

EU PROGRAMME ACTIVITY 2 (KA2)  
**PROJECT “Ecofriendly worker 1.0”**  
 (Nr. 2021-1-PL01-KA210-VET-000032894)

“USE OF RENEWABLE RESOURCES MODULE”

1.	LESSON TITLE	USE OF RENEWABLE RESOURCES MODULE SHUTDOWN OF THERMAL POWER PRODUCTION WORK WITH THEORY WORKS AND FOR SELF-CONTROL TESTS
2.	AUTHOR	Riga State Technical school
3.	ANNOTATION	The learning material is intended for students studying Renewable Energies technician specialty. They acquire the knowledge about the Use of renewable resources in the heat energy production module. students have access to the theoretical digital study materials (theory) of the module topics with self-checks tests, respectively, as a result of self-directed learning, students can acquire the theoretical knowledge of the module much better for the final paper (final tests, exams). The final work of the module has also been prepared in the digital format. Since the questions of the self-control tests generally form the final paper, then the students have a lot of motivation to perform the self-control tests well, understand the mistakes made as well as the answered questions learn more in the theory notes.
4.	LESSON STRUCTURE	<ol style="list-style-type: none"> <li>1) Theory summaries (digital study materials (theory)) and self-directed tests</li> <li>2) Final thesis of the module</li> </ol> <p>The methodological material can be found on the website of the RSTS digital learning environment in the Professional section study subjects → Study subjects of the Department of Energy → PB8 Renewable resources use in thermal energy production by opening the link <a href="https://e.rvt.lv/course/view.php?id=480">https://e.rvt.lv/course/view.php?id=480</a> (under the condition that the interested party is added as member or by entering the guest password SILTUMS).</p>
5.	THE GOALS OF THE LESSON	The created methodical teaching material has been created on the learning platform Moodle. It gives the opportunity for teachers and students to get easy and comfortable access to the created learning materials. The digital environment gives the ability to assess instantly tests and get feedback on problematic topics, but learners have the opportunity to get acquainted with the mistakes made immediately after the work has been completed and to receive immediate feedback in the form of comments about the mistakes made. Digital material also provides an opportunity to be used if a substitute teacher is needed. The material can be used modularly for full-fledged learning, in the self-directed learning process, also external or unsuccessful students, for whom given the opportunity to take the post-test of the module, but before that an opportunity is needed independently learn the subject material.
6.	THE FORM OF THE LESSON	The theoretical part summaries are easy to open with the help of hyperlinks and save as PDF format files. The abstracts contain the most important and latest information about plumbing for pipes and circuits, solar collectors, solar panels for thermal energy, biomass thermal energy and geothermal energy. In the abstracts, you can find information about the relevant ones technologies both in Latvia and worldwide.

		The practical part consists of self-control tests, 28 questions have been created, which make up the question bank. Questions are of different types such as true/false, single correct, multiple correct answers, with an answer number to be found or calculated, with pictures to choose the appropriate one name, with images to which descriptive text should be added in the appropriate places.
7.	LESSON CONCLUSIONS	<p>First of all, it should be concluded that the module Use of renewable resources for thermal energy production is taught for the first time in the technical school this school year, so this year is the first opportunity to check this methodical material in a real learning process. Pupils find what is found in the theory notes learning material was learned through various types of tasks during studies at the technical school. From the module according to the results of the final work, it can be concluded that the students have learned the learning material of the module have learned at a sufficiently high level. All students who took the end-of-module exam, have successfully passed it with at least 60% of the maximum number of points.</p> <p>Secondly, after completing the final paper, some comments were obtained from the students about the imprecise wording of questions and answers. You could also check the correctness of the questions to conclude from the obtained report after the work has been completed. All this was taken into account when specifying some questions in the question bank.</p> <p>And thirdly, can conclude that this created learning material will definitely give students easy access to theory materials what will help to repeat the learning material at any convenient time and better prepare for the final work of the module, it will allow you to quickly complete the digital final work of the module, will give an immediate evaluation of the work and the opportunity to get acquainted with errors and comments on to the submitted answers.</p>
8.	METHODS, TOOLS	RSTS digital learning platform Moodle, pictures.
9.	SOURCES	<p><i>Āboliņa K., Andrušaitis A., Blumberga D., Briede A., Bruņiniece I., Grišule G., Kļaviņš M. (2008). Klimata mainība un globālā sasilšana. Rīga, LU Akadēmiskais apgāds, 176 lpp.</i></p> <p><i>Kļaviņa M., Zaļoksnis J. (2011). Vide un ilgtspējīga attīstība. Rīga, LU Akadēmiskais apgāds, 334 lpp.</i></p> <p><i>Brēmere I., Indriksone D., Aļeksejeva I. (2011). Siltumsūkņu izmantošana ēku siltumapgādē. Rīga, Baltijas Vides forums, RTU, 32 lpp.</i></p> <p><i>The German section of the International Solar Energy Society. (2010). Planning and Installing Solar Thermal Systems. Vācija, Earthscan, 368 lpp.</i></p> <p><i>Keyhani A. (2019). Design of smart power grid renewable energy systems. ASV, Wiley, 624 lpp.</i></p> <p><i>Čiuprinskiene J., Kupianskas K., Motuziene V. (2020). Apkure, ventilācija, gaisa kondicionēšana. Lietuva, Supernamai, 416 lpp.</i></p> <p><i>Dunlap R. A. (2018). Sustainable energy. ASV, Cengage Learning, 736 lpp.</i></p> <p><i>Glassley W. E. (2015). Geothermal energy. ASV, CRC Press, 409 lpp.</i></p>