Interreg Baltic Sea Region

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ENERGY TRANSITION CommitClimate

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CommitClimate – Follower Municipalities (D3.3) Summary Report

Estonia, Latvia, Poland, Sweden

Aim of this report

This report aims to summarize the engagement with follower municipalities in each country, document their experience with the CommitClimate Simulator, gather structured feedback on usability and relevance and identify challenges, needs, and opportunities for further collaboration.

All countries involved in the project are located around the Baltic Sea as is seen on Figure 1.

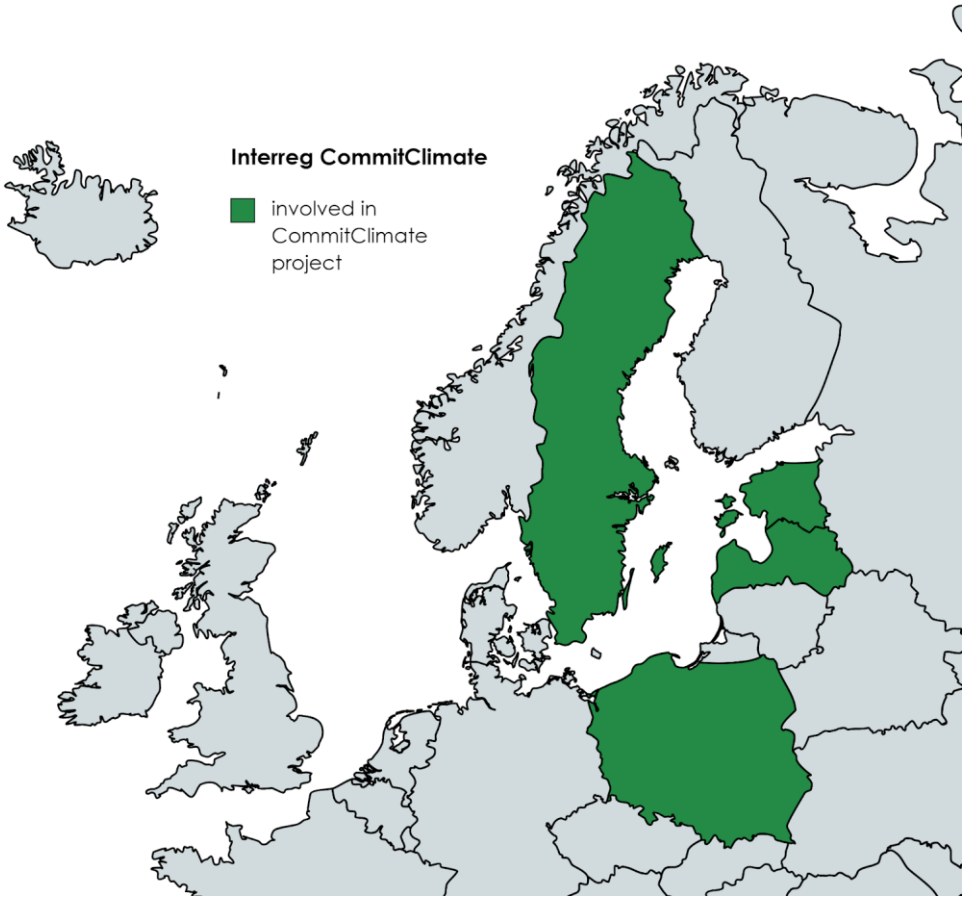

Figure 1. Countries involved in the Interreg CommitClimate project (Source: National framework conditions summary report)

Estonia

Background

Follower municipalities from Estonia:
Tallinn

Basic characteristics

- Population size: 461 400 (2024)
- Type: capital city, urban municipality
- Key climate-relevant sectors: Through changes in the energy, transport, and building sectors, the city aims to reduce carbon emissions by 40% by 2030 (compared to 2007 levels).

Climate and energy planning context

Climate-neutral Tallin. The *Tallinn Sustainable Energy and Climate Action Plan 2030* is a cross-sectoral development document that sets the city's target of achieving climate neutrality by 2050 and reducing greenhouse gas emissions by 40% by 2030, in line with the Covenant of Mayors. It is aligned with the *Tallinn 2035* development strategy and the EU Green Deal, supporting long-term EU climate goals. Tallinn also participates in international projects that provide funding, expertise, and practical solutions, helping the city move step by step towards more sustainable urban development.

Strategic documents include:

- Climate-neutral Tallinn – Sustainable Energy and Climate Action Plan 2030,
- Tallinn 2035 development strategy,
- Estonia 2035 national strategy,
- Estonia's National Development Plan of the Energy Sector 2030,
- Estonia's 2030 National Energy and Climate Plan,
- Transport and Mobility Development Plan 2021+,
- General Principles of Climate Policy 2050,
- Climate Change Adaptation Development Plan until 2030,
- Harju County Development Strategy 2035+.

Experience with digital planning tools or climate simulation platforms

Tallinn 2035 strategy envisions the city as a digital frontrunner in Northern Europe. One part of the Building Register made for the Estonian state is 3D Digital Twin, which is mainly meant for decision-making when it comes to environmental decisions. GreenTwins is developing a green model for the digital twin cities (HEL-TAL), analysing physical space models and digitising geoinformatics data and movement - aim of the project is to deal with digital solutions for modelling blue and green networks in the urban environment and to develop software and models that provide information on the effects of urban planning to various stakeholders.

The B.Green project aimed to develop a model for digital and participatory urban planning that promotes the pre-planning of multifunctional green infrastructure solutions in the Baltic Sea region. The project has piloted green solutions with residents and experts in Helsinki and Tallinn.

Viimsi

Basic characteristics

- Population size: 23 000 (2024)
- Type: rural municipality
- Key climate-relevant sectors: Due to its geographical location and population, Viimsi municipality is most affected by the vulnerability of coastal areas to floods and storms, the formation of heat islands, and floods caused by precipitation. With the combination of rapid population growth and longer drought periods, the supply of drinking water will also become a significant challenge.
  The key climate-relevant sectors also include:
  - Energy,
  - Water management,
  - Buildings, transport,
  - Land use and spatial planning,
  - Health,
  - Natural environment and biodiversity,
  - Tourism,
  - Emergency response.

Climate and energy planning context

Viimsi adopted the Viimsi Climate Change Adaptation Plan 2021- 2031 in 2021.

Strategic documents include:

- Viimsi Road Network Development Plan,
- Viimsi Street Light Development Plan,
- Viimsi Transportation and Mobility Management Development Plan,
- Viimsi Storm Water System Development Plan.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Lääne-Harju

Basic characteristics

- Population size: 14 000 (2024)
- Type: rural municipality
- Key climate-relevant sectors:
  - Buildings,
  - Energy,
  - Industry,
  - Resouces,
  - LULUCF,
  - Mobility and transport,

- Agriculture,
- R&D,
- Energy consumption management,
- Smart district heating and cooling networks,
- Supporting environmentally friendly management.

Climate and energy planning context

Lääne-Harju Municipality adopted the Lääne-Harju Municipality Climate and Energy Plan in 2023, which analyses current situation and sets a clear vision for the municipality for the year 2030.

Experience with digital planning tools or climate simulation platforms

The ClimaResponse project (2025-2028), aims to improve the resilience of municipalities to the impacts of climate change. One of the key activities is developing the Digital Planning Platform, a structured knowledge-sharing online resource for local governments and step-by-step adaptation planning.

Rakvere

Basic characteristics

- **Population size:** 16 000 (2024)
- **Type:** urban municipality
- **Key climate-relevant sectors:** The Rakvere City Government has set a goal in the current development plan of the city of Rakvere to achieve climate neutrality by 2035. In the field of transport, achieving this goal can be considered the biggest challenge, due to the widespread use of internal combustion engines in cars and trucks.
  The key climate-relevant sectors also include:
  - Energy,
  - Buildings,
  - Water management,
  - Waste.

Current climate or energy planning context

In 2022, Rakvere City Government's Climate and Energy Plan 2030 was approved. In addition to the Rakvere City Development Plan 2021-2030, this climate and energy plan is also based on the Rakvere City General Plan (adopted on 17.02.2010), the Rakvere District Heating Area Heat Economy Development Plan 2016-2026, and the Rakvere City Public Water Supply and Sewerage Development Plan for 2018-2030 (amendments approved on 21.04.2021).

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Activities aimed at municipalities

Selection of municipalities

Estonia consists of 79 municipalities (15 urban and 64 rural). TalTech and Enerhack aimed to reach all municipalities to ensure no potentially interested follower was missed. Primary target municipalities were defined as those:

- Involved in climate and energy strategy work,
- Operating or planning district heating infrastructure upgrades,
- Showing capacity and motivation to integrate data-driven decision-making tools.

Initial outreach and identification of the target group

Contacts were collected through public sources, including key officials responsible for energy, climate, and development planning. For larger municipalities, specialised departments were targeted; for smaller ones, mayors or deputy mayors were contacted directly. Contact details included full name, position/department, municipality, and email. The final list was used for personalised invitations. The search was conducted using official public municipal information.

The final Excel contact list served as the basis for personalised invitations and is included in Annex 1.

With the ready-to-use version of the tool now available, it was decided to organize a workshop for follower municipalities, allowing participants to work directly with the simulator and become familiar with the tool. Experience has shown that effective, hands-on use of the tool requires a full working day; therefore, an in-person training session was identified as the most effective format.

All related materials and invitations were shared through multiple channels:

- Direct personal emails,
- Follow-up calls and emails,
- Engagement via existing personal and professional networks of team members,
- Outreach through professional LinkedIn profiles (e.g. Prof. Volkova, Dr. Krupenski).

Additionally, several meetings were held with the Association of Estonian Cities and Municipalities to define the most effective approach for outreach:

- 15 January 2025 (I. Krupenski and K. Toomet),
- 4 February 2025 (I. Krupenski, A. Volkova, K. Toomet).

Three outreach options were evaluated:

- hosting the workshop during the Association's annual event (not selected due to time requirements for hands-on training),
- distributing invitations to all municipalities via the Association's board (selected and implemented on 25 March 2025),
- presenting the invitation during an Association seminar (promotional slides prepared and delivered – Annex 1).

Meetings, workshops and training sessions

A workshop with follower municipalities was organised to provide hands-on training with the CommitClimate Simulator. Preparation included booking a lecture room at TalTech, arranging catering, preparing promotional materials, and developing a registration form.

In the frame of pre-workshop preparation Participants received:

- List of required dataset types,
- Instructions on data sources,
- Individual support where needed,
- On-site clarification of data gaps was provided.

During the event, guided training on the tool was delivered, support for data upload and integration was provided, and feedback on usability and technical issues was collected. Information regarding workshop and feedback received is added to Annex 1.

A total of **11 participants from 8 municipalities** registered. Representatives from **5 municipalities** took part onsite:

Municipality	County	Population	Participants
Lääne-Harju Parish	Harjumaa	~13,800	1
Viimsi Parish	Harjumaa	~23,000	1
Lüganuse Parish	Ida-Virumaa	~8,000	1
Tallinn	Harjumaa	~437,980	1
Rakvere	Lääne-Viru	~15,000	1

Additional communication with municipalities was conducted following the workshop. The main conclusion of the workshop was that the preparation of high-quality analyses using the CommitClimate tool requires a substantial input of reliable data and analytical work. Given the limited resources available to municipalities, it was decided to involve students through the study course Climate and Environmental Impact Assessment, which was held in autumn 2025.

Collaboration with municipalities and the use of the CommitClimate simulator were proposed as one of the group project topics for a team of four students. Consent to participate was received from the City of Tallinn and Viimsi Parish. After initial discussions and the collection

of background data, the student group decided to initiate cooperation with the City of Tallinn. Several meetings were held with representatives of the city, during which information was exchanged on statistics, data sources, existing studies, and planned policies and measures.

Based on these discussions, it was jointly decided to focus the project on the transport sector, identified as the most critical and in need of transformation. The final outcome of the project included a detailed report presenting background information, simulation results, and recommendations for improving transport-related policies. The report was presented at the final seminar of the study course on 17 December 2025 and was also submitted to the City of Tallinn. A dedicated presentation for city officials is currently being planned; however, no date has yet been agreed.

In addition, bachelor's and master's thesis topics related to municipal carbon footprint calculations were proposed. Lääne-Harju Parish and Viimsi Parish were consulted regarding their willingness to cooperate on these issues. As of 15 December 2025, no formal response had been received. Nevertheless, given the positive feedback expressed by both municipalities in September 2025, continued cooperation with municipalities and further use of the CommitClimate simulator in 2026 is considered highly likely.

Feedback from municipalities

The municipalities in Estonia that tested the simulator reported that it was generally easy to use. The set-up and overall framework were considered logical and well explained. However, municipalities also noted that the simulator requires a substantial amount of input data to complete the assessment, which makes the process relatively demanding and time-consuming. Consequently, they indicated that effective use of the simulator and meaningful support for decision-making would require the involvement of a dedicated official, consultant, or student assigned specifically to the project.

Municipalities were also asked to complete a feedback form, the summary of which is presented in the Annex.

Policy measures, particularly those related to the transport sector were identified as the most relevant and interesting. Municipalities expressed interest in continued use of the simulator, and as a result, collaboration has been initiated in the context of a study course as well as bachelor's and master's theses.

Challenges and difficulties

The primary challenge reported in using the calculator was the significant amount of time required to collect the data necessary for the baseline emission inventory and to prepare the initial simulation. When combined with ongoing staff shortages especially in smaller municipalities this significantly limits the capacity to allocate sufficient resources for full utilisation of the tool.

In addition, several technical and functional issues were identified during the testing phase. All comments and observations have been compiled and forwarded to the responsible project partner.

Latvia

Background

Within the CommitClimate project, the follower municipalities Mārupe, Ludza, Saulkrasti, and Bauska (Latvia) and Constanța Metropolitan Region (Romania) represent a diverse cross-section of Latvian local authorities in terms of size, geographic location, and development priorities. All five municipalities operate within the national climate and energy policy framework and are increasingly affected by EU-level climate targets, yet their starting points in climate action planning differ.

Energy and Climate Planning Context in Latvia

In Latvia, municipalities play a key role in implementing climate and energy policies, primarily through Sustainable Energy and Climate Action Plans (SECAPs) under the Covenant of Mayors. While many municipalities have adopted SECAPs or earlier SEAPs, challenges remain related to data availability, monitoring capacity, and the practical evaluation of policy impacts. Energy planning is often constrained by limited human resources and fragmented datasets, making digital decision-support tools particularly valuable.

Follower municipalities from Lativia:

Mārupe (Latvia)

Basic characteristics

- Population size: 37 025
- Type of municipality: suburban municipality near Riga
- Key climate-related sectors:
  - Climate-neutral municipal infrastructure and governance,
  - Introduction of “green” innovations in production and service processes,
  - Accessible, safe and climate-resilient mobility for all groups of society

Current climate or energy planning situation

Mārupe is rapidly growing suburban municipality near Riga, characterized by strong development pressure and rising energy demand. Mārupe has relatively high climate ambition and experience in strategic planning but faces challenges in balancing growth with emission reduction.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Ludza (Latvia)

Basic characteristics

- Population size: 20 336
- Type of municipality: urban-rural municipality
- Key climate-related sectors:
  - Climate-neutral municipal infrastructure and governance,
  - Introduction of “green” innovations in production and service processes; accessible,

- Safe and climate-resilient mobility for all groups of society.

Current climate or energy planning situation

Ludza is smaller municipality in eastern Latvia with constrained administrative capacity and limited access to analytical tools. Climate and energy planning is often integrated into broader development planning, with a strong need for user-friendly digital tools to support evidence-based decision-making.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Saulkrasti (Latvia)

Basic characteristics

- Population size: 9 983
- Type of municipality: urban-rural municipality
- Key climate-related sectors:
  - Energy Use in Buildings,
  - Transport and Mobility,
  - Renewable Energy and Local Energy Production,
  - Public Infrastructure and Services,
  - Land Use, Spatial Planning and Coastal Environment,
  - Citizen Engagement and Awareness.

Current climate or energy planning situation

As a coastal municipality, Saulkrasti faces key challenges related to climate adaptation, seasonal population fluctuations, and energy efficiency in public buildings. While the municipality has engaged in climate-related planning, it previously lacked practical tools to visualize long-term CO_2 reduction scenarios.

Saulkrasti places particular emphasis on land-use planning, protection of natural areas, and adaptation to climate risks such as coastal erosion and flooding, all of which are closely linked to climate change. The municipality also has significant potential for small-scale renewable energy solutions, especially solar energy. Expanding local renewable energy generation contributes to both emission reductions and greater energy independence.

Transport is another major climate-relevant sector in Saulkrasti, driven by commuting patterns and seasonal tourism flows. Key priorities include promoting sustainable mobility, improving public transport accessibility, and encouraging walking and cycling.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Bauska (Latvia)

Basic characteristics

- Population size: 42 017
- *Type of municipality:* urban-rual municipality
- *Key climate-related sectors*: Based on workshop activities and scenario development, key sectors include municipal buildings, public street lighting, residential buildings (apartment renovation), and municipal transport.

Current climate or energy planning situation

Bauska Municipality has developed an updated Sustainable Energy and Climate Action Plan (SECAP) in 2025, covering the entire municipal territory, including Bauska, Iecava, Rundāle, and Vecumnieki

The municipality has set a clear strategic objective to reduce CO_2 emissions by 40% by 2030 compared to 2016 levels, aligning with national and EU climate policy targets. In the longer term, the municipality aims to move towards climate neutrality by 2050.

The SECAP identifies five main sectors for action:

- municipal infrastructure
- housing
- mobility
- energy production
- climate adaptation

Key priorities include improving energy efficiency in municipal buildings and infrastructure, promoting the renovation of residential buildings, increasing the use of renewable energy sources, and supporting sustainable mobility solutions such as walking, cycling, and public transport.

The plan also places emphasis on behavioural change and stakeholder engagement, highlighting the role of residents, businesses, and municipal institutions in achieving climate goals.

Overall, Bauska demonstrates a structured and target-driven approach to climate planning, with clearly defined sectoral actions and measurable objectives.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms. The municipality was able to use the CommitClimate Simulator relatively easily and found it particularly useful for visualising scenario results through graphical outputs, which supported internal discussions and decision-making processes

Constanta Metropolitan Region (Romania)

Basic characteristics

- Population size: over 450,000 inhabitants, including the city of Constanța and surrounding municipalities.
- Type of Municipality: urban region, a metropolitan governance structure comprising an urban core (the City of Constanța) and several neighbouring municipalities.

- Key Climate-Related Sectors:
  - Transport and Logistics,
  - Energy Use in Buildings,
  - Renewable Energy,
  - Urban Infrastructure and Public Services,
  - Land Use and Coastal Management.

Climate and energy planning situation in CMR

Energy planning in Romania is characterised by fragmentation across governance levels and limited integration of climate objectives into local planning processes. While national strategies align with EU climate and energy targets, municipalities often face challenges such as:

- Limited access to high-quality local energy and emissions data
- Insufficient technical capacity for advanced energy modelling and scenario analysis
- Financial constraints for implementing large-scale energy efficiency and renewable projects
- Dependence on national-level policies and funding mechanisms, reducing local flexibility

In this context, tools such as the CommitClimate CO_2 Simulator offer significant added value by supporting data-driven decision-making, enabling scenario modelling, and strengthening the capacity of metropolitan regions like Constanța to integrate energy and climate considerations into transport, mobility, and logistics planning.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Relevance of the CommitClimate Simulator

For all follower municipalities, the CommitClimate Simulator represents a new step toward data-driven energy and climate planning. It helps bridge gaps between strategic goals and practical implementation by providing a structured, transparent way to model CO_2 emissions, test policy scenarios, and support communication with politicians, stakeholders, and citizens.

Activities aimed at municipalities

Selection of municipalities

Riga Technical University (RTU) selected the follower municipalities based on a combination of previous cooperation, existing professional networks, and strategic relevance to the objectives of the CommitClimate project. A special focus was given to municipalities that were either developing or updating their Sustainable Energy and Climate Action Plans (SECAPs), as

these local authorities could most immediately benefit from testing and applying the CommitClimate CO_2 Simulator in real planning processes.

RTU's long-standing collaboration with Latvian municipalities through research, pilot projects, and national climate and energy initiatives provided valuable insight into local capacities, data availability, and planning challenges. These established relationships helped identify municipalities that were both motivated to engage in climate action and capable of providing meaningful feedback on the Simulator's usability and relevance.

An important contribution to the selection process was the national online seminar held in early June 2025, jointly targeting Latvian municipalities and the Latvian Association of Local and Regional Governments. During this event, RTU presented the CommitClimate project and demonstrated the functionality of the CO_2 Simulator, highlighting its practical application in municipal energy and climate planning. The seminar served as a key outreach and engagement activity, generating significant interest among municipalities. Follow-up discussions after the seminar led to more structured cooperation with several municipalities that expressed a clear willingness to further explore and test the Simulator, ultimately forming the group of follower municipalities.

In addition to national-level engagement, RTU's cooperation with the Vidzeme Planning Region (VPR) played a strategic role in expanding the relevance of the CommitClimate Simulator beyond Latvia. Within the Interreg Europe SPOTLOG project, which focuses on low-carbon logistics and sustainable mobility, VPR identified the CommitClimate Simulator as a Good Practice for transport decarbonisation. This recognition demonstrated the Simulator's potential to be applied not only in energy and climate planning, but also in the transport sector at regional level.

As a direct result of this cross-project synergy, one of the SPOTLOG project partners—the Constanța Metropolitan Region in Romania—expressed strong interest in using the CommitClimate Simulator to model CO_2 emissions and reduction scenarios specifically for the transport sector in its metropolitan area. This development illustrates how RTU's approach to selecting and engaging follower municipalities was embedded in a broader European learning and policy transfer process, strengthening the Simulator's applicability across sectors and regions.

Overall, the selection of follower municipalities was not a one-off decision but a gradual, interaction-driven process, shaped by existing cooperation, targeted dissemination activities, and cross-project synergies within the Interreg framework. This approach ensured that the follower municipalities were well positioned to meaningfully engage with the CommitClimate Simulator and contribute to its further refinement and transferability.

Initial outreach and communication

Municipalities were initially approached via email, followed by a series of structured exchanges. The cooperation process started with an invitation to test the CommitClimate CO_2 Simulator, after which detailed explanations were provided regarding the required input data.

An important aspect highlighted by the municipalities was the need for a reduced and manageable data set, which they considered essential for practical application of the tool. While the simulator was designed to operate with a streamlined data structure, data

availability and data collection remained a decisive factor for continued cooperation. As a result, communication with municipalities was continuous and iterative, with municipalities seeking clarification of specific data requirements and providing feedback on data availability and limitations.

Meetings, workshops and training sessions

To support this process, online meetings via Microsoft Teams were organised with the municipalities. These meetings were used to demonstrate the simulator's functionality, explain its scope, and ensure a better understanding of how the tool can be applied in municipal planning processes.

This collaborative approach was applied both with Latvian municipalities and with Romanian partners. In the case of the Constanța Metropolitan Area (Romania), cooperation has been ongoing since September 2025, reflecting the scale and complexity of the region. Due to its size and significant transport flow, several iterations were needed to define and refine the scope of the simulator testing, particularly in relation to the transport sector. In addition, representatives of the Constanța region expressed interest in the integration of additional policy measures into the simulator, further strengthening the relevance and adaptability of the tool.

In addition, on 8 October 2025, the Interreg CommitClimate and Energy Equilibrium projects jointly organised a capacity-building event in Riga, bringing together representatives from nine municipalities. The event focused on strengthening municipal understanding of climate-neutral energy planning through practical, hands-on engagement with project tools.

As part of the seminar, an interactive working session was conducted specifically for municipal representatives. During this session, participants were introduced to the CommitClimate CO_2 Simulator and were given the opportunity to actively test the tool using a predefined scenario. This practical approach allowed municipalities to explore how different policy measures and planning choices influence CO_2 emissions and energy system development, enhancing their understanding of the simulator's applicability in real municipal planning contexts.

The event also served as a platform for discussion and exchange of experiences among municipalities, highlighting the relevance of simulation tools for evidence-based decision-making, stakeholder communication, and long-term energy strategy development.

Furthermore, the CommitClimate Simulator was integrated into a lifelong learning course titled *"Integrated Wind Energy Systems and Hydrogen"*. Participants of this course included professionals from various sectors, among them four municipal representatives. During an intensive half-day working session, participants used the simulator to model different development situations and select alternative policy scenarios, linking theoretical knowledge with practical planning applications.

Through both the joint municipal workshop and the lifelong learning course, the CommitClimate Simulator demonstrated its value as an educational and planning tool, supporting municipalities and practitioners in understanding complex energy transitions and in designing pathways toward climate neutrality.

Feedback from municipalities

The feedback summarised below is based on continuous cooperation with municipalities, including email exchanges, online meetings, workshops, simulator testing sessions, and informal discussions during the project implementation.

Municipalities focused primarily on emission-relevant sectors that fall within their planning and operational responsibilities. These included energy use in buildings with particular attention to municipal and multi-apartment residential buildings, transport and mobility covering municipal vehicle fleets, and local mobility measures, deployment of renewable energy sources, mainly solar energy and energy efficiency measures planned or already included in Sustainable Energy and Climate Action Plans (SECAP). The selection of focus sectors was strongly influenced by the availability and quality of data, as well as by existing local priorities and ongoing planning processes.

The simulator was perceived as logical, transparent, and user-friendly after initial guidance was provided. Municipalities highlighted the value of scenario-based modeling, which enabled them to compare different policy options and clearly visualise their potential to CO_2 reduction impacts. The structured overview of energy consumption and emission trends supported internal discussions and strategic planning debates. The tool allowed municipalities to test assumptions quantitatively, reducing reliance on purely qualitative judgments in decision-making processes.

The use of the simulator contributed positively to municipal decision-making. It strengthened internal discussions and promoted more evidence-based planning approaches, improved communication between technical staff, management, and political decision-makers, and provided credible, data-driven support for policy choices and prioritisation of measures.

Several challenges were also identified during implementation. Data availability and quality varied significantly between municipalities, reflecting differences in energy management maturity, fragmented or incomplete datasets, and limited staff capacity.

In addition, municipalities initially required guidance to correctly interpret model assumptions and results. Time constraints posed another challenge, as municipal staff often had limited capacity to engage with testing activities alongside their regular responsibilities. Institutional and contextual factors, such as internal reorganisations, parallel planning processes, and competing political or administrative priorities, also influenced the level of participation.

Regarding future improvements, some municipalities expressed interest in incorporating cost or investment-related aspects into the simulator. However, project partners agreed that maintaining simplicity and usability should remain a priority. There was strong interest in additional thematic workshops, particularly focused on transport and buildings, as well as more hands-on training sessions. Peer-learning visits between municipalities were also viewed positively to exchange experiences and best practices.

Challenges and difficulties

Cooperation with municipalities and testing of the CommitClimate CO_2 simulator revealed several challenges that need to be considered when replicating and expanding the use of this tool in the future.

Administrative and organisational barriers

A key challenge was the varying levels of internal capacity across municipalities. In many cases, energy and climate responsibilities were spread across multiple departments, making coordination and data collection time-consuming. Limited staffing levels, particularly in smaller municipalities, slowed down progress. In addition, gaining access to decision-makers often required additional time, as climate and energy issues had to compete with other pressing municipal priorities.

Technical and data-related challenges

The biggest obstacle turned out to be data availability. Latvian municipalities vary significantly in terms of the maturity of their energy management systems, which had a direct impact on the quantity and quality of available data. In several cases, the data was fragmentary, outdated, or stored in incompatible formats. Responsibilities for providing specific data sets were not always clearly defined, requiring additional clarification and repeated communication. Although the simulator was designed to operate with a limited data set, data acquisition remained a decisive factor influencing the scope and pace of testing.

Understanding and interpretation of the Simulator

Although the overall structure of the simulator was considered logical, municipalities initially had difficulty understanding the model's assumptions, system boundaries, and interpretation of results. Without detailed explanations, there was a risk of misinterpreting the results or overestimating their accuracy. To ensure meaningful use of the simulator, ongoing support and interactive presentations were therefore necessary.

Motivation and time constraints

A recurring issue was time availability. Municipal staff often had limited time to conduct tests alongside their regular duties. Although municipalities appreciated the support provided by RTU—especially in terms of data entry, consultation, and ongoing communication—it was clear that more time would be needed for in-depth and routine use of the simulator in daily planning processes.

Contextual and external factors

Several contextual factors influenced participation in the project, including parallel planning processes (such as developing or updating SECAPs), internal reorganisations, and changing political priorities. In some municipalities, climate and energy policy is a high priority, while in others it remains a secondary issue, which affects the level of commitment and continuity of action. In the case of larger entities, such as the Constanța metropolitan area, the scale of the territory and the complexity of transport flows required multiple adjustments to the scope of the tests, which prolonged the duration of the collaboration.

Key takeaway

Overall, the main challenges were not technical limitations of the Simulator itself, but rather institutional, organisational, and data-related conditions at the municipal level. These insights underline the importance of capacity-building, clear guidance on data requirements, and sufficient time allocation when replicating the CommitClimate Simulator in other municipal or regional contexts.

Sweden

Background

Swedish municipalities are required by law to maintain an up-to-date energy plan covering the supply, distribution, and use of energy within the municipality. This requirement is based on the Law (1977:439) on Municipal Energy Planning. The Swedish Energy Agency emphasizes that these plans must be kept current and integrated into broader municipal planning, with a recommended review at least once per mandate period. In recent years, the national policy focus has shifted from earlier climate-protection-centered planning toward electrification, security of supply, and preparedness. A Swedish municipal energy plan is not only a technical document but also a political process. Because the plan must undergo a strategic environmental assessment and be sent out for consultation to relevant stakeholders, the process is both formalized and time-consuming. These procedural steps, combined with political anchoring and coordination across municipal departments, mean that developing an energy plan typically takes at least one year, and in many municipalities often more than two years from the initial decision to start the work until the plan is formally approved by the municipal council.

No Swedish municipality was able to use the Simulator autonomously to develop its own scenarios due to the Simulator's complexity and limited functionality. When the project started, the ambition was clear: provide municipalities with a practical tool to simplify local energy planning, covering both baseline inventories and scenario development. However, the timeline for achieving a fully operational Simulator proved more challenging than anticipated.

1. Municipality of Gällivare

Basic characteristic

- Population size: 17 233 (2023)
- Type of municipality: rural municipality, with heavy mining industry (about 75% of energy use, which is expected to increase to 90% in 2045)
- Key energy and climate relevant sectors: Gällivare Municipality CO2ekv-emissions per capita were 20.07 t in 2023 in comparison to the national Swedish average of 3.5 ton per capita. The key climate-relevant sectors in Gällivare include:
  - Municipal buildings,
  - Residential buildings,
  - Private transport residents,
  - Commercial and tertiary sector buildings and transport,
  - Industry(ETS-Sector)

Climate and energy planning situation

According to the Municipal Plan 2026-2028, Gällivare Municipality aims to enable a lifestyle that reduces environmental and climate impact. It should be easy and natural for residents

to choose environmentally and climate-smart options, and both the municipal organization and its companies are expected to lead by example. All municipal decisions must prioritize long-term sustainability to support the ability of future generations to live ecologically. New buildings and renovations should be designed to minimize environmental and climate impact, focusing on energy efficiency and avoiding harmful materials. Improving energy efficiency in older buildings is also an important measure. To become a fossil-free municipality, Gällivare will expand charging infrastructure for electric vehicles and make its own vehicle fleet fossil-independent. Planning of walking and cycling paths should provide safe routes for all ages, encouraging active transport as a healthier and more environmentally friendly alternative. The municipality strives for sustainable production and consumption by strengthening demand for ecological and locally produced goods and services through sustainable public procurement. Whenever possible, the municipality should choose locally produced and eco-labeled products. It also promotes a circular economy through increased reuse and recycling. Gällivare Municipality will guide this work together with citizens and businesses to meet today's needs without compromising those of future generations. Goal follow-up is based on key indicators:

- Greenhouse gas emissions: net-zero by 2045 (excluding LKAB, which is part of the EU ETS)
- Greenhouse gas emissions from transport should decrease by at least 70% by 2030 compared with 2010
- By 2030, 100% of vehicles in the municipal organisation should be fossil-independent

In 2025, The Municipality of Gällivare decided to develop a local energy plan according to Swedish law . The emission inventory uses 2023 as the baseline year.

2. **Municipality of Trelleborg**

   Population size: 47,000

   The Municipality of Trelleborg's Energy Strategy for 2024–2030 outlines its overarching goals to create a sustainable, low-climate-impact energy system. Covering the entire municipality as a geographical area, the strategy addresses current challenges and development needs in the energy sector. Developed collaboratively with all municipal administrations and companies, it defines key focus areas essential for achieving sustainability: renewable energy supply, sustainable transport, energy efficiency in properties, and a reliable, sustainable energy supply.

3. **Municipality of Tomelilla**

   Population size: Approx. 13,600 (2024)

   Tomelilla's Climate Program 2024–2045 provides a comprehensive overview of the municipality's long-term climate goals and efforts. The municipal organization plays a key role in the climate transition, both because the municipal council adopts the

program and because of its significant influence over planning, construction, and essential community services such as education, healthcare, crisis management, water supply, environmental protection, and waste management. While the municipality has a unique responsibility, achieving the climate objectives requires collaboration with external stakeholders, including authorities, citizens, businesses, and civil society.

Activities aimed at municipalities

Selection of municipalities

The main objective was to inform as many municipalities and multipliers as early as possible about the opportunity to become a Follower and to provide a hands-on training session with the Simulator during the workshop.

Initial outreach and communication

2024: Lapplands Kommunalförbund started in 2024 to recruit Follower Municipalities through:

- A presentation of the CommitClimate Simulator was given to the regional energy agency, EnergikontorNorr, which had been commissioned by Region Norrbotten to support municipalities in developing energy plans. The intention was to use the Simulator in one municipality in Norrbotten. However, as the Simulator was not yet fully operational, it could not be applied at that time.
- A presentation of the Simulator was held for Malå Municipality, which had expressed interest in becoming a Follower. However, as the Simulator was not yet fully operational, it could not be applied at that time.

2025: In 2025, the Sustainable Business Hub (SBHub) and Lapplands Kommunalförbund collaborated to engage potential Follower municipalities in the context of the second national workshop.

Lapplands Kommunalförbund sent the invitation prepared by SBHub to 127 contacts in the following municipalities: Arjeplog; Arvidsjaur; Boden; Eskilstuna; Falköping; Forshaga; Gallivare; Gotland; Halmstad; Haparanda; Hudiksvall; Huddinge; Jokkmokk; Kalix; Kiruna; Linköping; Luleå; Mjölby; Orust; Overkalix; Overtornea; Pajala; Piteå; Sorsele; Stenungsund; Storfors; Storuman; Torsby; Uddevalla; Umeå; Uppsala; Vännäs; Vårgårda; Älvsbynand the following organisations and networks: Region Jämtland Härjedalen, Region Värmland, Region Dalarna, Region Halland, Region Gävleborg, Region Örebro län, Region Östergötland, Region Västernorrland, Region Jönköpings län, Region Norrbotten, Energikontor Norr, Energikontor Sverige, Energikontor Syd, Energimyndigheten, Göteborgs Stad Miljöförvaltningen, Samarbetsorganisation Bergslagen, Power Circle, HSB, Innovatum Science Park and the national network of Swedish Ecomunicipalities to spread the invitation further.

During the 2nd National Workshop, Sustainable Business Hub (SBHub) launched an initiative to encourage municipalities to register as *Follower Municipalities*. To support this effort, SBHub created a dedicated registration page and shared the invitation during the workshop. The

participants from the national workshop were 16 municipalities, 2 regions, 2 counties, and 1 university. The initiative aims to foster engagement among municipalities and to test the CommitClimate simulator using their local regional data, allowing them to compare different scenarios.

The 2nd national workshop registration page to become a Follower municipality resulted in registrations of interest of the following municipalities:

- Jönköpings kommun
- Skellefteå kommun
- Hammarö Energi AB
- Region R10 – a collaboration of 10 municipalities which had planned to jointly develop energy plans.
- Gällivare kommun
- Alvesta kommun

All interested municipalities

- were invited to 4 coaching sessions by Lapplands Kommunalförbund to dive deeper into the Simulator. The presentations have been recorded and made available to all interested municipalities.
- Beyond, Lapplands Kommunalförbund also developed a guideline for Swedish municipalities on how to find energy-, transport- and building statistical data needed for the Simulator.
- Lapplands Kommunalförbund offered all interested municipalities another bilateral coaching session under autumn 2025 to discuss results from the Simulator and to support further use of the Simulator.

Final response Follower Municipalities:

Among the municipalities that expressed interest in becoming Followers after the second national workshop, only Gällivare proceeded with the process of using the Simulator. The remaining municipalities were unable to continue due to limited resources for further testing and application of the tool.

Many municipal representatives previously perceived the Simulator as intuitive. This impression is understandable: entering basic data is straightforward, and the tool provides immediate, visually appealing outputs. However, once deeper scenario development is attempted — involving multiple iterations and cross-checks — it becomes clear that the current version of the Simulator sometimes produces methodologically inconsistent or technically incorrect calculation results.

In addition to these calculation issues, municipalities also faced significant challenges in assembling a correct set of input data. The type of baseline data required by the Simulator differs from the statistical datasets normally used in Swedish municipal energy planning, which meant that several key parameters were either unavailable, needed extensive assumptions, or had to be reconstructed from partial sources. Aligning national statistics with

the Simulator's data structure required repeated recalculations, harmonization of definitions, and careful verification after each adjustment. This process was resource-intensive and, in some cases, created uncertainty about whether the underlying data fully reflected local conditions. Together, these factors made it difficult for municipalities—especially small and medium-sized municipalities with limited capacities —to generate a fully accurate and internally consistent input dataset for the Simulator.

Gällivare municipality

Lapplands Kommunalförbund supported Gällivare Municipality within the framework of the CommitClimate project by actively participating in Local Working Group meetings related to the development of the municipal energy plan.

Participation of Lapplands Kommunalförbund in Local Working Group meetings included the following sessions:

- 22 September 2025 – Introduction to energy planning and the overall planning process,
- 17 October 2025 – Energy inventory,
- 10 November 2025 – Energy inventory (follow-up),
- 2 November 2025 – Future scenarios,

The Local Working Group consisted of representatives from various municipal departments, including:

- Lotta Silfver – Environmental Strategist,
- Alexander Kult – General Strategist,
- Sebastian Glan – Responsible for Security, Resilience, and Preparedness,
- Adrian Nordmark – Land-use Planning,
- Erik Karlsson – Director of District Heating,
- Oskar Lehto – Head of the Building Department,
- Peter Töyrä – Building Department,
- Silva Herrmann – Lapplands Kommunalförbund,

Within the CommitClimate project, Lapplands Kommunalförbund provided targeted support to Gällivare municipality throughout the scenario development process. This support included the analysis of available statistical data and the preparation of the baseline energy inventory for the year 2023, as well as the organisation of a dedicated workshop with the Local Working Group to define the key assumptions underpinning the CommitClimate scenarios. In addition, Lapplands Kommunalförbund actively supported the development of scenarios within the CommitClimate Simulator by providing methodological guidance and expert input.

During the scenario development phase, technical difficulties with the Simulator occurred, which limited its functionality and prevented independent scenario development by the municipality. As a result, Lapplands Kommunalförbund continued to support the municipality with expert input and methodological guidance.

Trelleborg and Tomelilla municipality

The municipalities of Trelleborg, Tomelilla, and the City of Malmö were invited to participate as CommitClimate Follower Municipalities due to their membership in the Sustainable Business Hub (SBHub). Initial contact was made via email, followed by phone calls from SBHub to explain the purpose of the activity. SBHub successfully arranged meetings with two of the three municipalities contacted. After confirming suitable dates, SBHub sent each municipality an email providing information about the tool and the scheduled meeting times.

Two meetings were organised:

- 30 September 2025 – online meeting with Trelleborg municipality;
- 6 October 2025 – in-person meeting with Tomelilla municipality, attended together with an additional SBHub representative, Per-Johan Wik.

During these meetings, the following topics were addressed:

- CommitClimate Online Platform,
- Recap of the tool page,
- Practical aspects of operating the CommitClimate simulator,
- Identification of the sectors for planning,
- The most relevant features and functionalities of tools.

To conclude and summarise each meeting, feedback was collected from participating municipalities. Following the meeting, SBHub sent an email showing appreciation to be there to test the tool.

Feedback from municipalities

Gällivare municipality

Due to the complexity of the local context and the methodological requirements of the CommitClimate Simulator, Gällivare Municipality was unable to use the tool independently at this stage. Consequently, Lapplands Kommunalförbund provided expert support

Key challenges were identified:

- In Sweden, local energy plans typically start with baseline data derived from Swedish Energy Statistics. The Simulator requires a different type of input data for the baseline energy inventory, Such datasets are not readily available for Gällivare municipality.

To ensure internal consistency of the energy plan, Swedish statistical data for different sectors had to be carefully matched with the Simulator's calculation logic. Without this alignment,

scenario simulations would start from a baseline that differs from the one presented in the initial part of the energy plan, which is not acceptable in the Swedish planning context. **Other follower municipalities**

For the remaining follower municipalities, the CommitClimate Simulator was generally perceived as user-friendly and intuitive once its structure and assumptions were explained. Municipal representatives highlighted its strong potential for integration into municipal planning processes.

Challenges and difficulties

Gällivare municipality

- Establishing a correct baseline energy inventory has been a major challenge due to limited data availability.
- Conducting simulations requires adjusting several of the Simulator's default values, which is time-consuming. For initial exploration, the Simulator is intuitive and straightforward. When deeper scenario development is attempted — involving multiple iterations and cross-checks — it becomes clear that the current version of the Simulator produces to some extent methodologically inconsistent or technically incorrect calculation results. One example is inconsistent calculation of energy savings versus CO2 reduction. Another example is that expected wind-power expansion cannot be processed correctly; when entered, it influences the baseline instead of future scenarios, generating unrealistic results (e.g., extreme energy and CO_2 savings or inflated per-capita emissions
- Some functions do not behave as expected or fail to activate when selected.
- Uploading data into the Simulator is not reliable, leading to error messages or discrepancies between the imported and displayed values.
    - In certain cases, after manually entering policy-related information, the Simulator freezes and becomes unresponsive.

Other follower municipalities

- Municipalities spent limited time testing the Simulator and indicated a need for further exploration to verify the accuracy of the baseline scenario before developing additional scenarios.
- While the general instructions were considered clear, some advanced settings (such as adding local energy production or energy purchases) were easy to overlook.
- Municipalities suggested features that would allow the Simulator to source data directly from online databases, as easier data access would significantly lower barriers for first-time users.
- Given that many municipalities have limited time and in-house expertise, respondents considered the tool highly useful once these improvements are implemented.

Engaging additional Swedish municipalities as followers proved challenging due to:

- Limited data availability,
- Insufficient staff resources,
- Existing climate targets,
- Already well-established knowledge of emissions and energy planning.
- The absence of a fully functioning demonstration version of the Simulator that municipalities could explore independently and which allows for iterative scenario-building.

Poland

Background

Follower municipalities from Poland:

Municipality of Besko

Basic characteristic

- Population size: 4 415 (2022)
- Type: rural municipality
- Key climate-relevant sectors: Within the Municipality of Besko, there are no operational district heating networks and no industrial facilities that could have a significant impact on the environment. Public transportation services are absent, and all passenger transport is provided exclusively by private operators. Natural gas supply is ensured through the existing gas distribution network. There are no installations within the municipality that generate electricity for commercial purposes.

  Given these conditions, the key climate-relevant sectors in Besko include:
  - Municipal buildings, equipment/facilities
  - Residential buildings
  - Public infrastructure
  - Other sectors (commercial and tertiary)
  - Private transport
  - Waste

Climate and energy planning situation

The Municipality of Besko adopted its Sustainable Energy and Climate Action Plan (SECAP) in 2024, building upon the previously implemented Sustainable Energy Action Plan (SEAP) from 2015. The emission inventory uses 2010 as the baseline year. The SECAP establishes a target of achieving a 40% reduction in greenhouse gas emissions by 2030 relative to the baseline, serving as an intermediate milestone on the pathway toward achieving climate neutrality by 2050. As a member of Association of Municipalities Polish Network „Energie Cités", the municipality can engage in various climate and energy related projects.

Strategic documents include:

- Development Strategy for the Municipality of Besko for 2014-2024
- Study of Conditions and Directions of Spatial Development for the Municipality of Besko
- Draft guidelines for the supply of heat, electricity, and gas fuels for the Municipality of Besko for 2013-2028
- Local Revitalization Program for the Besko Municipality for 2017-2023

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Municipality of Piastów

Basic characteristic

- Population size: 23 140 (2021)
- Type: urban municipality
- Key climate-relevant sectors: Piastów, a densely populated urban municipality, has an operational district heating system and public transport network.
  The key climate-relevant sectors in Piastów include:
  - Municipal buildings, equipment/facilities
  - Residential buildings
  - Public infrastructure
  - Other sectors (commercial and tertiary)
  - Public transport
  - Private transport
  - Waste

Climate and energy planning situation

Piastów has substantial experience in climate and energy planning. As a member of the Association of Municipalities Polish Network „Energie Cités", the municipality actively engages in climate- and energy-related projects. Its initiatives are guided by several strategic documents, many of which specifically address climate and energy planning:

- Low-Carbon Economy Plan for the Town of Piastów for 2015-2020,
- Sustainable Energy and Climate Action Plan for the Town of Piastów,
- Municipal Climate Change Adaptation Plan for the Town of Piastów for the years 2023-2030,
- Electromobility Development Strategy for the Town of Piastów For 2019–2035,
- Assumptions for the Heat, Electricity and Gas Supply Plan for the Town of Piastów for 2020–2034,
- Plan for the Development of Low-Emission Transport in the Town of Piastów,
- Waste Management Plan for the Town of Piastów,
- Study of Conditions and Directions of Spatial Development of the Town of Piastów.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Municipality of Siemiatycze

Basic characteristic

- Population size: 13 491 (2022)
- Type: urban municipality
- Key climate-relevant sectors: In Siemiatycze, the district heating network is operational. The largest industrial plants in the municipality include dairy

production, frozen food manufacturing, and food processing. Emissions from these facilities have been accounted for together with those from the commercial and tertiary sectors.
The key climate-relevant sectors in Siemiatycze include:

- Municipal buildings, equipment/facilities
- Residential buildings
- Public infrastructure
- Commercial and tertiary buildings
- Other sectors (commercial and tertiary, industry and construction)
- Private transport

Climate and energy planning situation

The Town of Siemiatycze has experience in energy and climate planning. As a member of the Association of Municipalities Polish Network „Energie Cités", the municipality participates in climate- and energy-related projects. As of December 2025, Siemiatycze is developing its Sustainable Energy and Climate Plan, which sets a target of reducing GHG emissions by 40% by 2030.

The town has adopted the following strategic documents:

- Electromobility Development Strategy for the Town of Siemiatycze for 2020-2037,
- Environmental Protection Program for the Town of Siemiatycze for 2015-2018 with a perspective until 2022,
- Study of conditions and directions of spatial development of the Town of Siemiatycze,
- Local spatial development plans.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

City and Municipality of Sztum

Basic characteristic

- Population size: 16 744 (2024)
- Type: rural-urban municipality
- Key climate-relevant sectors: Sztum has an operational district heating network and a well-developed renewable energy sector, including wind farms, photovoltaic systems, and biomass installations, owned by the municipality, private companies, and individuals. Passenger transport is provided by private companies and the railway. Several industrial plants are also located within the municipality.

  Given these conditions, the key climate-relevant sectors in Sztum include:

  - Municipal buildings, equipment/facilities
  - Residential buildings

- Public infrastructure
- Other sectors (commercial and tertiary, industry and construction)
- Public transport
- Private transport
- Local production of electricity

Climate and energy planning situation

As a member of the Association of Municipalities Polish Network „Energie Cités", Sztum has been actively engaged in multiple energy and climate initiatives and possesses experience in climate and energy planning. As of December 2025, the municipality is developing its Sustainable Energy and Climate Plan, which sets a target of reducing GHG emissions by 40% by 2030.
Sztum has adopted the following strategic documents:

- Development Strategy for the Town and Municipality of Sztum for 2021–2030
- Action Plan for Sustainable Energy – Low-Carbon Economy Plan for the Town and Municipality of Sztum until 2020
- Electromobility Development Strategy for the Town and Municipality of Sztum for 2020-2035
- Study of Conditions and Directions of Spatial Development of the Town and Municipality of Sztum
- Municipal Low-Carbon Programme for the Municipality of Sztum for 2020-2024
- Strategy of the Sztum Energy Cluster
- Draft guidelines for the supply of heat, electricity and gas fuels for the Town and Municipality of Sztum until 2036
- Lighting Plan for the Town and Municipality of Sztum
- Municipal Revitalisation Programme for the Town and Municipality of Sztum for 2024-2033

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Municipality of Żyraków

Basic characteristic

- Population size: 11 420 (2022)
- Type: rural municipality
- Key climate-relevant sectors: Żyraków does not have a centralized district heating network. Renewable energy sources in the municipality include photovoltaic and solar-thermal installations. Public passenger transport is provided in cooperation with neighbouring municipalities, primarily by bus, and the municipality is also served by a railway. Żyraków has an agricultural character, with more than 1,200 farms.

  Given these conditions, the key climate-relevant sectors in Żyraków include:
  - Municipal buildings, equipment/facilities
  - Residential buildings

- Public infrastructure
- Other sectors (commercial and tertiary, agriculture and forestry)
- Private transport

Climate and energy planning situation

In its 2021 Low-Carbon Economy Plan, Żyraków set a target to reduce GHG emissions by 21.8% by 2030 (compared to 2019) and to achieve a 45% share of renewable energy in local energy consumption. As of December 2025, the municipality is developing its Sustainable Energy and Climate Plan, which raises the GHG reduction target to 40%. Żyraków has participated in several climate- and energy-related projects and is a member of the Association of Municipalities Polish Network „Energie Cités".

The municipality has adopted the following strategies documents:

- Development Strategy for the Municipality of Żyraków for 2023-2030,
- Low-carbon economy plan for the Municipality of Żyraków for 2021-2030,
- Study of conditions and directions of spatial development of the Municipality of Żyraków,
- Draft guidelines for the heat, electricity and gas fuel supply plan for the Żyraków Municipality for 2014-2029,
- Environmental Protection Programme for the Żyraków Municipality for 2017-2021, with a perspective until 2025.

Experience with digital planning tools or climate simulation platforms

Municipality does not have any specific previous experience with digital planning tools or climate simulation platforms.

Activities aimed at municipalities

Selection of municipalities

Besko, Siemiatycze, Sztum, Żyraków

The municipalities of Besko, Siemiatycze, Sztum, and Żyraków were selected as CommitClimate Follower Municipalities based on their prior cooperation with PNEC in the development of their Sustainable Energy and Climate Action Plans. All selected municipalities are members of the Association (PNEC). Their earlier work on strategic energy- and climate-related documents ensured the availability and accessibility of relevant data.

Piastów

Piastów was chosen to become CommitClimate Follower Municipality, because it is a member of the Association (PNEC) and have experience in energy and climate planning – The Sustainable Energy and Climate Plan was developed in 2022. Given the access to the collected data and proven engagement in climate and energy planning, Piastów was a promising potential user of the CommitClimate simulator.

Initial outreach and communication

Besko, Piastów, Siemiatycze, Sztum, Żyraków

Initial contact with the municipalities was established by telephone to arrange workshop dates for the CommitClimate Simulator. Following the confirmation of suitable dates for each municipality, PNEC distributed an email containing detailed information regarding the scheduled meetings.

Meetings, workshops and training sessions

Besko, Piastów, Siemiatycze, Sztum, Żyraków

All workshops were conducted online via the Zoom platform. The sessions focused on several key areas, including:

- potential for using the CommitClimate calculator to raise awareness and educate on climate change and possible behaviour change,
- practical aspects of operating the CommitClimate simulator,
- potential applications of the simulator and calculator within municipal planning and decision-making processes,
- the most relevant features and functionalities of both tools,
- technical issues encountered and opportunities for further tool development,
- identification of the priority sectors for climate and energy strategy implementation.

To conclude and summarise each workshop, feedback was collected from participating municipalities. Following the events, PNEC distributed thank-you messages accompanied by a concise summary of the discussions and outcomes.

The workshops covering the CommitClimate simulator and calculator:

Municipality attending the workshop	Date of the workshop
Besko	Tuesday, December 2, 2025 11:30-12:30 CET
Siemiatycze	Tuesday, December 2, 2025 13:00-14:00 CET
Sztum	Wednesday, December 3, 2025 9:30-10:30 CET
Żyraków	Wednesday, December 3, 2025 11:00-12:00 CET
Piastów	Friday, December 5, 2025 10:00-11:00 CET

The session addressed a range of topics, covering the potential of CommitClimate calculator in environmental education and awareness rising among residents, practical use of the CommitClimate Simulator, its potential integration into municipal planning and decision-making, and the core functions and capabilities of both the simulator and the calculator. It also included a discussion of technical challenges encountered during use, possibilities for

further improvement of the tools, and the identification of key sectors that should be prioritised in the implementation of climate and energy strategies.

Feedback from municipalities

In general, the Follower Municipalities indicated that the CommitClimate simulator is easy to use and has significant potential for integration into municipal planning processes. They view it as a valuable tool for identifying the most suitable pathways for reducing greenhouse gas emissions.

During the meeting with the municipalities, the building sector particularly public buildings was identified as the most important area for scenario development. Rural municipalities additionally highlighted the agricultural sector as a key focus, noting that it had been overlooked in previous strategies despite likely being a major source of emissions.

Several municipalities expressed interest in participating in a dedicated workshop to gain a deeper understanding of the simulator's full functionality and to explore potential scenarios for reducing local energy demand and emissions.

However, municipalities also pointed to several barriers that limit the simulator's use in day-to-day operations. The most significant challenges include limited access to required data and the considerable time needed to collect and verify this information. Combined with ongoing staff shortages particularly in smaller municipalities these constraints make it difficult to allocate sufficient resources to fully utilise the simulator.

Regarding the CommitClimate calculator, which allows residents to assess their personal carbon footprint, municipalities expressed strong interest in the tool. They indicated their willingness to promote it to residents either through the municipal website or by presenting it at local events focused on climate awareness and education.

Challenges and difficulties

The primary challenge reported in using the CommitClimate Simulator was the significant amount of time required to collect the data necessary for the baseline emission inventory and to prepare the initial simulation. During the testing phase, several technical and functional issues were identified, including:

- within the Polish interface, some sections remain in English,
- certain options do not function as intended or are not responding,
- some required data fields are insufficiently explained,
- importing data for the simulator sometimes does not function properly – errors occur or different values are displayed,
- some links redirect the user to a different section than they should,
- in some cases, after entering the data about policy manually, the simulator gets stuck and not responsive.

The municipalities have been notified that the simulator is currently in its testing phase, and all identified errors and issues will be systematically addressed and resolved during this period. All comments and observations have been compiled and forwarded to the responsible project partner. Furthermore, it was suggested that it would be useful to include an additional chart on the summary page illustrating the sectoral share of total emissions, similar to the

chart currently provided for energy demand. It was also noted that linking the tool to external data sources—such as the Central Register of Building Emissions in Poland—would significantly streamline data collection and the preparation of simulations. Such integration would allow relevant data to be automatically imported into the simulator, reducing the time and effort required from users.

No concerns were raised regarding the CommitClimate calculator. The tool was positively evaluated as interesting, user-friendly, and practical.

Summary

Follower Municipalities across Poland, Sweden, Latvia, and Estonia generally found the CommitClimate Simulator user-friendly and valuable for scenario-based planning. Key sectors of focus included buildings, transport, and renewable energy, with agriculture highlighted in some rural Polish municipalities. The Simulator was appreciated for enabling municipalities to visualize CO_2 reduction impacts, test policy options, and support evidence-based planning and internal discussions.

Municipalities across all countries involved in the project have identified various sectoral priorities and opportunities for collaboration. In Estonia, policy measures particularly in the transport sector were considered the most relevant and interesting, and municipalities showed interest in continued use of the simulator, leading to collaboration in study courses as well as bachelor's and master's theses. In Latvia, municipalities focused on emission-relevant sectors within their planning responsibilities, including energy use in municipal and multi-apartment buildings, transport and municipal vehicle fleets, local mobility measures, renewable energy deployment (mainly solar), and energy efficiency measures included in Sustainable Energy and Climate Action Plans (SECAP). Sector focus was strongly influenced by data availability, quality, and existing local priorities. In Sweden, to ensure internal consistency, statistical data for different sectors had to be carefully aligned with the simulator's calculation logic, since scenario simulations starting from an inconsistent baseline would not be acceptable in the Swedish planning context. In Poland, the building sector particularly public buildings was identified as the key area for scenario development, while rural municipalities also highlighted agriculture as a major emissions source often overlooked in previous strategies. Several municipalities expressed interest in workshops to better understand the simulator and explore scenarios for reducing local energy demand and emissions.

Municipalities highlighted its logical and transparent structure, which made it understandable once its assumptions were explained, as well as its scenario-based modelling, which allowed for testing the impact of different policy measures and comparing alternative development pathways. The Simulator also supported evidence-based decision-making. Furthermore, the tool demonstrated clear educational potential, as shown in workshops and student projects in Lativia and Estonia.

Despite these positive experiences, municipalities across all countries faced similar challenges. Data availability and quality emerged as the most significant barrier, with many municipalities lacking complete, up-to-date, or appropriately structured datasets for baseline inventories. Time and capacity constraints, particularly in smaller municipalities, limited the depth of engagement and the ability to independently use the Simulator. Many municipalities also needed guidance in interpreting the results, struggling initially to understand model assumptions, system boundaries, and output without expert support. Technical limitations and bugs during the testing phase further restricted the independent development of scenarios, especially in Sweden and Poland. Overall, these challenges were more institutional and organisational than conceptual, indicating that the main limitations related to the conditions of implementation rather than to the Simulator itself.

Based on feedback from all countries, several technical improvements were recommended. Municipalities suggested more reliable data import and export functionality, clearer

explanations of required input data and assumptions, better handling of large-scale energy systems and industrial energy use, and additional visual outputs such as sectoral emission share charts to support interpretation and communication of results. To further improve uptake and replication, municipalities recommended the development of step-by-step guidance materials, hands-on workshops, ongoing expert support during baseline inventory preparation and scenario development, and promotion of peer learning between municipalities to share experiences and best practices.