Current Green Skills Needs and Learning Approaches for Welders – Final Conclusions

The Final Report of Work Package No 2, Current Green Skills Needs and Learning Approaches for Welders, of the GREENWELD project, was released in June 2023. This report presents the partnership conclusions of the desk research and questionnaires made and validated by a specialized Round Table made of experts from industry and learning, regarding the gap of green skills in the training approach for welders.

The conclusions and recommendations are available on the project website (https://greenweld.org/pages/project).
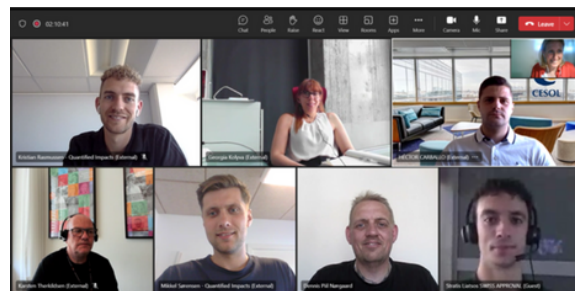

Capacitation Workshop

Once the green Skills Needs for Welding had been identified, the partnership began preparing the curriculum to respond to this identification.

The first action was to train the entire partnership with the essential knowledge to design a curriculum, using the EWF qualifications methodology.

A Capacity Building Workshop was therefore prepared, which took place on 12 June 2023 and involved all GREENWELD partners.

During the Training Workshop, the participants tackled the topic of how to design the curriculum using the Learning Outcomes methodology.
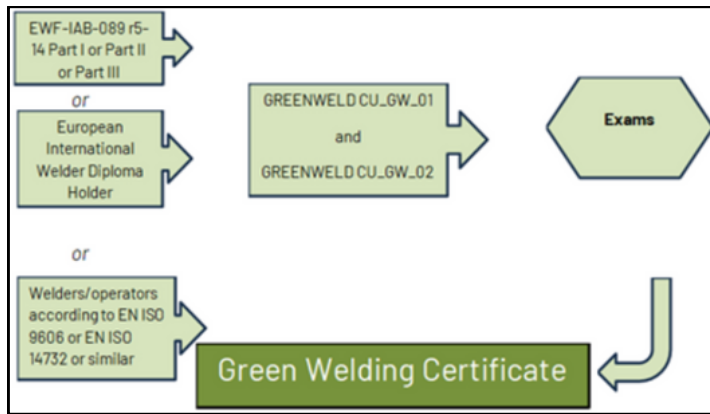

They also explored the basic characteristics of the EWF qualifications methodology, namely:
- Common terminology for all qualifications
- Detailed curriculum with learning outcomes adjusted to proficiency levels
- Levels of proficiency with EQF correspondence, for a more effective understanding of stakeholders (industry and education)
- Capitalisation of units of competence and precedence
- Definition of workload

For the scope of this workshop, materials and documents from the EWF's methodology and Bloom's Taxonomy were used.

Development of the Welders Training Programs and Materials

After the clear identification of needs with a list of conclusions and recommendations and the partner's familiarization with the methodology for designing qualifications. The next step was the design of competence units that could immediately address the lack of sustainability skills in the welder's curriculum.

Two competence units were carefully prepared by the partners, based on all the previous work.

These competence units can be accessed here:
(https://greenweld.org/assets/GREENWELD%20Integrating%20green%20skills%20into%20the%20curricula.pdf)

It is point out the framework to access the training, as well as the knowledge and a clear identification of learning outcomes expected to be reached.

CU_GW_01: Environmental Awareness for a Greener Welding	Recommended Contact Hours
Subject	
Awareness in Green Topis: Reduce, Recycle, Reuse	2,5h
Waste and material reduction	1 h
Total Teaching Hours	**3,5h**
Workload	**7**

Learning Outcomes – CU1_GW_01 Environmental Awareness for a Greener Welding	
Knowledge	Basic facts, principles, processes, and general concepts on: • Awareness in Green Topis: Reduce, Recycle, Reuse. • Waste reduction.
Skills	• Apply welding techniques, procedures and specifications that minimize carbon emissions. • Apply the methods for waste reduction during and after welding.

CU_GW_02: Greenweld Impact measurement	Recommended Contact Hours
Subject	
Parameters to measure the impact of welding work	1,5 h
Welding Energy performance	1,5 h
Welding simulation equipment and green good practices	0,5h
Total Teaching Hours	**3,5h**
Workload	**7**

Learning Outcomes – CU_GW_02 Greenweld Impact measurement	
Knowledge	Basic facts, principles, processes, and general concepts on: • Parameters to measure the impact of welding work • Welding Energy performance • Welding simulators and demonstration in a greener approach
Skills	• Carry out actions to control the energy consumption during welding process. • Identify the parameters required for energy saving during welding. • Identify the advantages of using welding simulators. • Recognize the environmental benefits associated with the utilization of welding equipment and apply green welding good practices.

WP3 User Guide for Training Implementation: Pedagogical Framework for Green Skills

As part of the GREENWELD package of training resources, the partners prepared a User Guide for Training Implementation.
Some of the contents presented in this guide are:

Theoretical presentation of Innovative teaching methodologies:
- Flipped Classroom
- Problem-Based Learning (PBL)
- Project-Based Learning (PrBL)
- Game-Based Learning
- Peer Teaching and Peer Learning
- Collaborative Learning
- Traditional Multimodal Learning
- Reflective Practice and Journaling
- Inquiry-Based Learning
- Using Extended Reality (XR), virtual reality (VR) and augmented reality (AR)

Reference to successful cases in the implementation of projects and innovative pedagogical practices, as a source of inspiration for trainers who may be about to implement the GREENWELD competence units.

Lesson Planning

A lesson plan, providing detailed guidance for trainers in facilitating the training process. It acts as a roadmap for delivering a lesson or a set of lessons effectively:

Trainer:	Date:		Starting time/duration:
CU:	Topic		Place:
Learning Outcomes:			

Stage:	Duration:	Training Methodology:	Media/Tools/ Resources:	Evaluation and Assessment:
Introduction: (List of topics to be explored)				
Body/Development: (List of topics to be explored)				
Saving Results/Summary: (List of topics to be explored)				

Transnational Project Meeting in Athens – Host WGI

WGI hosted the 3rd Transnational Project Meeting on 10th and 11th October 2023, in Athens, Greece and Partners were focused on WP3: Development and adaptation of Welders Training programs and materials:

- Develop a set of Green Skills for welders
- Integrating the Green Skills into VET curricula

During the two days of the meeting, important issues within the framework of the project were discussed and decided upon to ensure that all assigned tasks were carried out in a clear and orderly manner, such as:

- Clarification of the Project Management of GREENWELD
- Development and adaptation of Welders Training programs and materials
- Implementation of Green Welding Certificates
- Dissemination & Exploitation of the GREENWELD Project

Partners

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