EXEMPLARY ENERGY EFFICIENCY PROJECTS AND
GOOD IMPLEMENTING PRACTICES

KOSOVO*

June 2016
<table>
<thead>
<tr>
<th>No.</th>
<th>EE PROJECT/ PROGRAMME TITLE</th>
<th>IMPLEMENTING BODY /BENEFICIARY/ TARGET GROUP(S)</th>
<th>IMPLEMENTATION PERIOD</th>
<th>SOURCE OF FINANCING / AMOUNT</th>
<th>BRIEF DESCRIPTION OF PROJECT / PROGRAMME AND GOOD IMPLEMENTING PRACTICES</th>
<th>EARLY RESULTS / IMPACT EVALUATION (IF EXIST)</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES (EEM) IN SCHOOLS and HOSPITALS IN KOSOVO</td>
<td>The European Union Office in Kosovo is the Contracting Authority of this Service Contract. The Beneficiaries are Ministry of Economic Development (MED), Ministry of Local Government Administration (MLGA), Ministry of Health (MoH). School “Emin Duraku”, Municipality of Shtime</td>
<td>September 2012 - September 2016</td>
<td>EUROPEAN UNION €257,796 EE measures €78,039 non EE measures €335,835 total investment</td>
<td>In order to encourage more effective use of energy across Kosovo, the EU Office in Kosovo has provided further support to Kosovo municipalities in implementing energy efficiency measures in public buildings, particularly in 63 schools across different municipalities and 2 hospitals in the Municipality of Prishtina. The proposed measures to promote a more rational use of energy were focused on: o Building envelope improvements (such as external thermal insulation of buildings, replacement of external windows and doors, waterproof roof insulation); o Heating systems, electrical and lighting systems, air conditioning and ventilation control systems; o Introduction of renewable energy resources, such as solar panels for hot water production, solar-assisted space heating systems. The main objectives are: − Implementation of energy saving measures as listed above, − Increase in end-user satisfaction about energy efficiency and indoor comfort, − Awareness rising of the end users about energy efficiency and rational use of energy.</td>
<td>Significant energy consumption savings have been achieved for 1 refurbished building with annual savings of an average of 68% which amounts to 609,364 kWh/year. Difference in average annual specific CO₂ emissions reduction follows the same pattern as energy consumption, which is 68% in total or 254 t/a. The Equity Payback Period (EPP) for EE Measures is 9 years. Average specific investment for school building is 118 €/m².</td>
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| 2.  | IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES (EEM) IN SCHOOLS and HOSPITALS IN KOSOVO | The European Union Office in Kosovo The Beneficiaries are Ministry of Economic Development (MED), Ministry of Local Government Administration (MLGA), Ministry of Health (MoH). School “7 Marsi” Municipality of Drenas | 2012-2016 | EUROPEAN UNION €150,629 EE measures €28,700 non EE measures €179,329 total investment | In order to encourage more effective use of energy across Kosovo, the EU Office in Kosovo has provided further support to Kosovo municipalities in implementing energy efficiency measures in public buildings, particularly in 63 schools across different municipalities and 2 hospitals in the Municipality of Pristina. The proposed measures to promote a more rational use of energy were focused on:  
- Building envelope improvements (such as external thermal insulation of buildings, replacement of external windows and doors, waterproof roof insulation, thermal insulation of ground floor);  
- Heating systems, electrical and lighting systems, air conditioning and ventilation control systems;  
- Introduction of renewable energy resources, such as solar panels for hot water production, solar-assisted space heating systems.  
The main objectives are:  
- Implementation of energy saving measures as listed above,  
- Increase in end-user satisfaction about energy efficiency and indoor comfort,  
- Awareness rising of the end users about energy efficiency and rational use of energy. | Significant energy consumption savings have been achieved for 1 refurbished building with annual savings of an average of 69% which amounts to 323,625 kWh/year  
Difference in average annual specific CO₂ emissions reduction follows the same pattern as energy consumption, which is 69% in total or 131 t/a. The Equity Payback Period (EPP) for EE Measures is 10.1 years, while the EPP for total investments is 8.46 years.  
Average specific investment for school building is 153 €/m². |
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<td>IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES (EEM) IN SCHOOLS and HOSPITALS IN KOSOVO</td>
<td>The European Union Office in Kosovo The Beneficiaries are Ministry of Economic Development (MED), Ministry of Local Government Administration (MLGA), Ministry of Health (MoH). School “Vellezerit Frasheri” Municipality of Decan</td>
<td>2012-2016</td>
<td>EUROPEAN UNION €384,668 EE measures €70,884 non EE measures €455,512 total investment</td>
<td>In order to encourage more effective use of energy across Kosovo, the EU Office in Kosovo has provided further support to Kosovo municipalities in implementing energy efficiency measures in public buildings, particularly in 63 schools across different municipalities and 2 hospitals in the Municipality of Prishtina. The proposed measures to promote a more rational use of energy were focused on: o Building envelope improvements (such as external thermal insulation of buildings, replacement of external windows and doors, waterproof roof insulation, thermal insulation of ground floor); o Heating systems, electrical and lighting systems, air conditioning and ventilation control systems; o Introduction of renewable energy resources, such as solar panels for hot water production, solar-assisted space heating systems. The main objectives are: − Implementation of energy saving measures as listed above, − Increase in end-user satisfaction about energy efficiency and indoor comfort, − Awareness rising of the end users about energy efficiency and rational use of energy.</td>
<td>Significant energy consumption savings have been achieved for a refurbished building with annual savings of an average of 42% which amounts to 367,762 kWh/year Difference in average annual specific CO₂ emissions reduction follows the same pattern as energy consumption, which is 42% in total or 112 t/a. The Equity Payback Period (EPP) for EE Measures is 3.77 years (PBP short because of the high price of fuel oil which was changed to biomass after EE Measures) Average specific investment for school building is 90 €/m².</td>
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<td>IMPLEMENTATION OF ENERGY EFFICIENCY MEASURES (EEM) IN SCHOOLS and HOSPITALS IN KOSOVO</td>
<td>The European Union Office in Kosovo The Beneficiaries are Ministry of Economic Development (MED), Ministry of Local Government Administration (MLGA), Ministry of Health (MoH). School “Pandeli Sotiri” Municipality of Obiliq</td>
<td>2012-2016</td>
<td>EUROPEAN UNION €273,748 EE measures €68,661 non EE measures €341,409 total investment</td>
<td>In order to encourage more effective use of energy across Kosovo, the EU Office in Kosovo has provided further support to Kosovo municipalities in implementing energy efficiency measures in public buildings, particularly in 63 schools across different municipalities and 2 hospitals in the Municipality of Pristina. The proposed measures to promote a more rational use of energy were focused on: o Building envelope improvements (such as external thermal insulation of buildings, replacement of external windows and doors, waterproof roof insulation, thermal insulation of ground floor); o Heating systems, electrical and lighting systems, air conditioning and ventilation control systems; o Introduction of renewable energy resources, such as solar panels for hot water production, solar-assisted space heating systems. The main objectives are: − Implementation of energy saving measures as listed above, − Increase in end-user satisfaction about energy efficiency and indoor comfort, − Awareness rising of the end users about energy efficiency and rational use of energy.</td>
<td>Significant energy consumption savings have been achieved for 1 refurbished building with annual savings of an average of 70% which amounts to 273,748 kWh/year. Difference in average annual specific CO₂ emissions reduction follows the same pattern as energy consumption, which is 70% in total or 378 t/a. The Equity Payback Period (EPP) for EE Measures is 6.6 years (PBP short because of the high price of fuel oil which was changed to biomass after EE Measures) Average specific investment for school building is 67 €/m².</td>
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<td>5.</td>
<td>STREET LIGHTING IN MUNICIPALITY OBILIQ</td>
<td>September 2015</td>
<td>UNDP 23,700.00 Euro</td>
<td>In the municipality Obiliq are changed lighting bodies 150W Hg with 50W LED lamps. Achieved savings are about 33%.</td>
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<td>6.</td>
<td>ENERGY AUDITS IN PUBLIC BUILDINGS-SUPPORT PROGRAM</td>
<td>MED/Municipality – Schools</td>
<td>2014</td>
<td>40,501.10€</td>
<td>Implementing of EE measures(one measure) Instaling of Energy Heating system in School</td>
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</table>
PHOTO REPORT of the School no.1 “EMIN DURAKU” – SHTIME

BEFORE EE MEASURES

Architecture

Figure 1: Front Façade (side entrance)  Figure 2: Rear Façade

Mechanical Installations

Figure 3: Existing boiler room  Figure 4: Existing radiators

Electrical installation
Figure 5: old manual switch  Figure 6: old distribution board

AFTER EE MEASURES

Architecture

Figure 3: Front Façade (side entrance)  Figure 4: Rear Facade

Mechanical Installations
Figure 3: Energy efficient boilers

Figure 4: New radiators

Electrical installation

Figure 5: New surface mounted luminaries

Figure 6: New surface mounted luminaries in toilets
PHOTO REPORT of the School no.02 “7 MARI” – KISHNAREKE, DRENAS

BEFORE EE MEASURES

Architecture

Figure 5: Front Facade

Figure 6: Entrance

Mechanical Installations

Figure 3: Existing stoves

Figure 4: Existing stoves

Electrical installation
AFTER EE MEASURES

Architecture

Mechanical Installations
Electrical installation

Figure 3: Energy efficient boilers

Figure 4: New radiators

Figure 5: New surface mounted luminaries

Figure 6: New manual switches
PHOTO REPORT of the School no. 3 “VELLEZERIT FRASHERI” DEÇAN
BEFORE EE MEASURES

Architecture

Figure 9: Front Facade

Figure 10: Rear Facade

Mechanical Installations

Figure 3: Existing boilers

Figure 4: Existing radiators

Electrical installation
AFTER EE MEASURES

Architecture

Mechanical Installations
Figure 3: Energy efficient boilers

Figure 4: New radiator and refurbished installation

Electrical installation

Figure 5: New surface mounted luminaries

Figure 6: New manual switch

PHOTO REPORT of the School no.04 “PANDELI SOTIRI” OBILIQ

BEFORE EE MEASURES

Architecture

Figure 13: Front & Side Facade

Figure 14: Rear & Side Facade
Mechanical Installations

Figure 3: Existing boilers

Figure 4: Existing radiator

Electrical installation

Figure 5: Surface mounted luminaries

Figure 6: Existing manual switch

AFTER EE MEASURES

Architecture
Figure 15: Front & Side Facade

Mechanical Installations

Figure 3: Energy efficient boilers

Figure 4: New radiator

Electrical installation

Figure 5: New surface mounted luminaries

Figure 6: New electrical socket
**PHOTOS** (lighting road)

**Before lighting (Hg) 150W**

**After lighting LED 50W**

*EECG Report on good EEAP implementing practices, June 2016 – Kosovo*
- Street lighting in Municipality Obiliq (lighting road)

Before lighting road (Hg) 150W  
After lighting road (LED) 50W

- Energy Audits in public buildings - Support program

<table>
<thead>
<tr>
<th>Building based on Standard Energy Audit</th>
<th>Primary School: BAJRAM CURRI, ISTOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Auditing</td>
<td>24.10.2013</td>
</tr>
<tr>
<td>Year of Construction</td>
<td>1964</td>
</tr>
<tr>
<td>Type of Building</td>
<td>Terciary Building /Education Building</td>
</tr>
<tr>
<td>Construction Type</td>
<td>Massive</td>
</tr>
<tr>
<td>Number of Usable Area</td>
<td>2 (Ground Floor and 1 Stair)</td>
</tr>
<tr>
<td>Overall view of Technics – Sanitary</td>
<td>Good</td>
</tr>
<tr>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>Working Days</td>
<td>185</td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
</tr>
<tr>
<td>Time schedule</td>
<td>07:30-16:40</td>
</tr>
<tr>
<td>Number of users</td>
<td>1669</td>
</tr>
<tr>
<td>Number of Staff</td>
<td>116</td>
</tr>
<tr>
<td>Responsible for maintainer</td>
<td>Technical worker</td>
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<th>Latest renovation done in the last years</th>
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</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Year</td>
</tr>
<tr>
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Photos before the EE measures- Heating System with old system stove