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2023-1-ES01-KA220-VET-000152268

Hydrogen technology as an educational tool within an inclusive, digital and employability framework





Partner Organisations

Organisation ID	Legal name	Country
E10046072	Elektrostrojarska obrtnicka skola www.esos.hr	Croatia
E10109658	ENSINUS - Estudos Técnicos e Profissionais SA www.inete.pt	Portugal
E10198335	Fevziye Tezcan Mesleki ve Teknik Anadolu Lisesi https://fevziyetezcaneml.meb.k12.tr/	Türkiye
E10188602	I.I.S. A. Ferrari www.ipsiaferrari.mo.it	Italy
Applicant Organization		
E10094414	Asociación de profesores Técnicos y de Enseñanza Secundaria de Automoción de Galicia www.apaga.es	Spain

Project Lump Sum



120.000



Currently

80% 96.000



1	Project Management	24 000,00	19.200
2	Activity	35.000,00	28.000
3	Activity	20.000,00	16.000
4	Activity	25.000,00	20.000
5	Activity	16.000,00	12.800
Total		120.000,00	96.000



Partners budget summary



Call 2023 Round 1 KA2
KA220-VET - Cooperation partnerships in vocational education and training
Form ID KA220-VET-40E3F6B9 Deadline (Brussels Time) 24 Mar 2023 12:00:00

Project budget summary

This section provides a summary of the estimated project budget. The table is automatically completed taking into account the described work packages and their estimated cost.

Budget Items	Allocated amount (EUR)
Work package n° 1 'Project Management'	24 000,00
Paquete de trabajo n°2 - 35000	35 000,00
Paquete de trabajo n°3 - 20000	20 000,00
Paquete de trabajo n°4 - 25000	25 000,00
Paquete de trabajo n°5 - 16000	16 000,00
Total	120 000,00

Distribution of the grant amount among participating organisations

WP	Coordinator (EUR)	Partner 1 (EUR)	Partner 2 (EUR)	Partner 3 (EUR)	Partner 4 (EUR)	Total (EUR)
Work package n° 1 'Project Management'	8 000,00	4 000,00	4 000,00	4 000,00	4 000,00	24 000,00
Paquete de trabajo n°2 - 35000	7 000,00	7 000,00	7 000,00	7 000,00	7 000,00	35 000,00
Paquete de trabajo n°3 - 20000	4 000,00	4 000,00	4 000,00	4 000,00	4 000,00	20 000,00
Paquete de trabajo n°4 - 25000	5 000,00	5 000,00	5 000,00	5 000,00	5 000,00	25 000,00
Paquete de trabajo n°5 - 16000	4 000,00	3 000,00	3 000,00	3 000,00	3 000,00	16 000,00
Total	28 000,00	23 000,00	23 000,00	23 000,00	23 000,00	120 000,00
Project lump sum (EUR)						120 000,00



OBJECTIVES

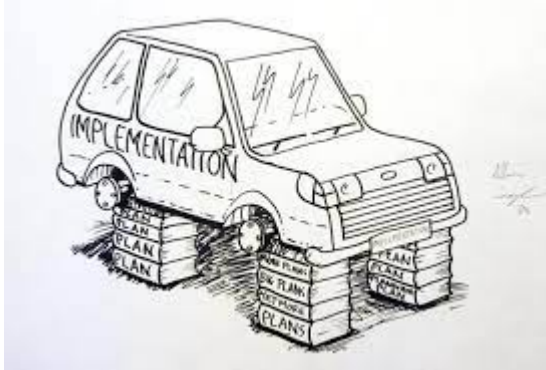
- 1 - Create multilingual, inclusive, innovative **teaching materials in ebook format** (MTO) in **three different levels** to share the knowledge **on green hydrogen energy** - 100% sustainable and clean (0% emissions) among professionals, students and citizens in general.
2. **Designing, assembling a hydrogen station** and getting it operational in each participating institution.
3. **Disseminating all created products** and spreading knowledge about this type of sustainable clean energy.



Duration

1/09/2023 to 31/08/2025

24 months





IMPLEMENTATION

1	Coordination activity. Transnational Meeting.	?	12-14 February 2024
2	Training, researching activity. Hydrogen station. Teaching unit 8	?	20-24 May 2024
3	Coordination activity. Transnational meeting. Teaching units from 1 to 3	?	2-6 September 2024
4	Training activity. Green hydrogen in vehicles. Teaching units 4 and 5	?	4-8 February 2025
5	Final training correction activity. Teaching units 6 and 7 Dissemination activity. Final project outputs	?	last week August 2025



Project outputs

<p>1</p>	<p>Innovative multilingual inclusive teaching material in ebook format</p> <p>8 teaching units</p> <ol style="list-style-type: none"> 1. Hydrogen as a chemical element 2. Photoelectrolysis 3. Safety in hydrogen management 4. The electrochemical cell, fuel cell and stack 5. Hydrogen storage in the vehicle 6. (General) inverter, engine and battery operation 7. Diagnosis and maintenance of fuel cell vehicles 8. The hydrogen generator <p>Hydrogen green energy and vehicles expertise.</p>
<p>2</p>	<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>Operative hydrogen station</p> <p>Design, assembly instructions to get the system operational.</p> </div> <div style="flex: 1; text-align: center;">  </div> </div>
<p>3</p>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="flex: 1;"> <p>Extended partners' professional and personal networks.</p> <p>Improved green energy, digital and professional skills for everyone involved in the project.</p> </div> <div style="flex: 0.5; text-align: center;">  </div> </div>



VET: Contributing to innovation in vocational education and training

HORIZONTAL: Inclusion and diversity in all fields of education, training, youth and sport

HORIZONTAL: Environment and fight against climate change



COMMUNICATION

- 1. PROJECT EMAIL**
- 2. WHATSAPP GROUP FOR COORDINATORS**
- 3. MTO DRIVE FOR PEOPLE DESIGNING AND EDITING WORKING UNITS**

PROJECT CALENDAR

2023	
Sept-23	Initial coordination meeting (Lisbon-Portugal). Distribution of tasks and establishment of standards of inclusivity in didactic units (UD) (text-to-speech reader, interactive images...). Proposal of technical contacts for research on hydropower plants. Dissemination.
Oct- 23	Online ebook app training, UD 1 to 3 and level I research.
Nov- 23	Design of ebook template. Structure of content blocks. Research UD1 to 3 and 8 level II.
Dec-23	Research 1,2,3,8 level III. Elaboration of UD
2024	
Jan- 24	Training (Modena-IT). UD 8. Hydrogen station. Design. Basic elements. Storage. compression, refrigerated refuelling, nozzles, refuelling calculations. Dissemination.
Feb/Mar 24	Finalisation and layout of UD 1 to 3 all levels in English and translations into all languages.
Apr-24	Delivery of Units 1 to 3, levels I, II and III. Translations.
May-24	Implementation of UD 1 to 3 materials in a group (minimum) of VET Automotive students from each partner. Dissemination of the implementation.
Jun-24	Implementation report. Corrections.
Jul-24	Intermediate coordination meeting (Cocaeli- TK). Delivery of UD 1 to 3 and corrected translations. Dissemination. Request Hydrogen budgets in each country.
Aug/sep 24	Research UD 4 and 5 all levels Budget selection.
Oct-24	Training (Zagreb- CR). Hydrogen elements in the vehicle, diagnostics and maintenance.
Nov-24	Visit Hydrogen station with students

Dec-24	Delivery of UD 4 and 5 in English. All levels
2025	
Jan to Mar -25	Report corrections UD. Design H.
Apr-25	Delivery of corrections. UD 6-7.Assembly H.
May to Jul-25	hydrogen station assembly Virtual meeting. Preparation August final meeting
Aug- 25	Delivery UD 6 and 7, dissemination of project results (Spain) (visit and operation of the hydrogen plant and presentation of the multilingual version of our multilingual version of our inclusive ebook on green hydrogen)
Sept-25	Closing of the project. Delivery of complete documentation and inputs for the final report. Final report submission



Meetings teams

3 people per country, one from each working team (see below Team1, 2 and 3).
Required to be able to communicate in English and with fixed responsibilities so as to develop tasks in those teams.

Team 1. Staff in charge of project paperwork (documents and finance) and/or translations.
Materials implementation

Team 2. Staff in charge of MTO ebooks management, editing, writing...Materials
implementation

Team 3. Staff in charge of cooperating on the writing of materials and hydrogen plant
assembly. Design and assembly implementation and dissemination.

Work package n°1 Project Management

3 DAYS - LISBON 12- 14 FEBRUARY 24

Objectives:

- Approval, if necessary, of the calendar of activities and proposals for improvement.
- E-book publisher. Online training activity. Access to materials.
- Companies involved in each country in the development of green hydrogen technology.

Contact.

- Documentation and deadlines.
- Financing distribution. Control mechanisms. Contract of commitment and compliance with deadlines.

Work package n°2. Training meeting 1

5 DAYS - MODENA 20-24 MAY 2024

Objectives:

- The Hydrogenator. Design. Basic elements. Storage. Compression, refrigeration, nozzles, refueling calculations.
- Dissemination of the activity

Work package N° 3. Coordination meeting 2.

5 DAYS - COCAELI 2-6 SEPTEMBER 2024

Objectives:

- To adjust DUs 1 to 3 and 8 to the quality and format standards initially agreed.
- Provide at least 3 different budgets per country for the joint purchase of hydrogen elements.
- Analyse in detail the quotations for the purchase of hydrogen elements and select three final full or partial options to consult on speed of delivery.
- Delivery of corrected translations of the first 4 complete blocks of the multilingual inclusive training material.
- Homogenise units in ebook format.
- Functional testing of the inclusive elements and their adjustment (audio-text-to-speech documents, interactivity of images and videos, self-assessments, interactive dictionary, etc.).
- Contact with potential suppliers to establish international transport conditions.
- Dissemination of the activity

Work package n° 4. Training activity 2

5 DAYS ZAGREB- 4-8 FEBRUARY 25

Objectives:

- Hydrogen elements in the vehicle.
- Diagnosis and maintenance

- in-vehicle hydrogen storage in the vehicle.
- Safety elements.

- To receive training on the 2 blocks of content for the design of didactic units 4 and 5.
- To outline the structure of the presentation of the contents of the 2 DUs.
- Agree on a joint proposal for the inclusive interactive visual elements for each of the 2 topics.
- Elaborate the final design of the hydrogen generator to be set up in each centre. Send to all partners.
- Purchase the material for the assembly according to the budget selected in the previous meeting this year.
- Dissemination of the activity

Work package nº 5

5 DAYS- RIBADEO - LAST WEEK AUGUST 2025

Objectives:

- Receive training on the 2 blocks of content for the design of the didactic units 6 and 7.
- Outline the structure of the presentation of the contents of the 2 final DUs (6 and 7).
- Agree on a common proposal for the inclusive interactive visual elements for each of the 2 topics.
- Event to disseminate the final results of the project with the attendance of all the work teams of the partner countries. Live broadcasting through our youtube channel. This activity contributes to:- Providing tools and resources to the teachers involved in the development of the DU on this green energy.
 - Solving possible final doubts about operation and failures in the hydrogen plant.
 - Establish contact with professionals who are already working with the necessary technology to produce green hydrogen or have processes under development or have processes under development.