

MED TEST III Lebanon

Transfer of Environmentally Sound Technologies

Food and beverages sector

Al Kanater s.a.l.

Company overview

Number of employees:

65 Full-time employees

Key products:

Under the Al Kanater brand the company produces hulled sesame seeds, Tahini (ground sesame seeds), Halawa (sesame candy) and Raha (Loukoum / Turkish delight).

Main markets:

Local (10%), International (90%)

Standards & certifications before MED TEST III:

ISO 9001:2015, ISO 22000: 2005, FSSC ISO 22002-1:2009 and ISO 22005:2007

Al-Kanater s.a.l. is a family-owned business established in 1977 and specialized in producing traditional and natural food products such as Tahini and Halawa known as sesame candy. It is one of the leading manufacturers of Tahini in Lebanon, with an annual production of around 5,000 tons per year.

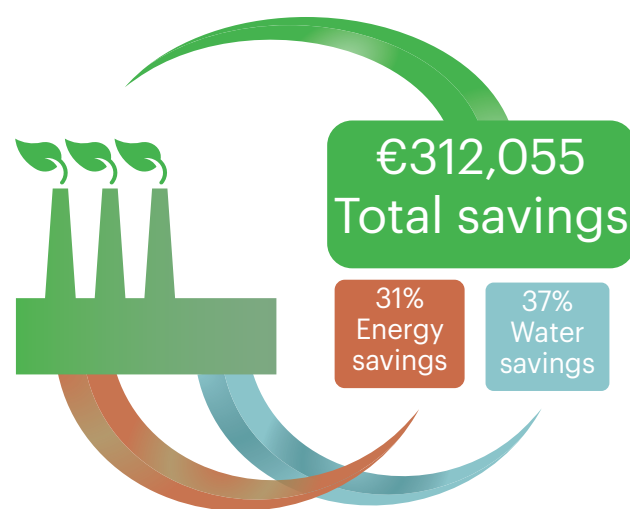
The company's vision is to achieve market leadership in each of the markets it serves by providing its distributors and consumers with high-quality, safe products produced under strict hygienic conditions, with top-notch technology, using high-end raw materials and an experienced team of professionals while reducing to a minimum the environmental impacts resulting from its activities. Al-Kanater strives to reduce resource consumption and costs and promote the long-term environmental and financial sustainability of its operations.

Benefits

The MED TEST III project identified total annual savings of 312,055 Euro* in energy and water with an estimated investment of 429,795 Euro*. The average payback period is 1.4 years, and the top management accepted 85% of the identified 13 measures for implementation. Of the approved measures, 64% have already been implemented while the remaining 36% are planned for implementation in the coming three months.

Through the approved measures, water consumption will be reduced by 37% and total energy consumption (including electricity generated in situ and other thermal uses) by 31%. This is equivalent to a reduction of 895 tons of CO₂-eq per year and BOD₅ and COD by 487.5 tons/year.

Identified annual savings



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We decided to participate in the MED TEST III project to adopt sustainable production practices in our factory and reduce our production costs, increase productivity while lowering our environmental footprint.

Mireille Abou Naoum
Operations Director

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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
Water conservation and wastewater pollution load reduction	71,775	28,710	2.5	17,000 m ³ water	-	Total reduction of: 487.5 tons of waste 895 tons of CO ₂ -eq
Optimization of the production lines	91,872	97,857	1.7	-	1,137	
Good house keeping measures	33,591	117,125	0.3	-	1,339	
Improving boilers performance	17,226	19,087	0.9	-	222	
Renewable energy	215,332	49,275	3.6	-	195	
TOTAL	429,795	312,055	1.1	17,000 m³ water	2,847	

* Using average exchange rate February 2022-February 2023 1 USD=0.957 Euro

**Numbers based on the production value: August 2021-July 2022

Water conservation and wastewater pollution load reduction

By introducing retention tanks at the sesame peeling stage with appropriate holding times, around 75% of the water used in sesame peeling would be recovered and reused in the sesame washing stage after appropriate treatment. The measure would also enable the recovery of around 75% of the sesame peels or hulls from wastewater, leading to a BOD₅ reduction of 487.5 tons/year and the possibility to recover this waste for other added-value alternatives such as animal feed, minimizing environmental impacts and opening new business opportunities.

Optimization of the production lines

Optimizations of the production lines involves replacing the inner surface of the stainless-steel roaster troughs with black steel and operating roasters at different and more appropriate pressure. The black steel troughs will ensure better heat transfer by radiation between the trough and the sesame seeds. This measure will reduce the physical contact between the sesame seeds and the troughs and lead to energy saving by 602 MWh/year. On the other hand, shell dryers are to be shut off when empty leading to additional energy savings and better working conditions for workers. Finally, the power factor is to be improved by installing correction capacitors at the different electrical distribution boards of sesame processing lines and at the main production board.

Good housekeeping measures

A number of good housekeeping measures have been identified, enabling the company to achieve good annual savings (Euro 117,125) at a low cost (Euro 33,591) and with a payback period of just 3.4 months. The identified measures comprise the insulation of dryers and boilers, fixing steam leaks from pipes and valves, cleaning and combing coils of all AC machines and providing a shading for the condenser on the roof.

For more information contact:



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Improving boilers performance

The boilers performance can be improved by optimizing the air-fuel ratio of the burners and by installing economizers at the exhaust of the 5T and 3T boilers. The company also has the potential to apply better control of boiler usage by tuning the operational unit to the actual production loads. This will result in an increase of the operational efficiency, considering that energy losses of the bigger boilers are much higher compared to the ones of the smaller ones. Furthermore, this measure will avoid the degradation of bigger boilers when operating at reduced load.

Renewable energy

Al Kanater can save around 44,000 liters of diesel per year and lower its electricity consumption by 11% by installing a 100 kWp PV system with a 5KWh UPS backup. The company decided to install a larger PV system of 185 kWp to cover the plant's energy needs in the future and looking at achieving self-reliance in the current country situation of energy scarcity. The system should be well synchronized with generator operation and possible installation of a fuel saver for maximum optimization.

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The MED TEST III project team helped us to realize the potential of resource-efficiency as a tool. The TEST methodology has proven to be useful to control our losses and reduce our impacts and is closely aligned with our safety management system. We are interested in continuing improving our environmental footprint, also now that Lebanese companies are generating their own electricity.

Mireille Abou Naoum
Operations Director

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