



## ENERGY EFFICIENCY PROJECT DEVELOPMENT ASSISTANCE FOR SOUTH ATTICA

### **Title:**

# **Overview of main characteristics of launched tenders**

**Deliverable D5.1**

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## Statement of Originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

## Investment #1 of the Municipality of Alimos

**Investment #1** concerns the energy efficiency improvement of 10 municipal buildings of Municipality of Alimos, by implementing a series of energy efficiency measures as well as RES generation. The interventions concern namely the following:

- (a) installation of heat pumps to replace the existing oil and natural gas heating systems
- (b) installation of LED lights
- (c) installation of double glazed windows and aluminum window frames
- (d) roof and wall insulation and
- (e) installation of PV panels on the roofs of Municipal buildings

The total procured budget (including VAT) of Investment #1 is **2,359,799€**.

For the procurement of this investment Municipality of Alimos proceeded with a Competition Call according to the National Law for public tenders, Law 4412/2016, harmonizing the European Directive 2014/24/EU. The tender is conducted via open electronic auction, with the award criterion to be the best price criterion and the type of contract is a work contract.

The contract is financed by:

- a grant received from the Municipality of Alimos and more specifically, from 'SYDNA'- Integrated spatial investment of sustainable urban development. This grant reaches almost 81% of the procured budget
- as well as Municipality's own equity for the remaining 19%

In order to incorporate some features of an Energy Performance Contract, and more specifically of a Guaranteed Savings Contract, Municipality of Alimos requests from the Contractor to achieve certain level of energy class upgrade of the buildings involved, according to the national building code (KENAK). Moreover, to safeguard the sound operation of all installed equipment and their proper maintenance for 5 years, the Contractor will provide a 5-year guarantee.

This guarantee, if no deviations from minimum requirements are observed, will be returned to the Contractor in the end of the 5-year period, otherwise a proportional amount of the deviation will be retained.

About the quantitative impact of the tender, the primary energy saving is estimated to 1,282 MWh/year, the renewable energy production is estimated to 89.3 MWh/year and the CO<sub>2</sub> emissions reduction is estimated to 380 tn /year, into a total number of 10 buildings, covering an overall surface of 14,772 m<sup>2</sup>.

**Table 1**      **Financing scheme and status of investment #1 in the Municipality of Alimos**

INVESTMENT #1	
<b>Investment budget (m€)</b>	2.36
▪ <b>Of which EE measures (m€)</b>	2.27
▪ <b>Of which RES (m€)</b>	0.094
<b>Type of contract &amp; financing scheme</b>	Guaranteed Savings EPC, financed by a 81% public grant and by a 19% own equity
<b>Status of investment</b>	Procured
<b>Proof of Investment</b>	Competition Call launched on 30 <sup>th</sup> of March 2022

## Investment #2 of the Municipality of Agios Dimitrios

**Investment #2** concerns the provision of virtual net-metering services through RES in municipal facilities of Agios Dimitrios. Bidders are invited to install photovoltaic systems on the roofs of 35 Municipal buildings and the electricity generated from the above will be offset primarily by the electrical meters of the same buildings and then virtually by selected streetlighting meters and other future facilities of the Municipality. The total installed power of the photovoltaic systems is equal to 2,381 kWp. The investment budget to be procured<sup>1</sup> is **4,211,141€** (including VAT of 24%).

Tenders' legal framework will be the National Law for public tenders, Law 4412/2016, harmonizing the European Directive 2014/24/EU. The tender will be conducted via open electronic auction and it will be a service contract. This approach of using a service contract for PV installation is a new approach that hasn't been used in the past before and introduces the Energy Performance Contracting (EPC) concept in the investment. It will be financed 100% by the ESCO contractor, who will be repaid through a 10 years EPC.

The award criterion will be the most economically advantageous tender, based on the best value-price criterion of the Life Cycle Cost approach, as foreseen in Articles 86 and 87 of Law 4412/2016. The object of the tender includes the installation of photovoltaic systems with a total power of at least 2,381.11 kWp interconnected with the HEDNO S.A. (Hellenic Electricity Distribution Network Operator S.A.) network and installation of all relevant required equipment such as support bases, inverters, wiring, lightning protection etc., but also metering and monitoring equipment, activation of each photovoltaic system by the competent service of HEDNO and the maintenance of the system for ten (10) years from the date of its activation by HEDNO.

About the quantitative impact of the tender, the renewable energy production is estimated to 3,561 MWh/year and the CO<sub>2</sub> emissions reduction is estimated to 1,396 tn /year, into a total number of 35 buildings, with PVs installed capacity reaching 2,381kWp.

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<sup>1</sup> This investment will be procured as soon as a legislative change in the current Law for net metering is voted. This change will allow offsetting PV production also with street lighting meters and not only with building meters.

**Table 2**      **Financing scheme and status of investment #2 in the Municipality of Agios Dimitrios**

INVESTMENT #2	
<b>Investment budget (m€)</b>	4.21
▪ <b>Of which EE measures (m€)</b>	0
▪ <b>Of which RES (m€)</b>	4.21
<b>Type of contract &amp; financing scheme</b>	Guaranteed Performance EPC, financed by 100% by the ESCO
<b>Status of investment</b>	To be procured
<b>Proof of Investment</b>	Final Draft of Competition Call that is expected to be launched in 2022

## Investment #4 of the Municipality of Vari-Voula-Vouliagmeni

**Investment #4** concerns the energy upgrade of twenty-eight (28) municipal buildings, through the application of Energy Efficiency measures and RES installation, improving the energy mix of the proposed buildings and reducing the energy carbon footprint of the Municipality.

This investment was procured via two distinct tenders, comprising a total investment budget (VAT included) of **1.404.599€**, including a series of interventions, namely:

- (a) the installation of PV panels on the roofs of twenty-seven (27) Municipal buildings,
- (b) the installation of LED lights at six (6) municipal buildings,
- (c) the replacement of old heating systems with new, less energy consuming heat pumps at four (4) municipal buildings,
- (d) energy consumption and other Key Performance Indicators (KPI's) monitoring for twenty-eight (28) municipal buildings and
- (e) roof insulation at five (5) municipal buildings.

The first (a) to (d) interventions were launched within the first tender, characterized as a mixed supply and service tender of 1.227.600€ and the (e) intervention as a work tender of 176.999€. Total costs included VAT.

Tenders' legal framework was the National Law for public tenders, Law 4412/2016, harmonizing to the European Directive 2014/24/EU. Both tenders were conducted via open electronic auction, with the award criterion set to be the best price criterion.

The first contract, which is the mixed supply and service contract, shall be fully compensated by the ESCO contractor (100% ESCO financing) through a 5-year Energy Performance Contract (EPC) of Guaranteed Savings, while the second contract, which is a work contract, shall be fully paid by the Municipality to the technical company awarded, upon completion of works.

About the quantitative aspect of the two tenders, the primary energy saving is estimated to 206 MWh/year, the renewable energy production is estimated to 326 MWh/year and the CO<sub>2</sub> emissions reduction is estimated to 310 tn /year, into a total number of 28 buildings, covering an overall surface of 28.956 m<sup>2</sup>.



**Table 3** *Financing scheme and status of investment #4 in the Municipality of Vari-Voula-Vouliagmeni*

	INVESTMENT #4.1	INVESTMENT #4.2	INVESTMENT #4
<b>Investment budget (m€)</b>	1.23 m€	0.18 m€	<b>1.41m€</b>
▪ <b>Of which EE measures (m€)</b>	0.97 m€	0.18 m€	<b>1.15 m€</b>
▪ <b>Of which RES (m€)</b>	0.26 m€	0 m€	<b>0.26 m€</b>
▪ <b>Type of contract &amp; financing scheme</b>	Guaranteed Savings EPC financed 100% by the ESCO	Work contract financed 100% by municipality's own equity	
▪ <b>Status of investment</b>	Procured	Procured	

## Investment #5 of the Municipality of Agii Anargyri - Kamatero

**Investment #5** concerns the energy efficiency improvement of 23 municipal buildings of City of AAK, by implementing a series of energy efficiency measures as well as RES generation. This investment was procured via two distinct tenders, comprising a total investment budget (VAT included) of **5,282,557€**, including a series of interventions, namely:

- (a) installation of PV panels on the roofs of Municipal buildings,
- (b) installation of LED light,
- (c) replacement of old heating systems with new, less energy consuming heat pumps
- (d) roof insulation
- (e) installation of BEMS
- (f) issue of Energy Performance Certificates
- (g) Measurement and Verification of energy performance, monitoring of energy consumption and monitoring other Key Performance Indicators (KPI's)

Elements (a) to (f) are common in both tenders, with the difference that the first tender is applied in 4 buildings, while the second tender is applied in 19 buildings. Element (g), which deals with M&V, can be found only in the second tender, which is an energy performance contract of guaranteed savings

The first tender is a work contract with a procured budget (including VAT) of 855,871€. This tender is financed by:

- a grant received from City of AAK and more specifically, from the Operational Programme Attica, which is funded by the European Structural Fund and National resource. This grant reaches almost 72% of the procured budget
- as well as Municipality's own equity for the remaining 28%

The second tender is a mixed contract of work, supply and services with a procured budget (including VAT) of 4,422,000€. This tender is financed by:

- a grant from national funds under the name 'Green Fund' by 13%
- Municipality's own equity by 14%
- The ESCO by 73%

Both tenders' legal framework is the National Law for public tenders, Law 4412/2016, harmonizing to the European Directive 2014/24/EU. The tenders are conducted via open electronic auction, with the first tender having as the award criterion the best price criterion, while the second tender having the best value for money criterion taking into consideration both price and technical requirements.

The first tender is procured as a work contract. The second tender incorporates many features of an Energy Performance Contract, and more specifically of a Guaranteed Savings Contract. The ESCO receives upon completion, a first payment coming from the grant and municipality's own equity, while the remaining part is paid of annually during the 10-year contract, given that the

minimum performance levels are achieved. For this reason, a Measurement and Verification Plan has been integrated in the contract, the main elements of which are predefined already at the procurement stage. In case of deviation, a proportional decrease of its payment has been included in the contract with a penal clause for under-performance.

About the quantitative impact of investment #5, the primary energy savings are estimated to 1,089 MWh/year, the renewable energy production is estimated to 660 MWh/year and the CO<sub>2</sub> emissions reduction is estimated to 463 tn /year, into a total number of 23 buildings, covering an overall surface of 33,858 m<sup>2</sup>.

**Table 4** *Financing scheme and status of investment #5 in the Municipality of Agii Anargyri - Kamatero*

	#5.1	#5.2	INVESTMENT #5
<b>Investment budget (m€)</b>	0.86 m€	4.42 m€	<b>5.28 m€</b>
▪ <b>Of which EE measures (m€)</b>	0.73 m€	4.04 m€	<b>4.77 m€</b>
▪ <b>Of which RES (m€)</b>	0.12 m€	0.38 m€	<b>0.51 m€</b>
<b>Type of contract &amp; financing scheme</b>	work contract with guaranteed savings financed by 72% from a grant and 28% by municipality's own equity	Guaranteed Savings EPC financed 73% by the ESCO, 13% by a grant and 14% by municipality's own equity	
<b>Status of investment</b>	Procured	Procured	

## Investment #6 of the Municipality of Alimos

**Investment #6** deals with the installation of LED lighting fixtures for saving energy in the municipal street-lighting sector of the Municipality of Alimos contributing to saving of energy and the improvement of the environment through the reduction of CO<sub>2</sub> emissions in the municipal lighting of external public spaces and streets. The investment signed budget (including VAT) is of **3,085,512.41€**. Tenders' legal framework was the National Law for public tenders, Law 4412/2016, harmonizing the European Directive 2014/24/EU. The tender was conducted via open electronic auction, with the award criterion set to be the most economically advantageous tender, based on the best value, according to Art. 86 of Law 4412/2016.

The type of contract used for this project, is the supply contract type, but additional specific features have been included so as to fulfill certain terms used in an Energy Performance Contract (EPC) and more specifically of a Guaranteed Savings EPC. A guaranteed energy savings penal clause related to the achieved energy savings, and the maintenance and sound operation of the equipment has been included. The Municipality of Alimos financed this contract through the public Fund for Consignments and Loans (TPD) by receiving a low interest loan. The Contractor is paid upon completion, but the 50% equipment guarantee that was requested, is released in equal annual payments for the ten (10) years-period of the contract, as long as the energy savings are achieved. The contract duration is 10 years..

About the quantitative aspect of the tender, the primary energy savings are estimated to 11,087 MWh/year, and the CO<sub>2</sub> emissions reduction is estimated to 3,781 tn/year, into a total number of 5,220 lighting fixtures.

**Table 5** *Financing scheme and status of investment #6 in the Municipality of Alimos*

Investment #6	
<b>Investment budget (m€)</b>	3.09 m€
▪ <b>Of which EE measures (m€)</b>	3.09 m€
▪ <b>Of which RES (m€)</b>	0 m€
<b>Type of contract &amp; financing scheme</b>	10-year Guaranteed Savings EPC, paid upon completion, with a 50% equipment guarantee released in equal amounts, given the guaranteed savings are reached
<b>Status of investment</b>	Signed

## Investment #8 of the Municipality of Agii Anargyri - Kamatero

**Investment #8** concerns the energy efficiency improvement of the Municipal street-lighting, through the replacement of the old lighting fixtures with new ones of LED technology, as well as the installation of a remote monitoring and control system in the City of AAK. The investment signed budget (including VAT) is of **4,712,675.80€**.

More specifically, the tender refers to the supply and installation of the following:

- 5,550 luminaires of LED technology for street lighting, with central monitoring and control system
- 1,300 luminaires of LED technology, with integrated automatic dimmer
- 200 luminaires of LED technology, traditional LED type, with integrated automatic dimmer
- Replacement of 3,951 luminaire support arms
- “Municipal street lighting Monitoring and Control System” with integrated Internet of Things (IoT) technologies

This investment aims at developing modern urban lighting systems with maximum geographical coverage and optimal lighting quality. In particular, it promotes the utilization of modern technical capabilities and the improvement of efficiency of existing infrastructure, and finally the upgrading of the services provided to the citizens. Tenders’ legal framework was the National Law for public tenders, Law 4412/2016, harmonizing the European Directive 2014/24/EU. The tender was conducted via open electronic auction, with the award criterion set to be the most economically advantageous tender, based on the best value, based on a life cycle cost approach, according to Art. 86 and 87 of Law 4412/2016.

The type of contract used for this project, is the supply contract type, but additional specific features have been included so as to fulfill certain terms used in an Energy Performance Contract (EPC) and more specifically of a Guaranteed Performance Contract, such as a guaranteed energy savings penal clause related to the achieved energy savings, and the maintenance and sound operation of the equipment. Even though the Municipality of Agii Anargyri-Kamatero financed this contract through the public Fund for Consignments and Loans (TPD) by receiving a low interest loan, the penal clause included in the contract foresees that the Contractor is paid off the 70% of the project cost upon completion, while the remaining 30% will be paid off in equal installments provided that the agreed energy savings are achieved. The contract duration is 10 years.

About the quantitative aspect of the tender, the primary energy savings are estimated to 14,240 MWh/year, and the CO<sub>2</sub> emissions reduction is estimated to 4,856 tn/year, into a total number of 7,050 lighting fixtures.

**Table 6** *Financing scheme and status of investment #8 in the Municipality of Agii Anargyri – Kamatero*

Investment #8	
<b>Investment budget (m€)</b>	4,71
• <b>Of which EE measures (m€)</b>	4,71
• <b>Of which RES (m€)</b>	0,00
<b>Type of contract &amp; financing scheme</b>	10-year Guaranteed Savings EPC, 70% paid upon completion and 30% through annual installments conditional to energy efficiency target
<b>Status of investment</b>	Signed

**Table 7** *Overview of the investments concerning Building renovations and Street-lighting*

	#1	#2	#4.1	#4.2	#5.1	#5.2	#6	#8
<b>Area of investment</b>	<b>Buildings renovations</b>						<b>Street lighting</b>	
<b>Budget (m€)</b>	2.36	4.21	1.23 m€	0.18 m€	0.86 m€	4.42 m€	3.09 m€	4,71
• <b>Of which EE measures (m€)</b>	2.27	0	0.97 m€	0.18 m€	0.73 m€	4.04 m€	3.09 m€	4,71
• <b>Of which RES (m€)</b>	0.094	4.21	0.26 m€	0 m€	0.12 m€	0.38 m€	0 m€	0,00
<b>Type of contract &amp; financing scheme</b>	Guaranteed Savings EPC, financed by a 81% public grant and by a 19% own equity	Guaranteed Performance EPC, financed by 100% by the ESCO	Guaranteed Savings EPC financed 100% by the ESCO	Work contract financed 100% by municipality's own equity	Work contract with guaranteed savings financed by 72% from a grant and 28% by municipality's own equity	Guaranteed Savings EPC financed 73% by the ESCO, 13% by a grant and 14% by municipality's own equity	10-year Guaranteed Savings EPC, paid upon completion, with a 50% equipment guarantee released in equal amounts, given the guaranteed savings are reached	10-year Guaranteed Savings EPC, 70% paid upon completion and 30% through annual installments conditional to energy efficiency target
<b>Status of investment</b>	Procured	To be procured	Procured	Procured	Procured	Procured	Signed	Signed



**PROJECT COORDINATOR**  
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**Agios Dimitrios Municipality**



**Glyfada Municipality**



**Vari - Voula - Vouliagmeni  
Municipality**



**Agii Anargiri - Kamatero  
Municipality**



**Palaio Faliro Municipality**



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