

Encouraging Energy Efficiency Investments in the tertiary sector through Energy Performance Contracting

Workshop in the frame of H2020 Trust EPC South European initiative

Bulgarian Chamber of Commerce and Industry, Sofia, Tuesday 29 May 2018

Organised by:



TECHNICAL UNIVERSITY OF CRETE (TUC) SCHOOL OF ENVIRONMENTAL ENGINEERING RENEWABLE AND SUSTAINABLE ENERGY SYSTEMS LABORATORY



With the support of:





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Introduction – Energy efficiency potential in the tertiary sector

Renewable and Sustainable Energy Systems Lab School of Environmental Engineering Technical University of Crete



TECHNICAL UNIVERSITY OF CRETE (TUC) SCHOOL OF ENVIRONMENTAL ENGINEERING RENEWABLE AND SUSTAINABLE ENERGY SYSTEMS LABORATORY





ENERGY EFFICIENCY - A PRIMARY ENERGY RESOURCE

- Buildings are responsible for ~40% of energy consumption and 36% of CO₂ emissions in the EU.
- 35% of the EU's buildings are over 50 years old and 75% of the building stock is energy *in*efficient
- Energy efficiency renovation of existing buildings has the potential to lead to significant energy savings: 5-6% reduction of the EU's total energy consumption and 5% lower CO₂ emissions
- Large cost saving potential for energy improvements 20-50% energy and operating cost savings
- Better performing buildings provide higher levels of comfort and wellbeing for their occupants, and improve health by reducing illnesses caused by a poor indoor climate.
- Ambitious EU targets for 2030 and even more for 2050;
 90% reduction in domestic GHG emissions by 2050 (40% for 2030) compared to 1990 levels;
- Energy efficient building renovations can be expensive and owners may not have the means to finance them. Financial instruments are provided by EU countries and the EU itself





ENERGY EFFICENCY IN EUROPE

EU POLICY

Energy Perfomance of Building DIRECTIVE, 2012/27/EU

Created a common framework which improves energy efficiency in buildings and encourages building renovation within the EU.

Specific actions where established in order to guarantee the consecution of indicative targets established for 2020.

- 20% reduction of overall energy consumption within the EU
- after 31 December 2020, all new buildings are nZEB;







ENERGY EFFICIENCY IN EUROPE

EU POLICY

The Energy Efficiency Directive highlights:

- The contribution of Energy Performance Contracting (EPC) in the development of the energy services market
- The need model contracts, exchange of best practice and guidelines.
- The leading role of public sector buildings in implementing EPC projects through Energy Service Companies (ESCOs)
- The benefits for the final user (e.g. no initial capital needed).





ENERGY EFFICIENCY IN EUROPE

EU POLICY

New package of measures (**Clean Energy for All Europeans**) announced on 30 November 2016, including an **update to the Energy Efficiency Directive**.

European Commission proposed targets by 2030:

30% energy efficiency

40% cut in **CO₂** emissions

27% RES in the final energy consumption





ENERGY EFFICIENCY IN EUROPE

On May 14th 2018, the EU Council adopted a revised directive on the energy performance of buildings.

- Member States to set roadmap with measures and established measurable progress indicators, with a long-term 2050 goal of reducing GHGs by 80-95 % compared to 1990, to ensure a highly energy efficient and decarbonised building stock and to facilitate the transformation of existing buildings into nZEBs.
- The Energy and Climate Policy Framework for 2030 establish commitments to reduce GHGs by at least 40 % by 2030 as compared with 1990, to increase the proportion of renewable energy consumed, and to improve Europe's energy security, competitiveness and sustainability
- Promotion of electromobility: for non-residential buildings, with >10 parking spaces, MS tol ensure the installation of at least one recharging point and infrastructure for at least 1 in every 5 parking spaces to enable the installation of recharging points for electric vehicles at a later stage
- new residential buildings and residential buildings undergoing major renovation, with >10 parking spaces, to ensure the installation for every parking space to enable the installation, at a later stage, of recharging points for e-vehicles





ENERGY EFFICIENCY INTERVENTIONS

At present, **insufficient public and private investment** is flowing into energy efficiency

Financial barriers are commonly reported as the main obstacle for realizing energy efficiency projects.

Obstacles in the bankability of such investments, especially in MS under economic crisis.

especially true for the **tertiary sector** (hospitality, tourism, healthcare, services, etc.), which often presents a high potential for energy efficiency.

Budget limitations in combination with the current economic stagnation, often block the realization of energy saving measures.







TRUST EPC SOUTH

THE INITIATIVE

Aim to scale up investments on energy efficiency in the private tertiary sector of southern European countries, with particular focus on Energy Performance Contracting (EPC) projects.









TRUST EPC SOUTH

PROJECT OBJECTIVES-BUILDING TRUST AMONGST STAKEHOLDERS



31/05/2018

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TRUST-EPC-SOUTH

- Portugal
- Spain
- **France**
- ➤ Italy
- Croatia
- **Greece**

Balkan countries, with support of ABC and UHC



This project is co-funded by the European Union's Horizon 2020 research and innovation programme









OUR OFFER

Promotion of dialogue and synergies between the EPC offer side, the tertiary sector demand side and the financing side.

An **investment assessment and benchmarking tool** based on the Green Rating[™] methodology and tools by:

Training on financing solutions and EPC basics for all stakeholders involved

Facilitating the financing process for small/medium projects

Reducing transaction costs thanks to its standardised approach

Providing a independent third party certification

What do we offer?

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TARGET GROUPS







GREPCon VIDEO



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TRUST EPC SOUTH

MARKET MAPPING

- Forecasts of energy efficiency potential and Energy efficiency /EPC market
- > Expectations and considerations of stakeholders
- > Barriers for energy efficiency investments
- Level of understanding and adoption of EPC practices

DATA ANALYSIS

- EU and National reports
- Databases
- Market researches
- EU projects results and previous experience
- ✓ Interviews and field surveys in TRUST EPC countries





EPC MARKET ANALYSIS

TERTIARY SECTOR IN SOUTHERN EUROPE

Energy consumption in the tertiary sector per country and per segment (2012, TWh)



Segment/ Country	Offices	Retail	Hospitality	Other	Total
Croatia	0,64	3,89	1,12	2,63	8,28
France	57,10	52,10	24,90	92,00	226,10
Greece	10,28		4,00	7,83	22,11
Italy	36,60	41,60	20,60	85,20	184,00
Portugal	6,40	6,93	3,09	7,92	24,35
Spain	20,00	30,90	11,40	35,40	97,70
/					





EPC MARKET ANALYSIS

TERTIARY SECTOR IN SOUTHERN EUROPE

Shares of dominantly used energy forms in tertiary sector overall and per country (2012).



Share of energy forms in final consumption of tertiary sector







EPC MARKET POTENTIAL

TERTIARY SECTOR IN SOUTHERN EUROPE

Country	Potential for energy savings by 2020, TWh	Estimated EE investment costs by 2020, million EUR ¹	Expected EPC market by 2020, million EUR ²	EPC market potential, million EUR
Croatia	< 1	420	40 - 80	600
France	60	N/A	750 – 1 000	19.600
Greece	1,5 - 6	2.100 – 3.200	400 – 600	1.600
Italy	17	17 700	2 600	9.300
Portugal	4	N/A	630	1.600
Spain	22	N/A	1.600	9.800

¹ National Trust EPC market analysis, see respective national reports

² Estimated according to energy consumption, average savings and energy prices





EPC PROVIDERS IN TRUST COUNTRIES

Country	Registered	Active EPC providers	Typical EPC project			
	EPC providers		Average value (€)	Main technologies	Duration (years)	
Croatia	10	4	500.000	Efficient lighting, HVAC refurbishment, RES and replacement of boilers	~7	
France	No existing register	10	100.000	EMS/organisation, efficient lighting and HVAC systems	< 5	
Greece	39	<10	250.000	RES, efficient lighting, Energy Management Systems and roof insulation	4-5	
Italy	150	<20	500.000	Replacement of boilers, CHP systems, and efficient lighting	~ 8	
Portugal	100	4	250.000	RES, efficient lighting	~ 15	
Spain	1 134	<20	240.000	Efficient lighting, HVAC refurbishment, RES, monitoring and control	6-7	





Involved stakeholders

Tertiary sectors-Financing sector-EPC providers/facilitators







MARKET OVERVIEW

EPC providers - GREECE

PERCEIVED ROADBLOCKS BY EACH STAKEHOLDER GROUP







MARKET OVERVIEW

Tertiary sector - GREECE

PERCEIVED ROADBLOCKS BY EACH STAKEHOLDER GROUP







FINANCING ENERGY EFFICIENCY









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PROJECT



THANK YOU FOR YOUR ATTENTION

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649772

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