SPP REGIONS
REGIONAL NETWORKS FOR SUSTAINABLE PROCUREMENT

SPP TENDER MODEL

Building retrofit

Deep renovation of Burgas City Hall

Purchasing body:	Burgas municipality
Contract:	Deep renovation of Burgas City Hall Tender publication date: Later in 2018
Savings:	• 282.9 tons of CO_2/year emissions to be saved • Primary energy savings – 0.89 GWh/year • Financial Savings - 37,967 EUR/year

SUMMARY

- Target of 60% energy savings set by Burgas municipality
- Challenging renovation of historical building (without changing facades)
- 1 year guarantee requested from contractors for energy savings
- Design and construction works in one contract
- Tender will result in more energy efficient building and a healthier environment for the municipal staff and the visitors.

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www.sppregions.eu

Procurement Approach

The renovation of heritage buildings is currently a challenge facing public authorities not just in Bulgaria but across the EU. The impossibility to apply standard measures (i.e. external insulation) makes the process of renovation complicated.

For the renovation of the City Hall, the Burgas city administration set a minimum target of **60% primary energy savings** – a highly ambitious goal for such a building. The process started with numerous consultations with technical experts, involving procurers from the municipality and EcoEnergy staff. The main risks to project implementation were identified and the task was considered feasible. Based on the conclusions an energy audit was assigned to a certified company in November 2016. The auditing process took longer than usual due to the numerous iterations made in order to reach the 60% energy savings goal.

The first draft of the audit was submitted in February 2017, and finalised in June.

Based on the recommended measures the tender documentation was developed. As the project will be financed under the Operational Progamme "Regions in growth" 2014 - 2020, a project proposal was also developed and submitted to the programme operator in the beginning of 2018.

The municipality is applying for a budget of 690 000 EUR, and will contribute with its own budget of 380 000 EUR.

The project proposal has already a positive preliminary assessment and will be financed under the programme, but the final approval is delayed. It is expected that the tender will be published in April 2018.

PROCUREMENT INNOVATION

The construction works will not change the facades, but will improve building efficiency with more than 60 % with 1 year warranty for achieved savings requirement.

Another innovative requirement is the implementation of BMS, that is not usually a common practice for the public buildings in Bulgaria.

Market Engagement

During the Bulgarian SPP network meetings, companies involved in building automation were invited in order to share their experience and demonstrate the effect and possibilities such type of measures. Based on the outcomes of these meetings, and numerous discussions between the municipality and EcoEnergy experts, the installation of a Building Management System (BMS) was included in the project proposal and will be implemented. Although a standard investment for big retail shops and private office buildings, such a measure is rarely implemented in public buildings in Bulgaria, due to the high costs and limited municipal budgets.

Incentivising the contractor

In order to help ensure the high energy efficiency requirements will be achieved, one innovation in this tender is to require a bank guarantee from the contractor for one year. If the energy savings are

not achieved the guarantee will not be released. For this purpose the contractor will also be responsible for building managed for this first year. The size of the guarantee is to be proposed by the bidders, and will form part of the tender evaluation process.

Innovation in renovation

In addition to the bank guarantee approach described above, a number of further innovative measures will be required within this tender, including the installation of a Building Management System that guarantees the effective management of the buildings and provides information about the achieved results, and setting evaluation criteria on measures to improve resource efficiency and increase user comfort.

Such measures are usually not included in projects for **renovation of existing public buildings** in Bulgaria.

Tender specifications and Verification

TECHNICAL SPECIFICATIONS

- Full set of energy efficiency measures (envelope, building systems, RES, BMS), as defined by the energy audit
- Warranty periods for the insulation, HVAC (Heating, Ventilation and Air Conditioning) systems, windows (5 years standard and additional points in case of 10 years)

AWARD CRITERIA

- Price - max. 50 points
  - Construction works price - max. 30 points
  - Cost for building management for 1 year - 10 points
  - Amount of bank warranty for achieved savings - 10 points
- Technical proposal - max. 50 points
  - Warranty periods - max. 20 points
  - Measures to reduce inconvenience to office workers during construction works - 5 points
  - Measures to improve resource efficiency and increase user comfort (i.e. decrease tap water flow, turn off heating while windows are open, noise insulations, ventilation flaps etc.) - 25 points

A regional approach to SPP

This is the second tender within the Bulgarian SPP network (after Sts. Cyril and Methodius school in Gabrovo) requiring implementation of BMS during renovation of public building. This approach aims to reach higher energy standards and monitoring of the achieved results after project completion.

The need for monitoring and verification of projects for renovation of buildings was discussed by the network members at their regular meetings and the successful implementation of this project will demonstrate to Bulgarian municipalities the benefits of this measure.

All network members recognized the need for **deep** renovation of public buildings and put the sustainable use of energy as their priority. After the project implementation the building will reach energy efficiency class B (beyond the class C required by Bulgarian legislation).

Results

Environmental impacts

Two approaches were used to calculate the environmental impact of the tender. The results in Table 1 show comparison of the green tender against the actual consumption of the building before project implementation, as well as with the energy consumption if the legislative minimum requirements of energy efficiency class C were fulfilled.

Table 1: Environmental savings green tender compared to benchmark and conventional solutions

Tender	Consumption (kWh/year) (Nm^3/yr)	CO_2 emissions (tCO_2/year)	Primary Energy consumption (GWh/year)	RES triggered (GWh/yr)
Benchmark (electricity and natural gas)	479,229 kWh 30,754 Nm^3	469.5	1.54	0
Minimum requirement (electricity and natural gas)	431,306 kWh 20,989 Nm^3	405.8	1.31	0
Green tender (electricity, electricity RES and natural gas)	211,917 kWh 63,665 kWh RES 4,759 Nm^3	186.6	0.65	0.064
Savings between green tender compared to benchmark		**282.9**	**0.89**	**0.064**
Savings between green tender compared to minimum requirement		**219.22**	**0.66**	**0.064**

CALCULATION BASIS

- CO_2 emissions factor for electricity: 0.819 kg/kWh
- CO_2 emissions factor for natural gas: 2.503 kg/Nm^3
- Primary energy factor for electricity: 2.5
- Primary energy factor for natural gas: 1.1
- Primary energy consumption for the minimum required class C: 283 kWh/m^2/yr
- The calculation has been conducted using the tool developed in the GPP 2020 project (*www.gpp2020.eu*), and adjusted in the SPP Regions project (*www.sppregions.eu*). The detailed calculations can be found in Annex 1 of the present document.

Financial and social impacts

Currently due to the poor condition of the building envelope and the building systems, thermal comfort in the building is often low during the coldest weeks.. After project implementation a much more healthy environment will be provided for the municipal staff and the visitors.

Furthermore, after the implementation of the energy efficiency measures the annual expenses for electricity and natural gas will decrease by 37,967 EUR/yr.

Market response

It is expected that the tender will raise a lot of interest through the local and national construction companies as the City hall of Burgas is a famous building that will be a good reference in each company portfolio. The project was discussed numerous times during the Bulgarian SPP network meetings where private companies participated and shared their experience in building automation, monitoring and energy performance contracts.

Lessons learned and future challenges

Currently the common practice in Bulgaria for the implementation of energy efficiency measures in buildings does not bind the contractors to the expected energy savings but only guarantee that the construction work and the delivered equipment is provided. The innovative approach taken here with the additional 1 year energy savings guarantee as an evaluation criteria hopes to address this shortcoming.

Such an approach should assure the municipality that the contractor will implement the measures responsibly, and the achieved results will be measured and analyzed.

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Annex 1 - Calculation of environmental savings (if relevant)

Calculations made using the tool developed within the GPP 2020 project (www.gpp2020.eu), and refined within the SPP Regions project. Available on the SPP Regions website.

Location of energy contracting	Bulgaria											
CO_2-emissions per kWh electricity (kg/kWh)	0,819	*If you know your own rate, enter it on the sheet "General Assumptions".*										
Lifetime of the measures implemented in the course of the contract	25	years										
INPUT DATA												
	Baseline			**Conventional tender**			**Green tender**					
Energy source	**Current annual energy consumption**			**Expected annual energy consumption**			**Expected annual energy consumption**					
Electricity, conventional	479 229	kWh		431 306	kWh		211 917	kWh				
Electricity, green		kWh			kWh		63 665	kWh				
Heating oil		l			l			l				
Natural Gas	30 754	m^3		20 989	m^3		4 759	m^3				
Wood pellets		kg			kg			kg				
Wood		kg			kg			kg				
District heating		kWh			kWh			kWh				
Coal Briquette		kg			kg			kg				
Lignite high quality		kg			kg			kg				
Lignite low quality		kg			kg			kg				
Coke/Anthracite		kg			kg			kg				
									TOTAL			
SAVINGS												
	Savings (Baseline / Green tender)			**Savings (Conventional / Green)**								
Expected results	**Per year**	**Per lifetime**	**Percentage**	**Per year**	**Per lifetime**	**Percentage**						
Primary energy savings, (GWh)	0,89	22,2	57,63%	0,66	16,49	50,25%						
Reduction of CO_2 emissions, (t CO_2)	282,9	7 072,8	60,26%	219,22	5 480,53	54,03%						

About SPP Regions

SPP Regions is promoting the creation and expansion of 7 European regional networks of municipalities working together on sustainable public procurement (SPP) and public procurement of innovation (PPI).

The regional networks are collaborating directly on tendering for eco-innovative solutions, whilst building capacities and transferring skills and knowledge through their SPP and PPI activities. The 42 tenders within the project will achieve 54.3 GWH/year primary energy savings and trigger 45 GWh/year renewable energy.

SPP REGIONS PARTNERS

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