European Conference
Climate Finance for Subnational Actors

October 1, 2015 - Paris

Low energy refurbishment of condominiums in Ile-de-France region
Shareholding

- **85% of public ownership:**
  - 11 local authorities
  - 3 energy syndicates

- **15% of « private » ownership:**
  - CDC
  - Caisse d’Épargne IdF

Areas of actions

- Third party financing collective housing (private and social)
- Equity participation in SPV dedicated to RE project development
- Technical assistance
- Public sector buildings
FOCUS ON ENERGIES POSIT’IF OPERATIONS IN THE PRIVATE HOUSING SECTOR
• **4,713M** main residences\(^{(1)}\) of which 72% multi-residential buildings (44% in France)

• **2,1M** main residences classified in E, F, G energy classes (230 to 450 kWhpe/m²/an) of which **47%** are multi-residential buildings → priority target of **1M** apartments.

\(^{(1)}\) The average consumption of the housing stock is 220kWhpe/m²/y (heating and sanitary hot water) and 330kWhpe/m²/y when including «cooking» and «specific electricity».
FINANCING ISSUE

"Factor 4" target largely exceeds the direct investment capacity of most building owners

- 25k€ on average for low energy refurbishment of an apartment\(^{(1)}\)
- 1M collective housing to be renovated up to 2050
- 625 M€/y over a 40 year period
- 250 €/inhabitant/y

The only financial resource available in an appropriate volume are the energy savings

- An investment dedicated to energy efficiency of 250 €/inhabitant/y is required
- To be compared with average domestic energy bill of 640€/inhabitant/year\(^{(2)}\)

\(\text{(1)}\) Source: IDDRI 2010

\(\text{(2)}\) INSEE 2006; data for France (71% heating; 13% light and appliances; 10% hot water; 6% cooking)
WHY RETROFITTING PROGRAMS ARE NOT HAPPENING?

- Initiative and management left to the owner and condominium managers (rarely experts)
- Constraints of the decision-making process:
  - Governance
  - Motivation
  - Cash availability and solvency
- Loans not tailored for long-term payback investments (over 15 years)
- Lending institutions with few expertise to assess the effectiveness of works financed through subsidised soft loans
Increase confidence and expertise at the condominium level

- Stimulation of the investment decision making process;
- Support of technical and financial high standards for thermal retrofitting: a minimum energy saving target of 40%

Business based on 3 innovations

- Design-implement-operate contract for works and services (i.e. the program includes the thermal insulation of the building envelop)
- Guarantee on energy performance in the operation phase
- Third party financing (optional)

GOALS

- 2015
- 2020

60-80 condos renovated
8000 dwellings
200M € cost
ENERGY PERFORMANCE CONTRACTING, CAN IT BE ADAPTED FOR DEEP RENOVATION?

3. Lower cost of capital to reduce the contract duration

2. Extra contribution to reimburse the investments: grants or contribution of building owner

Garanteed energy saving are used to repay the investment

At the end of the contract, cost savings are for the building owner

1. Extension of contract duration to allow payback of deep renovation
FUNDING SOURCES FOR THE THERMAL RETROFITTING OF BUILDINGS

- Owner self-financing
- Energy savings via third part financing
- Energy Efficiency Obligations (White certificates)
- Financial structuring of a « low energy » building retrofitting
- Direct subsidies
- Tax incentives
- Soft loans (Eco PTZ, Eco Prêt LS)

Public finance support
ENERGIES POSIT’IF OFFER TO CONDOMINIUMS

“Local facilitators”: energy agencies, associations

Condominium
Administrator

Mature projects

Unconditional phase
- Design of energy retrofit measures
- Financing plan

Validation by G.A.

Conditional phase
- Implementation of the works
- Third party investment
  - Energy savings guarantee (EPC)
  - O&M with shared savings

Energies POSIT’IF

Sub-contracting or co-contracting agreements

Architects
- Thermal engineers
- Construction companies
- Energy service companies

G.A.: General Assembly
O&M: Operation and maintenance

Initial Contact
- Pre-assessment
- Contract proposal
- Design + financing plan
- Works
- O&M
BUSINESS PROCESS

Initial Contact
Pre assessment
Contract proposal
Design + financing plan
Works
O &M

G.A. 1
G.A. 2

0.5 days
3 days
0.5 to 1 months
1 to 6 months
9 to 12 months
Up to 20 years

Year 1

Year 2

Year 3
Key achievements

- The project pipeline → **60 condominiums**

- **22 signed contracts.**

- More than **€50 millions works value** in 2015 - 2016 (3300 apartments renovated)

- Energies POSIT’IF has become a reference for several French regions (more than 10 regional initiatives aim at developing TPF services).

- A reduced rate of VAT for energy retrofits made by a TPF provider

<table>
<thead>
<tr>
<th>Bottlenecks</th>
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<tr>
<td>An eligibility to the White Certificates system</td>
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<td>Art.124 of the ALUR act providing a legal definition for third-party financing activities</td>
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<tr>
<td>On the 17th August, the Energy transition law for green growth has been issued. It gives a framework for TPF companies.</td>
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Since the Third Party Financing needed a particular legal framework to be implemented:

- Impact on the marketing policy and the development of the project pipeline
- Delay in structuring condominium’s financing plans
- Delay in the negotiation with IFIs and national banks

Cost of feasibility studies: Condominiums are only used to pay for works.

“pure energy performance contracting” approaches don’t fit with condominiums decision making process
The next steps

- Decree issuance
- Authorization given by the ACPR (Regulatory entity of the French banking sector)
- Signing the loan with the European Investment Bank

Provided that a Surety company guarantees the loans the condominiums subscribe with Energies POSIT’IF
CASE STUDY: CONDOMINIUM « LE BIEF »
CASE STUDY: CONDOMINIUM LE BIEF

- Located in Chelles (Ile-de-France Region)
- Construction year: 1964
- Number of apartments: 216
- Number of buildings: 12
- Energy label class: E

Deteriorated buildings, bad energy performance, major ventilation and mold problems.

Crédit photo Réanova, 2014
CASE STUDY: CONDOMINIUM LE BIEF

Consortium leader and financial engineering

Architect

Thermal and fluid engineering agency
Renovation programme

- external insulation of facades and flat roofs
- insulation of the lower floors
- shutters replacement
- single-glazed windows changing for PVC double glazing
- installation of a Controlled Mechanical Ventilation
- installation of thermostatic valves and creation of airlocks.

\[= 245 \text{kWhpe/sqm.y} \rightarrow 98 \text{kWhpe/sqm.y}\]

Programme achieving a level of consumption equivalent to the label "BBC Effinergie Renovation » → post-works energy consumption level of 98 kWhpe/sqm.y, a 60% savings."
Final energy consumption (heating):
- Before the renovation: 2,336 MWh/year. (160 kWhfe/sqm heating)
- After the renovation: 690 MWh/year. (47,50 kWhfe/sqm heating)

Percentage of energy savings → 70%
- Apartments of 60 sqm on average
- Investment cost: 297€/sqm

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<th>Type of apartment</th>
<th>Savings (kWh)</th>
<th>Savings (€/year)</th>
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<tbody>
<tr>
<td>F2 (1 bedroom)</td>
<td>5,126 kWh</td>
<td>435 €</td>
</tr>
<tr>
<td>F3 (2 bedrooms)</td>
<td>7,600 kWh</td>
<td>646 €</td>
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<tr>
<td>F4 (3 bedrooms)</td>
<td>10,252 kWh</td>
<td>871 €</td>
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CASE STUDY: CONDOMINIUM LE BIEF

- Before /after

Crédit photo Réanova, 2014
The « AMI Copro Durable » is a subsidy obtained within the frame of a call for expression of interest which rewards the energy renovation programmes targeting the « BBC Effinergie Label » (104 kWhep /sqm.y)
CASE STUDY: CONDOMINIUM LE BIEF

- Financial engineering: study case
- Family of 3: 1 couple & 1 child
- Living in an apartment with 3 bedrooms
- Comprehensive renovation program
- Cost: 20 700 €
The «AMI Copro Durable» is a subsidy obtained within the frame of a call for expression of interest which rewards the energy renovation programmes targeting the «BBC Effinergie Label» (104 kWh/ep sqm.y)
FINANCING PLAN
HOUSEHOLD WITHOUT ANAH’S GRANT

- Interest-free eco-loan and sustainable development tax credit cannot be combined in this case.

- To finance the remaining amount:

  Net financial savings per month (debt service and energy savings included):

  ➢ Solution 1: Interest-free collective eco-loan 15 years ➔ - 79 €
  (without taking the sustainable development tax credit into account.
  Amount taken in charge: 18 975 €)

  ➢ Solution 2: Collective loan (market offer: 4,33%*effective annual interest rate) ➔ - 84 €
  (Amount taken in charge net of the sustainable development tax credit: 14 055 € ; 5 800 € interests)

*Rates in December 2014
The « AMI Copro Durable » is a subsidy obtained within the frame of a call for expression of interest which rewards the energy renovation programmes targeting the « BBC Effinergie Label » (104 kWhep /sqm.y)
In this case, interest-free eco-loan and sustainable development tax credit can be combined.

To finance the remaining amount:

Net financial savings per month (debt service and energy savings included):

- Solution 1: Interest-free collective eco-loan, 15 years maturity ➔ 14 €
- Solution 2: Collective loan (market offer: 4,33%*effective annual interest rate) 15 years maturity ➔ 9 €

*Rates in December 2014
PORTFOLIO: PROJECT SELECTION ON WORKS PHASE

- **Meudon La Forêt (92)**
  - Current consumption: 216 kWhpe/sq.m.y.
  - After works consumption: 140 kWhpe/sq.m.y.

- **Palaiseau (91)**
  - Current consumption: 238 kWhpe/sq.m.y.
  - After works consumption: 148 kWhpe/sq.m.y.

- **Paris (75)**
  - Current consumption: 169 kWhpe/sq.m.y.
  - After works consumption: 66.9 kWhpe/sq.m.y.

**PORTFOLIO:**

**PROJECT SELECTION ON WORKS PHASE**
PORTFOLIO : PROJECT SELECTION ON DESIGN PHASE

Paris 14

- 1956
- 39 apartments

Current consumption: 180 kWhpe/sqm.year

Consumption after works: 104 kWhpe/sqm.year (BBC Effinergie Rénovation)

Vote of the works phase: November 2015

Paris 13

- 1960
- 31 apartments

Current consumption: 279 kWhpe/sqm.year

Consumption after works: 104 kWhpe/sqm.year (BBC Effinergie Rénovation)

Vote of the works phase: October 2015
PORTFOLIO: PROJECT SELECTION ON DESIGN PHASE

**Paris 12**
- 1965
- 68 apartments
- 1 premises for business activities
- 1 premises for association activities

Current consumption: 225 kWhpe / sqm.year

Consumption after works: 104 kWhpe / sqm.year (BBC Effinergie Rénovation)

**Boussy Saint-Antoine (91)**
- 1963-1967
- 350 apartments
- 17 buildings

Current consumption: 440 kWhpe/sqm.year

Consumption after works: 104 kWhpe/sqm.year (BBC Effinergie Rénovation)

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PORTFOLIO: PROJECT SELECTION ON DESIGN PHASE

**Current consumption**
- 225 kWhpe/sqm.year

**Consumption after works**
- 104 kWhpe/sqm.year (BBC Effinergie Rénovation)
PORTFOLIO: PROJECT SELECTION ON AUDIT PHASE

- Paris 12
  - 1965
  - 2 buildings
  - 156 apartments

- Choisy le Roi (94)
  - 1972
  - 3 buildings
  - 68 apartments

- Soisy-sous-Montmorency (95)
  - 1972
  - 1 building
  - 48 apartments

- Paris 13
  - 1972
  - 1 building
  - 118 apartments
  - 2 business premises
THANK YOU FOR YOUR ATTENTION