

Training on energy audits as an Energy Efficiency DRIVER for the automotive sector

KEY WORDS:

Energy efficiency, energy auditing, automotive sector, capacity building

DURATION:

June 2019 – May 2022 (36 Months)

FUNDING AND BUDGET:

- Horizon2020 (EU Framework Programme for Research and Innovation)
- 1 999 997 €

COUNTRIES OF IMPLEMENTATION:

Germany, Spain, France, Italy

PARTNERS:

1. CIRCE Foundation, (ES)
2. FRAUNHOFER ISI, (DE)
3. POLITO, (IT)
4. EPROPLAN GmbH, (DE)
5. SINERGIE, (IT)
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7. SERNAUTO, (ES)
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PROJECT COORDINATION

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ENERGY CONSUMPTION IN THE AUTOMOTIVE INDUSTRY

As a rapidly growing industry, the automotive sector uses substantial amounts of energy in the manufacturing of its products, making it essential to the global effort to use energy more efficiently. Small- and medium-sized (SME) automotive suppliers consume about 90% of the total energy in the production processes. Creating awareness about cost-effective energy efficiency improvements is therefore paramount to reducing energy consumption in the automotive industry and mitigating climate change.

OBJECTIVES

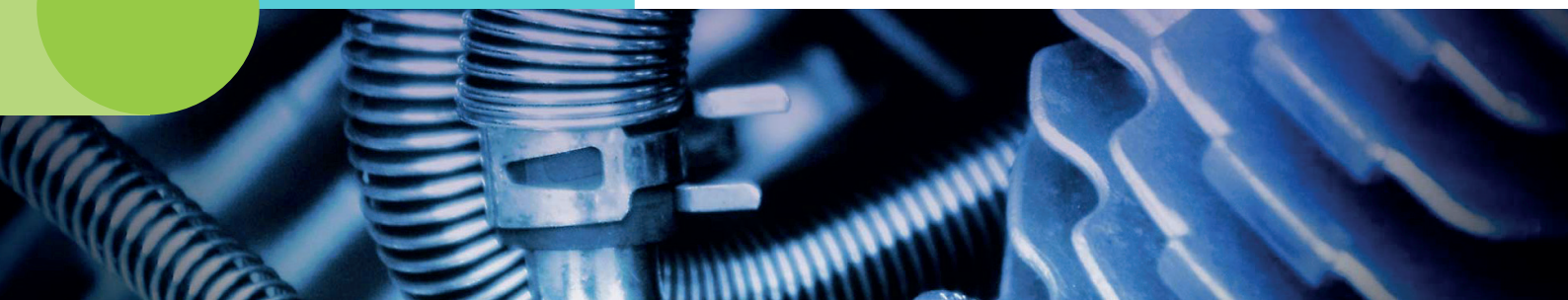
- Access to training tools and materials on the E2DRIVER learning platform (40 SMEs, 650 employees)
- Sharing of knowledge, progress towards standards like ISO 50.001
- Connection to energy and financial experts
- Tracking progress on energy consumption and improving upon the methodology

THE E2DRIVER SOLUTION

By law, SMEs are not forced to perform energy audits, which often results in high energy consumption. To counteract that, E2DRIVER offers a solution: training and awareness raising to encourage SMEs to perform audits. The solution consists of a Methodology, a Learning Platform and a Capacity building programme.

E2DRIVER methodology

The methodology will generate a guide for energy trainers to implement an innovative capacity building programme using Customised Learning, Ontological Flip-Teaching (OFT) as a pedagogical approach and Virtual Reality.



Customised learning	OFT	VR
<ul style="list-style-type: none"> Analyse trainees' needs, interests and role in firm Customised training adapted to trainee profiles using an algorithm 	<ul style="list-style-type: none"> Online training on learning platform Link activity - producing own academic work On-site class where academic work is discussed 	<ul style="list-style-type: none"> Interactive virtual reality session accessible through the learning platform

The E2DRIVER platform

The E2DRIVER platform is the central hub of the capacity building programme and the networking forum.

E2DRIVER Platform – main features
<ul style="list-style-type: none"> E-learning section with customised training units Repository of contents Community forum to exchange questions and ideas Energy and financial self-assessment tools Access to a virtual reality session

Capacity building format

The E2DRIVER training format targets different groups within SMEs, includes an Adjustment and a VR session, and encompasses six topics (see table).

Target group	Thematic section
<ul style="list-style-type: none"> Managers Science and engineering staff Technical managers Technicians Change agents 	<ul style="list-style-type: none"> Introductory energy concepts Energy efficiency Renewable energies Energy management Regulation Electric vehicles

During the Adjustment session, training needs and a final tailor-made training programme for each company are established. The trainings are divided between five target groups, all of which aim at a) training employees in EE and on energy audits, and b) improving the collective intelligence of the automotive sector through OFT. The VR session focuses on energy consumption measuring of electric switchboards.

11 E2DRIVER PILOT SMEs

These 11 pilot firms trust in E2DRIVER! Their aim: saving energy and helping the environment.

ITALY:

F.O.M.T.
SIVE
MOLLEBALESTRA

FRANCE:

NANOMAKERS
MANUPLAST
ERCÉ PLASTURGIE

SPAIN:

FRANCISCO ALBERO – FAE
GRUPO MECACONTRON

GERMANY:

ROTHWEILER FEINWERKMECHANIK
MÜLLER SPOT PLATING GMBH
STÖHR GMBH METALLTECHNOLOGIE

Company requirements to be eligible for E2DRIVER

- SME not forced by law to perform energy audits
- High energy consumption
- High interest in reducing the energy consumption and environmental impact

IMPACT

E2DRIVER's capacity building programme is expected to create the following benefits:

- Capacity to implement 65 energy efficiency measures
- Energy savings of 13 GWh/year (on average, 20% of energy savings)
- €2.5 million/year of potential savings
- 3.5 ktCO₂/year emissions avoided

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