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TEE



Overview of SEAPs

Selected measures and sectors in SEAPs
developed by SEAP-PLUS municipalities



**3rd Twinning visit of DIBA to TCG
7-9 July 2014
Athens**

Municipalities supported by TCG



Covenant of Mayors
Committed to local sustainable energy

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Covenant Coordinators

Technical Chamber of Greece

Overview Signatories

Signatories Supported

Signatories	Population	Adhesion	Status
Alimos, GR	42,000	11 Apr 2013	Progress
Almopia, GR	27,495	28 Mar 2013	Progress
Anogia, GR	2,507	5 Mar 2013	Progress
Dimos Pentelis, GR	34,934	11 Mar 2013	Progress
Dimos Sidikis, GR	28,832	29 Oct 2012	Progress
Pallini, GR	54,390	9 Apr 2013	Progress
Tanagra, GR	21,156	5 Mar 2013	Progress
Tripolis, GR	48,267	27 Feb 2013	Progress
Biannoy (Βιάννος), GR	5,500	28 Feb 2013	Progress
ΦΑΡΣΑΛΑ, GR	23,531	3 Jul 2012	Progress

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SEAPs submitted

- Penteli (08.04.2014)
- Tanagra (27.02.2014)
- Farsala (01.04.2014)

SEAPs ready for submission

- Anogia
- Almopia
- Sidiki



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REVIEW OF SEAPS

(Penteli, Tanagra, Farsala,
Anogia, Almopia, Sintiki)

BEI CO₂ emissions

Municipality	Population	Area (km ²)	Baseline Year	BEI CO ₂ emissions (tonnes CO ₂ /year)	CO ₂ reduction by 2020 (tonnes CO ₂ /year)
PENTEI	34,934	29	2010	210,182	42,046
TANAGRA	19,340	554	2012	72,209	14,442
FARSALA	18,545	740	2011	107,835	21,567
ANOGIA	2,507	131	2011	12,755	2,555
ALMOPIA	29,354	986	2012	140,595	28,119
SINTIKI	28,382	1112	2012	85,184	17,036

Sectors included in SEAPs

- Municipal sector
 - ▶ Municipal Buildings
 - ▶ Public lighting
 - ▶ Green Public Procurement
 - ▶ Other measures (pump stations, wastewater treatment, open spaces...)

- Residential & tertiary sector

- Transportation
 - ▶ Municipal vehicles
 - ▶ Private vehicles

- RES

- Agricultural sector

- Horizontal measures (Farsala, Anogia)

New Sector - Agriculture

Was included in the SEAPs of: Farsala, Anogia, Sintiki, Almopia

1. Crop production (use of agricultural tractors)
2. Livestock (operation of livestock farms- energy for heating, lighting, food drying)

The calculation of energy consumption in agricultural sector was based on the methodology of **eReNet** project (Rural Web Energy Learning Network for Action) funded by IEE.

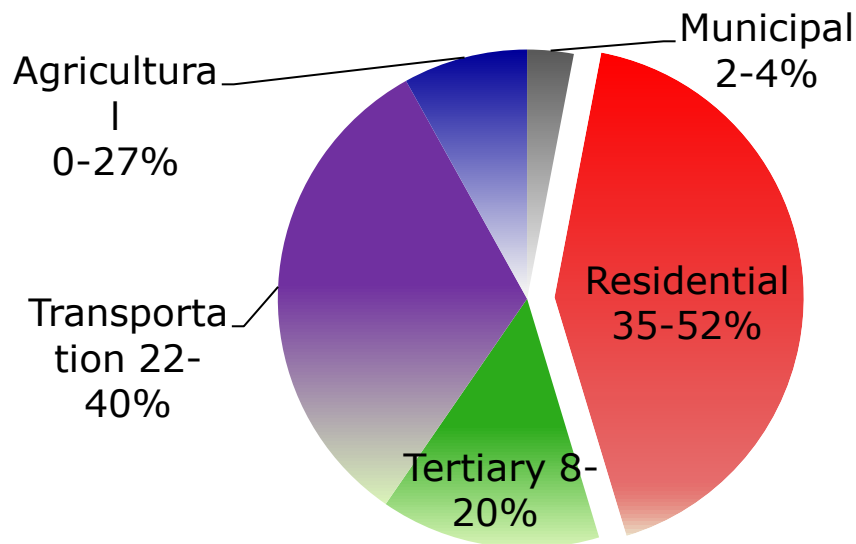
eReNet was coordinated by the Decision Support Systems Laboratory of the National Technical University of Greece.

Energy consumption based on the following approach:



Energy consumption = Number of animal or area of crops x average diesel consumption

Contribution of each sector



MUNICIPALITY	SECTORS				
	Municipal (%)	Residential (%)	Tertiary (%)	Transportation (%)	Agricultural (%)
PENTEI	3,20	49,30	19,40	28,10	0,00
TANAGRA	2,76	37,80	19,50	39,95	0,00
FARSALA	3,00	35,27	12,46	22,22	27,05
ANOGIA	4,00	36,30	17,20	40,42	2,00
ALMOPIA	3,10	51,90	8,30	29,81	7,00
SINTIKI	2,01	43,82	8,90	33,78	12,47



SEAP ACTIONS FOR THE REDUCTION OF CO₂ EMISSIONS BY 2020

SEAP Actions

Municipal Sector (1)

Municipal Buildings

1. Energy certification of public buildings and initial study for energy saving
2. Improvement of the energy performance of public buildings
 - ✓ Thermal insulation (walls, roofs)
 - ✓ Use of double and triple glasses-thermal break
 - ✓ Improvements in heating, cooling and hot water supply systems
 - ✓ Replacement of existing lamps with new more efficient
 - ✓ Installation of BMS systems
 - ✓ Installation of passive cooling and shading systems
 - ✓ Green roofs
 - ✓ PVs

SEAP Actions

Municipal Sector (2)

Municipal Buildings

3. Improvement of the energy performance of public buildings (funding secured-Eξοικονομώ I-II and European programmes)

- ✓ Thermal insulation (walls, roofs)
- ✓ Use of double and triple glasses-thermal break
- ✓ Installation of natural gas burner/boiler
- ✓ Installation of more efficient oil burner/boiler
- ✓ Replacement of existing lamps with new more efficient
- ✓ Installation of BMS systems
- ✓ Mechanical ventilation
- ✓ Planting of surrounding areas
- ✓ Energy certificate

SEAP Actions

Municipal Sector (3)

Municipal Buildings

4. System Installation for recording the electrical and thermal consumption of municipal buildings (use of electric meters)
5. Preventative maintenance of the electrical and mechanical equipment (program implementation).
6. Awareness campaign for energy savings in public buildings

Green Public Procurement (GPP)

7. Training of municipality's procurement department
8. Use of environmental standards for products that consume energy

Public Lighting

9. Replacement of existing street lamps:

Replacement of existing lamps with high efficiency lamps

Study recording existing street lighting levels in the municipality with proposed actions.

Use of a centralized GIS system for the design and management of street lighting

Common Actions







SEAP Actions

Municipal Sector (5)

Some municipalities have proposed:

10. Green roofs in schools (*Penteli*)

11. Bioclimatic reformation of open spaces (*Tanagra*)

-  Street lighting
-  Planting on the sidewalks
-  Fountains
-  Use of cool materials

12. Installation of autonomous lighting systems for public lighting with the use of PVs (*Farsala*)






SEAP Actions

Municipal Sector (6)

Some municipalities have proposed:

13. Improvement of the energy efficiency of pump stations for water supply and wastewater (*Farsala, Tanagra, Anogia, Almopia*)

-  Study of potential energy savings in existing pump stations
-  Replacement of existing equipment with more energy efficient equipment (pump station, inverter, pipes..)
-  Installation of automation system and remote monitoring and control system

14. Upgrade - Modernization of wastewater treatment plant (*Anogia*)

Residential & Tertiary Sector (1)

Common Actions

1. Municipal Forum and website dedicated to the CoM and the actions of local authority
2. Public awareness campaign on energy saving
3. Campaign for the use of energy efficient bulbs (distribution actions of energy saving lamps)
4. Information and promotional campaign of the National Funding Programmes



Residential & Tertiary Sector (2)

L.A. Specific Actions

6. Provision of consultancy services (municipality's Citizens Service Center /office for Energy Savings and fight against Climate Change). *Tanagra*
7. Creation of a Center for Environmental Training & Volunteering for students and general public (*Tanagra*).
8. Tree planting (no direct energy saving) – (Mount Pentelicus – *Penteli*)

SEAP Actions

Transportation (1)

Municipal Vehicles

Common Actions




1. Use of higher mixtures of biodiesel in municipal fleet (ex.B7 oil which contains 7% biodiesel)
2. Replacement of existing municipal fleet with electric /hybrid/natural gas vehicles
3. Training of municipal drivers on Eco-driving
4. Study and design of actions for the effective management of municipal fleet (ex. routes...)

SEAP Actions

Transportation (2)

Private Vehicles

Common Actions

5. Public information and awareness campaign on Eco-Driving and the use of public transport
6. Elaboration of urban mobility study and identification of measures for:
 -  Infrastructures
 -  Use of alternative means of transport
 -  Reduced use of private transport and increased use of public transport
7. Biofuel promotion at national level



1. Study and installation of PVs and RES in municipal buildings
2. Information of citizens and local stakeholders on RES - Promotion
3. Promotion of National Funding Programmes on RES (ex. "Φωτοβολταϊκά στις στέγες")



Agricultural Sector (1)

Common Actions

1. Creation and operation of the “Department of Agricultural Development”
 - 🌱 Information to farmers on funding opportunities
 - 🌱 Consultation on techno-economic issues that may arise

2. Continuous training on the modernization of agricultural tractors and irrigation techniques
 - 🌱 Organization of annual seminars

Main target: To train the farmers on the proper use of agricultural tractors and irrigation techniques in order to implement the knowledge gained to their crops.

Agriculture Sector (2)

Common Actions

3. Installation of a water abstraction electronic system- water meters

A major reason leading to excess consumption of water for irrigation in agriculture is the billing approach. The cost of water in agriculture is based on the irrigated area and not on the basis of actual consumption.

With the installation of electronic water meters the farmers will be charged for the actual water consumption. In this way, farmers to irrigate their crops should activate water meters with special cards. By the method of prepaid water, farmers are more careful in managing it so that it is not overused.

4. Information campaign for farmers

Thank you

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