Effective engagement of citizens and stakeholders in LHP

Good practice template

Participation of local stakeholders in local heat planning is highly relevant to:

- *ensure that there is a legitimacy for proposed measures*
- *reach the successful realisation of planned investments in the years to come.*
- *entail the positive effects of an enhanced decision-making processes,*
- *create greater acceptance of renewable energy projects, positive behavioural change, and increased investment in community-led initiatives.*

*PlanHeat has a **special focus on target group involving citizens** and citizens associations, community groups, neighbourhood energy cooperatives, climate protection initiatives etc.*

It is worthwhile that the good practices of activities engaging citizens (online campaigns, events, trainings/seminars, local initiatives, interesting materials) are related to the topics of existing local heating supply (e.g. district heating networks) and planned new investments (e.g. new heating grids, use of renewable energy sources, or energy efficient housing refurbishment).

Country: *Latvia*

Title: *BASD with GEN4 to NET0 hackathon*

Introduction:

The goal of "BASD with GEN4 to NET0" is to explore the possibilities of using the low-potential energy of treated wastewater at the Riga Water Biological Treatment Station "Daugavgrīva" (BASD) to achieve energy neutrality and promote the sustainable development.

The expected outcome from the hackathon participant teams is a CO_2-neutral heat production and consumption balance from a climate impact perspective. This includes the synergy of various energy resource potentials at the Daugavgrīva Biological Treatment Station (including residual heat from treated wastewater and biogas cogeneration), as well as a future business development model for the use of low-potential residual heat. The goal is to support the development of fourth-generation district heating networks in Riga and contribute to achieving climate neutrality and mitigating the impacts of climate change for both the city of Riga and its water management sector.

Stakeholders engaged:

The hackathon participants were students, young researchers, innovation enthusiasts and other citizens.

The hackathon participants were supported by experts from Riga Technical University, district heating network operators, the water and wastewater treatment company, and the Riga Energy Agency.

Context:

BASD with GEN4 to NET0 hackathon is part of the Life project ENABLE DHC were Riga Energy Agency is project partner.

The "Riga Energy Agency" (REA) is an independently operating municipal institution of the Riga City Council, responsible for managing and coordinating energy management and energy efficiency.

Methods and tools:

The hackathon was organized in four parts, one event per week:

- *1st week – evaluation un improvement of ideas*
- *2nd week – development of a conceptual solution*
- *3rd week – business process evaluation and presentations*
- *4th week -final presentations*

Each event was held for three hours including training, practical works meetings with mentors or experts.

Five teams were chosen to participate in the hackathon.

Practice description:

During the hackathon, participants are required to address the following questions and problem situations:

- *Provide an evaluation of the selected low-potential heat recovery technologies for treated wastewater and present a vision for the development of these technologies over the next 5 years.*
- *Assess the maximum capacity and total annual energy output potential of low-potential heat recovery from BASD treated wastewater, ensuring it does not interfere with the safe operation of the activated sludge process (ASP) and anaerobic digestion of wastewater sludge.*
- *Perform numerical simulations and create graphical representations of heat/cooling consumption and production processes across different months of the year, taking into account the synergy of various BASD energy resources (residual heat from treated wastewater and biogas cogeneration).*
- *Evaluate the maximum and average annual electricity consumption of electrical equipment.*

- *Explore future opportunities for using low-temperature residual heat in the district heating networks managed by AS "Rīgas Siltums", considering the consumption patterns of these neighborhoods and the existing and planned heat production capacities of AS "Rīgas Siltums."*
- *When evaluating the use of BASD residual heat (from treated wastewater and biogas cogeneration) for ASP's own consumption and for the needs of residents, seasonal variations in technological and domestic heat consumption must be taken into account within the current climatic situation.*
- *Detailed information on a specific practice. Description of activities implemented as part of good practice, for example online campaigns, events, trainings/seminars, local initiatives. Step-by-step instructions or guidelines for its implementation. Illustrations or diagrams, if available and helpful. Goals set and achieved.*

Familiarization with the Problem to be Solved

Teams visit the Riga Water premises to get acquainted with the problem situation. On-site inspections of the water treatment, biogas digestion, and cogeneration equipment take place. Teams have the opportunity to ask questions in person about the energy consumption and production of the treatment facilities, as well as other questions relevant to successfully completing the task.

Mentoring and Concept Development Phase

In this phase, teams collaborate with selected thematic mentors to develop ideas that address the outlined problem and improve their business development model sketches and value propositions.

Mentoring include both relevant technical guidance and sustainability mentoring to help tailor the results to needs and best practices. Mentors will be available throughout all collaboration days.

Final Phase

The expected outcome is a detailed concept with a business development model sketch. All teams must deliver a presentation of their work and a summary. The summary must be at least one A4 page long, including a visual annotation and explanatory text. Teams should attach supporting and explanatory documents to the summary, including those developed during the hackathon, using hyperlinks to external resources or file repositories. Winner teams gets 2000EUR prize.

Benefits:

3 key benefits of the practice. Highlight what challenges can be solved by the practice

- Participants (citizens) actively searching for technical solutions.

- Bringing together experts and citizens that brings a better understanding of problems;
- Stakeholders get new ideas for upgrading heating system;

Challenges:

3 issues that may hinder the implementation/replication of good practice and affect its proper and beneficial operation

- Implementing advanced technologies—such as low-potential heat recovery and integration with existing water treatment and district heating systems—can be technically complex and participants may not deliver expected results;
- Small portion of citizens involved;
- Lack of systematic approach

References and additional sources:

- *Project ENABLE DHC web page https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE23-CET-ENABLE-DHC-101167576/enabling-strategies-and-investment-plans-for-efficient-multi-energy-and-digitalized-dhc*
- *Hackathon Regulations (In Latvian) - https://www.rtu.lv/writable/public_files/RTU_rigas_udens_coopetiton_basd_with_gen4_to_net0_nolikums_.pdf*
- *Information about on of events - https://rea.riga.lv/jaunumi/21-novembri-rigas-udens-telpas-norisinajas-otra-hakatona-basd-with-gen4-to-net0-nodarbiba-kura-dalibnieki-turpinaja-izstradat-savas-idejas-un-konsultejas-ar-nozares-specialistiem/*