

TEMPLATE FOR THE GOOD PRACTICE

Element	Description
Title*	Developing Skills for Renewable Energy through Partnerships between Vocational Education and Training, Business and the Labour Market
Name of the VET Provider	<i>Khmelnysky Higher Vocational School №25</i>
Thematic domain	• Innovation • Green • Inclusion • Lifelong learning • Creating partnerships/skills ecosystems
Introduction*	The transition to a green and resource-efficient economy and the development of renewable energy are creating demand for specialists with new professional competences. This calls for updating the content of vocational training, developing teachers' competences, modernising the learning environment and strengthening cooperation with employers. Khmelnysky Higher Vocational School №25 applies a systemic approach to training specialists for green energy. It combines the greening of educational content, hands-on training on modern equipment, teachers' professional development, partnership with business and the employment service, and vocational training for both young people and adults. An important milestone was the project "Solar Energy as a Component of the Educational Process", implemented jointly with the NGO "Khmelnyskyi Energy Cluster". Topics on alternative energy and on the installation and maintenance of solar power plants were integrated into the working curricula of electrical-engineering occupations. A training solar power plant was installed on the roof of the school's training and production building. It is used for learners' practical training and covers part of the school's energy needs. Further development of the practice led to obtaining a licence to train in the occupation "Electrician for Repair and Maintenance of Solar Power Installations", expanding partnerships with energy-sector companies, organising adult training, and involving employers in practical training and competence assessment. In this way, separate initiatives have grown into a comprehensive model for training green-energy specialists. It covers identifying labour-market needs, building professional competences, assessing them in practice, and applying them in professional activity.
Stakeholders and Partners	The main beneficiaries of the practice are VET learners, teaching staff, adults who need to acquire new or update existing professional competences,

veterans, internally displaced persons, veterans' family members, and companies that need qualified workers for the renewable energy sector. The practice is built on a multi-stakeholder partnership between the VET institution, business, civil society organisations, the employment service, methodological institutions and international partners.

Impact*

The practice has brought about change in educational content, the learning environment, vocational training, teacher development, partnership with business, and adult learning.

1. Updating the content of vocational education.

Topics on alternative energy and on the installation and maintenance of solar power plants have been integrated into the curricula of electrical-engineering occupations. Green skills have become part of vocational training. The school has also obtained a licence to train in the occupation "Electrician for Repair and Maintenance of Solar Power Installations".

2. Hands-on training on real equipment.

The training solar power plant (SPP) has become part of the school's learning environment. Learners gain practical skills in installing, connecting, grounding, operating and maintaining solar power installations. They also analyse possible faults and determine how to fix them. At the same time, the SPP partly covers the energy needs of the training and production building.

3. Organising vocational training for adults.

At the end of 2025, in cooperation with the RePower Ukraine Foundation, the school hosted short-term training under the "Solar Power Plant Installer" programme. It was successfully completed by 10 trainees, including veterans, internally displaced persons and veterans' family members. Participants gained practical competences in the design, installation, commissioning, diagnostics and maintenance of solar power plants. This experience expanded the school's activities in lifelong learning and the professional adaptation of adults.

4. Competence assessment with employer involvement

In cooperation with the private enterprise "SVI TOK", the case championship "Solar Energy: Connect, Test, Launch" was held as part of the project "Vocational Education: Autonomy of the Future", supported by the Skills4Recovery Multi-Donor Initiative.

Three teams of learners carried out a comprehensive work-based task. They installed and wired a solar power plant, checked that the connections were correct, and presented the results of their work. The assessment covered professional knowledge and practical skills, compliance with safety requirements, teamwork and the ability to make professional decisions. Employers and energy-sector specialists took part in the assessment. The winning team was offered an internship in solar energy at SVI TOK. This format combines hands-on learning, independent assessment of professional competences and a follow-up internship at a company.

5. Developing teachers' professional competence.

Three teachers completed certified training on the Atmosfera platform in the programmes “Solar Power Plant Designer” and “Solar Power Plant Equipment Specialist”, after which they ran seminars for entrepreneurs and local residents. As part of the Reskilling Ukraine project, a senior training instructor completed the programme “OnTrack Solar Power Plant Installer”.

Six teachers completed the hands-on intensive course “Installation of Solar Power Plants” by ISolar Academy.

Thus, the practice simultaneously develops educational content, learning infrastructure, the competences of learners and teachers, and mechanisms for cooperation with employers. This helps bring vocational training closer to the current needs of the renewable energy sector.

Innovation and Success Factors *

The practice is innovative in its comprehensive approach to training green-energy specialists. The school takes labour-market needs into account, updates its educational programmes, develops teachers’ competences and cooperates with employers. Training combines theory with practical work on modern equipment in conditions close to a real workplace.

A key part of the learning environment is the operating training solar power plant. It generates electricity for the school’s needs and is used for hands-on training. Learners gain skills in installing, connecting, operating, diagnosing and maintaining solar power installations.

The case championship “Solar Energy: Connect, Test, Launch” became a new format for practical training and assessment. Learners carried out a comprehensive work-based task: they installed and connected equipment, checked the quality of the work, followed safety requirements and presented their results. Employers and energy-sector specialists took part in the assessment. The winners were offered an internship at a company.

A distinctive feature of the practice is the active involvement of employers. They help identify relevant professional competences, take part in practical training and in assessing its results, and offer internship opportunities. This ensures that vocational training matches the real needs of companies.

The practice is supported by the school management’s commitment to the green agenda, cooperation with energy-sector companies and the employment service, teachers’ professional development, and modern facilities and equipment. Participation in national and international projects, including the EU Erasmus+ programme, is an important resource. It helps develop partnerships, introduce new approaches and broaden training opportunities. Replicating the practice in other VET institutions requires appropriate institutional conditions. The institution must be ready to update the content of vocational training and introduce green technologies. Teachers need to upgrade their professional competence on a regular basis. Sustained cooperation with employers in practical training, competence assessment and internships is also essential.

Economic conditions include resources for creating and upgrading facilities and equipment. Practical training requires modern equipment for installing, connecting, diagnosing and maintaining solar power installations. Additional

resources can be mobilised through partnerships with business, civil society organisations, public authorities and the employment service, as well as through national and international projects.

The social condition is the regional labour market's need for specialists with green competences and employers' interest in training them. Demand for such training among young people and adults also matters. The training facilities created can be used for vocational training and retraining of adults, including veterans, internally displaced persons, women and unemployed people.

The environmental condition is the development of renewable energy, energy efficiency and other green technologies. This creates a need for new professional competences and opportunities to apply them in professional activity.

Ensuring all these conditions together supports the sustainability of the practice and its adaptation to the needs of other VET institutions and regional labour markets.

Constraints*

One of the main challenges is the rapid pace of technological change in renewable energy, which requires constant updating of educational programmes and teachers' professional competences. To address this, teachers undergo specialised training and internships, and new technologies and partners' practical experience are gradually integrated into the educational process.

Another challenge is the need for modern specialised equipment and the significant funding required to purchase and upgrade it. This is partly addressed through cooperation with business and civil society organisations, and through the school's participation in national and international projects. This approach makes it possible to gradually develop the school's facilities and create conditions for hands-on training on modern equipment.

A key challenge is ensuring that vocational training reflects real production processes and employers' needs. To this end, energy-sector companies are involved in learners' practical training, in developing and assessing work-based cases, and in updating educational programmes.

A separate task is ensuring the sustainability of the practice, so that its development does not depend solely on individual projects and external funding. To this end, green competences are being integrated into the school's educational programmes, training in the occupation "Electrician for Repair and Maintenance of Solar Power Installations" is being developed, teachers are upgrading their qualifications, and ongoing cooperation with employers, the employment service and other partners is expanding.

Lessons learned *

Experience with the practice has shown that green skills are developed most effectively when they are integrated directly into vocational training. The environmental dimension should be linked to the specific professional tasks and technologies that the future specialist will work with on the job.

Combining theoretical learning with practical work on modern equipment is essential. The training solar power plant enables learners not only to gain knowledge about renewable energy but also to acquire practical skills in

installing, connecting, operating and maintaining equipment. At the same time, they learn to follow safety requirements, use resources efficiently and understand the environmental impact of their professional activity.

The practice has also confirmed that introducing new technologies into the educational process requires continuous professional development of teachers. Teachers need to master modern technologies and understand the changes taking place in the relevant economic sector. Teacher upskilling should therefore go hand in hand with updating educational programmes and facilities.

An important lesson was that employers should be involved not only in organising work placements. Their participation in identifying relevant professional skills, in practical training and in assessing learning outcomes helps better reflect the real requirements of the labour market.

The case championship demonstrated the effectiveness of practical work-based cases. Completing a comprehensive task in conditions close to real production makes it possible to assess, at the same time, professional knowledge and practical skills, compliance with safety requirements, and the ability to work in a team, make decisions and present one's work. Involving employers in such assessment strengthens the practical orientation of vocational training.

Another important lesson is that the facilities created at the school and the teaching experience accumulated make it possible to organise short-term vocational training and retraining for adults, including veterans, internally displaced persons, women and unemployed people.

Thus, the main lesson of this practice is that training green-energy specialists is most effective when updated educational content, modern equipment, teachers' professional development, hands-on training and cooperation with employers are developed as interconnected parts of a single system.

Replicability and/or up-scaling

The practice has potential for transfer to other VET institutions, since it is based on a model for organising vocational training in line with the needs of the green economy. Individual elements of the practice can therefore be adapted to the capacity of a particular institution, the specific features of the region and the needs of the local labour market.

Before introducing the practice, it is important to analyse which green professional competences are most in demand in the region. Based on this analysis, the institution can decide on the training field and the range of potential partners. These may include companies, the employment service, local authorities, professional associations, and civil society and international organisations. It is labour-market needs that should determine which elements of the practice are worth introducing in a given institution.

An important condition is preparing teachers to work with new technologies. At the same time, educational programmes need to be updated to integrate the relevant green competences, and a practical learning environment needs to be created. The amount and type of equipment can be determined by the chosen training field, the institution's financial capacity and the equipment

available at partner companies. Practical training should be based on real conditions or conditions as close as possible to real production.

The infrastructure created and the trained teaching staff can be used both for vocational training of young people and for training and retraining adults. This extends the practice to veterans, internally displaced persons, women, unemployed people and other groups who need to acquire new professional competences.

At the regional level, the practice can be disseminated through cooperation between VET institutions, employers, the employment service and public authorities. Institutions that have the relevant equipment and trained teachers can use their facilities to train young people and adults, share experience and hold joint practical events.

At the national level, individual elements of the model can be used by other VET institutions to update educational programmes, develop green competences, organise practice-oriented learning and strengthen cooperation with employers. For wider dissemination, it would be useful to develop and share learning materials, work-based cases, assessment criteria, teacher training programmes and recommendations on organising partnerships with business.

At the international level, the practice can be useful for VET institutions that are also adapting workforce training to the green transition. International partnerships make it possible to compare approaches, exchange learning materials and practical cases, jointly develop teacher training programmes and draw on the experience of different countries to improve vocational education. The model is not limited to solar energy. Following the same logic, it can be adapted to e-mobility, green construction, automation, waste management, the circular economy, energy efficiency, heat pumps and other areas of the green transition.

Contact details

What is the address of the people or the project to contact if more information on the good practice are needed?

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URL of the practice

<https://sites.google.com/view/metodystvpv25/%D0%BA%D1%80%D0%B0%D1%89%D1%96-%D0%BF%D1%80%D0%B0%D0%BA%D1%82%D0%B8%D0%BA%D0%B8>

Related resources that have been developed

The practice has produced a set of interlinked educational, methodological, technological and organisational resources that support the training of specialists for the renewable energy sector and lay the foundation for further development of this field at the school.

1. The working curricula of electrical-engineering occupations have been updated to include renewable energy topics. Learning and presentation materials on solar energy have been developed, along with materials on the installation, operation, diagnostics and maintenance of solar power plants. For practical training, the case

“Solar Energy: Connect, Test, Launch” and expert assessment criteria for learners’ work have been developed.

2. An educational programme for the partial qualification “Installation of Solar Power Plants”, as well as educational programmes for the occupation “Electrician for Repair and Maintenance of Solar Power Installations” for qualification grades 2, 3 and 4 have been developed.
 3. Memoranda of cooperation have been signed with the RePower Ukraine Foundation, the Khmelnytskyi Regional Employment Centre, PE “SVI TOK” and LLC “Enerhodosvid”.
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