

Latvia - The Riga State Technical School

Title of inspiring practice	Renewable energy and material approaches at the Riga State Technical School (<i>'Rīgas Valsts tehnikums – RVT'</i>)
Geographical area	At municipal level in Latvia.
Period of implementation	The practice was started during the construction of the Technology and Innovation Centre in 2016.
Rationale	The Riga State Technical School is promoting the implementation of green thinking in practice, with the goal of improving the study and learning process, creating a green environment, as well as saving resources and reducing the amount of fossil fuel use. This practice is a good example of how greening educational curricula and promoting greening activities at school level can successfully reduce environmental pollution and educate future generations to green thinking through vocational learning.
Scope of the practice	Initial Vocational Education and Training, Continued Vocational Education and Training, apprenticeship
Educational level	EQF level 4, planning EQF 5 in CVET in relation to demand from the labour market stakeholders
Introduction and context	<p>The activities undertaken by the Riga State Technical School (a VET institution under the supervision of the Ministry of Education and Science) are part of their Investment and Development Strategy, which was developed to ensure the implementation of the national educational policy with regard to the green approaches. The Education Development Guidelines in Latvia for 2021-2027 (GDE) was the main driver behind the introduction of Investment and Development Strategy among VET institutions. The DGE envisaged an opportunity for VET institutions to lead on a new role in addressing the green transition and digitalisation by adopting strategic planning to improve stakeholder collaboration and increase competitiveness and innovation. The GDE also encouraged the adoption of green transition and digitalisation curricula, as well as green core modules and sector or occupation-specific courses. Another main driver behind the activities undertaken by the Riga State Technical School was the European recommendation on key competences for lifelong learning. In this sense, the initiative responded to the green course and digitalisation policy promoted by the European Commission.</p> <p>Other activities were carried out to ensure renewable sources of energy. In addition to a scaled-down wind turbine on the roof of the building, solar collectors were installed on the roof of one building and an educational programme was also developed 'Renewable energy technician' (solar energy, wind energy and hydrogen). This allows already during the study process to demonstrate the actual use of the technology. The school is working towards making the Technology and Innovation Centre energy neutral in the future.</p> <p>Overall, the initiative aims at the improvement of the study/ learning process, promoting green philosophy (thinking), creating a green environment, as well as saving resources and reducing the amount of fossil fuel use.</p>
Key activities and outcomes	The Riga State Technical School has implemented a number of activities to educate its students to a green mindset and reduce the environmental impact of students and the school.

As part of the initiative, the school is creating environmentally friendly solutions, while promoting sustainable use of materials, as well as training specialists to work with sustainable solutions.

"Green course" is being integrated into the everyday tasks and practical activities of the school and green thinking is promoted through various learning topics and the actual saving of resources. The three-step green thinking principle is practiced also in the development of the curriculum: Reduce - Reuse - Recycle.

Efforts are being made to leave an ecological footprint as small as possible through the continuous identification, research and analysis of the resources necessary to implement the mission and strategic priorities of the school. Furthermore, school staff and students are being encouraged to think about the impact of their overall lifestyle and daily activities from a green perspective.

For instance, the school is becoming increasingly aware of the amount of CO₂ emissions it produces when consuming different types of energy. To reduce its ecological footprint, the school is investing in the equipment to extract energy from solar, wind, hydrogen alternative energy sources and is committed to increase the number of solar panels and collectors on the roof of the educational building. In addition, the school plans to install a system for rainwater treatment and reuse, with the goal of enabling the gradual transition of the RVT car park from internal combustion engines to electric engines.

In the future, the school will pay increasing attention to creating as little negative impact on the environment as possible, both directly and indirectly.

For instance, the technical department plans to minimise the consumption of fossil fuel materials and the use of other non-renewable materials, by reducing the use of motorised transport, heating equipment and electricity. Furthermore, the buildings and premises of the school have been organised in a way such that the sunlight for heating or cooling of the buildings can be used efficiently.

The school also intends to implement a territory planning with the inclusion of environmental cultural elements and greenery for nature protection.

To reduce overall pollution, the school involves students and all employees in collecting wastepaper. In the next planning period, this practice is expected to be introduced as a systematic movement. Furthermore, students participate in environmental clean-ups and organise various events to educate the public on how to help the environment and reduce its pollution. For the organisation of such events and campaigns, the 'Eco Council' has been established, resulting in a regular waste collection and delivery system.

Following the decision of the student self-governed working group, resources acquired through various campaigns and actions will be used to purchase materials, as well as to produce waste sorting sets, e.g. in the workshop of the RVT woodworking department.

The Riga State Technical School is the winner of the EU Innovation Award in 2022.

A recent initiative concerns the development of **solar panel canopy prototype**. Last September (2022) three Latvian companies and RVT signed a cooperation agreement, agreeing to engage in a comprehensive training of highly qualified specialists in accordance with the climate goals set by the EU. The agreement also provided for starting the creation of a solar panel canopy prototype (primarily intended for charging electric cars), would be industrially produced in the future, with the maximum use of local raw materials for support structures and applying the best available technologies of the time.

As a result of the cooperation, a prototype has been created that can be placed on an area of less than 25 square metres. All support structures are made of composite material produced in Latvia. The roof uses 16 solar panels, which are fixed in an ingenious and proven way to ensure the impermeability of rainwater. Canopies - the solar micro-generation station has a capacity of 6.4 kW, which is more than sufficient for an average fast charging of an electric car during daylight hours. The suppliers of

	<p>the panels and equipment necessary for the operation of the station are German manufacturers.</p> <p><u>Challenges encountered throughout the project:</u></p> <p>Not all the envisaged activities could be implemented. There was a plan to increase the number of solar panels by placing them also on the roof of the students' dormitories. However, there were no finances available for purchase of these panels. Therefore needs and priorities are divided into blocks for gradual implementation. A challenge also is the change of habits of teachers and students, e.g. regarding the sorting of waste, also collecting waste paper, used batteries. It should become a habit and additional effort needs to be invested into it.</p> <p><u>Success factors of the project:</u></p> <p>Timely anticipation of the need for installing solar panels when designing/reconstructing buildings and premises. The parallel drafting and implementation of alternative energy education program. Flexible cooperation with employers/companies regarding green transition and involvement of teachers and students in the implementation of respective joint projects. For example, in manufacturing the solar panel canopy prototype.</p> <p>Targeted competitions among student groups, e.g. on waste paper collection with a prize for the best - excursions around Latvia to visit picturesque places and promotion prizes for all participating groups.</p>
Other information	The Education Development Guidelines in Latvia for 2014 – 2020 and 2021-2027 encourage sustainable approaches and green transition.
Contacts and sources	<p>Website and social media channels:</p> <p>https://www.rvt.lv/</p> <p>https://www.facebook.com/rigasvalststehnikums</p>
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