Air Conditioning & Hot Water Solutions
Energy Saving Case Studies from Hospitality Vertical market in Greece

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Mechanical Engineer, MSc in Energy
Depending on the design we can have a reduction in operation cost up to:

- 65% in air-conditioning
- 55% in hot water production
- 60% in lighting
High Temp Heat Pumps- Hot Water Solutions

1) Hot Water energy saving case study

Grecotel Lux Me Rhodos Hotel

- Oil Boiler replacement
- Hotel operation: May-Oct
- Target: To reduce the total operation cost for domestic hot water.

Energy consumption results

<table>
<thead>
<tr>
<th>Oil saving 2017-2019</th>
<th>Electricity add 2017-2019 (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-56.069lt</td>
<td>+288.755kWh</td>
</tr>
</tbody>
</table>

Cost  Energy saving
€32,716,00

51% Operation cost saving!!!
2) Hot Water energy saving case study

**Grecotel Cape Sounio Hotel**

- LPG Boiler replacement
- Hotel operation: May-Oct
- Target: To reduce the total operation cost for domestic hot water.

**Energy consumption results**

<table>
<thead>
<tr>
<th></th>
<th>LPG saving 2017-2019</th>
<th>Electricity add 2017-2019 (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPG saving</td>
<td>-146.275lt</td>
<td>+321.126kWh</td>
</tr>
<tr>
<td>Cost</td>
<td>€15.872.00</td>
<td></td>
</tr>
<tr>
<td>€0.35/ltr</td>
<td>-€51.196</td>
<td></td>
</tr>
<tr>
<td>€0.11/kWh</td>
<td>€35.324</td>
<td></td>
</tr>
</tbody>
</table>

31% Operation cost saving!!!
High Temp Heat Pumps- Hot Water Solutions

3) Hot Water energy saving case study

**Grecotel Casa Maroon Hotel**

- Oil Boiler replacement
- Hotel operation: May-Oct
- Target: To reduce the total operation cost for domestic hot water.

**Energy consumption results**

<table>
<thead>
<tr>
<th>Oil saving 2017-2019</th>
<th>Electricity add 2017-2019 (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-13.859lt</td>
<td>+92.155kWh</td>
</tr>
</tbody>
</table>

Cost Energy saving €5,800.00

36 % Operation cost saving!!!
High Temp Heat Pumps- Hot Water Solutions

4) Hot Water energy saving case study

Royal Mare Luxury Thallasso Resort

• Oil Boiler replacement
• Hotel operation: May-Oct
• Target: To reduce the total operation cost for domestic hot water.

Energy consumption results

<table>
<thead>
<tr>
<th>Oil saving 2014-2016</th>
<th>Electricity add 2014-2016 (kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-22.150lt</td>
<td>+83.358kWh</td>
</tr>
</tbody>
</table>

Cost Energy saving €20,290.00

69 % Operation cost saving!!!
5) Air Conditioning energy saving case study

**Atlantica Aegean View Hotel**

- Split Room air conditioning replacement with VRF MULTI V
- 252 Rooms cooling capacity 12,000 btu/h
- Hotel operation: May-Oct
- Target: To reduce the total operation cost for Air Conditioning.

**Energy consumption results**

<table>
<thead>
<tr>
<th>2016 (Electricity Amount)</th>
<th>2017 (Electricity Amount)</th>
</tr>
</thead>
<tbody>
<tr>
<td>€65,400</td>
<td>€25,000</td>
</tr>
</tbody>
</table>

62% Operation cost saving!!!
Air Conditioning-Ventilation

6) Electricity energy saving case study

“Blue Lagoon Resort has managed to reduce electricity consumption by working with latest technology (energy savers) equipment, bus automation systems and replace HVAC with LG VRF MULTI V 5 Technology and Ventilation ERV of the main buildings.”

Electricity consumption results

<table>
<thead>
<tr>
<th>Year</th>
<th>kWh</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>2.669.118,45</td>
<td>€ 293.603</td>
</tr>
<tr>
<td>2019</td>
<td>1.987.319,82</td>
<td>€ 218.605</td>
</tr>
</tbody>
</table>

25.5 % Operation cost saving!!!
Thank You