

# WATER EFFICIENCY AND WATER-ENERGY NEXUS IN BUILDING CONSTRUCTION AND RETROFIT

ERASMUS + STRATEGIC PARTNERSHIP 2017-2020



Agència para a Energia



CENTRE FOR RENEWABLE  
ENERGY SOURCES AND SAVING



Erasmus+

Co-funded by the Erasmus+ Programme of the European Union

# WATTer Skills map and performance indicators for water efficiency and water-energy nexus in building construction and retrofit

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Agência para a Energia



- Private, non-profit, public benefit association
- Mission to develop public interest activities in the areas of Energy, Energy Efficiency and Water-Energy Nexus
- Portuguese Scientific and Technological System
- Participation in several national and European projects, aiming to share experience from active cooperation between partners within the Energy and Water Sectors

## WATER & ENERGY



**WATER  
SCARCITY  
PORTUGAL  
2017**



**Drought  
96%**

Country



**Hydroelectric power  
-50%**  
than 2016

€€€



**Climate&Energy  
EU/PT Package goals**



**Record increase in  
Natural Gas  
consumption**



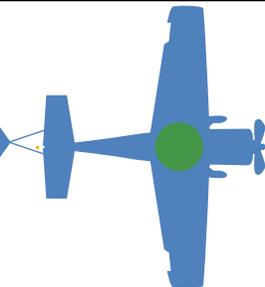
**Renewable Energy  
Production**



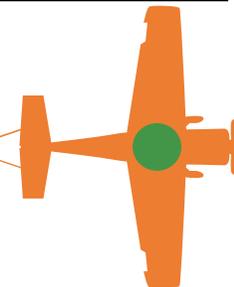
**-30%**  
than 2016

**+31% CO<sub>2</sub>**  
vs. 2016  
(energy production)

**30%** Water efficiency potential in buildings



**3,5%** Associated energy savings



## WATER WASTE

URBANS.

**25%**

AGRICULTURE

**38%**

INDUSTRY

**25%**

## SAVINGS

URBANS.

**€38,5**

(PNUEA)

AGRICULTURE

**€47,3**

MILION/YEAR

INDUSTRY

**€15,9**

European project, funded within the ERASMUS+ initiative, which aims to develop, implement and propose a common curricula, qualification framework and accreditation scheme at European level, for **training and skills upgrading** of construction and green professionals on water **efficiency** and **water-energy nexus** for building construction and retrofit.

Action: Key Action 2: Strategic Partnerships

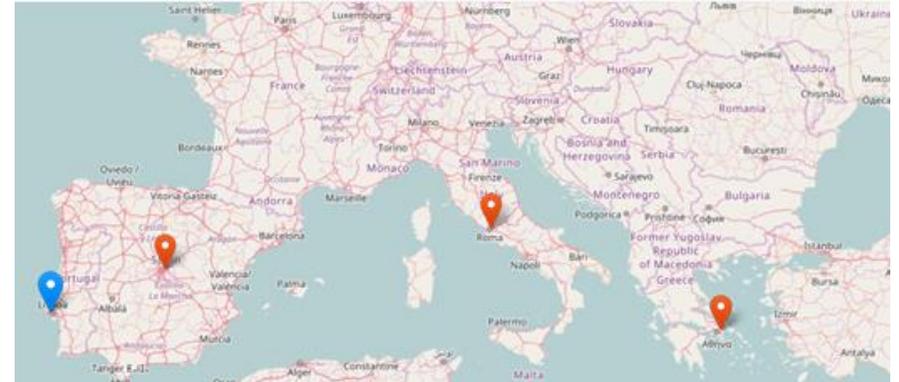
Strategic Partnerships for vocational education and training - Development of innovation



[www.watterskills.eu/](http://www.watterskills.eu/)

- **ADENE** – Agência para a Energia | National energy agency | [Portugal](#)
- **FLC** - Fundación Laboral de la [Construcción](#) | Educational Centre for businesses and workers | Spain
- **FORMEDIL** – Ente Nazionale per la Formazione e l'Addestramento [Professionale](#) nell Edilizia | VET management entity | Italy
- **CRES** – Centre for [Renewable Energy Sources and Saving](#) | National energy agency | Greece

- **WATTer Skills Advisory Board**
- **WATTer Skills Stakeholders**



## Intellectual Outputs

IO1 – Setting the Perimeter of WATTer Skills – FLC  
Task 1 – Definition of the WATTer skills map  
Task 2 – Collection of monitoring indicators

IO2 – Qualification Framework – ADENE

IO3 – Training Courses Curricula, Contents and e-Learning Platform – CRES  
Task: Training Courses Validation and Market Recognition – FLC

IO4 – Accreditation System based on EQF and ECVET – ADENE

set 2017

IO1. set 2018

IO2. oct 2018

IO3. jun 2019

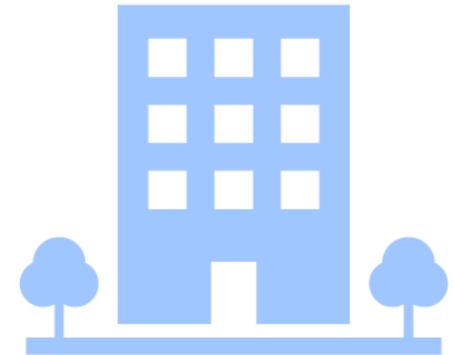
IO4. ago 2020



## How do you set a common reference at a European level?

WATTer Skills perimeter in terms of learning outcomes at a European level

- expected knowledge
- skills
- responsibility-autonomy
  
- To know how to do – more practical
- Knowledges – more theoretical
- To know how to be – soft skills



Reference: European Qualification Framework (EQF)

## European Qualification Framework

### Water Efficiency Technician and Water Efficiency Expert

	EQF 4	EQF 6
<b>Knowledge</b>	Factual and theoretical knowledge in broad contexts within a field of work or study	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles
<b>Skills</b>	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study
<b>Responsibility and autonomy</b>	Exercise self-management within the guidelines of work or study contexts that are usually predictable but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities.	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups



**Water scarcity**

**Damage caused by floods**



Water scarcity

Damage caused by floods

## Water and energy standards for water related products





Water scarcity

Damage caused by floods

Water and energy standards for water related products



Market readiness and transformation



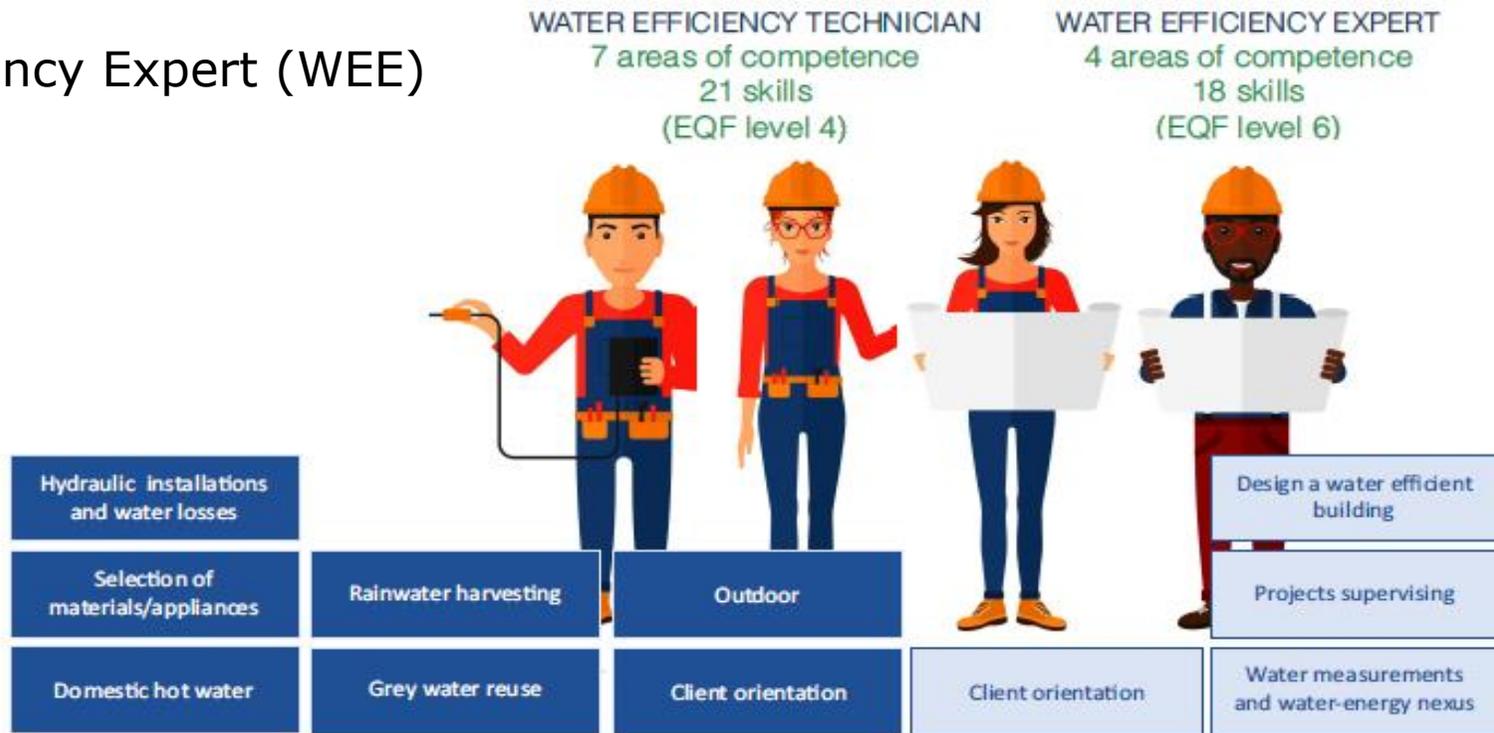
→ Requiring new harmonised skills for **water efficiency** for construction, retrofit and “green” professionals



## Two WATTer Skills maps were created

EQF4 - Water Efficiency Technician (WET)

EQF6 - Water Efficiency Expert (WEE)



## Main project expected results and outputs



Exchange of best practices!

According with ECVET – European Credit System for Vocational Education and Training

THANK YOU !

OUR CONTACTS:

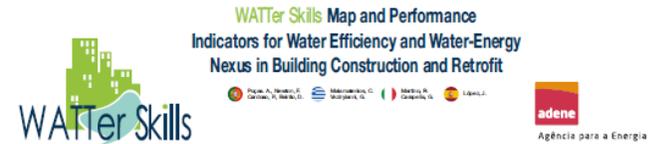
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<http://watterskills.eu/>



### 1 BACKGROUND AND NEW TRENDS IN WATER EFFICIENCY IN BUILDINGS

Water scarcity is a serious problem for many European regions, with ca. 45% of the territory expected to face scarcity problems by 2030 and damage caused by floods to increase fivefold by 2050. This is driving growing attention on water efficiency and management across Europe, including European Commission, Joint Research Centre and industry efforts to promote water and energy standards for water-related products in buildings and to move towards an EU framework of core indicators for the environmental performance of buildings. These initiatives will foster market transformation and demand the adoption of water efficient appliances and fixtures, systems and labeled products in buildings, thus requiring new harmonized skills on water efficiency and water-energy nexus in buildings for professionals working in the construction and retrofit sectors.

WATter Skills (Water Efficiency and Water-Energy Nexus in Building Construction and Retrofit) is a European project (2017-2020) funded within the ERASMUS+ initiative, which aims to develop, implement and propose a common curricula, qualification framework and accreditation scheme at the European level, for training and skills upgrading of construction and green professionals on water efficiency and water energy nexus for building construction and retrofit.



### 2 WATter Skills MAP

WATter Skills map aims to become a common reference for training and qualification of future technicians and experts on water efficiency for building construction and retrofit at a European level. The skills perimeter (i.e. scope) was the starting point for the definition of this qualification map, which is based on the European Qualification Framework (EQF), having its areas of competence described in terms of learning outcomes (knowledge, skills and responsibility-autonomy). Applying this methodology, aligned with the EQF levels, WATter Skills proposes new areas of competence for the water efficiency technician (EQF level 4) and for the water efficiency expert (EQF level 5) and the corresponding skills. The WATter Skills map will be submitted to a thorough discussion and improvement with stakeholders and the project advisory board, during 2018 and 2019, before the final proposal of WATter Skills qualification and accreditation framework.

### 3 WATter Skills PERFORMANCE INDICATORS

Key performance indicators may be used to compare water efficiency and energy efficiency practices and consumptions in buildings, as well as measuring the impact of implementing such a qualification framework. Throughout the project and onwards, monitoring of performance indicators together with assessment of project impact (e.g., involvement of stakeholders, participation of business) will be used to measure project effect and efficacy. Performance indicators over water efficiency in buildings may include: % of efficient product/equipment, % reused water.



### 4 WATter Skills EXPECTED OUTPUTS

Project main milestones and results include setting the perimeter of WATter skills together with the WATter Skills map, the qualification framework, training courses curricula, contents and e-learning platform, and accreditation system based on the European Qualifications Framework (EQF) and the European Credit system for Vocational Education and Training (ECVET).

### PARTNERSHIP

