Enabling Policies for Financing Energy Efficiency Investments

Innovative Public-Private Financing Mechanisms for Promoting EE investments at the National Level: The Tunisian Experience

14 – 15 April 2014
EE investment profitability

EE main market failures

Public – private financing mechanism for EE development

Example of Innovative financing mechanisms

Conclusion
EE investment profitability

Typology of projects

■ **Capitalistic projects**
  - Concentrated investment
  - Large investments
  - Limited number of investors
  - Low transaction cost for financing
  - Ex: cogeneration, process modification, etc.

■ **Decentralized projects**
  - Scattered market
  - Small investments
  - High transaction cost for financing
  - Ex: EE in building (SWH, envelop retrofitting, CFL, etc.)
EE investment profitability

Profitability factors

- Investment cost (KPEX)
- Operation cost (OPEX)
- Amount of saved energy compared to the investment
- End use energy tariffs

KPEX

OPEX

Saved energy
Energy tariffs

+ Profitability
EE main market failures
Mains barriers

Low profitability for the end user
- Energy tariff subsidies
- High KPEX
- High transaction cost

Investment access barriers
- Low capacity investment
- Limited access to bank financing

Market barriers
- Lack of information on technology
- Weakness of the local supply
EE main market failures
Energy tariff subsidy: case of Tunisia

Subsidy to energy in Tunisia in 2013 (% of final price)

Source: Alcor calculation from DGE and STEG data, 2014
EE main market failures
How to transform the market?

- Fair sharing benefits between State and end users
  - Displacing energy subsidy to EE investment support
  - Establish a Win-Win situation to create the market

- Remove the investment access barriers
  - Facilitating access to bank loans
  - Matching loan conditions to willingness to pay

- Awareness and technology information
- Supply side support and technology transfer
- End user protection
Public – private financing mechanism for EE development

Main components?

- Multi stakeholders mechanisms
- Public – private mechanisms
- Public support
  - Public investment subsidy
  - Indirect taxes advantage (VAT, customs duties, etc.)
  - Reduction of direct taxes : tax credit.
- Private financing
  - Credit system
  - Third Party Financing
### Public – private financing mechanism for EE development

#### Public support

<table>
<thead>
<tr>
<th>Measures</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Applicability</th>
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</table>
| **Investment public subsidy** | - Clear effect on the cost reduction  
- Strong signal to the market  
- Good vector for awareness  
- Stimulation effect for supply side | - Pressure on the public finances  
- Low sustainability  
- High management cost  
- Inflation risk | + |
| **Indirect taxes reduction** | - Easy implementation  
- Low pressure on public finances | - Low visibility  
- Low efficiency in case of informal market  
- Difficulty to apply on services cost | ++ |
| **Reduction of Direct taxes** | - Low pressure on public finances  
(only in case of taxes credit) | - Low efficiency in developing countries  
- Complexity of implementation in developing countries | − |
| **Interest rate subsidy** | - Good vector of awareness  
- Improve the profitability for the HH | - Currency risk coverage  
- Sustainability of the interest subsidy  
- Financial market distortion  
- Pressure on public finance | − |
| **Credit guarantee systems** | - easy access to the credit  
- Incentive for the banking sector | - Complexity of implementation in developing countries  
- Risk of derive | − |
<table>
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<tbody>
<tr>
<td>Specific credit mechanisms</td>
<td>- Reduce the capacity constraint investment ' - Mobilization of the banking sector ' - Good communication vector</td>
<td>- Exclusion of the unbanked population ' - Transaction costs and default payment risk</td>
<td>++</td>
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<tr>
<td>Specific credit lines</td>
<td>- Solve the problem of downstream resources ' - Involvement of banking sector ' - Good vector of awareness</td>
<td>- High cost of loan distribution and management ' - Exclusion of non banked households</td>
<td>++</td>
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<tr>
<td>Third Party Financing</td>
<td>- Associated to technical competences ' - Stimulate the supply side</td>
<td>- not adapted to small scattered investments ' - High transaction cost</td>
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Examples of Innovative financing mechanisms
Solar Water heater development mechanism in Tunisia: Prosol

- Started in 2005
- Public subsidy
  - Amount: 100 TND/m² (50 €/m²)
  - Fund sources: FNME operated by ANME
- Loan to consumer
  - 5 year duration
  - Reimbursed through the electricity bill
  - Reduced interest rate because of the Utility guarantee
  - Credit line provided by a private bank
- Quality control mechanism
  - Suppliers and installers accreditation
  - Installation control

Public subsidy: Profitable for the State
Examples of Innovative financing mechanisms
Solar Water heater development mechanism in Tunisia: Prosol

Installed capacity of SWH in Tunisia

Source: ANME, 2013
Examples of Innovative financing mechanisms

**Roof insulation in Tunisia: PROMO-ISOL** (under development)

- **Target:** roof insulation for existing and new dwellings

- **Public subsidy**
  - Amount: 4 TND/m² for new buildings and 3 TND for existing buildings
  - Maximum surface: 200 m² per dwelling
  - Fund sources: FNME

- **Loan component**
  - Interest rate: 7% to 7.5%
  - Duration: 5 to 7 years
  - Fund sources: private banks and specific credit lines from donors

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![Diagram of the financing process](image)

**Public subsidy:** Profitable for the State

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![Graph showing the time to return on public subsidy](image)
Examples of Innovative financing mechanisms

Other examples

- **PROSOL ELEC**: since 2010
  - Solar PV roof development in residential sector
  - Net metering
  - Public subsidy of 30% from FNME, operated by ANME
  - Loan from private bank but operated by the Utility (STEG)

- **PROMO-REF**: Idea under discussion
  - Up-scaling the renovation of existing low efficient refrigerators stocks
  - Win Wing public Subsidy to high efficient refrigerator purchasing
  - Bank loan operated by STEG
Mechanisms combining:

1. Financial instruments:
   - Win–Win Public subvention to improve project profitability for end-user
   - Indirect taxation measures
   - Bank credit over an enough long period to alleviate the payment capacity barrier
   - Sufficient upstream resources for both public subsidy and loan distribution

2. Institutional and organizational instruments
   - Simple and effective distribution system of loans;
   - Effective Operators, accredited to be eligible to the programs;
   - Effective quality control, but simple and cost-effective;
   - Accompanying measures including awareness and capacity building.
   - Coordinating agency to monitor all the mechanisms
Market rigidity: prices are determined by the subsidy and loan level
   ➡ Review the financial design frequently

Public management of the mechanism can become a bottleneck when the market grow quickly
   ➡ Private delegated management of the mechanism

Operation management cost can become exorbitant
   ➡ Rely on Technology of Information and Communication

Free rider suppliers with low quality
   ➡ Strict (but efficient) quality control
Thanks