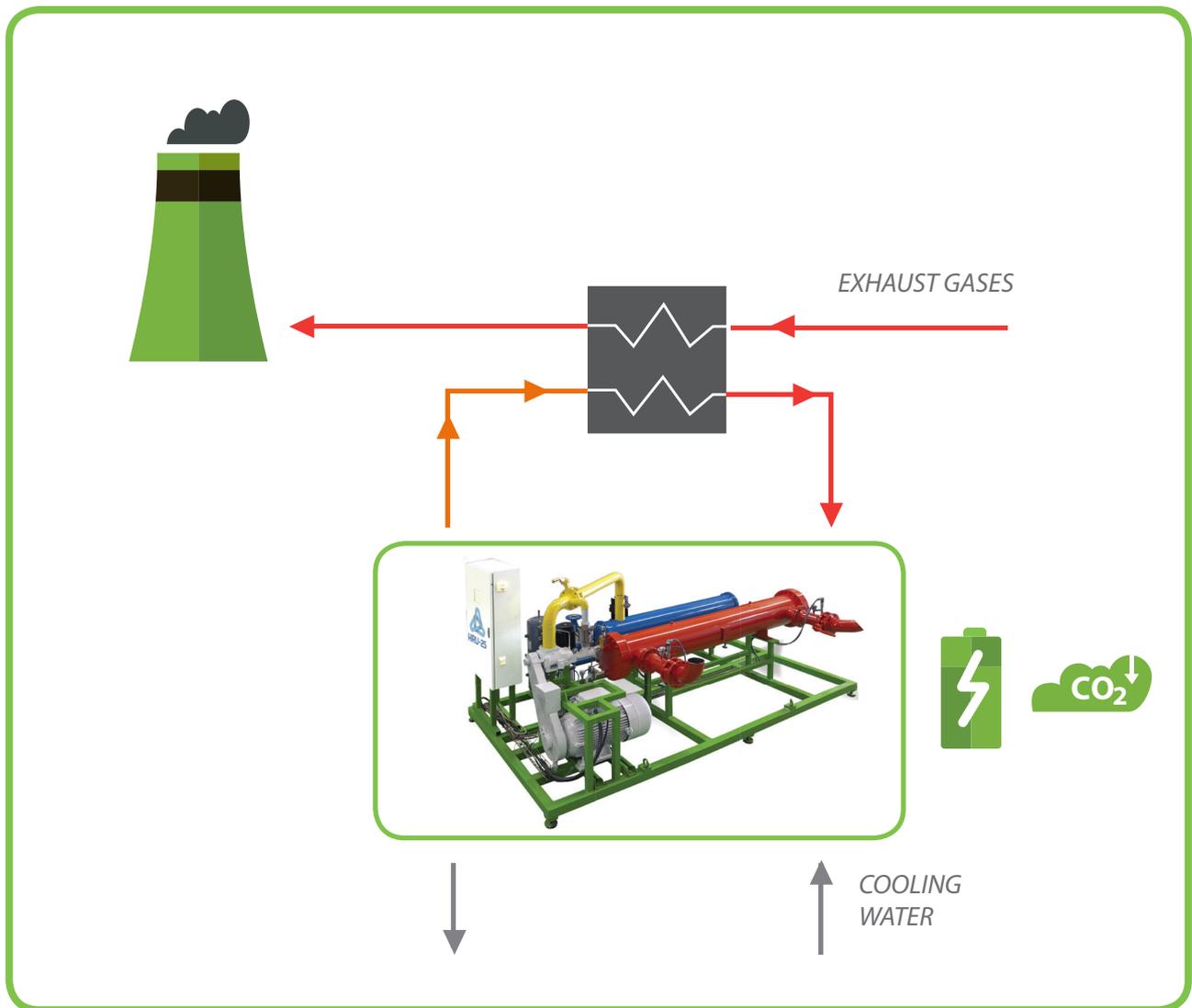
Through the installation of an exchange system through which the combustion fumes circulate, ENERBASQUE recovers thermal energy to produce hot water (or the fluid vector required according to the working conditions of the hot spot), which may be used for both the production of electricity through HRU technology or for the production of heating or heat for another process required in the plant.



According to the flow of gases and their temperature, the operation mode and thermal needs of the plant, we will design the most efficient solution possible to recover heat.

ENERBASQUE can quantify the thermal energy available and make the system the most suitable size for each client.

A diagram of a typical setup is shown below:



Cooling water may be available in plant or may be fitted by ENERBASQUE, with the possibility of opting for a more compact HRU machine design that includes an evaporative condenser instead of a tubular or plate condenser.