



Greening TVET

## Green Wheels

Submitted by CFME, Hungary

### BILT Innovation and Learning Practice



The Green Wheels project responds to the need for innovation in the automotive training sector by providing an open learning programme for the repair, maintenance and servicing of electric and hybrid vehicles. The programme focuses on innovative teaching methods and approaches, teacher training and mentoring, open learning materials, as well as curricula and guideline development.

This project was implemented by the Green Wheels Project Consortium of partners from four European countries: Czech Republic, Slovak Republic, Hungary, and United Kingdom.

- Start date: 11/2016  
End date: 10/2019
- Type of implementing institution:  
Governmental Organization or affiliated/Private sector/TVET schools
- Target group:  
TVET providers (public and private), professional organizations, regulatory bodies in education, key employers of the automotive industry

## CFME, Hungary

Centre for Modern Education (CFME) is an internationally-oriented network delivering educational projects focused on upgrading curriculum and improving teaching quality. CFME actively works with vocational schools, industry representatives, and national educational regulatory bodies to implement innovations into the educational system.

## Description of activities

Green Wheels developed a new open learning professional curriculum including competences for the operation, repair and service of hybrid and electric vehicles. These were developed to [European Credit System for Vocational Education and Training \(ECVET\)](#), and [European Quality Assurance in Vocational Education and Training \(EQAVET\)](#) criteria.

Teaching methods and approaches in this curriculum focus on critical thinking, inquiry-based and collaborative learning, flipped classrooms, and peer instruction. The project outputs are available on the [project website](#) and include:

- an online learning management system,
- e-learning modules and worksheets for practical assignments,
- online picture-based explanatory dictionary in all four project partner languages, and
- blended learning resources.

A special focus in the Green Wheels project is put on improving and enriching teaching practice and methodology via extensive teacher training and mentoring.

## Added value

### What current challenges does your initiative address?

The automotive industry is one of the most innovative fields of the European economy. However current TVET education and training does not reflect how rapidly the industry is evolving to provide future-oriented careers in this sector. The Green Wheels project addresses the lack of innovative methods and approaches in automotive TVET by providing a programme for the repair, maintenance and servicing of green vehicles.

### Why is this initiative a success?

A key element was effective stakeholder engagement during the consultation and design of Green Wheels. For this to happen, several challenges were addressed:

- providing regular teacher trainings from the beginning of the project,
- promoting cooperation between project partners through national monthly meetings, and
- enhancing students' engagement in project activities at different levels throughout the project lifecycle.

### What is the added value of this example?

The project was an opportunity for TVET schools to focus on innovation in teaching through close partnership with the private sector. An important element was the definition of learning outcomes for different learning environments, which have potential uses in initial and continuing VET, as well as higher education.

## Impact on curricula

### What implications does this example have for current or future curricula?

A central point of Green Wheels was to develop learning materials flexible enough to serve the needs of different national curricula in the four participating countries. The ECVET structure of the learning content served this purpose perfectly, allowing national differences in curricula to be considered and incorporated during the project cycle in all four project countries.

Although automotive employers find soft skills equally as important as hard skills, typically, national curricula provide little space for the inclusion of soft skills. This was remedied in the training by embedding soft skills in learning content.

### How does this example impact TVET systems?

At the local level, TVET schools can provide new courses and integrate Green Wheels content into their existing curricula. Furthermore, vocational centres and car industry employers offering dual TVET can integrate parts of the Green Wheels materials into their own training system.

At the national level, Green Wheels supports the emergence of new qualifications and the design of upskilling programmes as part of adult education. Training was provided for VET teachers to improve the attractiveness of this educational field and

simultaneously introduce greening into curricula on a content basis. The methodology of building such a flexible learning content that can be used by different educational fields also has a system-wide impact.

### How does this example respond to industry and social demands?

Green Wheels addresses a gap in industry by providing flexible training to employees for building a strong theoretical competence in the field of operation, repair and service of hybrid and electric vehicles. The competencies developed consider the needs of national curricula, lifelong learning and labour market requirements.

## Transferability

### Which components of this practice may have practical value to other UNEVOC Centres/TVET institutions?

Green Wheels learning content is available for use by automotive VET providers in English, Slovakian, Hungarian, and Czech languages. The methodology of building flexible learning contents with the principles of ECVET is one that could be used in different sectors with minor adaptation.

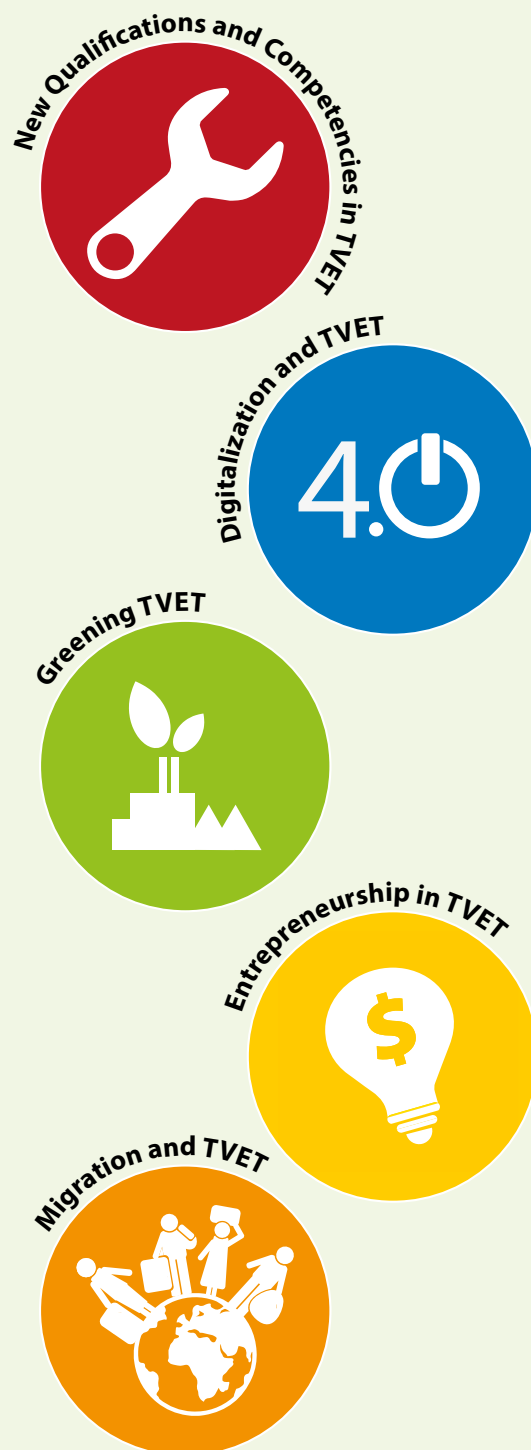
### What challenges do you see if transferred to another context?

Under certain preconditions it is possible to transfer the project to other vocational fields and sectors. It is important to provide simultaneous support for all target and partner groups and consider the different rationale of stakeholders throughout the project life cycle, otherwise competing interests could become the basis for conflict. Furthermore, regular evaluation and information sharing on developments play a key role. An important precondition for knowledge transfer to teachers is the involvement of key industry players in teacher training. Generally, industry-led projects can contribute to the inclusion of green issues into curricula better than the projects introduced by the educational side that may not be accepted by industry.

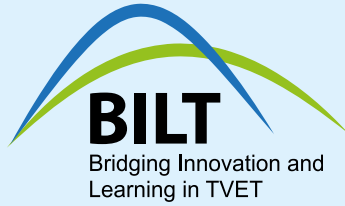
- Contact person:  
Ms Gabriella Mihályi, Training development expert, Centre for Modern Education (CFME), Hungary  
[gmihalyi@cfme.net](mailto:gmihalyi@cfme.net) or [info@cfme.hu](mailto:info@cfme.hu)
- For more information about this practice:  
[www.gwproject.eu](http://www.gwproject.eu)
- Implementation partners:  
The Green Wheels Project Consortium consists of one TVET school, one professional association in the automotive field, and appropriate regulatory bodies. The UNEVOC Centre [National Pedagogical Institute of the Czech Republic](#) (National Body) is a member of the Consortium.

Part of the BILT project involves collecting Innovation and Learning Practices\* that address systemic challenges within the five work streams of the project, with the purpose to understand what elements lead to their success and can be transferrable to other contexts.

Access more BILT Innovation and Learning practices in the thematic areas of:



\*UNESCO-UNEVOC does not endorse any of the practices included in this database and is not responsible for their management or implementation.



The Bridging Innovation and Learning in TVET (BILT) project provides TVET stakeholders with a platform for exchange and supports them to address current challenges in TVET systems, which arise due to technological, social, environmental, and workplace changes.

Within BILT, the overarching thematic area is New Qualifications and Competencies in TVET, which is supported by four work streams:

- Digitalization and TVET,
- Greening TVET,
- Entrepreneurship in TVET, and
- Migration and TVET.

Through regular knowledge exchange, thematic project activities, and expert working groups, BILT offers opportunities for collaboration between UNEVOC Centres and TVET stakeholders in Europe, and a platform for bridging of innovation and learning between European UNEVOC Centers and TVET stakeholders in the Asia-Pacific and Africa regions.

The results of ongoing activities are accessible on BILT's web page and will be disseminated during a BILT Learning Forum.

The BILT project is carried out in collaboration with UNEVOC Network members, coordinated by UNESCO-UNEVOC with support of the German Federal Institute for Vocational Education and Training (BIBB), and sponsored by the German Federal Ministry of Education and Research (BMBF).

For more information, please visit [www.unevoc.unesco.org/bilt](http://www.unevoc.unesco.org/bilt) or contact us at [unevoc.bilt@unesco.org](mailto:unevoc.bilt@unesco.org)

COORDINATED BY



WITH SUPPORT OF



SPONSORED BY THE

