

MED TEST III Jordan

Transfer of Environmentally Sound Technologies

Food and beverage sector

Nestlé Waters

Company overview

Number of employees:
350 Full-time employees

Key products:
Bottled waters

Main markets:
Jordan and the West Bank

Standards & certifications before MED TEST III:
ISO9001, ISO14001, OHSAS 18001, ISO 450001

As one of the largest food and beverage companies in the world, Nestlé is represented in 191 countries around the world with different branches. Nestlé Waters factory in Jordan was established in 1999 through a joint venture with an existing factory that had started in 1982 under name of "Ghadeer". Today, Nestlé continues producing under the brand "Nestlé Pure Life", and the company has 350 full-time employees and produces several sizes of bottled water with the highest standard and best quality, including other Nestlé's products.

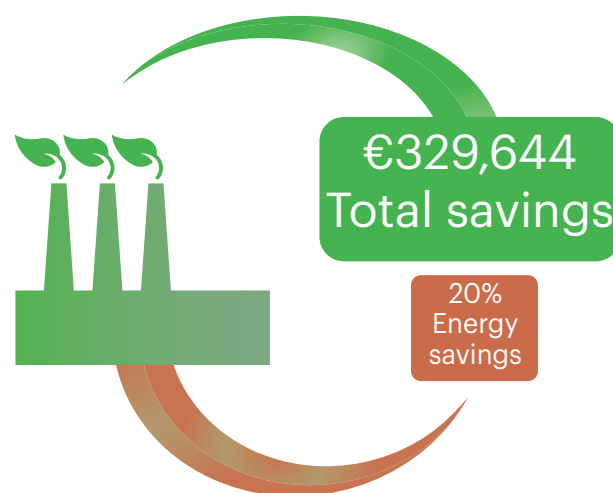
Benefits

The MED TEST III project identified total annual savings of 329,644 Euro* (247,233 JOD) in energy and packaging materials with an estimated investment of 430,333 Euro* (322,750 JOD). The average payback period is 1.3 years.

The top management accepted 56% of the identified 16 saving measures which are already implemented or under implementation. 19% of the identified measures are retained for further study while the rest of measures are rejected.

Energy consumptions is expected to be reduced by 20%. Additionally, 9.24 tons of packaging materials and 251 tons of CO₂ are expected to be reduced annually from implementing the identified options.

Identified annual savings



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Our main target of participating in the MED TEST III project was to identify new opportunities for savings and to develop fresh eyes to assess and uncover hidden losses in our factory. As we are continuously looking for ways to enhance our team capacities, also to develop a sustainability mindset, the TEST methodology appeared particularly interesting to us.

Eng. Mohammed Issa
Safety, Health and Environment Manager

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As part of the EU-funded SwitchMed programme, UNIDO demonstrates in the MED TEST III project pathways for industries in the Southern Mediterranean to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

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Saving opportunities**

Actions	Economic key figures			Resource savings & Environmental impacts		
	Investment Euro*	Savings Euro* per year	Payback period years	Water & Materials per year	Energy MWh per year	Environmental impact per year
Savings in packaging materials	2,667	74,853	0.04	9.24 tons	-	251 tons of CO ₂ 9.24 tons of solid waste
Energy conservation in the compressed air and cooling system	239,666	147,009	1.6	-	559.4	
Energy conservation in the retail lines	185,333	105,467	1.8	-	342.1	
Installation of power meters	2,667	2,315	1.2	-	24.8	
TOTAL	430,333	329,644	1.3	9.24 tons	926.3	

*Exchange rate 0.75 Jordanian Dinar (JOD) = 1 Euro
** Numbers based on production value from 2020

Savings in packaging material

Packaging material was found to be the second priority flow in the company which represents 39.1% of the total Non Product Outputs (NPO). Major losses were linked in the production of "5G water bottles." Accordingly, Nestlé Waters is currently redesigning the 5G gallons to produce a new mold, which is expected to reduce these losses. In addition, the losses of preform could be reduced by installing a tracking and monitoring system. It is also been recommended to use alternative biodegradable or recycled shrink material.

Energy conservation in the compressed air and cooling system

Energy was found to be the largest single cost center and the most important NPO representing 41.9% of the total NPOs in the company. Analysis showed that the utilities are the main energy consumers, specifically cooling systems and compressors. Several saving options were identified to reduce the energy consumption in these two systems such as:

- Install Variable Frequency Drive (VFD) compressors with bigger capacity to save energy and reduce maintenance.
- Standardize the settings i.e. to synchronize the compressors loading/unloading settings in steps aiming to reduce the loading/unloading frequencies that accordingly save energy.
- Eliminate the leaks, and reduce the pressure setting of compressors to align with the real demand.
- Insulation of chilled waters pipes and tanks.

Energy conservation in the retail lines

The retail line was the second biggest consumer of energy. In particular, for the heating processes in the preform oven and shrink oven machines some improvement and saving options were proposed, as follows:

- Using an Eco-Oven to preheat the preform before blowing. This new technology consists of new lamps that consumes less energy and uses ceramic reflectors instead of steel.
- Installing new ovens for shrinking.
- Fixing the leakages in the filler machine.
- Reducing blowing pressure in retail lines.

Installation of power meters

Around 30-35% of the factory loads are not measured. It is recommended to install new energy meters for these loads to monitor their consumption and 2% savings is expected once these loads are properly monitored and tracked.

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Working on the TEST methodology with the support of the external consultants, the RSS and the UNIDO team has added a great value to the factory and the TEST methodology was useful to identify saving opportunities and raise competencies of the factory team, which was the main target of participating in this project.

Eng. Mohammed Issa
Safety, Health and Environment Manager

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