

## Cooling Clean Air Waste Heat Energy Recovery

# ERW

PROGETTI's Cooling Clean Air Waste Heat Energy Recovery can recover thermal energy which would normally be dispersed from the kilns, and transfer it to various energy consumers.

### Benefits

- Dramatic reduction of energy costs
- No effects on kiln function
- Suitable for all continuous kilns
- Ease of maintenance



Recovery unit



Recovery unit



Recovery unit

### Versions

- Indirect recovery
  - A.** Energy is transferred to a thermal plant.
  - B.** Energy is transferred directly to energy consumers
- Direct recovery
  - C.** Air is transferred directly to energy consumers

### Operation

- Indirect recovery system

It is a unit equipped with an air/overheated-water exchanger with static intake on the stack. The losses of the recovery unit, the static pressure of the kiln, and the dynamic forces of the stack are neutralized by an automatic ventilation system.

Version **A**: the water is transferred to a thermal unit that provides efficient distribution to the various energy consumers.

Version **B**: the water is directly transferred to energy consumers.

- Direct recovery system

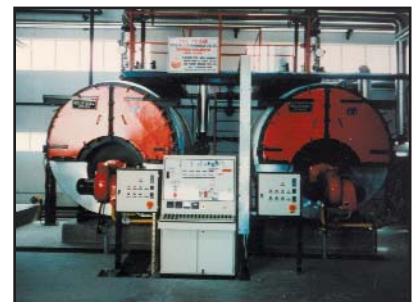
Version **C**: the hot air is transferred directly to energy consumers (see limitations below).

### Automatic control system

The control system through modulating dampers, actuators and PIDs automatically regulate the energy transferred to energy consumers depending on their specific demands.

### Uses

- Indirect recovery system
  - The overheated water produced can be transferred through small diameter pipes with high efficiency and quite easily to any energy consumer:
    - Static and continuous ware dryers
    - Moulds dryers
    - Ware finishing tunnels
    - Mould recovery tunnels
    - Casting hall conditioning systems
    - Slip heating, ambient heating, sanitary water production



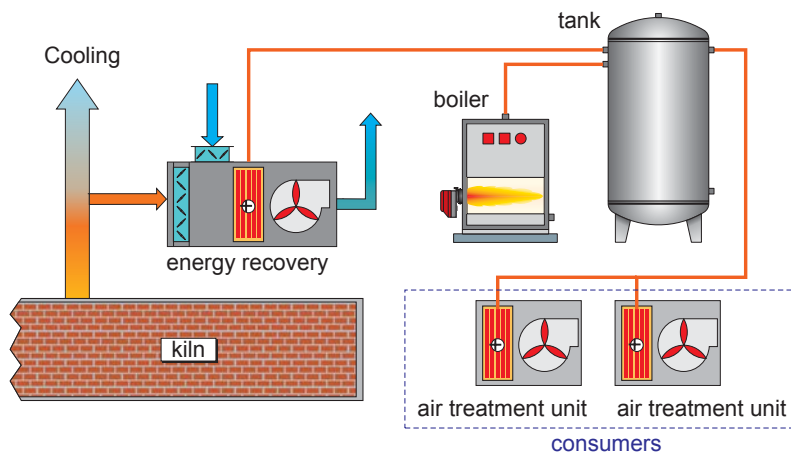
Thermal plant

- Direct recovery system

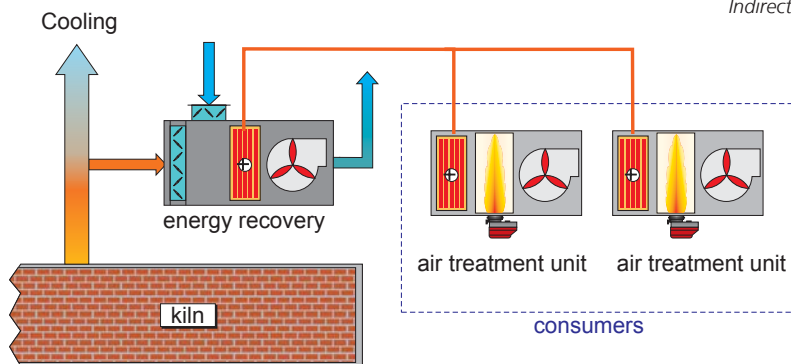
The hot air from the cooling stack can be transferred to the energy consumers with the following limitations:

- Static ware dryers (usable only after the contraction phase)
- Continuous ware dryers (usable on final sectors after the contraction phase)
- Mould recovery tunnels
- Casting hall conditioning systems (usable with PROGETTI's automatic regulation system)
- Ambient heating

*Indirect recovery: version A*



*Indirect recovery: version B*



*Direct recovery: version C*

