

H2020 project RES4LIVE 5th Consortium Meeting

The 5th Consortium Meeting of the RES4LIVE project took place in Potsdam, Germany, between the 24th and 25th of November 2022. The meeting was hosted by ATB Leibniz-Institut für Agrartechnik und Bioökonomie e.V. (Germany) at its premises. The meeting was hybrid, allowing those who couldn't physically join to attend virtually. During the event, fruitful collaboration and communication across project tasks took place through interaction between the attendees.



Professor Dr. Thomas Amon (ATB) opened and moderated the meeting, which over 30 participants from the 17 RES4LIVE partners attended. Project Manager Dimitrios Tyris (AUA, Greece) presented the current stage of RES4LIVE and gave the floor to Work Package (WP) leaders to present the project's status, share preliminary results, and highlight the major achievements of each WP.



The progress of adapting innovative Renewable Energy Sources (RES) technologies in livestock farms' needs (WP1) was examined and discussed; in this direction, the completion of the BioCNG Demo-Plant construction in the premises of LVAT was presented, including

the required test phases. Concerning WP1, the Biogas upgrading and CNG refueling as well as the completion of authority's approval and TÜV approval are in progress. Furthermore, the progress on the conversion of the tractor's engine for biomethane use was presented along with the necessary testing for the tractor. The promising results were discussed as well as the next steps which include additional testing, mainly for the thermal load and the delivery and on-site testing of the tractor at LVAT, scheduled for the beginning of 2023. Finally, the progress in the adaptation and testing of the heat pump as well as the thermal-photovoltaic systems development were presented. The former is an ongoing process with the full 3D design and the testing being completed and the installation of the pilot units in progress. For the latter, the thermal and the electrical design of the PVT systems have been completed as well as the solar station design, whereas the manufacturing of solar stations' thermal components and electrical cabinets are in progress. Following WP1, the focus was on the updated presentation on market available RES and energy efficiency solutions, machinery, and practices for livestock farms, owing to WP2 activities, completed on June '22. The technology inventory was presented and discussed as well as the simulations' predictions, which include solar energy, wind turbines, heat pump and energy storage sources. The communication of the latter's results to a wider audience was also discussed.



For WP3, the presentation and discussions focused on precise indoor environmental and energy smart control and the energy management platform. The environmental and energy smart control (weather station, anemometer, energy meter) installations at ILVO, LVAT, AUA, and GOLI were presented as well as the architecture design for the platform and the next steps. During the presentation of WP4, the implementation and the testing of RES solutions at the premises of AUA, UNIBO, ILVO and LVAT were discussed. In particular, AUA showed the photovoltaics, LEDs and smart control system installation in AUA's poultry house while the installation of the heat pump and the full integration of the smart control system to be tested under real conditions remain in progress. UNIBO presented the progress in the development and installation of the geothermal systems and ILVO showed the progress in the sensors installation, the RES technical room and the PVT installations. Finally, ATB

presented the development of a smart barn climate control systems while the integration of energy meters, ammonia and humidity sensors and of anemometer is in progress.



In WP5, AUA presented the status of the environmental, financial, and social assessment while in WP6 EAAP presented the clustering activities and policy recommendations. During the second day of the meeting, attendees visited LVAT's premises in the morning; the participants were guided around the farm and were able to hear about and see on-site all the realized installations. While at the farm, Gunnar Lennermo, João Gomes, and Alexander Loris from MG Sustainable Engineering AB took the opportunity to define the placement of the Concentrating PVT collectors on the roof of the LVAT barn. The C-PVTs will deliver solar heat and electricity to the dairy farm. Measurements were also taken to prepare the mounting structure for installing the collectors.



After the three-hour visit, the presentations of WP7 and WP8 followed at ATB, where discussions focused on strengthening the visibility of RES4LIVE at national level and on the overview of the work from the managerial – technical and financial – perspective, including the positive evaluation from the 1st Review Meeting. The 5th RES4LIVE Consortium Meeting ended with a positive general evaluation of the project and all participants were thanked for their efficient collaboration and the work already completed.

