Nakheel Palestine for Agricultural Investment is an agro-industrial company located in Jericho since 2010. The company processes palm dates (mainly Medjool) in five different quality sizes. The company operates according to leading international standards, with ISO 22000, HALAL, GlobalGAP, and FSSC22000 certification. Senior management demonstrated a high level of commitment and engagement in participating in the MED-TEST II project for implementing the RECP approach in the production lines.

The MED-TEST II project identified four major energy saving projects that will generate a total savings of 27,855 euros, with an investment of 39,600 euros, and a payback period of 1.4 years. Currently, two projects are already implemented, and two other projects are to be implemented in 2018.

The most important benefit for the company was improving the control of material and energy flows and the related costs. The company welcomed the opportunity to quantify costs associated with specific inefficiencies and losses and confirmed that efficient use of energy is the area with the highest potential for improvement.

“Our main challenge was to reduce energy losses associated with cooling and freezing of our products. The MED TEST II project helped us to identify the best solutions and to address our challenges.”

Mustafa Hasan
General Manager
**Saving opportunities**

<table>
<thead>
<tr>
<th>Action</th>
<th>Economic key figures</th>
<th>Resource savings &amp; environmental impacts per year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investment</strong></td>
<td><strong>Savings</strong></td>
<td><strong>PBP</strong></td>
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<tr>
<td>euros</td>
<td>euros / yr.</td>
<td>years</td>
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<tr>
<td>Energy efficient LED lights system</td>
<td>7,000</td>
<td>5,000</td>
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<tr>
<td>Energy conservation</td>
<td>20,000</td>
<td>6,095</td>
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<tr>
<td>Optimization of defrosting and condensation control in freezers and refrigerators</td>
<td>4,200</td>
<td>9,760</td>
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<tr>
<td>Roofing of the refrigeration systems</td>
<td>8,400</td>
<td>7,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>39,600</strong></td>
<td><strong>27,855</strong></td>
</tr>
</tbody>
</table>

**Energy efficient LED lights system**
During the course of the project, inefficient fluorescent lamps have been replaced by energy saving LED tube lamps saving 42 MWh/year. The investment of 7,000 euros will be recovered within 1.4 years.

**Energy conservation**
A series of energy efficiency measures were identified and are currently being implemented, such as sealing of areas with specific temperature conditions, insulation of pipes, installation of air cutters, and purchase of a dehumidifier. These energy efficiency measures including preventive maintenance and good housekeeping will bring annual savings of around 6,095 euros, with a total investment of 20,000 euros. CO₂ emissions have been reduced by 46 t on an annual basis.

**Optimization of defrosting and condensation in freezers and refrigerators**
Energy savings associated with freezers and refrigerators were achieved by a combination of changing the time settings for defrosting and increasing the effectiveness of procedures for removing ice and condensation vapor inside units. More efficient defrosting operations resulted in saving more than 10% of the energy used for refrigerators and freezers. The reduction of CO₂ emissions was calculated at 95 t/year.

**Roofing of the refrigeration systems**
The company paid 8,400 euros for roofing the mechanical and electrical parts of the refrigeration systems at the new facility. As the company is situated in the Jericho area in the Dead Sea Valley, where it is exposed to very hot weather, annual energy savings correspond to 7,000 euros reducing 45 t/year in CO₂ emissions.

“The MED-TEST II project highlighted some problems in our energy consumption. The TEST approach and factory visits by experts helped us to identify these problems and to develop plans for improving operations and saving costs. The ability to constantly monitor material and energy costs has given us control over expenditure and losses, and this was one of the major lessons learned from the project.”

Mustafa Hasan
General Manager

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For more information, contact:

**United Nations Industrial Development Organization**
Department of Environment
Vienna International Centre, P.O. Box 300
1400 Vienna, Austria
Telephone: +43-1 26026-0, Fax: +43-1 26926-69
E-mail: c.gonzalez-mueller@unido.org
Web: www.unido.org

**Palestine Academy for Science and Technology (PALAST)**
Jerusalem Ramallah Road
Ramallah, Palestine
Tel: +9722 2960524/6 Fax: +9722 2960525
E-mail: ikhatib@palestineacademy.org
Web: www.palestineacademy.org