TrainERGY
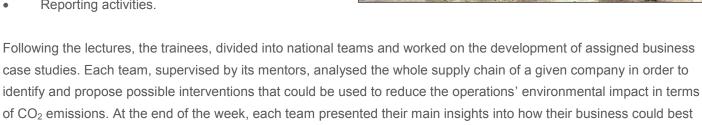## Training for Energy Efficient Operations

June 2017

TRAINERGY LANDS IN NAPLES

The University of Naples Federico II hosted the second training session of the TrainERGY project from 15 to 19 May. The event, organised by the Italian partners of the project and coordinated by Prof. Giuseppe Bruno, welcomed 41 participants from Greece, Italy, Poland and the UK. The international delegates included academics, business leaders and students.

The presentations and interactive teaching addressed new topics that had been highlighted in the TrainERGY research as topics business people want to learn more about:

- Definition of environmental objectives and key performance indicators;
- Database Management Systems;
- Reporting activities.

Following the lectures, the trainees, divided into national teams and worked on the development of assigned business case studies. Each team, supervised by its mentors, analysed the whole supply chain of a given company in order to identify and propose possible interventions that could be used to reduce the operations' environmental impact in terms of CO_2 emissions. At the end of the week, each team presented their main insights into how their business could best operate energy efficiently.

During the five-day training, the University of Naples also organised and hosted a Multiplier Event to disseminate the project's core objectives and the research results so far to an audience of local business representatives. Prof. Sergio Ulgiati (University of Naples Parthenope) delivered a guest lecture on the paradigm of growth and sustainability in the modern economy, and Dr. Annamaria Buonomano (University of Naples Federico II), spoke on the new advances in technologies for near-zero energy buildings.

The engaging and high quality lecturers, the enthusiasm of the trainees (and the great weather too!) were also key factors in making the TrainERGY week a successful and unforgettable experience for all those involved. The partners and staff look forward to meeting again in Thessaloniki in March 2018!

WORK SKILLS NEEDED TO OPERATE ENERGY EFFICIENTLY: THE RESEARCH SO FAR

Results from TrainERGY's research presented at the 10th International Conference for Entrepreneurship, Innovation, and Regional Development (ICEIRD 2017) and 22nd International Symposium on Logistics (ISL 2017).

Research conducted so far as part of the TrainERGY Project aimed to identify a set of skills related to energy efficient operations and whether there is a need for European SMEs to know and use them more.

Apart from identifying the top priority skills for European businesses, the research focused on, for example, relevance and stage of implementation / advancement in use of the competences, as well as drivers and barriers for implementing energy efficient and sustainable operations within the surveyed companies.

Priority skills identified for the partner countries

Country	Skills priority
Greece	1. Green marketing 2. Reporting activities 3. Technologies for reducing pollution
Italy	1. Green purchasing 2. Reporting activities 3. Interventions identification
Poland	1. Green marketing 2. Auditing activities 3. Interventions identification
United Kingdom	1. Green purchasing 2. Technologies for reducing waste 3. Green marketing

The main findings from this part of research are:

1) The relevance of competences required for implementing energy efficient and sustainable operations is lower in Poland, compared to the United Kingdom (UK), Italy and Greece.

2) Stage of implementation / advancement in use of the competences required for implementing energy efficient and sustainable operations is similar for Poland, UK and Greece, but higher for Greece.

3) The barriers to implementing energy efficient and sustainable operations in Poland, Italy, Greece and partly the UK are similar. However, the drivers are significantly different in the UK in comparison to Poland, Italy and partly Greece.

4) The results for Poland identified the highest number of differences (when comparing to UK, IT and

DEFINITION OF ENVIRONMENTAL OBJECTIVES AND PERFORMANCE INDICATORS

Performance measurement is typically defined as the process of quantifying actions, where action leads to performance and measurement represents the process of quantification. The core elements of this process are the dimensions, i.e. the criteria used for the evaluation, and the indicators that are the variables used for quantifying the dimensions. In the context of a firm, performance measurement is oriented to assess the efficiency and effectiveness of the firm itself, through the definition of a Performance Measurement System (PMS), that is the set of metrics (indicators) build up for measurement purposes. Different models of PMS can be retrieved from literature: Hierarchical models, Process oriented models and Balanced Scorecard. The latter, in particular, is one of the most consolidated PMS structure, aimed at providing mangers with sufficient and "balanced" information retrieved from the analysis of the following different perspectives: finance, customers, internal process, innovation and learning.

Although these models have been frequently and successfully applied in the context of a Supply Chain, there is still so much to do in Green Supply Chain Management. The most prominent open issues refers to how the environmental dimension impact on efficiency and effectiveness of a company process and how, accordingly, proper evaluation metrics can be defined. The analysis of the extant literature reveals that there is a huge gap to fill in in this context and, therefore, that large opportunities exist for researchers to face the challenge of reshaping in a more modern and greener perspective the classic PMS models.

IMPROVING REPORTING ACTIVITIES TO ENHANCE BUSINESS

Nowadays reporting activities are an inherent part of a company's management. Reporting can be divided into general categories: financial and non-financial. While the first type is commonly known in business practice, the second one is becoming more and more important.

There are several crucial reasons for the increasing interest of non-financial reports, especially environmental and social ones. Normative requirements (mainly obligatory directive on disclosure of non-financial and diversity information – 2014/95/EU), pressure from different groups of stakeholders, desire to gain permanent competitive advantage and the need for improving the way to effectively communicate with stakeholders are just some of them.

Reports can be developed in accordance with different standards in order to support the measurement and evaluation processes and to increase the comparability between all organisations. The most popular are GRI Standards, whose guidelines are often the basis for sustainability reports for many international companies.

Each year, the number of non-financial reports is growing; not only economic, but also environmental and social, which all impact and are important factors in creating value in a business's supply chains.

ENVIRONMENTAL DATABASES SUPPORT ENERGY EFFICIENT OPERATIONS

Environmental databases are gaining key momentum for today's industries. Companies use such databases in order to benchmark their operations, develop eco-innovations, perform forecasting, make regional assessments, monitor their performance and gather data in order to ensure their compliance to environmental standards. The variety of environmental databases found online is very wide (eg. WTO, UN, ECOINVENT, MRIO, EUROSTAT, GED, EORA, etc) and choosing the right database for a specific company is crucial.

This choice must take into account various parameters (starting from the scope of the environmental data usage, application area, existing IT systems of the company, knowledge of the staff working on this matter, etc.) and it will often be the case that multiple databases need to be integrated in order to achieve the intended goal. Nevertheless, companies need to be aware of the main limitations and risks that these databases bring: unknown quality and data coverage, outdated data, lack of integration, credibility, etc.

The ultimate aim for today's European (and global) industry is to steadily progress towards the concept of open science where all (suitable) data should be shared for the benefit of the entire society (and thus the environmental databases could benefit from constant realistic data uploads – in order to satisfy the data usage/retrieval demands).

BE A PART OF ENERGY EFFICIENT OPERATIONS

To help the academic institutions to produce the right course curricula that meets businesses needs for energy efficient operations, businesses are invited to test the Virtual Learning Environment, and be a case study.

Businesses are invited to participate in a third training taking place in the week 19-23 March 2018 in Thessaloniki, Greece.

For more information and to get involved, contact your local project coordinator or visit **www.trainergy-project.eu**

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