

RECP Best Practice Catalogue

Reduction of surface steam and heat loss
Developed within the framework of MED TEST II



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is
funded by the European Union

Best Practice - Reduction of surface steam and heat loss

SECTOR:	Food & Beverage
SUBSECTOR:	Bakery and farinaceous products
PRODUCTS	Couscous (fine and medium), short pasta (small pellets, Tlitli, elbows of different sizes, vermicelli, macaroni, bird tongue, snail).
CATEGORY	Good Housekeeping
APPLICABILITY	Utilities
COMPANY SIZE	147 employees



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Description of the problem (Base scenario):

There is a lack of thermal insulation on the steam lines, valves, flanges and collectors; and steam leakage on the steam distribution network has also been noted. The temperature of their external surface reaches 120 °C which constitutes energy losses estimated at 2% compared to a total annual consumption of natural gas used in the steam boiler, which is 1,637,233 m³/year.

Description of the Solution

Insulation and elimination of steam leaks for the entire steam distribution network.
Specifically this means the thermal insulation of 2 valves, 2 flanges, 2 collectors and the renovation of 2 regulators, sources of steam leaks, as well as the thermal insulation of 20 m of steam pipes, from the boiler room to facilities.



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Economic Benefits	<p>with an annual natural gas consumption of 1,637,233 m³/year and an NCV (net calorific value) gas average of 9,000 kcal/m³, to obtain a 2% reduction in energy consumption following thermal insulation of the network steam, the energy gain will be around 320 MWh/year. The financial benefit is 690 €/year.</p>
Environmental Benefits	<p>Energy savings of 320 MWh/year. With an emission factor of 0.00021 tons of CO₂e/KWh for natural gas, there will be a reduction of GHG emissions of 67 tons of CO₂e/year</p>
Health and safety impact	<p>There will be a positive impact because of reduced risk of burns by contact with hot surfaces or steam</p>



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Capital investments & financial indicators	Cost: 1,500 € Return on investment: 2.2 years
Suppliers	Local providers
Other aspects	No technical barriers, no negative impact on product quality
Implementation	



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