

PPP and 'Energy Saving Performance Contracting' (ESPC) in France

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Centre for Infrastructure and
Construction Industry Development

- CSTB had a workforce of 794 including Ph.D students, 723 of whom are permanent (end of 2007).
- CSTB activities consist mainly in :
 - exercising fundamental research works,
 - proposing its know-how in consulting (study, technical assistance) to manufacturers, architects, building owners and authorities,
 - evaluating the innovative techniques and products for French and foreign manufacturers,
 - providing its assistance to administration in setting up the regulations, the standards and the European normalisation.

- 1/ The context
- 2/ The steps to follow
- 3/ PPP and energy issue
- 4/ Energy saving performance contracting
- 5/ Energy saving performance contracting:
the case of the municipality of TOURS

PPP and 'Energy Saving Performance Contracting' (EPSC) in France
presented by Frédéric Dougran at HKU CICID (30-03-2009)

1/ The context : Public Private Partnerships in France

- New legal framework to develop PPP for public buildings since 2002 (Ministry of Interior in 2002; Ministry of Health in 2003; National framework in 17 June 2004 and 2008).
- PPP cannot be used at any time. Most construction projects have to follow the code for public markets.
- PPP is not dominant for public investments such as buildings.

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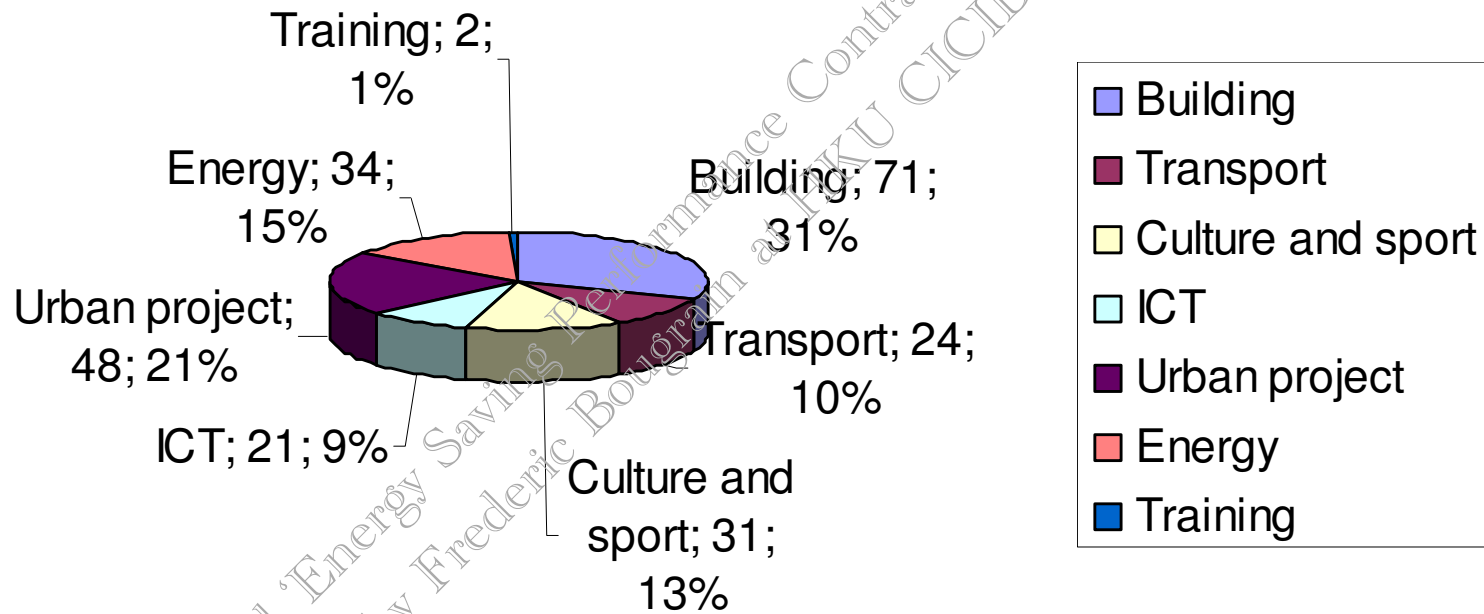
1/ The context : Some specificities of the code for public markets

- Most of the time national and local authorities who intend to construct public buildings have to follow the code.
- The code allows design, build and operate. But pre-financing is not allowed. Moreover the cost of each action has to be specified.
- Risk transfer is limited.

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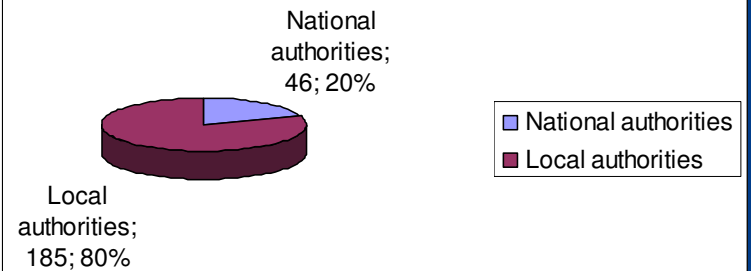
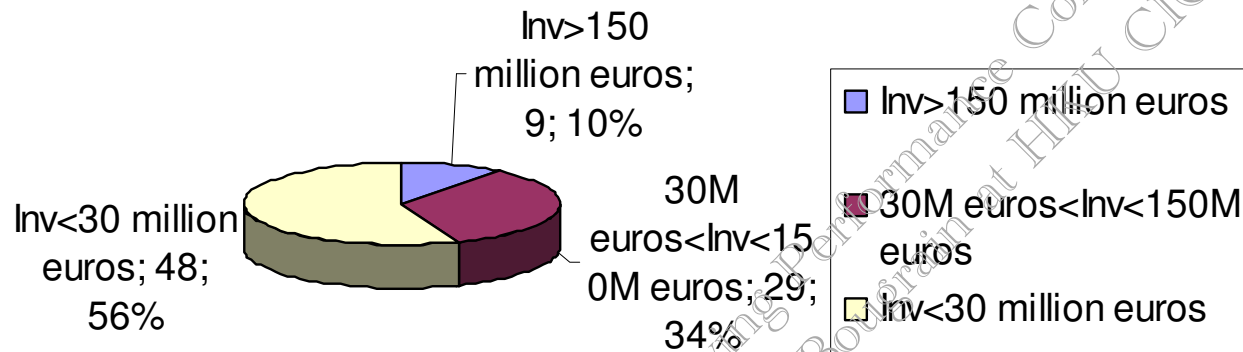
1/ The context : Published PPP projects in France from 2004 to March 2009

Source: MAPP - <http://www.ppp.bercy.gouv.fr/>



1/ The context : Size of projects National versus local projects

Source: MAPP - <http://www.ppp.bercy.gouv.fr/>



1/ The context : When to use PPP?

- Project considered as **complex** (complexity can be technical, juridical or financial) or
- Project considered as **urgent** or
- Project committed to delivering **best value for money** over its life.

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1. Evaluation to show that the project is complex, urgent or bring value for money;
2. Comparative analysis (**Public Sector Comparator**);
3. Competitive dialogue (only in case of complexity);
4. Selection of the preferred bidder;
5. Last discussions, signature of the contract and implementation of the project.

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2/ The steps to follow The comparative analysis

Characteristics of the project	Code for public market	PPP
1. Costs (1) . Direct investment costs, . Management costs, . Maintenance costs, . Operating costs.		
2. Risk analysis (2) . Risks before the signature of the contract, . Risks during the construction works, . Risks at the operating level		
3. Financing costs integrating risk analysis		
Net present value of the project (with total costs) = C(t) = (1) + (2) + (3) $VAN = \sum_{t=0}^n \frac{C(t)}{(1+i)^t}$		
4. Qualitative analysis		
5. General evaluation based on the aforementioned elements		

1/ PPP is supposed to favour **life cycle cost** approaches:

Investments leading to energy saving are supposed to be made at the construction stage by the consortium who will also operate the building;

2/ So far the 34 published PPP projects focusing on energy, concern mainly heating systems for hospitals, high environmental quality (**HQE**) buildings (HQE in France = BREEAM HK) and energy service performance contracting (**ESPC**)

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3/ PPP and the energy issue Is there any life cycle cost approaches?

Life cycle cost approaches are still limited for three reasons:

1. Each actor does not have an integrated thinking yet; “design, build and operate” concern most of the time different business units with different goals;
2. Contractors and financial companies who bear financial risks are not associated with the potential benefits;
3. Public authorities do not have clear expectations in this field.

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3/ PPP and the energy issue High Environmental Quality (HQE) Buildings

HQE in France focuses on:

- Eco-construction (relation between buildings and immediate surroundings, integrated choice of products and systems, green construction site);
- Eco-management (management of energy, management of water, management of waste, maintenance);
- Comfort of users (hydrothermal comfort, noise and acoustics, visual comfort, odor control)
- Health of users (health conditions in spaces, indoor air quality, water quality)

4/ Energy saving performance contracting (ESPC) a European definition

“A contractual arrangement between the beneficiary and the provider (normally an ESCO) of an energy efficiency improvement measure, where investments in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement.”

Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services

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4/ Energy saving performance contracting: a financial tool

Energy saving performance contracting concern all financial instruments *“that are made available to the market place by public or private bodies in order to cover partly or totally the initial project cost for implementing energy efficiency improvement measures”*

Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services

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4/ Energy saving performance contracting: definition of Energy Service Company (ESCO)

“A natural or legal person that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in so doing. The payment for the services delivered is based (either wholly or in part) on the achievement of energy efficiency improvements and on the meeting of the other agreed performance criteria”

Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services

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4/ Energy saving performance contracting: Why the code for public market is not adapted?

- Pre-financing is not allowed by the code for public market.
- Performance is possible only if public authorities finance the project (with their own resources or by borrowing money).
- Financial institutions will never guaranty the results. Only an ESCO can propose this service.

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4/ Energy saving performance contracting: Why PPP appears to be a better solution?

- The energy issue : National and local public authorities have to reduce by 2017 the energy consumption of their buildings by 40% and green house gas emissions by 50%;
- Lack of public funding;
- ESPC concerns existing building - PPP seems to offer better guaranty for performance;
- PPP can be long term contract: renovation works concerning the envelop require a long payback period.

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4/ Energy saving performance contracting: Issue 1: the baseline

The baseline is the key element in any ESPC before and during the contract:

- Define the baseline before the signature of the contract;
- Calculate baseline energy that would have been consumed without the investment;
- Adjust baseline in case of change during the contract.

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4/ Energy saving performance contracting: Issue 2: the preliminary assessment studies (1)

- Preliminary assessment studies (building + equipments) based on the requirements and expectations of public authorities. How far do ESCOs have to go?
- Australia: local authorities select the preferred proponent after the first proposals. Then competitive dialogue with the preferred bidder.
- France: Competitive dialogue with several proponents. Detailed assessment studies are often necessary. Selection of the preferred bidders comes after.

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4/ Energy saving performance contracting: Issue 2: the preliminary assessment studies (2)

Costs of preliminary and detailed assessment studies:
an example

	Preliminary assessment	Detailed assessment
40 sites	57 750 € HT	109 725 € HT
100 sites	144 375 € HT	274 310 € HT

Source: CSTB, ECOCAMPUS, EIFER - 2009

4/ Energy saving performance contracting: Issue 2: the preliminary assessment studies (3)

Preliminary assessment studies:

- will reduce the risks supported by public authorities;
- will improve the definition of the baseline;
- will make the follow up of the contract easier;

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4/ Energy saving performance contracting: Issue 3: the risk

Risk matrix like for traditional PPP but some risks are specific to this kinds of contracts;

- Risk of delay during the competitive dialogue due to a lack of data on energy consumption, on building surfaces...
- Risk linked to the occupancy of the buildings (ESCP concern existing buildings);
- Risk of inappropriate behaviour of the users;
- Inability to reach the energy target because the assessment studies were biased;
- Risk due to a change of the baseline after unexpected works.

4/ Energy saving performance contracting: Why so few PPP projects concern ESPC in France? (4 out of 231)

- Public authorities lack competencies and prefer to follow traditional tracks;
- Lack of data concerning energy consumptions of public buildings;
- Public authorities have not implemented strategic asset management principles;
- ESCOs work mainly on energy systems but do not integrate the works on the envelop of the building.

5/ Energy saving performance contracting: the case of the municipality of TOURS (1)

- Renewal of the contract concerning the energy installations of the municipality of Tours.
- April – may 2006 – Preliminary study
- October 2006 : Agreement of the municipal council
- October – November : Preparation of the call for tenders
- 3 calls for tenders for 160 heating systems – the municipality wants 3 proponents for each call for tenders and a maximum of 6 proponents for the three calls.

5/ Energy saving performance contracting: the case of the municipality of TOURS (2)

- December 2006 : Publication of the call
- February –competitive dialogue starts
- Mid-March : competitive dialogue ends
- End of March : Preparation of the request for proposals
- Proponents have 31 days to prepare their responses to the proposals
- Selection of the preferred proponent at the end of June (three different proponents for each call)
- July: Final agreement of the municipal council – contracts for 12 years with a value of 28.6 million euros.

5/ Energy saving performance contracting: the case of the municipality of TOURS (3)

Selection is based on four criteria:

- Technical quality (56%)
- Costs (34%),
- SMEs (5%),
- Capacity to maintain the service (5%).

Net present value:

- 5% for energy,
- 2,5% for equipments and
- 3,5% for maintenance activities.

5/ Energy saving performance contracting: the case of the municipality of TOURS (5)

- Budget 2008 (in comparison with 2006-2007) : economy of 520 000 euros on the operating budget (360 K€ are used as investments + 160 K€ of energy saving + the installations are renovated)
- Energy bill is reduced by 7,5%
- 1115 tonnes of CO₂ are saved (= a decrease by 15,5%)

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5/ Energy saving performance contracting: the case of the municipality of TOURS (4)

What can we learn from this case?

- 3 experienced people belong to the project team.
- This team will follow the contract for 12 years.
- Innovative disposals to motivate the contractors
- Contract for 12 years but change are possible (eg: increase of energy prices or unexpected works on the envelops of the buildings)
- No proponent propose to work on the envelop; only the systems were optimised.

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- ESPC is just one tool at the disposal of public authorities (or private companies);
- Strategic asset management and data collection for electricity, heating, water, should come first for public authorities managing several buildings;
- ESPC are still in their infant stage but more projects will be developed because of financial and environmental constraints.

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Thank you for your attention

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