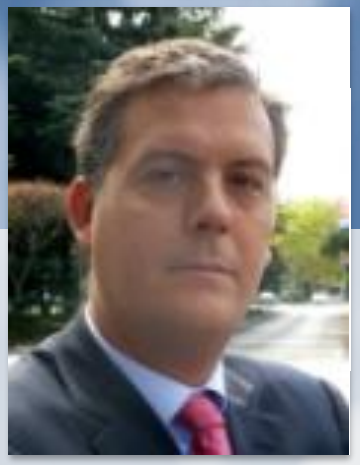
CELSIUS Talk: Business models for district energy

2017.05.02

celsius
smart cities

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 314441.

Reliable business models for international funding



Iñigo Prior
Senior Advisor, Deutsche Bank
Investment manager, eeef

Agenda

1 eeef – key elements

2 Business Models for DHC

eeef – Key Elements

Mustertext

eeef at a glance

Objective	▪ eeef is an innovative public-private partnership dedicated to mitigating climate change through market based financing in the member states of the European Union
Beneficiaries	▪ Municipal, local and regional (and central) authorities or public and private entities acting on behalf of those authorities such as utilities, public transportation providers, social housing associations, ESCOs etc.
eeef's capital	▪ Initial capitalization of the fund amounting to €265m provided by the European Commission, the European Investment Bank, Cassa Depositi e Prestiti and Deutsche Bank
Investments	▪ Fund's investments are split into three project categories: – Energy Efficiency (EE) – Renewable Energy (RE) – Clean Urban Transport

Objective and sponsors of the eeef

Background and objective

- 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 (and national) 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

Sponsors

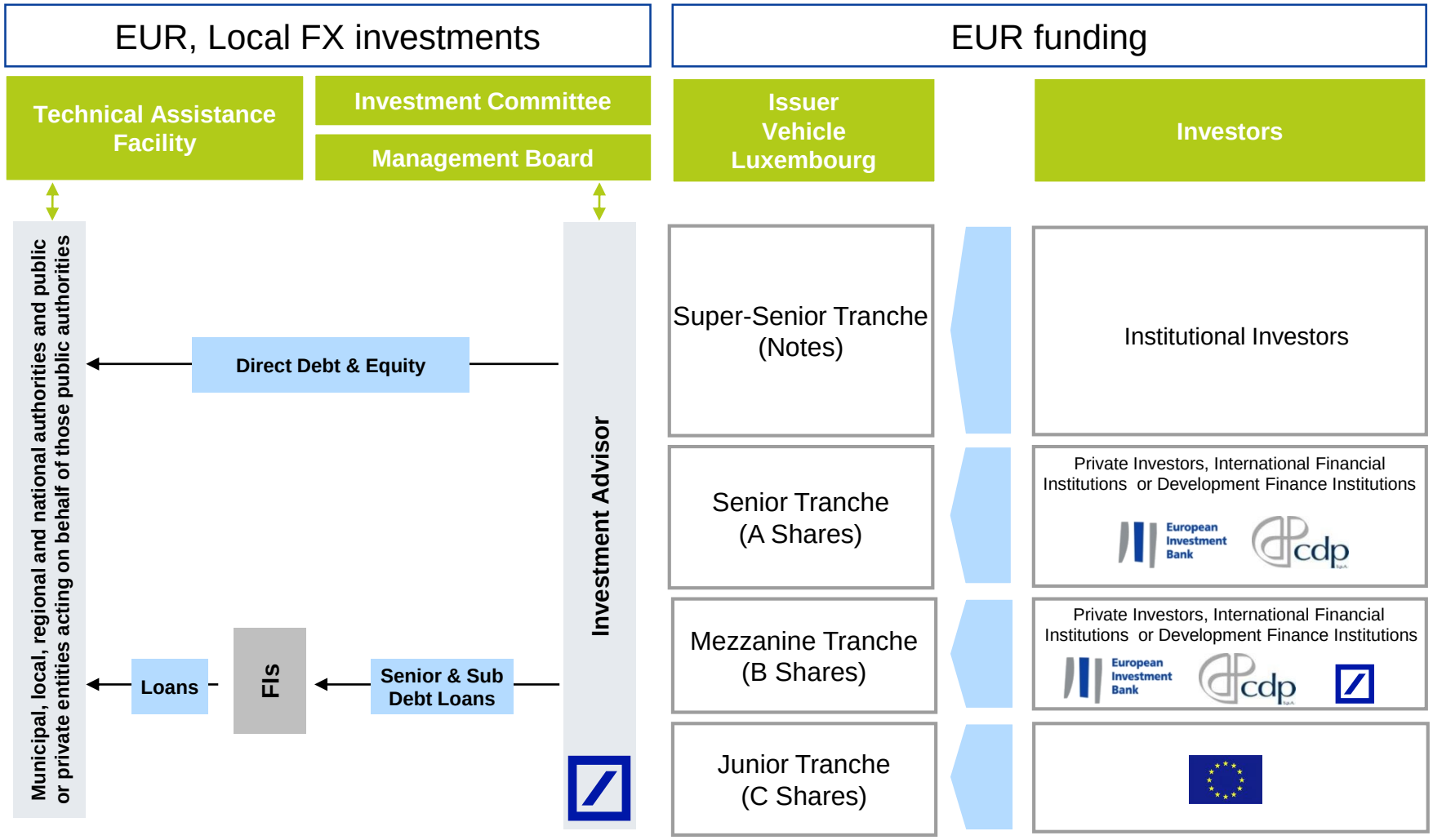
European Commission
(Initiator)

European Investment Bank
(Founding investor)

Cassa Depositi e Prestiti
(Founding investor)

Deutsche Bank
(Investor and investment advisor)

eeef structure



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 14 - 16 years
  - Equity or mezzanine capital can be provided to act as co-sponsor or long-term subordinated risk taker

Eligibility criteria of the eeef

Project eligibility

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

- General eligibility criteria such as:
  - public 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

eeef's typical projects are so far...

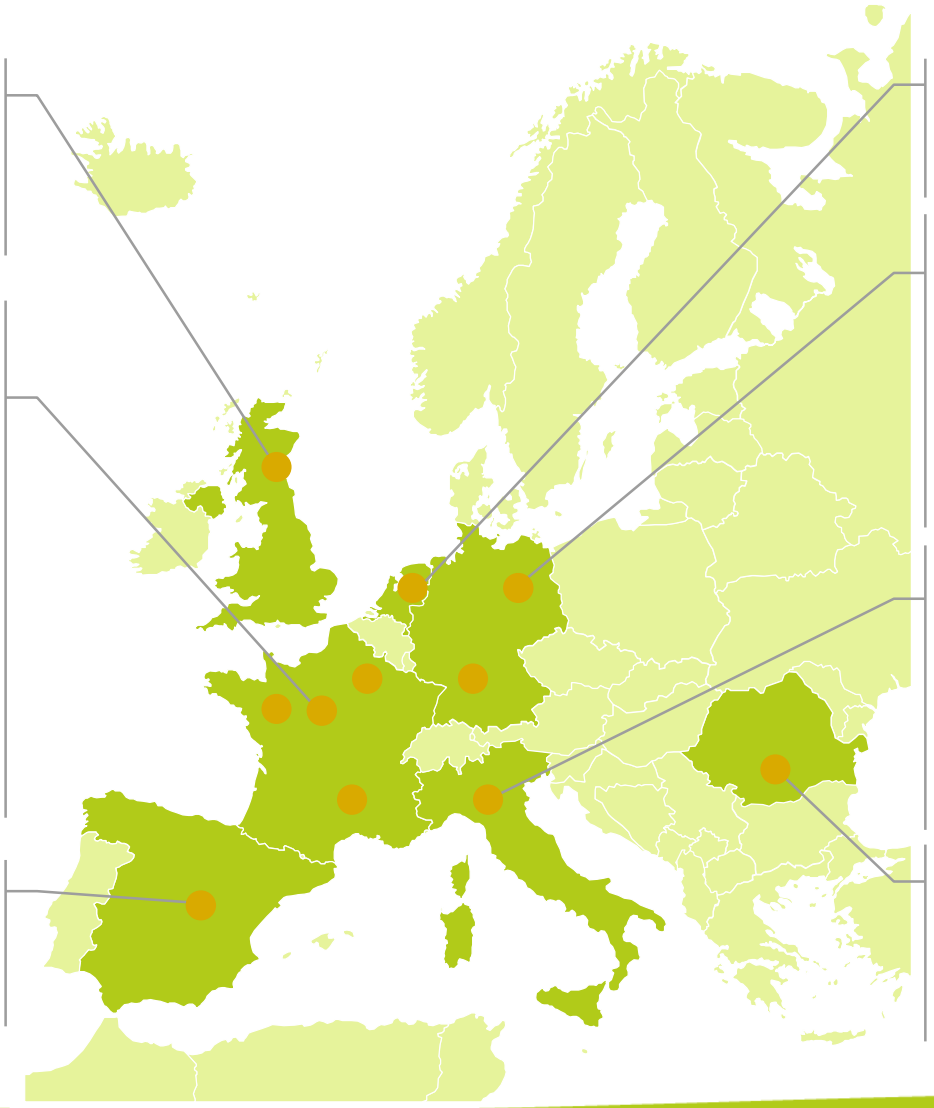
Project examples	Characteristics	Project structures
Building upgrades	▪ Energy audits completed, vast energy savings potential ▪ Sufficient know-how of ESCO in case of big projects ▪ Savings guarantee required ▪ Depending on counterparty risk additional parental/municipal guarantee required	▪ Senior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

eeef investments by country – project details

UK
- €4.2m senior debt to project entitiy **Cardenden Heat and Power**
  (EE: boiler replacement and RE: onshore wind)

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)

SPAIN
- €2.5m forfaiting loan to **Universidad Politécnica de Madrid** via Enertika *(EE: building retrofit)*



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

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

ITALY
- €32m project and VAT 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 Technical Assistance Facility

Public authority		Country	Description of the investment programme	Total size of the investment programme (EURm)	TA volume approved (EUR)	Estimation of CO_2 reduction (tonnes per annum)	Status	Probability of eeef funding	EEEF share (EURm)
	City of Santander	Spain	EE – Public lighting / building retrofit	10.0	452,560	2,464	closed	50 %	10
	City of Cordoba	Spain	EE – Public lighting / building retrofit	18.0	754,240	6,824	Q1/2017	0 %	other sources of funding
	Cabildo of La Palma	Spain	Public lighting/ building retrofit/ clean urban transport	8.0	871,941	4,347	H1/2017	30 %	other sources of funding
	City of Terrassa	Spain	Public lighting/ building retrofit/ clean urban transport/ PV	18.1	623,467	9,113	H1/2017	90 %	11
	City of Marbella	Spain	Public lighting/ building retrofit/PV	9.5	456,662	5,459	H1/2017	50 %	5
	Région Rhône-Alpes	France	EE – Buildings upgrade	25.0	1,125,000	1,000	Q4/2016	100 %	financing is closed
	Municipality of Ringkøbing-Skjern	Denmark	RE – Biomass	173.3	1,917,500	21,600	terminated	0 %	project is not realising
	Ore Valley Housing Association	UK	EE – Decentralised district heating	4.6	1,728,150	22,400	closed	100 %	4.5
	City of Elche	Spain	Public lighting/ building retrofit/ clean urban transport/ PV/Biomass	20.4	782,367	8,983	terminated	0 %	project not realising
	City of Venlo	Nether-lands	EE – Public lighting	9.1	425,000	672*	Q1/2017	100 %	financing is closed
	University of Liège	Belgium	EE – Buildings upgrade	30.0	1,500,000	3,200	H1/2017	0 %	other sources of funding
etb	Limerick and Clare Education and Training Board	Ireland	EE – Buildings upgrade RE – PV/micro wind	16.4	335,835	2,850	H1/2017	25 %	5
GRE LIEGE	Groupement de Redéploiement Economique de la province de Liège	Belgium	EE – Buildings upgrade	40.0	2,000,000	6,030	H1/2017	0 %	other sources of funding
cimac	CIMAC (Comunidade Intermunicipal do Alentejo Central)	Portugal	Public lighting/ building retrofit/ clean urban transport/ PV/Biomass	10.8	540,000	6,500	H1/2017	50 %	9
	Municipality of Zaanstad	Nether-lands	EE – Open and smart energy network	9.3	463,860	4,500	terminated	0 %	project not realising
	Roscommon County Council	Ireland	EE – Biomass district heating	6.6	184,275	333	TA refund	0 %	project not realising
			Total:	454.6	14,160,000	106,894			59.5

- Following the European Commission TA Facility managed by the EEEF, the Fund set up the EEEF TA Facility to support ambitious public beneficiaries in developing bankable sustainable energy investments.
- The EEEF TA Facility aims to bridge the gap between sustainable energy plans and real investments through supporting all activities necessary to prepare investments into sustainable energy projects.
- Going forward EEEF is open (no deadline) for TA project proposals on a first-come-first-serve basis, subject to availability of funds and the Fund's appetite for proposed sector/technology etc.

More info: http://www.eeef.eu/general-introduction.html

Business Models for DHC

Mustertext

Typical DHC projects risks and mitigants

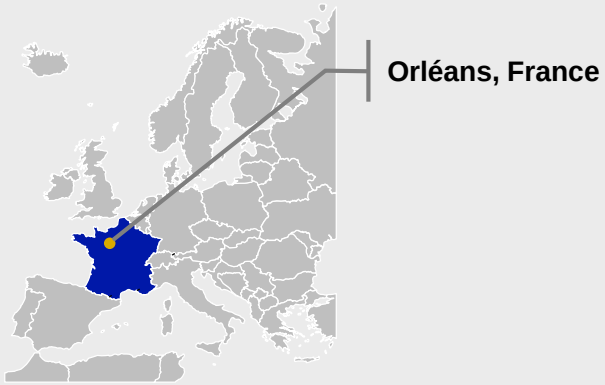
Project types	Risks and Mitigants	Project structures
Biomass plants	▪ Contracts for input (feed-stock) / output (e.g. electricity/heat) in place ▪ Substitution of input possible ▪ Technology with good-track record (e.g. boilers, turbines etc.) ▪ O&M concept	▪ Senior debt ▪ Mezzanine / equity ▪ Funding via co-investments in SPV or NewCo
Residual Fuel or Heat plants	▪ Long Term Contracts for input (feed-stock) / output (e.g. electricity/heat) in place ▪ Technology with good-track record (e.g. boilers, turbines etc.) ▪ O&M concept	
Solar / Geothermal plants	▪ Long Term Contracts for output (e.g. electricity/heat) in place ▪ Certified technology with good-track record / Proven solutions ▪ O&M concept ▪ Land ownership in municipal hand ▪ Grid connection secured ▪ Bankable supplier ▪ Resource to be proven by test drilling programme. No drilling risk can be accepted.	
DHC Networks	▪ Rehabilitation or extension of existing systems ▪ Long term heat supply costs including all necessary rehabilitation must be competitive with individual heat boilers in buildings. ▪ Relevant public clients or beneficiaries ▪ Robust market study, including captive demand	

Combined Heat and Power Plant (biomass) – City of Orléans, France

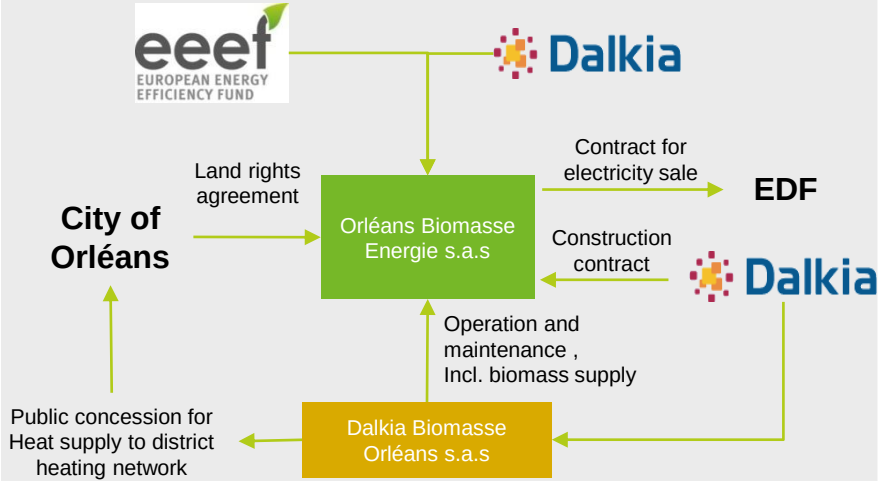
Project description

Partners:	– **City of Orléans, Dalkia France, eeef**
Measures: Biomass plant/ energy efficiency	– 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



Project structure



Investment characteristics

Key data:

- eee 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

Contacts

European Energy Efficiency Fund (eeef)

Lada Strelnikova
+49 (69) 910 46444
lada.strelnikova@db.com

Iñigo Prior
+49 (69) 910 48603
inigo.prior@db.com

Paola Rusconi
+49 (69) 910 84768
paola.rusconi@db.com

Matthias Benz
+49 (69) 910 46449
matthias.benz@db.com

Zarpana Signor
+49 (69) 910 49858
zarpana.signor@db.com

www.eeef.eu