GEF Innovative Approaches to Financing Energy Efficiency in Industry and GEF-7 Programming Directions

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Challenges and Opportunities in Global Industrial Energy Efficiency

• 65% of industrial energy use was NOT covered by mandatory energy efficiency standards
• Industrial energy intensity can be reduced by 50% in 2040
• Strengthened standards for industrial equipment (heat pumps and electric motors) are necessary
• Recycling of scrap metals presents a very important opportunity to raise efficiency in metal manufacturing
• Increased private financing is essential
## GEF’s Portfolio of Industrial Energy Finance

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of Projects</th>
<th>GEF CCM investment ($ million)</th>
<th>Co-finance ($ million)</th>
<th>CO2 Reduction (million tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Phase (1991-1994)</td>
<td>1</td>
<td>1.70</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>GEF - 1 (1994-1998)</td>
<td>3</td>
<td>14.10</td>
<td>32.59</td>
<td>81</td>
</tr>
<tr>
<td>GEF - 3 (2002-2006)</td>
<td>4</td>
<td>18.57</td>
<td>61.39</td>
<td>43</td>
</tr>
<tr>
<td>GEF - 4 (2006-2010)</td>
<td>19</td>
<td>79.20</td>
<td>616.40</td>
<td>123</td>
</tr>
<tr>
<td>GEF - 5 (2010-2014)</td>
<td>3</td>
<td>35.86</td>
<td>1,307.80</td>
<td>179</td>
</tr>
<tr>
<td>GEF - 6 (2014-2018)</td>
<td>1</td>
<td>4.40</td>
<td>22.00</td>
<td>3</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>33</strong></td>
<td><strong>162.92</strong></td>
<td><strong>2,052.49</strong></td>
<td><strong>465</strong></td>
</tr>
</tbody>
</table>

**Total in Clean Energy Financing**

|                        | 1,362               | 4,776                           | 49,853                 | 15,491                         |

1) GEF financing: US$ 31.9 million
2) Co-financing: US$ 212.1 million
3) GHG emission mitigation: 160 million tCO$_2$e
4) Technology transfer: 9 patents
5) Sales of GEF-supported boilers: 9,230 tons/hr
China Utility-Based Energy Efficiency Finance Program (CHUEE)

- 2006, $16.9 million GEF grant, $200 million IFC loan for EE marketing, development and financing services

- 2012, leveraged $800 million local bank loans for 170 plus EE/RE projects

- Mitigates over 19 million tCO₂/Yr, = total annual emissions of Mongolia
GEF7 Programming Framework
Climate Change Mitigation Focal Area

I. Promote innovation, technology transfer for sustainable energy breakthroughs
   - de-centralized renewables with storage (for Energy Access);
   - electric mobility;
   - accelerating energy efficiency; and
   - cleantech innovation

II. Demonstrate mitigation options with systemic impacts (through impact programs)

III. Foster enabling conditions for mainstreaming mitigation concerns into sustainable development strategies, including CBIT, NDCs, Enabling Activities
I. Address drivers and promote systemic change
II. Deliver impact and results across Focal Areas
III. Open access but proactive engagement with key countries

Impact Programs
GEF-7 Sustainable Cities Impact Program (IP)

• Integrated approach to invest in cities to generate global environmental benefits.

• Multi-scale partnerships—Global Platform, National level frameworks, Cities / Municipalities for scaled up results

• Cross-sector engagement to ensure results at all levels and for all stakeholders

• Energy efficiency is one of the core pillars to support sustainable cities
### Background

A rural village in Nigeria:
1. 200 residents
2. No power access
3. Two diesel engines for food processing
4. Using charcoal in bakery house

### The Project

- Installed 45 kW off-grid solar PV;
- Electrified 200 residents;
- Replaced diesel engines with e-motors;
- Powered shops
- Enabled water pumps
- Mitigated CO2

### Results

- Integrated EE, RE and food production and processing
- A pilot in Nigeria for a program to cover 10,000 villages in energy access

### Remaining Challenges

- Tariffs: $0.4/kWh
- Government charges
- GST
- ESCOs pay import duties for spare parts

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*Key message: Policy is needed to remove barriers to private investments*