

# RECP Best Practice Catalogue

*Substitution of the boiler's diesel fuel by  
natural gas*

*Developed within the framework of MED TEST II*



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is  
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# Best Practice - Substitution of the boiler's diesel fuel by natural gas

<b>SECTOR:</b>	<b>Food &amp; Beverage</b>
<b>SUBSECTOR:</b>	Manufacture of beverages
<b>PRODUCTS</b>	Carbonated and still mineral waters in 25 cl and 100 cl glass packaging, and in PET bottles, 50 cl, 100 cl, 200 cl and 500 cl. Flavoured mineral water and soda in 25 cl glass and 100 cl PET packaging.
<b>CATEGORY</b>	Technology upgrade/Eco-innovation
<b>APPLICABILITY</b>	Utilities

<b>COMPANY SIZE</b>	400 employees
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## Description of the Problem (Base Scenario):

The company uses diesel fuel for the operation of the boiler. The annual fuel oil consumption is 527,850 kg. This situation requires a regular supply of diesel fuel, by tank truck, and its on-site storage. However, the company is connected to the natural gas network that it uses for the operation of the CO<sub>2</sub> production unit which is an input for the production of mineral water and soft drinks.

## Description of the Solution

The improvement measure consists of substituting the boiler's diesel fuel with natural gas. This requires the replacement of the current boiler burner with a natural gas/gas oil burner, connecting the boiler to the internal natural gas network and increasing the contractual capacity of the natural gas (flow dedicated to company) provided by the utility provider at 10,000,000 kcal/hour to meet the new need of the unit.



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**Economic Benefits**      The current price of natural gas is on average 0.022 €/m<sup>3</sup>, while for diesel fuel, it is, on average, 0.15 €/litre. For the same current thermal energy consumption of 5,958,918 KWh/year, the fuel change generates a financial savings of:  
56,358 €/year

**Environmental Benefits**      For an emission factor of 0.000202 tons of CO<sub>2</sub>/KWh for natural gas and 0.000267 tons of CO<sub>2</sub>/KWh for diesel fuel, and based on an average annual consumption of 5,958,918 KWh/year, the reduction of greenhouse gas emissions resulting from this substitution is 387 tons CO<sub>2</sub>/year. Reduction of the risk of soil pollution by diesel fuel during de-fueling and storage.

**Health and safety impact**      Not relevant



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<b>Capital investments &amp; financial indicators</b>	Cost: 18,750 € Return on investment: 0.33 year
<b>Suppliers</b>	Local provider
<b>Other aspects</b>	No technical barriers, no negative impact on product quality
<b>Implementation</b>	The action has been implemented.  This Best practice was not implemented in more companies



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