ENERGY EFFICIENCY REVOLVING FUNDS IN WESTERN BALKANS

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WORLD BANK EE PROJECTS IN WESTERN BALKANS

Current EE investment portfolio of €105 million

• Bosnia and Herzegovina EE Project (BEEP), €27 million. Effective since May 2015 (RS) & December 2015 (FBiH). Potential additional financing is being considered for a similar amount.

• Kosovo EE and Renewable Energy Project (KEEREP) (€26 million). Effective since June 2015. Additional €10 million from IPA II funds

• Montenegro EE Project (MEEP) (€11.5 million). Effective since February 2009 and closing in March 2018

• Serbia Enhancing Infrastructure Efficiency and Sustainability (SEIES) €100 million (€40 million for EE) – Approved in November 2017. Program for Results based on milestones to renovate 234 public buildings
**WORLD BANK EE PROJECTS IN WESTERN BALKANS**

**Additional funding for ongoing EE projects**

- **Bosnia and Herzegovina EE Project (BEEP),** potential additional financing being considered to build on strong results and strengthen support for sustainable EE financing mechanisms.

- **Kosovo EE and Renewable Energy Project (KEEREP).** Additional €10 million grant funding from IPA II. Establishment and capitalization of Revolving EE Fund.

**New projects under preparation**

- **Montenegro EE Project (MEEP) (€6 million) in preparation,** potential areas of support (i) developing performance-based contracting schemes and budget-capture models and (ii) development of sustainable EE financing mechanism beyond the project.

- **Macedonia EE Fund for Public Buildings in preparation.** Establishment and capitalization of Revolving EE Fund.

**Total investment of current and pipeline projects ~ €177 m**
**WORLD BANK EE PROJECTS IN WESTERN BALKANS**

**Results to date**

- **Bosnia and Herzegovina EE Project (BEEP)**
  - 43 buildings retrofitted within 2 years. Average savings: 53% FBiH and 60% RS
  - 1/3 of buildings switched from fossil fuels (LFO or coal) to biomass (pellets)
  - Comfort level improved. Up to 8C in some school buildings
  - All buildings with energy certificates (18 issued) building classes A or B

- **Kosovo EE and Renewable Energy Project (KEEREP)**
  - First 11 buildings to be completed by the end of the year (56% savings)
  - 22 under renovation and 25 technical designs being finalized
  - Solar water heating in 6 of the buildings
  - DH system upgrade in all except one that is switching from fuel oil to DH

- **Montenegro EE Project (MEEP)**
  - 20 buildings retrofitted average savings 40%-50% (5 buildings close to completion)
  - End-user satisfaction levels improved by 40%
  - Support for capacity building of local service providers

- **Serbia Enhancing Infrastructure Efficiency and Sustainability (SEIES)**
  - *Project just recently approved*
  - National plan for public building renovation
  - Design and operationalization of consolidate program M&E system
  - Building renovation to meet building regulations and Class C
ENERGY EFFICIENCY REVOLVING FUNDS

Market Maturity
- Advanced commercial or project financing (ESCOs)
- Vendor credit, leasing
- Commercial financing, bonds
- Partial risk guarantees
- Credit line with commercial bank(s)
- Credit line with municipal (development) bank
- Public ESCOs
- EE revolving funds
- Utility (on-bill) financing
- MOF financing w/ budget capture
- Budget financing, grants w/ co-financing
- Grants

Energy Service Agreements

Agency cash flow

Baseline payments to escrow account for 5-10 years
EE retrofit

Baseline energy costs
Investment repayment
Reduced energy bill
New energy bill

Baseline
During contract
After contract
Kosovo Energy Efficiency Fund (KEEF)

- KEEF will be set-up as an independent, autonomous and sustainable entity governed by a board of directors representing key ministries, non-governmental entities and donors.
- KEEF will finance and implement EE investments to serve fulfilment of EnCT commitments (EE targets);
- The fund will focus on revolving fund for public sector (up to 15 years) and administration of grant scheme for residential sector.
- The fund will seek to support private sector involvement in all aspects of implementation – audits, renovation and later on co-financing.

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Energy Consumption ktoe</th>
<th>Energy Costs Million €</th>
<th>Energy Savings %</th>
<th>Energy Savings ktoe</th>
<th>Energy Savings Million €</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Buildings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>14.78</td>
<td>12.52</td>
<td>37%</td>
<td>5.47</td>
<td>4.6</td>
</tr>
<tr>
<td>Hospitals</td>
<td>2.06</td>
<td>1.74</td>
<td>37%</td>
<td>0.76</td>
<td>0.6</td>
</tr>
<tr>
<td>Office &amp; Other</td>
<td>1.84</td>
<td>1.56</td>
<td>30%</td>
<td>0.55</td>
<td>0.5</td>
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<tr>
<td>Total</td>
<td>18.68</td>
<td>15.82</td>
<td>36%</td>
<td>6.78</td>
<td>5.7</td>
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</tbody>
</table>
KOSOVO ENERGY EFFICIENCY FUND (KEEF)

Sources of funding for KEEF:

- Initial capital will be provided from donors (European Commission), IFIs (World Bank) and the Government of Kosovo
- Other donors also interested to provide TA and grants
Kosovo Energy Efficiency Fund

Kosovo Energy Efficiency Fund

Fixed payment from savings

Energy Service Agreement

Energy cost savings

Energy Efficiency Service Providers

Municipal building

Project Implementation Services
Next steps on KEEF

- Review and draft regulations governing EE Fund and use of ESAs
- Develop governance structure for EE Fund
- Develop Operations Manual for EE Fund (procedures, standard documents, contract templates)
- Develop staffing plans, including TORs, selection of Fund Manager
- Develop financial model for EE Fund, initial capital, investment plans, operating costs, revenues
- Fund to be established by end 2018
The proposed Energy Efficiency Revolving Fund is designed to be sustainable—i.e., no recurring Government budget needed—and operate on a revolving basis for 20+ years.

**Notes:**
- Equity critical to cover operating costs until Fund can earn sufficient revenues, potential early defaults
- ~10-12% fee structure to cover prelim audit, procurement, financing, oversight
- After 3-5 years, Fund should be sustainable and equity can grow
# Macedonia Energy Efficiency Fund

## Benefits

### Eligibility criteria
- Structurally sound with no plans for closure/privatization
- Comfort level > 50%
- Minimum 20% energy savings, payback period < 10 years
- Clients have shown good energy bill payment discipline

### Technical measures
- Building envelope measures (walls, windows, roofs)
- Space/water heating system upgrades and fuel switching (SWH, biomass)
- Metering and control systems
- Lighting and pumping upgrades

### Financial products
- Municipal loans
- Energy service agreements (ESAs)
- Grants, if available

### Other services
- Technical support for energy audits, construction supervision, commissioning, monitoring
- Procurement and design support

## Program Components

<table>
<thead>
<tr>
<th>Program Components</th>
<th>Total saved energy (in 2029)</th>
<th>Total monetary saving</th>
<th>Total investment</th>
<th>Simple payback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MWh/year</td>
<td>€ Million/yr</td>
<td>€ Million</td>
<td>years</td>
</tr>
<tr>
<td>Municipal buildings</td>
<td>83,131</td>
<td>7.04</td>
<td>51.56</td>
<td>7.3</td>
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<tr>
<td>Health care buildings</td>
<td>45,399</td>
<td>3.61</td>
<td>24.96</td>
<td>6.9</td>
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<tr>
<td>Universities &amp; science institutes</td>
<td>22,914</td>
<td>2.64</td>
<td>14.66</td>
<td>5.6</td>
</tr>
<tr>
<td>State administrative buildings</td>
<td>1,355</td>
<td>0.17</td>
<td>1.20</td>
<td>7.1</td>
</tr>
<tr>
<td>Social institutions</td>
<td>5,119</td>
<td>0.50</td>
<td>2.89</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>157,918</strong></td>
<td><strong>13.96</strong></td>
<td><strong>95.26</strong></td>
<td><strong>6.8</strong></td>
</tr>
</tbody>
</table>
MACEDONIA ENERGY EFFICIENCY FUND

• Some secondary legislation may be required
  • Amendments to existing regulations are needed to assign EE Fund management to an existing institution - Macedonian Bank for Development Promotion (MBDP)
  • Additional legislation may be needed to allow for use of ESAs, budget retention by public entities, public procurement, long-term contracts

• Issues to be resolved
  • Revise law on MBDP and restructure to become municipal development bank
  • Agree with MOF that ESAs should not be classified as municipal debt
  • Agree on eligibility criteria for municipalities to maximize coverage without increasing nonpayment risk
NEXT STEPS

• Review and draft/revise regulations governing EE Fund and use of ESAs
• Develop governance structure for EE Fund
• Develop Operations Manual for EE Fund (procedures, standard documents, contract templates)
• Develop staffing plans, including TORs, selection of Fund Manager
• Develop financial model for EE Fund, initial capital, investment plans, operating costs, revenues