



REFRESH, UPGRADE, PERFORM  
Kiln improvements

# RECOVERY SYSTEMS

SACMI for energy savings

Kilns can be equipped with various heat recovery systems that utilize the air used to cool the material as combustion air.



Optimized consumption  
management

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## ADVANTAGES

- Savings from 5 to 10%, depending on the adopted system type
- Simple installation



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# RECOVERY SYSTEMS

## Technical features

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**SPR (super-heated combustion air):** the system involves splitting the chimneys that collect the Slow and Final Cooling air.

- In the chimney that expels the last fraction of the Final Cooling air, the temperature is around 60-70°C; this is free from chemical pollutants (fluorine, chlorine, etc.) and can be used directly for building heating purposes (with just one filtration step, if at all).
- The chimney that expels the last fraction of the Slow Cooling air, instead, contains air at a temperature of about 140-160°C. The combustion air fan draws the required flow from this chimney and, following the necessary filtration, sends it to the heat exchanger placed in the Rapid Cooling zone.

Even with use of hot air, cooling efficiency is maintained by modifying heat exchanger geometry accordingly. The heat exchanger outlet could deliver air at a temperature of approximately 220°C, significantly reducing fuel consumption.

**MDR (medium-heated combustion air):** air collected from the Slow and Final Cooling zones and evacuated from the chimney at a temperature of 100-120°C is intercepted, sent to the Rapid Cooling Zone heat exchanger and then used as combustion air at a temperature of about 150°C.

**BSR (low-heated combustion air):** air drawn from outside passes through a BSR heat exchanger in the Rapid Cooling zone before being sent to the burners at a temperature of about 90°C. By subtracting heat from the Rapid Cooling (RR) zone, the exchanger also reduces the volumes needed to cool the material.