GReen procurement And Smart city suPport in the energy sector

UNIVERSITY OF PATRAS
Lead Partner

Yorgos Stephanedes, MSEE, Ph.D., P.E.

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

1ο Διεθνές Συνέδριο για την Ενεργειακή Απόδοση των Κτιρίων, τις Ανανεώσιμες Πηγές Ενέργειας και την Προστασία του Περιβάλλοντος – BEE RES Conference, TEI Western Macedonia, Kozani, 1-3 June2014

GRASP
Synergies

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Project Facts

- **Program:** MED
- **Reference:** 1C-MED12-33
- **Acronym:** GRASP
- **Full title:** GReen procurement And Smart city suPport in the energy sector
- **Axe 2:** Protection of the environment and promotion of a sustainable territorial development
- ***Objective 2.2:*** *Promotion, renewable energy and improvement of energy efficiency*
- **Countries participating:** Ellas, Italy, Spain, France, Cyprus, Malta, Albania, and Bosnia & Herzegovina
- **Partners:** 13
- **Lead Partner:** University of Patras, Ellas

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Project Facts

- **Program:** MED
- **Reference:** 1C-MED12-33
- **Acronym:** GRASP
- **Full title:** GReen procurement And Smart city suPport in the energy sector
- **Axe 2:** Protection of the environment and promotion of a sustainable territorial development
- ***Objective 2.2:*** *Promotion, renewable energy and improvement of energy efficiency*
- **Countries participating:** Ellas, Italy, Spain, France, Cyprus, Malta, Albania, and Bosnia & Herzegovina
- **Partners:** 13
- **Lead Partner:** University of Patras, Ellas

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

GRASP
Synergies

GRASP Consortium (1/2)

1. University of Patras, Ellas (LP)
2. Province of Perugia, Italy
3. Institute for Research and Improvement of Social Sciences (IRISS), Malta
4. Chamber of Commerce & Industry Terrassa, Spain
5. Mountain Community ALTO BASENDO, (Program Area Basento Bradano Camastra), Italy
6. Municipality of Spata-Artemis, Ellas
7. APEA Siena - Provincial Agency for Energy, Environment & Sustainable Development, Italy

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

GRASP Consortium (2/2)

8. ATLANTIS Consulting, Cyprus
9. Chamber of Commerce, Industry & Navigation Castellón, Spain
10. Inter-District Association of Electrification & Lighting of Haute-Corse (SIEEP), France
11. Municipality of Pilea-Hortiatis, Ellas
12. University of Vlora "Ismail Qemali," Albania
13. City Development Agency East Sarajevo-RAIS, Bosnia & Herzegovina

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Project Goals

- **Promote and ensure**
  - green standards (DG Environment)
  - smart management of energy supply & demand to support innovative solutions in Mediterranean
  - renewable energy and energy efficiency solutions are implemented in the most cost-efficient way

- **Improve**
  - knowledge in better energy management for SMEs

Med L'Europe en Méditerranée Europe in the Mediterranean
Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Main Objectives

- **Improve knowledge for better energy management**
  - Energy efficiency (EE)
  - Renewable energy sources (RES)
- **Promote smart management of supply & demand**
  - increase skills in public procurement
  - set up networks of public procurers
  - promote cost-optimal measures in PAs & SMEs
  - inform final users to better identify needs & efficiently use technologies
  - mobilise intermed.bodies (Ch. Commerce, Bus. Ctrs, Innv Agencies) to improve quality of demand EE/RES
- **Promote cost-efficient implementation**

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Expected Output

- GRASP Transnational Mediterranean Network (**TMN**)
- Databases for public bodies and SMEs
  - **Knowledge database** (SMEs)
  - **Solutions database** (PAs)
- **E-procurement on-line service (& toolkit)** with smart characteristics and functionalities
- **Joint Pilot Actions** (method, implementation, evaluation)
- **Action Plans & Impact Case Studies** (how partners implement output & expected impact, esp. after project end)

med L'Europe en Méditerranée Europe in the Mediterranean
Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

GRASP Databases

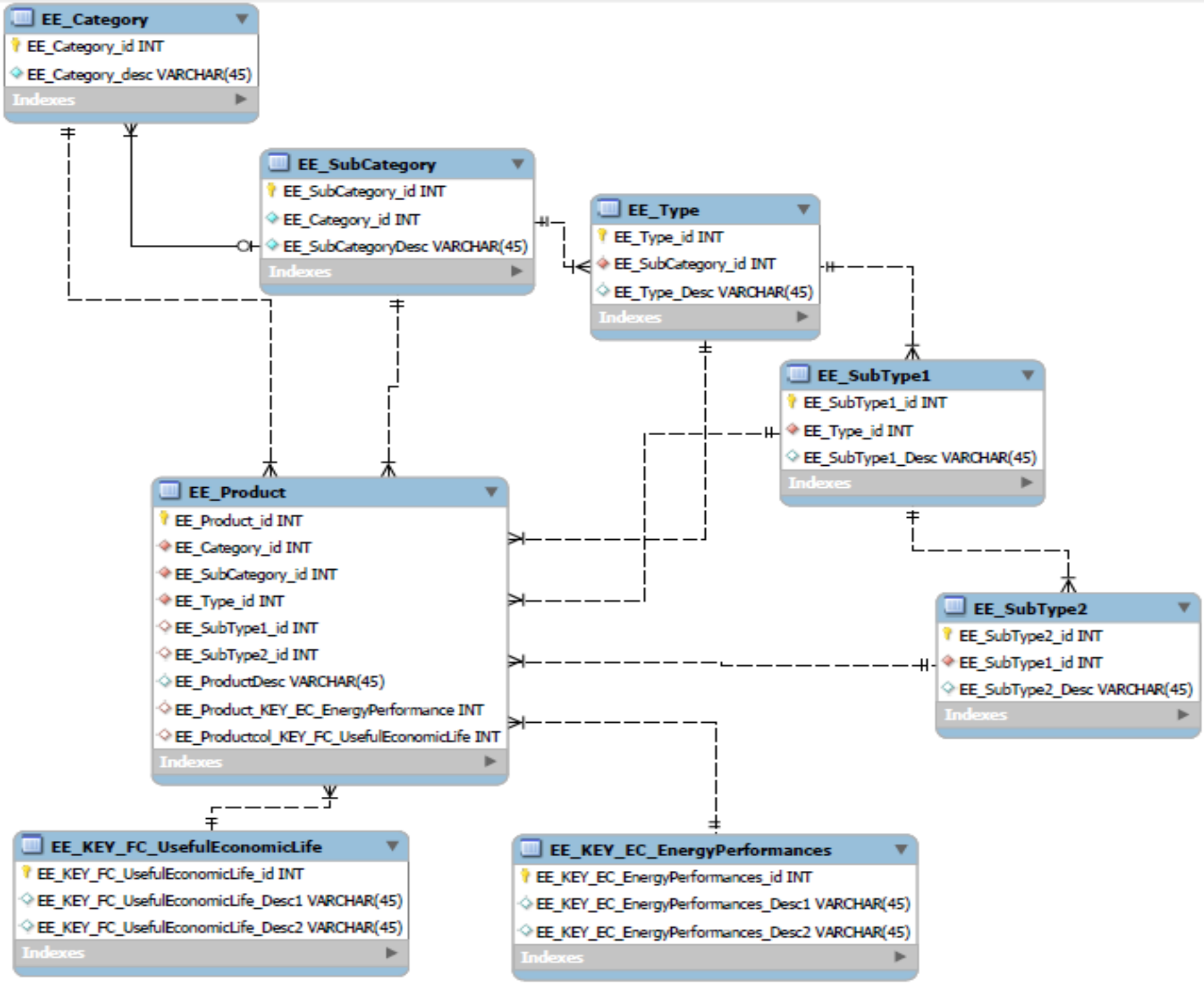
Two databases will be developed:

- **Solutions Database**
  (for Public Agencies → need for solutions)
- **Knowledge Database**
  (for SMEs → knowledge to respond to PAs needs including major options in market)

The 2 databases will be built on a set of main categories. The categories should be the same for each database so that the dbs can be linked as needed.

med L'Europe en Méditerranée Europe in the Mediterranean
Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Database Model



DBs Main Categories

- **Energy Efficiency (EE)**
  - Public Lighting
  - Building renovation & retrofitting
  - Building climate control
  - Heating and cooling efficiency
  - IT equipment

- **Renewable Energy Sources (RES)**
  - Solar energy
  - Wind energy
  - Geothermal energy

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Key Elements Of Each Category

- **Key elements**
  - **Environmental criteria**
    - Energy performance
    - Key technologies
    - Health impact
    - Waste impact
    - Emissions
  - **Financial considerations**
    - Useful economic life
    - Operational cost
    - Investment cost

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Example: Wind power category

TYPE	Sub-Type 1	Sub-Type 2	Power	Useful life
			KW	Years
ON-shore	Domestic-scale wind power	Horizontal axis wind turbine	1-20	20
ON-shore	Small-scale wind power	Horizontal axis wind turbine	20-200	20
		Vertical axis wind turbine		
ON-shore	Medium-scale wind power	Horizontal axis wind turbine	200-1000	20
		Vertical axis wind turbine		
ON-shore	Flat Wind Farm	Horizontal axis wind turbine	1000-5000	20
		Vertical axis wind turbine		
ON-shore	Flat Wind Farm	Horizontal axis wind turbine	> 5000	20
		Vertical axis wind turbine		
OFF-shore	Offshore Wind Farm	Horizontal axis wind turbine	1-5000	25
		Vertical axis wind turbine		
OFF-shore	Offshore Wind Farm	Horizontal axis wind turbine	> 5000	25
		Vertical axis wind turbine		
High-altitude wind power		Parachute	60-600	

Example: Geothermal Energy Components

SUBCATEGORY	TYPE	Sub-Type 1	GREEN PARTS & SERVICES
Geothermal heat pumps	Open loop		Heat exchanger
			Compressor
			Duct cleaning agents
			Condenser
			Evaporator
	Closed loop		Heat exchanger
			Compressor
			Condenser
			Evaporator
			Pipes./ducts
Industrial (electricity production)	Enhanced geothermal		
			Turbines / Generators
			Condenser
			Wells /pipelines
			Pumps
			Cooling tower
			Gas removal
			Hydrogen sulphide control

Med L'Europe en Méditerranée Europe in the Mediterranean
Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Example: Solar Energy

SUBCATEGORY	TYPE	Sub-Type 1	GREEN PARTS & SERVICES
Photovoltaics	Large scale systems		Panels • Crystalline Silicone ○ monocrystalline ○ polycrystalline • Rigid Thin film • Flexible Thin film
			Solar Trackers
			DC to AC converters / micro-inverters
			Roof mounts
	Home systems		Panels • Crystalline Silicone • Rigid Thin film • Flexible Thin film
			Solar Trackers
			DC to AC converters / micro-inverters
			Panel base foundation
Solar thermal	Industrial Power Plants		Reflector • Linear Parabolic • Tubes • Parabolic • Sterling • Tower
			Absorber system
			Turbines
			Generators
			Pumps
			Cooling Tower
			Condenser
			Evaporator
			Solar Trackers
	Solar water heaters		Solar Panel
			Storage tank
			Piping

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE
L'Europe en Méditerranée
Europe in the Mediterranean

Functionalities Of GRASP E-procurement Service

1. Formulation of '**Expression of Interest.**' Guidance to Public Agencies in order to prepare and set/build the requirements of their tender.

2. **Definition of the tender** concerning the decision on type (GREEN or not); is green procurement feasible for the selected products (assess availability, know how, etc.); initial assessment of budget.

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Functionalities Of GRASP E-procurement Service

3. Definition of what is green for each product in tender

4. Definition of levels of green so that green products can be compared to each other

5. Evaluation method of GREENESS

6. Collection of **environmental labels** for products and services.

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

GRASP Synergies (1/3)

MED and other projects approached for synergies

- **REMIDA***
- **REPUBLIC MED***
- **ECOFUNDING***
- **CO-EFFICIENT***
- SINERGIA
- GREENBERTH
- ECO-SCP-MED
- ACCELMED
- CITEK

- EMILIE
- FireMED
- GREEN PARTNERSHIPS
- SMILE
- SMARTinMED
- WIDER
- HOMER
- **PEEBPE**
- **MARIE**

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

GRASP Synergies (2/3)

Memorandum of Understanding between GRASP – REMIDA – REPUBLIC-MED

- Development of Databases
- Specification of Green Assessment Indicators
- Certification/Evaluation of these Indicators
- Cooperation on common Dissemination Activities to stimulate local societies and regional authorities

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

GRASP Synergies (3/3)

Memorandum of Understanding between GRASP – REMIDA – REPUBLIC-MED

- Assistance on each other's challenges:

- Technology Sorting/Best Practices in Energy Pilots of PPPP's (REMIDA)
- Best Practices on Procurement/Legal Framework at national and EU level (GRASP)
- Development of Socio-economic Energy Indicators & Questionnaires (REPUBLIC-MED)

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Potential Topics For Synergies (1/2)

- e-GPP good/best practices
- SMEs database
- TMN members (SMEs & PAs)

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Potential Topics For Synergies (2/2)

- Methodologies & Products/Features of Energy Efficiency (EE) and Renewable Energy Sources (RES) → Databases
- Green criteria for products/services
- Stimulate and define use of environmental labels

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

Invitation to Upcoming Events

- GRASP Meeting, Patras, 26-27 June 2014
- ITS Conference, Patras, 19-22 November 2014

Project co-financed by the EUROPEAN UNION
Projet cofinancé par l' UNION EUROPEENNE

GRASP

GReen Procurement And Smart city suPport in the energy sector

Thank you!

For further information please contact:
Professor Yorgos Stephanedes
(ystephanedes@upatras.gr)