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GPP In practice

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An Energy Service Company (ESCO) used to cut energy use in municipal buildings in Vantaa, Finland

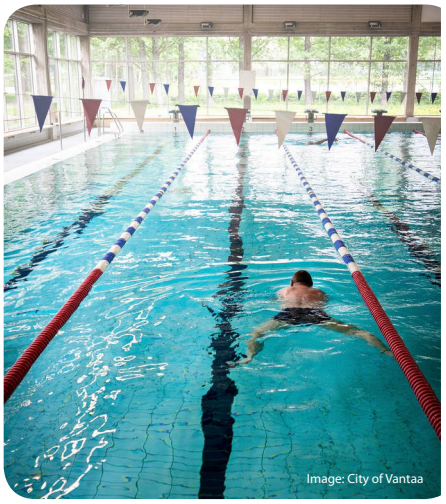


Image: City of Vantaa

Background

The City of Vantaa is the fourth biggest in Finland with a population of just over 200,000. It is part of the Helsinki Metropolitan Area.

The City is now using Energy Performance Contracting (EPC) services to maximise the energy efficiency of public buildings in order to try and meet the City's target of 20% CO_2 reductions by 2020 compared to 1990 levels, in line with national and EU targets.

EPCs are tendered by organisations wishing to take advantage of the technical expertise and finance provided by Energy Service Companies (ESCOs). These companies improve the energy performance of buildings through renovation and/or retrofitting energy efficient and water saving devices such as motion detectors for lighting and aerators on taps.

The cost of implementing energy saving measures is funded over time by the contracting authorities through realised energy savings, which are guaranteed by the ESCO.

Procurement objectives

In 2011, the City of Vantaa started a procurement process to contract an ESCO to improve the energy efficiency of 14 municipal buildings. The justification for this approach was that the energy saving measures and associated cost savings would be realised more immediately than would otherwise be possible using investment from the City's budget alone.

The City decided to pilot ESCO services for 14 buildings over an eight year time period. These properties are representative in terms of their age, size, design etc. The long-term plan is to roll out EPCs for further municipal buildings if energy saving measures prove successful.

Before publishing the actual procurement notice, Vantaa carried out a stakeholder engagement exercise on the use of ESCOs to carry out such work. Procurement objectives were defined ahead of time and the City of Vantaa's climate targets were taken into account as part of the process.

The City aimed to make energy-saving targets both clear and realistic. After consulting legal advice, Vantaa chose to use a negotiated procedure as the best option to utilise market potential and explore available options.

Criteria used

Subject matter: A contract for an Energy Service Company (ESCO) to improve the energy efficiency of 14 municipal buildings.

The combined energy cost of the 14 municipal buildings is €1.3 million per year. The total project investment will be €1.5 million over the 8 years.

The target of the contract period is to achieve savings of up to 30,100 MWh in heat and electric energy. This will cut 7500 tonnes CO_2 eq. emissions

This means annual savings of over €200,000 in the energy costs of the City of Vantaa, which is just over 15% savings in total.

Selection criteria:
Previous experience of undertaking EPC services was a pre-requisite. However, Vantaa decided not to restrict this to municipal EPCs, as experience in this area is relatively limited in Finland and they wanted to try and encourage as much competition as possible. (The value of the contract was relatively low - under the OJEU threshold - so it was most likely to be Finnish ESCOs that would be interested.)

Environmental impacts

Using effective and appropriate procurement procedures and energy performance criteria can reduce energy use significantly, which in turn lowers GHG emissions such as CO_2.

Buildings and equipment must be effectively maintained in order to optimise efficiency. Transferring responsibility for energy efficiency to private entities and using incentives and penalties to encourage high performance levels means that the contractor has a clear incentive for ensuring newly installed equipment is performing correctly and achieving energy savings.

Over the lifetime of this energy service contract, the aim is to realise a total of 30100 MWh energy savings in heat and electricity. According to an average EU household electricity consumption of 2500 kWh*, this is an equivalent amount of energy needed to power over 12000 homes for a year. It is estimated that in total GHG emissions will be reduced over the 8 year contract period by 7500 tonnes CO_2 equivalent emissions.

*According to European Commission: EuroStat

Image: City of Vantaa

Technical specifications:

- The energy savings proposed by the ESCO had to be 100% guaranteed.
- The maximum repayment period is 10 years.
- Indoor air quality must remain similar to the current standard.

To promote innovative solutions from the participating companies, the procurement notice didn't define what energy-saving models should be used nor were any boundary conditions presented. Instead, the participants were given detailed initial information about the energy audits for four buildings enclosed with the notice, on the basis of which they were able to select and suggest energy-saving measures. The energy savings the winning ESCO proposed in its bid were then guaranteed as part of the contract.

Award criteria:

Four negotiations were carried out with each bidder in order to guide Vantaa's approach to the procurement. Aspects discussed included the targets, procurement principles, contract model, and final invitation to tender. The award criteria and their focus areas were selected so that they supported the targets set for the project.

The award criteria for procurement

- Euros saved /year: 20%
- MWh savings/year: 20%
- Savings/year tCO_2e: 30%
- Savings that can still be made in 2023 (MWh): 30%

Contract management and monitoring:

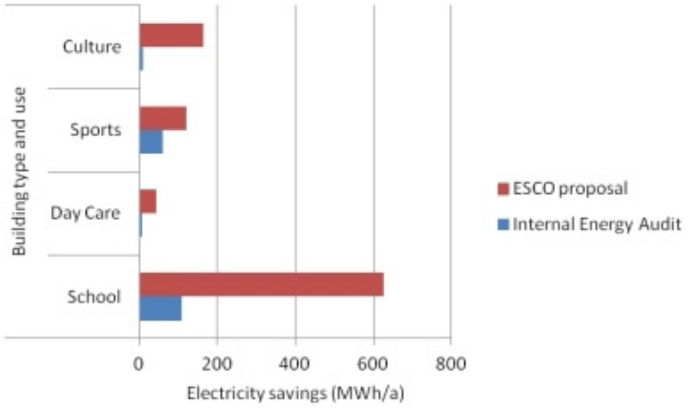
The winning ESCO gave a 100% guarantee of the energy savings they proposed, as required by the City of Vantaa. Any savings above the proposed amount are split between the ESCO and the City and any shortfalls are made up solely by the ESCO. The consumption figures are verified from electricity and district heat meters and the implementation of savings is monitored in follow-up meetings held once a year.

In the follow-up, the entire project, and not individual buildings, is examined. This means that if in one building the savings target is not reached, this can be compensated for if it is exceeded in another.

Results

All in all the procurement process was successful as the end result was in line with the original plan. Four companies responded to the procurement notice and the first investments in energy saving measures began in summer 2014.

The graph below shows the significant increases in the amount of electricity savings proposed by the winning ESCO, compared to the internal audit estimations. In terms of heat, the ESCO's proposals also tended to be higher, although the ESCO guaranteed significantly less water savings than the internal audits estimated was feasible.



The City wished to encourage rather than stifle innovation through its procurement approach, i.e. using stakeholder engagement and a negotiated procedure. However, due to the fact that the City of Vantaa required proposed energy savings to be 100% guaranteed by the ESCO, the companies tended to be risk averse in terms of using innovative energy saving solutions. One of the measures proposed that is predicted to result in the most significant energy savings is LED lighting.

It is foreseen that the budget will still have some room for developing new solutions in the implementation stage. The number of different measures was not determined in advance, either. This will give the supplier freedom to choose the measures that are worth investing in, whilst ensuring that the measures specified by the City of Vantaa will be carried out.

Lessons learned

Staff involved in this pilot programme concluded that energy service contracting has a great deal of potential and that it is a good way to improve the technical functionality and energy efficiency of buildings. They cited the following recommendations to public authorities wishing to establish energy service contracts:

- Gaining knowledge and expertise in energy efficiency is beneficial for project leads in order to effectively "sell" such projects to internal stakeholders.
- Keep the targets clear in your mind from the start as they direct the entire process. All of the selected measures must be related to the targets.
- Guidelines that are too strict may prevent potential contractors from presenting innovative solutions.
- The negotiated procedure challenges both the procurer and the contractor. It is important to gain mutual trust to achieve the desired end result. Suppliers must feel that trade secrets will be kept confidential.
- Make sure that the invitation to tender will comply with your targets, and that the strengths of bidders is taken into account.
- Where possible and necessary, take advantage of legal expertise to help interpret EU public procurement law.
- Engage with possible bidders in a transparent and open dialogue from the outset and take on board their input. This will help in understanding their potential and perspectives, while treating them all equally.
- It is worth investing in pilot projects! The economic situation can provide inspiration for the market to develop effective ways of maintaining and renovating properties to save energy.

For more information, please see European GPP criteria for Construction, Thermal insulation and Indoor lighting.

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