



# **Energy Efficiency Project Development for South Attica**

**Coordinator Alimos Municipality**

# ProDeSA

Ανάπτυξη Έργων Ενεργειακής  
Αποδοτικότητας στη Νότια Αττική



**Seven municipalities** located in the Athens Metropolitan area will reduce their energy bills via energy efficiency retrofits and by locally available renewable energy sources

# Project Outline

- **Seven municipalities** located in the Athens Metropolitan area will reduce their energy bills via energy efficiency retrofits and by locally available renewable energy sources
- PRODESA is a project of “**showcase dimension**” and will provide the means to mature projects and sign implementation contracts for energy conservation measures in about **116** municipal buildings and **6.3** MW street lighting
- The project is focusing on **pooling of financial resources** and on **optimal bundling** of fragmented municipal projects. Bundling will lead to considerable size, lower processing costs, reasonable payback time and risk diversification for all parties involved, namely project owners, investors, ESCOs, construction companies and suppliers of equipment

# A project of showcase dimension with direct impact on 460.000 citizens

- 116 municipal buildings
- 3,2 MW pv on buildings based on net metering
- 6,3 MW streetlighting



# Partners – Cooperation of Municipalities

PRODESA benefits from the **cooperation** and **exchange of experience** of seven municipalities in Athens. Most of them located in the southern part of Athens

Five municipalities will develop projects and proceed with tendering and contract signing:

- **ALIMOS (Project Leader)**
- **AGIOS DIMITRIOS**
- **GLYFADA**
- **VARIS - VOULA – VOULIAGMENI**
- **AGII ANARGIRI – KAMATERO**



Δήμος  
Βόρνης  
Βούλας  
Βουλιγαγμέννης



Two municipalities will participate as replicators

- **PALAIIO FALIRO**
- **AMAROUSSION**



Results to be disseminated to all municipalities in Greece via

- **CENTRAL UNION OF MUNICIPALITIES OF GREECE**

also participating in PRODESA



# Facilitating Partners

- EUDITI**  
Energy and Environmental Design LTD  
Project management & coordination support  
Technical support  

- CRES**  
Centre for Renewable Energy Sources  
Support on regulatory issues  
Technical support  

- ENFINITY NV**  
Support on project financing issues  

- ECN**  
European Crowdfunding Network  
Support on crowdfunding issues  

- Kelemenis & Co. Law Firm** Legal support  


# Supported with 100% by the European Program:



## Horizon 2020 Energy Efficiency

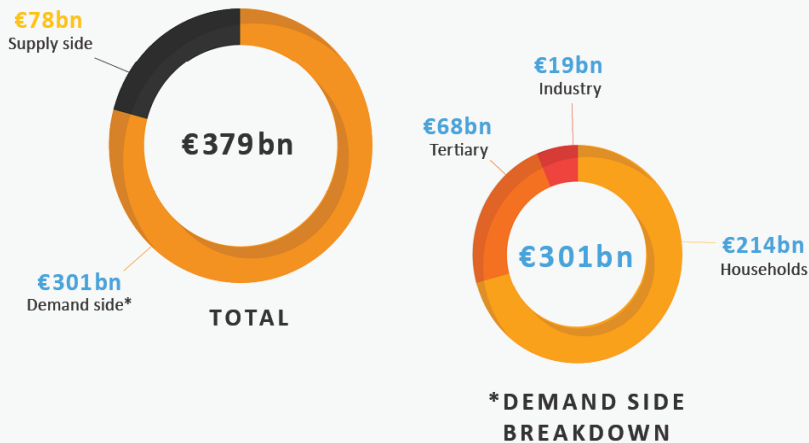
As part of Horizon 2020's energy challenge for secure, clean and efficient energy for Europe, the European Union launched 44 new projects under the Call 2016 to support Europe's transition to a more energy efficient future.



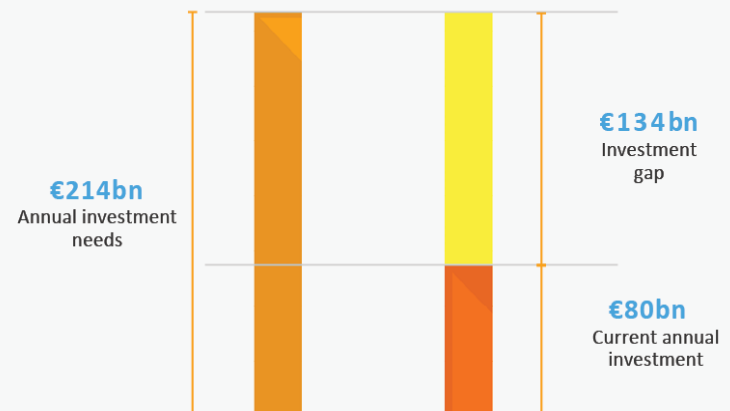
Innovative financing /  
EE22/2016 Project development assistance

# Why support innovative financing

## EU ANNUAL CLEAN ENERGY INVESTMENT NEEDS 2020-2030



## EU INVESTMENT GAP FOR ENERGY EFFICIENCY IN HOUSEHOLDS



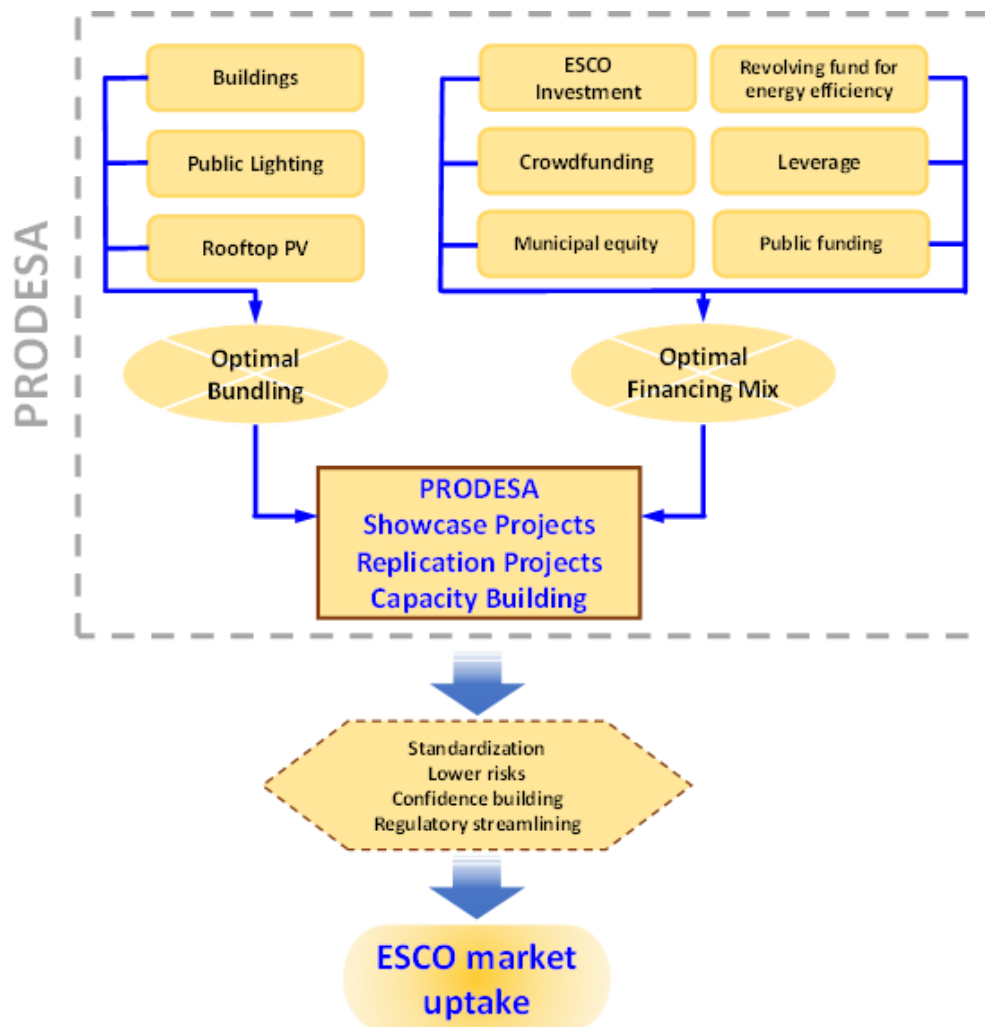
Source: 'Efficiency first scorecard', Briefing paper 2017, E3G



# Objectives

- Technical and economic study of energy interventions and categorization based on criteria of energy efficiency and economics
- Bundling of energy efficiency interventions to make sizable projects facilitating their implementation via Energy Performance Contracts
- Development of a financing scheme which will provide guaranties for all parties and reduce the operational risks
- Contribution to standardization of energy efficiency projects in municipalities (design studies, specifications, guaranties, contracts, verification)
- Demonstrate financing and organisational innovation for the municipalities in Greece and produce “Data Evidence” on performance of EPCs and investments

# The Concept



# Energy Efficiency Objectives

In 116 municipal buildings

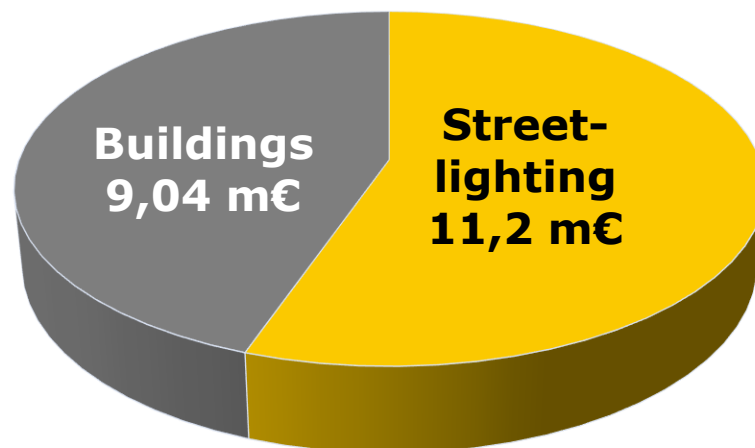
- expected primary energy savings 8 GWh/year
- PV electricity generation 4,8 GWh/year

6,3 MW streetlighting

Primary energy savings 37,6 GWh/year



# The Investment



**Total Investment: 20,4 m€**

|                        | Current Primary Energy Consumption (GWh/year) | Primary Energy Savings (GWh/year) | Savings in % | Electricity generation by PV (GWh/year) |
|------------------------|---|-----------------------------------|--------------|---|
| <b>Buildings</b>       | 18,96   | 8,02                              | 42           | 4,8                                     |
| <b>Street-lighting</b> | 60,11   | 37,63                             | 61,7         | -                                       |
| <b>Total</b>           | <b>79,07</b>                                  | <b>45,65</b>                      |              | <b>4,8</b>                              |

# Initial Bundling of Interventions

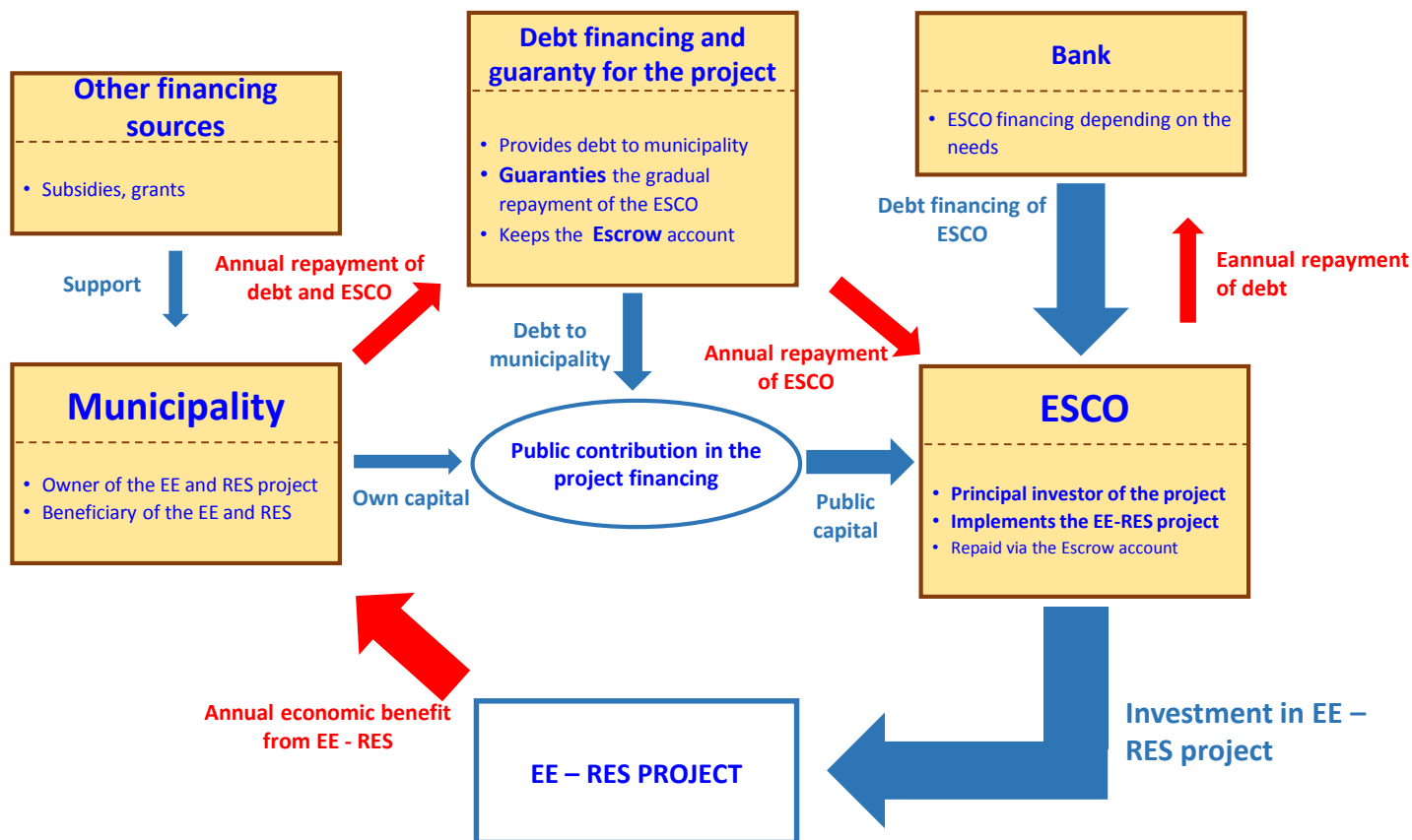
|                          | <b>Buildings<br/>(m €)</b> | <b>Streetlighting<br/>(m €)</b> | <b>Total Investment<br/>(m €)</b> |
|--------------------------|----------------------------|---------------------------------|-----------------------------------|
| Alimos                   | 1.24                       | 4.0                             | 5.24                              |
| Ag. Dimitrios            | 2.44                       | --                              | 2.44                              |
| Glyfada                  | 1.11                       | 5.7                             | 6.81                              |
| Voula                    | 2.47                       | ---                             | 2.47                              |
| Ag. Anargiri<br>Kamatero | 1.78                       | 1.5                             | 3.28                              |
| Total                    | 9.04                       | 11.2                            | 20.24                             |

# Expected Results from Bundling

Bundling of energy efficiency interventions will lead to:

- ✓ Reduction of operational cost
- ✓ Easier access to financing
- ✓ Attraction of investors' interest
- ✓ Achieve better payback periods
- ✓ Risk reduction (technical, operational, financial)
- ✓ Reduction of project runtime and faster revenue inflow

# Preliminary Financing Scheme



# Major Project Deliverable

**Signed and implemented contracts of  
20,4 m€**



# Replication

- Two fully developed pipelines of projects for the replicator municipalities, Palaio Faliro and Amaroussion
- More than 30 municipalities will receive free coaching for the development of energy efficiency project pipelines

# Project Timeline

- 2017 beginning of 2018:
  - Completion of the preparation and launching of tenders for the final design of EE and RES interventions in the 5 municipalities
  - An open dialogue with ESCOs has been initiated to identify barriers and develop solutions for the benefit of both parties
- Mid to end of 2018:
  - Full definition of the EE and RES projects
  - Definition of the financing sources
  - Preparation of the tenders for the Energy Performance Contracts
- Beginning of 2019:
  - Launching of tenders
- End of 1<sup>st</sup> quarter of 2019:
  - Contract signing of EE and RES projects

# [www.prodesa.eu](http://www.prodesa.eu)

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