

State of the Art

Financial mechanisms to support dissemination of innovative technologies

A Guide for Public Authorities

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1. FOREWORD

Innovative green procurement in the public sector is hampered by different factors most prominent of which is the strict budgeting system that prevents the public sector to invest in projects that are producing energy saving. In practice it appears that even if these projects were cost-effective and profitable (e.g. public lighting projects with relatively short return on investments) the evidence of the total costs of ownership is still difficult to grasp for local authorities. Public private cooperation to achieve finance tools and services may reduce the problems and may provide tools for the public sector to play an advanced role in the application and dissemination of low energy projects and technology.

This state of the art paper is produced in the framework of the PRO-EE project funded by the "Intelligent Energy Europe Program". Public authorities are major purchasers of goods and services and can exercise a very significant range of environmental impacts related to the technical specifications, purchase, transportation, use and disposal of goods. PRO-EE wants to bundle this purchasing power by undertaking large-scale joint procurement and secure a higher market share for the most energy efficient products and accelerate their market penetration. PRO-EE will work on innovative products for which the economical and technical energy saving potential is high. The public authorities involved shall push new environmental technologies in a close consultation process with European industry for more energy efficient office equipment, energy saving streetlights, traffic lights and fuel-efficient vehicles.

In the framework of the PRO-EE project, several tools will be addressed during multi-stakeholders workshops involving technical experts, technologies suppliers, institutional buyers (procurement agencies and companies purchasing services). One of this tool relates to the working group meeting of March 10th in Brussels, specifically:

- A public-private financial initiative to encourage buyers to go for innovative technologies by giving access to financing tools of "innovative non proven technologies"

2. INTRODUCTION AND STATE OF THE ART

Financing is a service, which can be tendered by local authorities to receive the best offer and conditions to implement energy savings by new technologies.

Loans from financial institutions and especially energy performance contracting are widely promoted as the means to overcome financial constraints against energy efficiency investments. In particular, for the public sector this model of Public-Private-Partnership (PPP) is considered to be one of the most effective tools to enhance the energy efficiency in the public building sector. In the member states to the EU, this model of PPP shall help to accelerate the upgrade of public buildings with the most efficient electrical appliances, office lighting etc. Crucial points for the market uptake of this model is the creation of demand in the public sector including the political acceptance of private sector involvement in prior public duties, trust from the private sector in doing business with the regional and local level, trust from the financial institutions in the model, the contracting partners and the applied risk mitigation measures.

A frequently listed argument against energy performance contracting and other kinds of outsourcing services in the public sector is that of loss of work places. It contains more than the fear of staff to loosing their work place. It also includes the fear of loss of control, a fear of possible proof for supposed incapability of proper energy management. Other issues playing a role are a fear of legal problems in the frame of the tender process or, more recently, uncertainties regarding the future demographic development. All of the above can lead to hampering conditions either from staff on the technical implementation level or on the side of the political level. However, fact is, that the backlog of building or cars fleet upgrade is huge, the available investment capital little. Seen against the targets and need for reduced energy consumption (security of supply, reduced dependence on energy imports), a reduction of energy costs (tight public budget situation) and the need to reduce greenhouse gas emissions (climate change), the above-mentioned fears could be countered well. The public

sector alone will just not be able to achieve these targets without additional help from financial institutions.

In Europe, the uptake of energy performance contracting in the public sector is mainly founded on the fact that procurers lacked the necessary investment capital (or access to that capital) for energy efficiency upgrades. Among the requirements for ESCOs to win a tender was and in most cases still is therefore the ability to organise the financing for the project making the ESCO the debtor. This is in contrast to the US market where the debtor can but in many cases is not the ESCO but an intermediary.

With more projects taken off ground, financing of energy services has become increasingly burdensome for ESCOs as well as their customers such as local authorities. Market partners reach their credit line limits; credit liabilities burden balance sheets. In addition, the equipment installed cannot in all cases be used as a collateral by the ESCO. The German Civil Code, for example, stipulates that equipment which is connected to a building passes into ownership of the building owner (the local authority) immediately when it is installed. With regard to the question of ownership, a new outlook is that currently finance options like operate or finance lease agreements are under consideration, and are already applied for some energy performance contracting projects in Austria. Their wider applicability still needs more reference cases and opinions from Ministries of Finance.

Consequently, innovative finance options like finance lease or “pure” forfeiting options have to be developed further and compared with classic finance instruments like credits. Also the question of who is best capable of providing financing, customer, ESCO or financial institution as a third party has to be considered.

The commonly used instrument today for re-financing (hardware costs) by the ESCO or other financial institution is forfeiting. Forfeiting is the in case when a bank loans money through a forfeiting mechanism, the bank wires euros to the ESCO at the time of completion of the project set-up, i.e. when the equipment has been installed the customer (in our case the local authority) makes periodic

fixed payments to the bank. For this, the customer signs an agreement on the amounts to be paid directly to the bank or financial institution. For the ESCO this may mean that the amount of security that it has to provide to the customer is increased. The normal practice could be for example to ask for 5% of the total savings guaranteed over the contract period to be backed by a bank guarantee. If forfeiting is applied, this amount increases to 10% as an additional security for the customer. Since forfeiting is an instrument to re-finance the ESCOs costs fast, it is today commonly used.

From a local authority's perspective, it is desirable to base any debt service on the project cash flow as opposed to basing it on the customer's creditworthiness alone. Debt should be repayable from future project income, the energy cost savings in the case of energy performance contracting. The savings generated are however, not always acknowledged as cash flow and therefore collateral. This is an issue that needs further to be worked on with regard to commercial banks. Commercial banks are interested in the business that can be generated in the field of energy services but there is still caution and barriers. Other issues to consider:

- Project Size: for many banks projects below an investment volume of three million Euros is too small to provide good conditions; support through global loans from development banks, state owned banks, to cover part of the risk could be one solution
- Financial strength of the ESCO: a small ESCO with less collateral acceptable to a bank will have larger overall capital costs, thus overall project costs will increase. If the value of the guaranteed savings were included and ranked higher in the due diligence this would improve the outlook on conditions for smaller companies. The cash flow generated in an energy performance contracting project is an asset. The value of this asset currently is not valued as such by banks.
- Project risks and risk mitigation instruments: For all the above-mentioned issues, the procurement tender, its feasibility and applied risk mitigation strategies are essential.

Banks need to understand the value of the guarantee given, need more information on how energy performance contracting works.

3. COSTS OF SUSTAINABILITY PURCHASING

Every business case has both benefits and costs. As the foregoing has demonstrated, a sustainability purchasing program by public authorities can generate significant financial benefits. There are costs to sustainability purchasing as well, enumerated below, along with strategies for managing and reducing these costs. Typical costs of establishing and operating a sustainability purchasing program include costs associated with the labor and research required to establish a program, stakeholder engagement expenses (i.e. informing, training and working with staff, suppliers and other stakeholders) and cost premiums on more sustainable products (some of which may have a longer-term payback).

It bears mention, however, that while there are material costs associated with developing and implementing a sustainable purchasing program, there are also significant costs in not having a program. Public authorities without sustainability purchasing programs could suffer reputation, climate change and other risks and experience productivity and innovation lags relative to their peers, for example. These costs are expected to grow with heightened consumer, government, NGO, community and investor concerns, over environmental and social conditions in the coming decades. For instance, global annual energy consumption in lighting is estimated at more than 2,100 TWh, of which urban/road lighting accounts for 8% of it (approximately 12-15% of global electricity production). Improved efficiency has a direct bearing on emissions and helping to meet tightening Kyoto targets. Some studies suggest we could achieve savings in Europe of over 20 TWh, equivalent to 10 million tonnes of CO₂, about 4% of the total EU commitment to the Kyoto agreement.

A key strategy for overcoming both cost and other barriers is to liaise with other local authorities prior the launching of the tender process. Organizations that engage with other purchasers find they are not alone, and it often helps to learn from others, or to work together to problem solve. Learning from others, particularly, can be a cost-effective approach to policy development and

implementation. Cost-sharing research and collaborating on projects and policy development can further help offset expenses and start-up costs. Sustainability Purchasing Networks presents at EU level offer opportunities for purchasers to collaborate with one another by offering case studies, tools, workshops, learning circles, a newsletter and other services.

Whatever the organizational strategy, remember that the development and implementation of a sustainability purchasing program is a process of change. People are often resistant to change, so it's best to expect it. Actively listen to the concerns of managers, employees, end-users, suppliers and others to ensure a full understanding of their concerns. Keep in mind that you may have to provide explanation and assistance along the way. The more staff members you support and assist, the more advocates for sustainability purchasing you will have at the end of the process.

4. MINIMISING OVERALL COSTS

While there are a number of costs and barriers to the successful implementation of a sustainability purchasing program, there are effective ways to minimize costs and overcome barriers. There are a number of tools to assist purchasers to identify and manage the financial implications of a sustainability purchasing policy:

- Acquisition planning is a framework for purchasers to effectively plan or defer purchases;
- 'Budget envelope' approach to purchasing uses cost offsets in one area (e.g. in reduced utility costs) to cover price premiums in another area; and
- Total cost of ownership (TCO) method, which illustrates the cradle to grave costs of product ownership, can draw out the sometimes hidden costs of "unsustainable" products and services, leveling the playing field for "sustainable" products and services that have higher initial costs.

Acquisition planning is a tool that allows purchasers to step back and assess whether a purchase is even necessary or useful. With respect to lighting for instance, upgrading to more efficient solution means to replace old lamps even though the existing ones are still perfectly functioning. If the purchase is deemed necessary, then the next step can be to assess alternatives. In large organizations which have dedicated purchasing personnel and where actual buyers may be in separate departments, it is wise and increasingly more common for purchasers, who have considerable product and industry knowledge, to be involved in the beginning phases of the procurement, and to work with the buyer to define and assess the need. Ultimately, avoiding a purchase all together may be the most environmentally responsible action. While that is not always possible, evaluating and reducing the need, use and scale of a purchase is a step in the right direction. The quantity purchased must be appropriate and sure to be used. Discussions with buyers regarding the necessity of, and possible alternatives to, a purchase, is the root of any procurement strategy.

Organizations that reduce expenses in certain product categories as a result of their sustainability purchasing program, are in a position to apply these cost savings to offset cost premiums of other sustainable products and services. Considered within a "budget envelope" of total purchases, the net effect of a sustainability purchasing program on an organization's bottom line may be neutral or insignificant. Similarly, organizations which are analyzing their supply chains to reduce their negative or maximize their positive social or environmental impacts may well discover other efficiencies and cost-savings as a result, further reducing their overall purchasing expense envelope.

Total cost of ownership (TCO or life time cost) is an important concept for creating the business case for many sustainability purchasing decisions. Total cost of ownership is an evaluation tool often partnered with a sustainability purchasing strategy. TCO is designed to assess the true profitability and sustainability of business investments by considering the time horizon that reflects the entire life cycle (and the economic costs associated with each phase of the cycle) of a product or service. While conventional purchasing evaluation focuses on the acquisition cost of a product or service, TCO evaluation examines hidden costs from production to disposal in addition to the acquisition cost. The

result of the TCO approach is that benefits arising from energy saving have an impact on the decision making

Performing a total cost of ownership evaluation involves moving through a number of logical steps:

1. Identify reasons for purchasing and needs that the purchase should address
2. Define objectives for the purchase and the scope of spending
3. Identify direct and indirect costs of the purchase over its life cycle
4. Analyze financial, ecological and social performance
5. Make decision
6. Measure impacts

There are two major approaches for financing innovative public procurement. One type is service with performance contracting and the other is third party involvement in financing. The difference is that in the service type the rewards of a private company depend on the performance of the project, in the third party involvement the rewards of the private company does not depend on the performance of the project.

5. PERFORMANCE CONTRACTING

According to provisions related to the Energy Services Directive:

Without prejudice to the national and Community public procurement legislation, Member States shall ensure that the public sector applies at least two requirements from the following list in the context of the exemplary role of the public sector as referred to in Article 5:

(a) requirements for the use of financial instruments for energy savings, including energy performance contracting, that stipulate the delivery of measurable and predetermined energy savings (including whenever public administrations have outsourced responsibilities);

Performance Contracting is an innovative financing technique that uses cost savings from reduced energy consumption by new technologies to repay the cost of installing energy conservation measures. Normally offered by Energy Service Companies, this innovative financing technique allows the capture of benefits from energy savings without up front capital expenses on the part of the building owners, since the costs of the energy improvements are borne by the performance contractor and paid back out of the energy savings. Other advantages include the ability to use a single contractor to do necessary energy audits and retrofit and to guarantee the energy savings from a selected series of conservation measures.

Performance contracting is a comprehensive package aimed at the guaranteed improvement of energy and cost efficiency of local authority installations. An ESCO carries out an individually selected cluster of services (planning, building, operation and maintenance) and takes over technical and economical performance risks and guarantees. The Performance service contracting is used in various types, the most common are:

1. Shared saving
2. Guaranteed saving
3. Chauffage

Availability of adequate financial resources for the efficiency investments is a key success factor for the implementation of performance contracting like energy performance contracting. At the same time, these instruments generate further cash flows from energy costs savings that can partly be used to re-finance the energy efficiency investments. The savings are guaranteed by an ESCO and backed up by a payment obligation in case of non-performance.

In energy performance contracting, the local authority and the energy service provider selected through the procurement tender enter into a contractual relationship with the efficiency enhancements provided being refinanced by future costs savings within a project period of 10 years.

The key features of the energy performance contracting models are:

- An ESCO, selected by a procurement tender, plans and realises energy efficient measures for a public authority and is responsible for their performance and maintenance throughout the contract term,
- The ESCO has to guarantee to the local authority energy costs savings compared to present state energy costs baseline,
- The energy investments are partially paid back out of the future energy cost savings given by non proven technologies,
- The local authority continues to pay the same energy costs as before and after termination of the contract the entire savings will benefit the local authority,
- The ESCO's remuneration is the contracting rate and depends on the savings achieved. In case of underperformance the ESCO has to cover the shortfall. Additional savings are shared between local authority and ESCOs.

6. CREDIT FINANCING

Credit financing means that a lender (financial institution) provides a borrower (local authority) with capital for a defined purpose over a fixed period of time with a number of fixed instalments. These instalments have to cover the amount borrowed plus interests rates as well as administrative fees. A credit serves in fact as an extension of the total amount of capital that a local authority can use to do its business i.e. deliver services or produce goods.

Credits require a creditworthy borrower backed up by the ability to perform the debt service. Where public entities are debtors, credit ratings are generally high. To explain:

- The ESCO is responsible for the energy efficient measures and refinances the investments from a credit line,
- The local authority pays a contracting rate which includes a financial share to the ESCO (subject to the performance of the ESCO savings guarantee),
- The ESCO uses the financing part of the contracting rate to perform the debt service.

7. LEASING FINANCE

Leasing is a way to obtain the right to use an asset but not the possession of this asset. Assets in our case mean investments into energy conservation measures. When leasing an energy conservation investment local authorities do not buy it but they pay only for the exclusive right to use it.

Leasing is a contract between the owner of the asset (lessor) and the user (lessee) where the former grants exclusive rights to use the asset for a certain period in return for payment of the lease. The lease is normally paid by instalments to the leasing financial institution. The lessee can be either an ESCO or its client (the local authority).

8. CESSION OR FORFEITING OF CONTRACTING

Cession is a transfer of future receivables from one party (the ESCO) to another (the financial institution). The original creditor (the ESCO) cedes his claims and the new creditor (the financial institution) gains the right to claim future contracting rates from the debtor (the local authority). A precondition is the legal rightfulness of the receivables. This means the ESCO has to perform successfully the energy performance contract and deliver the guaranteed savings for the public authority that selected it.

A cession can be used in addition to a credit or lease financial agreement. The ceding contracting rates serve as additional security for the financial institutions and the clients pay the rates. On the other hand, if a cession is applied without an underlying financing agreement (credit or leasing) it is called pure forfeiting. The financial institution buys the future contracting rates and pays a discounted present value directly to the ESCO.

9. MEZZANINE FINANCING

For projects of large volumes, mezzanine financing may also be an option for ESCOs to finance energy performance contracting procured by local authorities. Mezzanine financing is a hybrid form and can be seen to be between a credit and equity capital. Mezzanine financing is ideal for projects with a high initial investment and income that is starting in the future.

Advantages of mezzanine financing include its proximity to equity and positive influence on the capital structure; its disadvantages are that minimum requirements are usually above 2 million euro and that they require a high return on investment (higher interest rates) than would a good credit.

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