Title: Education for Circular Economy– Comprehensive solutions in cities – water, waste & energy

Education for the Circular Economy (CE) is one of the key activities of the Mineral and Energy Economy Research Institute of the Polish Academy of Sciences (MEERI PAS) which is organising various events to support the CE implementation.

The transformation towards the CE model, that is based on rational use of primary raw materials and more sustainable waste management, is one of the key activities of the various pro-environmental organisation in the world. The circular management of water, which is the most important resource for life, is important area in implementing the CE. Moreover, water-based waste, as waste water, sewage sludge and sewage sludge ash are a valuable source of raw materials (including phosphorus) and energy, therefore the commitments for the CE should be integrated in these three areas - water, raw materials and energy.

The great example of the building of the CE society are initiatives conducted by MEERP PAS for different groups of stakeholders. One of them was a 2-weeks summer schools for students on the adaptation of selected elements of water, waste (including sewage) and energy management in cities to the assumptions of the sustainable development and the circular economy. The CIRCU-CITY Summer Schools took place in the hybrid form in September 2020 and September 2021. In total 142 students (originating from > 40 countries as Spain, Poland, United Kingdom, Albania, Austria, Portugal, Belgium, Ecuador, Finland, Germany, Sweden, Nigeria, Brazil, Switzerland, Bangladesh, Ethiopia, Lagos and others) took part in the CIRCU-CITY Summer Schools in three cities – Gent (Belgium), Cracow (Poland) and Mondragón (Spain).

MEERI PAS developed a training program on the sustainable and circular management of water and raw materials (as phosphorus) in case study region – Podgórze district in Cracow (Poland). The area is under constant development including residential and industrial constructions. Due to rapid urbanization in the area, the district face many difficulties such as water management (flooding risk, overloaded sewage system), transport (high traffic due to industrial sites and high-density housing) and waste management (industrial and municipal). In the selected area, there is also one of the largest in Poland wastewater treatment plant (WWTP) - Płaszów WWTP serving approx. 780 000 population equivalent (PE), and the SUEZ composting plant (6 000 Mg/year capacity), located next to the WWTP. Students were trained in good practices in the circular economy, in particular the water reuse, phosphorus recovery and renewable energy. Due to the summer camp consisted of a series of interactive lectures given by experts in the field, a field visit (virtual), a board game, and a 2-day tournament, the students were able to propose circular solutions for this area, mainly in the circular water management, and recovery of raw materials and energy in WWTP.

The CIRCU-CITY Summer Schools were a continuation of the training program implemented by Ghent University (Belgium) in cooperation with the University of Queensland (Australia) and MEERI PAS as a part of the “Water and Energy Systems Integration Summer School 2019” project. In 2021, Mondragon University (Spain) and Erion (Italy) were also involved in the implementation of the summer school. This initiative was co-financed by EIT Raw Materials – a body of the EU, under Horizon 2020.

We are pleased to announce that the CIRCU-CITY Summer School 2021 received the Award for innovative and activating learning approach during the Ghent University Education and Internationalisation Day in November 2021. Experts (main organisers) - Gijs Du Laing, Elise Meerburg, Marzena Smol, Michał Preisner, Itsaso Gonzalez Ochoantesana and Ganix Lasa received this Award for their efforts in running the CIRCU-CITY Summer School. They trained more than 140 students from all

corners of the world (in editions 2020 & 2021) on the transition towards circular cities. Such a huge interest in the training program and the opportunity to transfer knowledge to students from different regions of the world proves the significant impact of activities carried out by all MEERI PAS on building a circular economy and increasing public awareness of the key role of water and raw materials for our and future generations.

More about the Education for Circular Economy can be found on the web-page of the Division of Biogenic Raw Materials MEERI PAS https://min-pan.krakow.pl/psb and in the social media https://www.facebook.com/RawMaterialsPolishAcademyOfScience & https://www.linkedin.com/company/divisionofbiogenicrawmaterials/

Supported by

eit RawMaterials ACADEMY

Funded by the European Union