eeef - European Energy Efficiency Fund
District energy in cities: From EU vision to local action through an integrated approach
EUSEW Brussels, 18 June 2015

Advancing Sustainable Energy for Europe
Agenda

1. eeef – key elements
2. Portfolio overview
3. Case study: CHP Plant City of Orléans, France
## eeeef at a glance

<table>
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<th>Objective</th>
<th>eeeef is an innovative public-private partnership dedicated to mitigating climate change through market based financing in the member states of the European Union</th>
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<tr>
<td>Beneficiaries</td>
<td>Municipal, local and regional authorities or public and private entities acting on behalf of those authorities such as utilities, public transportation providers, social housing associations, ESCOs etc.</td>
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<tr>
<td>eeeef’s capital</td>
<td>Initial capitalization of the fund amounting to €265m provided by the European Commission, the European Investment Bank, Cassa Depositi e Prestiti and Deutsche Bank</td>
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</table>
| Investments | Fund’s investments are split into three project categories:  
- Energy Efficiency (EE)  
- Renewable Energy (RE)  
- Clean Urban Transport |
Commitment of the EU member states to achieve the 20/20/20 goals: 20% increase in EE, 20% reduction of CO2 emissions, and 20% RE in EU's energy mix by 2020.

Substantial potential for EE and small scale RE in the European public sector.

Set up a funding source to enhance EE and foster RE dedicated financing within the European Union, primarily through the provision of dedicated financing to:

- municipal, local and regional authorities
- public and private entities acting on behalf of those authorities such as utilities, public transportation providers, social housing associations, ESCOs etc.

Focus areas: EE, RE and clean urban transport.
Advantages of the eeef

Fast and flexible financing

- Professional investment advisor, decision making process from initial screening (assuming all information is provided) until financial close no longer than 6 months
- One-stop shop from project development support via grants from the TA facility to tailor-made financing of projects

Various financing instruments

- The fund offers various financing instruments including senior debt, mezzanine, equity, leasing structures and forfeiting loans
- Fund can also operate as the sole investor in projects (single investor transactions) to simplify implementation and lower execution costs

Long maturities

- Flexible with respect to maturities:
  - Debt can be provided for maturities up to 15 - 20 years
  - Equity or mezzanine capital can be provided to act as co-sponsor or long-term subordinated risk taker
Eligibility criteria of the eeef

According to eeef’s investment guidelines an investment has to meet several eligibility criteria:

- General eligibility criteria such as:
  - municipal link
  - commitment of municipality to mitigate climate change (e.g. Covenant of Mayors Initiative)
  - Primary energy savings of at least 20% (Co2 savings for certain technologies)
  - use of proven technologies

- Furthermore, each technology may have its own specific eligibility criteria

- Financing need of the Project from eeef shall be preferably in the range of €5m to €25m
  - smaller project sizes will be reviewed on a case-by-case basis

- Alignment with relevant EU legislation
Role of Deutsche Bank in the eeef

Deutsche Bank, in its role as investment advisor for eeef, is the first point of contact for private and public clients, developing projects in the energy efficiency, renewable energy or clean urban transport sector.

Identifies, evaluates and structures the investments for the Fund, the final investment decision is taken by the Management Board.

Manages the existing project portfolio and interacts with all fund’s service providers.

Sources new investors for the Fund.

Is the key point of contact for all investors, service providers, sponsors and project companies.
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**eeef’s typical projects so far...**

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<th>Project examples</th>
<th>Characteristics</th>
<th>Project structures</th>
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<td><strong>Building upgrades</strong></td>
<td>- Energy audits completed, vast energy savings potential&lt;br&gt;- Sufficient know-how of ESCO in case of big projects&lt;br&gt;- Savings guarantee required&lt;br&gt;- Depending on counterparty risk additional parental/municipal guarantee required</td>
<td>- Senior debt&lt;br&gt;- Mezzanine / equity&lt;br&gt;- Funding via co-investments in SPV or NewCo&lt;br&gt;- Forfaiting&lt;br&gt;- Leasing (mostly for clean urban transport projects)</td>
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<td><strong>Street lighting</strong></td>
<td>- Only light bulbs, switch boards plus EE related measures can be financed, not the light pole itself&lt;br&gt;- Ownership of lighting points need to be in municipal hand&lt;br&gt;- Technology with good track-record only</td>
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<td><strong>Biomass plants</strong></td>
<td>- Contracts for input (feed-stock) / output (e.g. electricity/heat) in place&lt;br&gt;- Substitution of input possible&lt;br&gt;- Technology with good-track record (e.g. boilers, turbines etc.)&lt;br&gt;- O&amp;M concept</td>
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<td><strong>Photovoltaic</strong></td>
<td>- Land ownership in municipal hand&lt;br&gt;- Grid connection secured&lt;br&gt;- Feed-in tariff secured&lt;br&gt;- O&amp;M concept&lt;br&gt;- Bankable module supplier</td>
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eeef investments as of 03/2015

Investments by Projects (in %)

- JMB 22%
- Bolloré Autolib 4%
- Banca Transilvania 7%
- CHP Biomass Orléans 2%
- CHP Biomass Rennes 7%

Investments by Country (in %)

- France 41%
- Germany 28%
- Italy 7%
- Netherlands 2%
- Romania 7%

Investments by type of Partner Institution (in %)

- Direct Investment 78%
- Financial Institution 22%

Investments by Financial Instrument (in %)

- Senior Debt 67%
- Subordinated Debt 22%
- Equity 11%
eeef results – what we have achieved (1/3)
Portfolio investments

**NETHERLANDS**
- €8.5m senior debt to City of Venlo  
  (EE: public lighting)

**FRANCE**
- €5.1m junior funds to project vehicle to supply heat to City of Orléans  
  (EE: CHP/biomass)
- €7.3m junior funds to project vehicle to supply heat to City of Rennes  
  (EE: CHP/biomass)
- €30m senior funding to Bolloré  
  (Clean Urban Transport: electric cars)
- €5m senior construction facility to project vehicle of Région Rhône-Alpes  
  (EE: schools retrofit)

**GERMANY**
- €0.9m forfeiting loan to Jewish Museum Berlin with Johnson Controls  
  (EE: building retrofit)
- €0.6m forfeiting loan to University of Applied Sciences Munich with ESCO of Johnson Controls  
  (EE: building retrofit + CHP)

**ITALY**
- €32m project bond facility to project entity upgrading University Hospital S.Orsola Malpighi in Bologna  
  (EE: reduction on energy in entire fluid production and distribution system)

**ROMANIA**
- €25m subdebt to Banca Transilvania  
  (Financial Intermediary investment: EE, RE, Clean Urban Transport)
### eeef results – what we have achieved (2/3)
Examples from eeef’s portfolio investments

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<tr>
<th>Key project characteristics</th>
<th>Type of eeef’s instrument</th>
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<td><strong>Combined Heat Power Plant Orléans, France</strong></td>
<td>Replacing gas with a biomass plant in the existing district heating network</td>
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<td><strong>University Hospital S. Orsola, Bologna, Italy</strong></td>
<td>Largest hospital energy efficiency upgrade in Italy</td>
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<td><strong>Banca Transilvania, Cluj, Romania</strong></td>
<td>First co-operation of the eeef with a financial institution</td>
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<td><strong>City of Venlo, Netherlands</strong></td>
<td>Street lighting upgrade as part of an overall green development plan of the city</td>
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<tr>
<td><strong>University of Applied Sciences, Munich, Germany</strong></td>
<td>2nd forfaiting transaction in the German market opening opportunities with universities and schools</td>
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eeef results – what we have achieved (3/3)

Technical Assistance projects

**UNITED KINGDOM**
- €1.7m to Ore Valley Housing Association
  (EE: CHP plant/decentralised district heating)

**IRELAND**
- €336k to Limerick and Clare Education and Training Board
  (EE: building upgrade and RE: PV, micro wind)
- €184k to Roscommon Council
  (EE: biomass district heating)

**SPAIN**
- €452k to City of Santander
- €754k to City of Cordoba
- €871k to Cabildo of La Palma
- €623k to City of Terrassa
- €456k to City of Marbella
- €782k to City of Elche
  (EE: public lighting, building retrofit and RE as well as Clean Urban Transport)

**BELGIUM**
- €1.5m to University of Liège
  (EE: building retrofit)
- €2m to GRE Liège
  (EE: building retrofit)

**NETHERLANDS**
- €425k to City of Venlo
  (EE: public lighting)
- €463k to Municipality of Zaanstad
  (EE: open/smart energy network)

**DENMARK**
- €1.9m to the Municipality of Ringkobing-Skjern
  (RE: biogas plant)

**FRANCE**
- €1.1m to project vehicle
  Région Rhône-Alpes SPL
  (EE: building retrofit)
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Case study: combined heat and power plant
City of Orléans, France (1/3)

Project description

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<th>Partners:</th>
<th>– City of Orléans, Dalkia France, eeef</th>
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| Measures:          | – Dalkia won a public tender realized under a French Regulation Commission Tender ("CRE3") for electricity /heat generation fired by biomass |
|                    | – Biomass-fired combined heat and power plant with a capacity of 7.5 MW in electricity and 17 MW thermal energy |

| Results:           | – Reduction of CO2 emissions of 20,500t p.a., approx. 89.1% compared to baseline |
|                    | – Energy production 50,826 kWh p.a. |

Location

Orléans, France

Investment characteristics

Key data:
– EEEF is a 84.4% shareholder of Orléans Biomasse Energie s.a.s
– Total project volume: € 36m
– Total junior funds volume: € 6m
– Duration of financing: 18 years

Highlights:
– Decentralized energy supply for City of Orléans using existing district network
– Supply of biomass within 100 km
– Long term PPA agreement with EDF
Decentralized energy supply for the city of Orleans using an existing district heating network, allowing 15,000 households to achieve substantial energy savings with the new energy source and increase environmental sustainability of the citizens

Key facts of the CHP plant

- The co-generating facility is using high steam pressure to produce heat and electricity and has a capacity of 7.5MWe (electrical) and 17MWth
- It is fired by wood chip biomass sourced from local suppliers within a radius of less than 100 km
- The thermal heat will supply the district heating network of the city and electricity produced will be sold to EDF through a 20 year contractual agreement
- During the first partial year of operation, the CHP plant achieved primary energy savings of 2,470 MWh and 23,361 tonnes of CO2
The City of Orléans project required equity/and quasi equity loan to complete the funding structure

Overall project volume of EUR36m includes funding provided by eeef in form of equity and quasi equity (shareholder loan) in the amount of ca. EUR5m to the project SPVs

eeef purchased 84% of shares of Orléans Biomasse Energie, the project SPV. Dalkia France is co-invested along with eeef and is a shareholder of the remaining 16% and is also responsible for the operation/maintenance of the plants

eeef was an integral part to realize the project due to the Fund’s flexibility to provide various financial instrument (debt, mezzanine, equity, leasing, forfeiting structure)

First equity investment for eeef, which was replicated in a second project, ‘CHP biomass City of Rennes’ with a similar structure
European Energy Efficiency Fund (eeef)

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