



## **Definition “Smart Energy Management (SEM)” and “SEM Expert” for skilled workers (EQF level 4/5)**

The new-generation of information technologies such as the Internet of Things, robotics, and smart connected objects open new horizons for industry and the energy markets. The experiences of the VET partners from Basque Country (CIFP Usurbil LHII + ZubiGune Fundazioa), Germany (MSVE), the Netherlands (Alfa-college) and Sweden (Lulea Kommun) involved in this project point to the fact that VET providers have to align their training offer with the new technical competencies required by the energy sector.

For this reason, the partners are working together on the project *Energyeducation: Exploring Smart Energy Management* (2018-2020), co-funded by the Erasmus+ Programme of the European Union.

The project's stated goal is to develop training materials for skilled workers (EQF Level 4/5) in Smart Energy Management, enabling them to design and deliver technical solutions that help save energy.

In a first step, the project partners have defined what exactly entails Smart Energy Management (SEM) for the target group of skilled workers, and what expertise, skills and competencies make up a Smart Energy Management expert. This definition, or SEM qualification, forms the basis for the development of online learning modules (MOOCs), which will be provided by the project partners before the end of 2020.

For the development of the SEM definition and qualification, the project partners applied their own experience and knowledge regarding SEM and carried out a literature study. Six key questions were derived from this process, which formed the basis of interviews with SEM experts from industry and (applied) universities. The notes for the interviews were evaluated and combined with all the information collected so far, after which the definition of SEM was developed in an interactive process (16 versions were edited). The present result is intended as a preliminary definition, as the publication of a final qualification description of the Smart Energy Manager is planned at the end of the project.

Find more information about the project at: [www.energyeducation.eu](http://www.energyeducation.eu)



**DEFINITION**

**What is Smart Energy Management?**

Smart Energy Management helps to save energy in transformation, storage, distribution and consumption units by strategically influencing user behaviour and energy flows through the intelligent interaction of sensors, actuators, controllers and user interfaces.

**QUALIFICATION DESCRIPTION**

**Knowledge**

An SEM expert has basic knowledge ...

... about energy transformation, energy storage, energy distribution and energy consumption units.

to understand the function of Smart Energy Management Systems (hardware/software) through the interaction of sensors, actuators, controllers, communication technologies, user interfaces and user behaviours.

... of strategies to save energy.

... on data protection legislation, energy legislation and sustainability regulation at regional, national, European and international level.

**Skills**

An SEM expert is able, ...

... to analyse energy production, distribution and storage, energy consumption units and user behaviours by documentations, visits and on-site interviews.

... to develop new energy-saving solutions based on an analysis carried out with consideration of costs and benefits or to optimise an existing Smart Energy Management System.

... to implement, document, maintain and hand over, also for people not experts in technology, Smart Energy Management System.

**Competence: Responsibility & Autonomy**

An SEM expert is able, ...

... depending on complexity, to carry out tasks related to Smart Energy Management Systems alone or in a team, either independently or in accordance with instructions.

... depending on complexity, to carry out tasks related to Smart Energy Management Systems independently or according to instructions in an inter-institutional as well as interdisciplinary cooperation.

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

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

