



OPERATION, REPAIR AND SERVICE OF HYBRID AND ELECTRIC CARS

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About the project:

Since November 2016 we have been developing materials for the Green Wheels project - Operation, repair and service of hybrid and electric cars. This was implemented under the Erasmus + programme of the European Union. The project should complete in October 2019.

In the project we have been developing open learning educational materials, in the expanding field of maintenance and repair of hybrid and electric cars, for students of secondary schools in the automotive industry field. The materials are ideal for use in the field of lifelong learning and retraining in the near future. Our innovative materials are intended for

teachers of vocational subjects and include support for teaching and learning methodologies. The project emphasizes the use of these innovative teaching methods and the co-operation of schools, employers, sector organizations and vocational training institutes.

Project outputs:

One of the key goals of the project is to create meaningful teaching materials that will serve teachers as a valuable resource during preparation and teaching. With support of the new innovative materials the learning and teaching process is more enjoyable and the achieved knowledge more sustainable.

The training of teachers is crucial for the successful implementation and use of the teaching and learning materials. Our priority is therefore to teach the teachers to make optimal use of our innovative materials and apply them to their daily practice. We have organized teacher trainings at schools to show the teachers how to use and apply the materials successfully. Since the start of the 'train-the trainer' workshops in September 2018, a total of 93 pedagogical staff from 49 schools have been trained and the number of interested schools and trained mentors has been increasing.

In the project we have involved some of the key players in the automotive sector that have helped us with realization of the hands-on trainings of the teachers. For example, Porsche Slovakia, Hyundai Slovakia and ZSE Slovakia. We expect to implement at least 3 more training sessions with involvement of sector organizations by the end of the project.

Among the main innovative methods applied to our teaching and learning materials there are: Critical Thinking, Inquiry-based Learning, Collaborative Learning, Flipped Classroom, CLIL, and other methods.

We place emphasis on communication between project partners, at national and transnational levels, by organizing national and local project meetings. So far we have organized 6 international project meetings.

The major sustainable outputs of the project:

- e-Learning interactive learning modules managed by LMS (Learning Management System)
- Worksheets and videos for practical lessons
- Methodology support materials for teachers
- Online student and teacher forum
- Teacher training webinars available on the website of the project
- Online picture and sound based dictionary in 4 language versions
- ECVET system for the study field of repair of hybrid and electric cars
- Face-to-face teacher training
- Database of schools involved in project activities





The outputs and detailed information on the project will be available in the final form at lms.gwproject.eu by the end of 2019 in four project languages (English, Hungarian, Slovak and Czech).

The developed materials are now being tested at project schools in each country. About 42 secondary automotive schools from all 4 project countries have signed the project letter of support expressing their interest in the project and its outputs. This number has been growing steadily and we expect to involve more than 60 other schools.

In addition to the teaching and learning materials, a new curriculum for the maintenance and repair of hybrid and electric vehicles will be developed in line with ECVET and EQUAVET requirements to unify and standardize learning outcomes across the countries. The ECVET development has been supervised by regulatory bodies in each of the project countries and this activity has been closely monitored by the EACEA. The new curriculum will be available in four languages, just like all other project outputs.

The materials created in the project will mainly serve secondary vocational schools in the automotive sector in the Czech Republic, the United Kingdom (FE colleges), the

Slovak Republic and Hungary. The ECVET (European Credit System for Vocational Education and Training) will be developed together with a proposal on how schools can integrate this system into their curricula. We have created 82 worksheets in four language versions for students and teachers, a methodical guidebook for teachers, a guide for using the LMS, 20 CLIL worksheets with methodology for English, 12 student videos from pilot schools using project materials. We have also been preparing an online picture and sound based dictionary in four project languages to support the worksheets.

There final result of the project will be a comprehensive and unique set of materials for teaching of automotive repair and maintenance for electric and hybrid vehicles. The materials are being developed in European countries where the automotive industry is the key sector.

The outputs of the project will be disseminated among a wide range of users such as secondary vocations schools, car companies, professional associations, and sectoral regulatory bodies inside and outside the project consortium. By doing this we guarantee the sustainability of the outputs even after the end of the project.

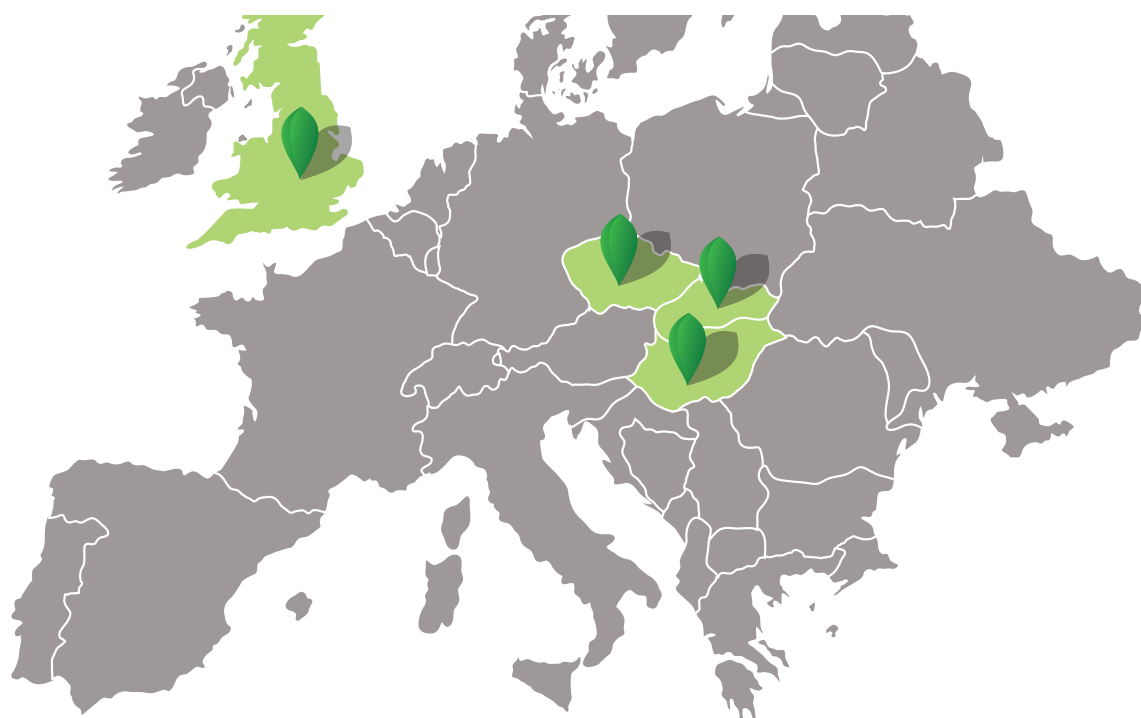


Project partners:

- Teachers of secondary vocational schools in the automotive industry
- Representatives from regulatory bodies in the educational field
- Automotive industry associations
- Other industry specialists
- Specialists in modern methods of education

The project consortium consists of 13 partners from 4 countries - the Czech Republic, the Slovak Republic, the United Kingdom and Hungary. The project is led by the Czech Centre for Modern Education (CZ), s.r.o. which has extensive experience with international projects in the field of education.

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The Institute of the Motor Industry / Hertford
Havering College of Further and Higher Education / Hornchurch / Havering