NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Action Plan

of Suceava City

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Summary

An abstract **summarizes the content** of the 2030 Climate Neutrality Action Plan (Action Plan) that is developed jointly by local authorities, local businesses, and other stakeholders.

Textual element
On December 12, 2015, during the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21), **195 States, Romania included, adopted the Paris Agreement, which strives to limit the increase in global temperatures to well below +2°C**. The European Union has committed under the Paris Agreement to reduce greenhouse gas (GHG) emissions by at least 55% below 1990 levels by 2030, and to achieve climate neutrality by 2050. To achieve these ambitious targets, the European Green Deal was developed, which makes reaching climate neutrality by 2050 legally binding in the EU, and around 1 trillion Euro of public and private funds have been mobilized through the Sustainable Europe Investment Plan, to help achieve the target. **VISION: Suceava City in 2030 is a metropolis running largely on renewable energy sources, with a fully decarbonized transport infrastructure, efficient and environmentally friendly public transport, occupied by buildings built to high-energy efficiency standards, quality green spaces, a local circular economy focused on sustainable goods and services and an integrated and efficient waste management system**. In support of the European Green Deal, the European Commission has also set the "100 Carbon Neutral Cities by 2030" Mission. The scope of the Mission is to: Support, promote and showcase 100 European cities in their systemic transformation towards climate neutrality by 2030 and make these cities into experimentation and innovation hubs for all cities, thus leading on the European Green Deal and on Europe's efforts to become climate neutral by 2050. **Suceava has been selected as one of the 100 Mission cities and it is committing to increase efforts to achieve climate neutrality and serve as an example for other cities.** **This commitment was already approved by the local decision makers and it is included in other (already in implementation phase strategic) documents such as: Integrated Urban Development Strategy 2021-2030 and Sustainable Urban Mobility Plan, both designed for Urban Functional Area of Suceava (with two cities and 7 villages from the metropolitan area)**. Other relevant strategic document is the 2021-2030 Sustainable Energy and Climate Action Plan (SECAP) – already approved and currently into the implementation phase with several projects linked with energy efficiency and reduction of GHG emission. Within the framework of existing local strategic documents and their integration and further development to a raised ambition towards the Mission in the CCC process, the Municipality of Suceava acts as a, light house, city with innovative, ambitious and integrated initiatives that approach reduction of energy consumption and GHG emissions. Achieving climate neutrality in a city requires a commitment to reduce sources of GHG emissions as much as possible, for example through the use of renewable energy resources to replace fossil fuels, while offsetting those residual emissions which are too hard to eradicate. The city vision, born from a collective desire for a cleaner, healthier future, ignited a spark within the community. It fuelled the creation of Suceava's Climate Action Plan, a roadmap towards becoming a **Net Zero City**. This plan, far from being a mere document, is a testament to the city's commitment, a story of collective action, innovation, and the unwavering belief in a brighter tomorrow. Recognizing their contribution to the global climate challenge, the people of Suceava, along with the municipality and local stakeholders, embarked on a journey of transformation. They acknowledged the reality – greenhouse gas emissions from various sources, including transportation, buildings and waste, were contributing to the environmental crisis. On its pathway to became a "green city", with previous achievements like being the first Romanian city with a municipal electric fleet, charging facilities and incentives for electric vehicles , first and only (so far) Romanian city with 100% electric public transport, Suceava City sees the Climate City Contract and Net Zero Cities Mission as the perfect opportunity to continue its efforts and accelerate the implementation of specific actions that will create the local conditions to reach the climate neutrality goals. City vision: **A Resilient Future for Suceava: Embracing Sustainability** Suceava City envisions itself as a thriving green metropolis by 2030, as being a city where: - **Clean air and vibrant green spaces** replace the haze of pollution, fostering a healthy environment for generations to come. - **Renewable energy** powers the city, minimizing its carbon footprint and showcasing its commitment to a sustainable future. - **Efficient transportation systems**, with robust public options and emphasis on walking and cycling, create a

more liveable and connected city.
- **Sustainable practices** become the norm, embedded in everyday life from waste management to energy consumption.

To become a climate neutral city, Suceava committed to the following steps:

- Carrying out a greenhouse gas inventory to establish where emissions and their values come from;
- Developing a climate action plan setting out the strategies and actions needed to reduce emissions; the plan must be aligned with the objectives of the Paris Climate Agreement and the 2030 Agenda for Sustainable Development;
- Reducing energy consumption - increasing the energy efficiency of buildings, implementing smart grids and promoting alternative means of travel (electric public transport, walking, cycling, etc.);
- Increase production and promotion of renewable energy and clean vehicles;
- Offsetting carbon emissions - any remaining carbon emissions should be offset by investing in green projects (reforestation, carbon capture and storage, etc.);
- Involving stakeholders (residents, businesses, public administration, etc.) collaborating on the implementation of initiatives and promoting a culture of sustainability and sustainable development.

Suceava's story is not just about numbers and targets; it's about the unwavering spirit of a community united in pursuit of a shared vision. It's a testament to the power of collective action and the belief that even the most challenging goals can be achieved when a community comes together, united by hope and a desire to create a better future for generations to come.

The sentence **"Environment is not a heritage from previous generation but most likely a loan from the future ones"** must be the official statement for all public authorities. The list of the projects and the interventions that are included into the Action Plan and Investment Plan was established together with local and regional stakeholders, as Suceava's **ultimate goal is the reduction of the local GHG emissions by at least 80 % till 2030**.

List of figures

The list of figures **identifies the titles and locations** (page numbers) of **all visual elements:** figures, drawings, photos, maps, etc. used in the Action Plan.

List of tables

The list of tables **identifies the titles and locations** (page numbers) of **all tables** used in the Action Plan.

Abbreviations and acronyms

Abbreviations and acronyms	Definition
AFOLU	Agricultural, Forestry, and Land Use
AP	Action Plan
CO2	Carbon Dioxide
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIB	European Investment Bank
ERDF	European Regional Development Fund
EU	European Union

GHG	Greenhouse gas
LPG	Liquefied Petroleum Gas
Ha	Hectare
IUDS	Integrated Urban Development Strategy
LED	Light-Emitting Diode
MA	Metropolitan Area
MWh	Megawatt hour
N/A	Not Applicable
NGO	Non-governmental Organization
nZEB	nearly Zero Emission Building
PPP	Public Private Partnership
RDI	Research-Development-Innovation
RP	Regional Programme
SRL	Limited Company
SECAP	Sustainable Energy and Climate Action Plan
Sq.	Square meters
SUMP	Sustainable Urban Mobility Plan
NRRP	National Resilience and Recovery Plan
t	Tons

1 Introduction

The introduction should outline the local policy context in which the Action Plan is being developed and describe the gap it is addressing in broad terms.

Introduction - textual element

Suceava Municipality is a public administration institution responsible for local infrastructure, heating, public lighting, public transport, culture, public spaces, green areas, social activities, education utilities and has a budget of 203.229.064 Euro/year (related to 2023). Information and key data about Suceava City are included in Annex 1 at the Action Plan.

1.Previous actions related to climate neutrality : In the past 15 years there were many investment projects in the field of energy efficiency (public and private buildings), alternative heating production (biomass), rehabilitation of public lighting (LED systems), education buildings, public transport (100 % electric fleet), alternative vehicles (electric municipal fleet, charging stations for EV's – with incentives for charging also for private owners), traffic management, cycling lanes, electric bicycles and scooters, rehabilitation of central heating system, separate waste collection and recycling system, rehabilitation of the water and sewage system, green areas, rehabilitation of pedestrian (low emission zone) and road infrastructure, city ring. Suceava recognizes the urgent need to address the global climate crisis and minimize its impact on communities, the economy and the environment. It is recognized that the local community is currently contributing to this crisis through greenhouse gas emissions from transport, buildings, waste and other sources.

2. Suceava Municipality's Commitments: The municipality's commitment to its responsibility to mitigate climate change is to achieve climate neutrality in terms of climate impact by 2030, and to meet this goal requires a reduction in local greenhouse gas emissions. This is to be achieved through the following actions:

- Reduction of greenhouse emissions - emissions levels in Suceava will be reduced through various methods such as: increasing energy efficiency and use of renewable energy, promoting sustainable transport options, increasing the area of green spaces in the city, increasing the use of alternative transport;
- Offsetting carbon emissions - the remaining greenhouse gas emissions will be offset by investing in projects such as: renewable energy installations, reforestation;
- Encouraging public involvement and community action - so the community will actively participate and take collective responsibility in reducing the locality's greenhouse gas emissions;
- Annual progress reports - this will track and report annually on progress at the local level in order to have control over achieving the climate neutrality target;
- Conduct community awareness and education campaigns to understand that achieving climate neutrality will require sustained effort and significant investment.

Thus, all stakeholders will be called upon to support and work together to achieve climate neutrality by 2030.The municipality has an important role to play in leading the local climate transition towards the goal set by joining the 100 Smart and Climate Neutral Cities Mission by 2030. The role that Suceava will play in the coming period is to become the initiator of the decarbonisation process at local level by providing a concrete example of best practice, thus one of the first cities to commit to involving most of the local stakeholders in the climate transition process.

The actual organization and management of this ambitious process will follow an open approach towards the general public and all stakeholders, so that the focus is on dialogue and collaboration between stakeholders, both through public consultation and information gathering from all sectors of interest, providing opportunities for involvement in an equitable and participatory governance.

Suceava had voluntarily joined the national program "Transparent, open and participatory governance - standardization, harmonization, improved dialogue", carried out by the General Secretariat of the Government and the Ministry of European Affairs, which aimed at improving electronic services and their interoperability, increasing transparency and citizens' involvement in the development process of the city.

Therefore, through the climate contract the local authority shows once again that the Municipality of Suceava aims to involve citizens in the current processes of development of the city, demonstrating a public management oriented towards the citizen and the relevant factors of the local plan.

Fuelled by the success of previous initiatives**, like being the first Romanian city with a 100% electric public transport fleet,** Suceava saw the **Climate City Contract and Net Zero Cities Mission** as the perfect opportunity to accelerate their progress.

The municipality, acting as a facilitator and coordinator, embarked on a collaborative journey, bringing together diverse stakeholders - residents, businesses, experts, and public officials - to co-create the action plan.

This collaborative spirit permeated every step of the process. Public consultations and workshops ensured that the plan addressed the community's needs and concerns directly.

The voices and suggestions of citizens became the foundation for identifying and designing projects, ensuring the plan was not just top-down, but truly representative of the collective vision. The resulting action plan lays out a clear roadmap towards achieving climate neutrality by 2030. It outlines ambitious yet achievable goals, like reducing CO2 emissions by 80.6% compared to the 2021 baseline. This ambitious target is not an insurmountable obstacle but a call to action, a shared responsibility embraced by the entire community.

On its pathway to became a ”green city”, with previous achievements like being the first Romanian city with a municipal electric fleet, charging facilities and incentives for electric vehicles, first and only (so far) Romanian city with 100% electric public transport, Suceava City sees the Climate City Contract and Net Zero Cities Mission as the perfect opportunity to continue its efforts and accelerate the implementation of specific actions that will create the local conditions to reach the climate neutrality goals.

3. City vision: **A Resilient Future for Suceava: Embracing Sustainability**

Suceava City envisions itself as a thriving green metropolis by 2030, as being a city where:

- **Clean air and vibrant green spaces** replace the haze of pollution, fostering a healthy environment for generations to come.
- **Renewable energy** powers the city, minimizing its carbon footprint and showcasing its commitment to a sustainable future.
- **Efficient transportation systems**, with robust public options and emphasis on walking and cycling, create a more liveable and connected city.
- **Sustainable practices** become the norm, embedded in everyday life from waste management to energy consumption.

Suceava’s City Challenges and the Stakes: However, the path to this vision is not without its challenges. Climate change poses a real threat, affecting Suceava's environment, economy, and overall well-being. Rising temperatures, increased air pollution, and extreme weather events are all potential consequences if action isn't taken. Beyond the environmental concerns, the people of Suceava worry about the city's long-term prosperity and its ability to attract future generations. They aspire for a city that offers a high quality of life, economic opportunities, and a sense of connection to its rich cultural heritage.

The Climate City Contract (CCC): A Catalyst for Change: The Climate City Contract (CCC) serves as a powerful catalyst for Suceava's ambitions, both climate-centric and beyond. It provides a framework for

collaboration and resource mobilization, accelerating the city's existing commitments to sustainability.
Suceava already boasts a significant foundation of successful sustainability initiatives, including its 100% electric public transport fleet.

4. How the CCC is addressing to Suceava Municipality's ambitions and engagement to climate neutrality:

The CCC builds upon these achievements by:

Amplifying Suceava's City voice on the global stage: The city gains access to a network of like-minded communities, fostering knowledge sharing and best practice exchange.

Attracting resources and investment: Participation in the CCC opens doors to funding and partnerships, accelerating the implementation of Suceava's ambitious goals.

Boosting innovation and collaboration: The CCC fosters collaboration between public and private stakeholders, encouraging the development of innovative solutions for a sustainable future.

The CCC goes beyond just climate change, contributing to Suceava's broader vision for the future. By promoting sustainable practices and resource efficiency, the city can:

Reduce its dependence on external energy sources, making it more resilient and economically secure.

Position itself as a leader in sustainability, attracting investment and talent, particularly within the green economy sector.

Enhance the overall quality of life for residents, creating a healthier and more vibrant city.

Areas of intervention proposed by thematic working group and included in the Climate City Contract are covering the entire territory of Suceava city and could be define as following:

Urban mobility - tackling climate change by promoting more energy efficient," green" transport, sustainable public transport, alternative transport and other sustainable mobility options.

Energy Efficiency - promoting more efficient energy consumption and reducing greenhouse gas emissions by improving the energy efficiency of public and residential buildings, public lighting systems and heating transport and distribution network

Renewable Energy - promoting renewable energy sources, especially solar, to reduce dependence on fossil fuels and reduce greenhouse gas emissions.

Public Lighting - improving the energy efficiency of public lighting systems and promoting energy efficient lighting technologies.

Waste Management - addressing waste management and reducing its environmental impact by promoting recycling, separate waste collection and other sustainable waste management methods.

Urban Regeneration and Revitalization of Public Spaces - improving the quality of the urban environment through the development of more environmentally friendly green spaces and other public areas and promoting more sustainable practices in urban construction and development.

Smart citizens and 'open' government - promoting citizen participation in decision-making and developing smart government solutions that support the overall objectives of the Climate City Contract and facilitate better community engagement in climate change efforts.

As regards to the projects included into Action Plan it is important to mention the following:

1. Grant contracts have been already signed for: electric buses for metropolitan area, charging stations for electric vehicles and buses, smart mobility, rehabilitation and energy efficiency for 6 public buildings, rehabilitation and energy efficiency for 11 residential buildings, waste management and recycling facilities, rehabilitation of central heating distribution and transport network – all these projects are in the implementation phase at the moment
2. Several other projects concerning green areas, smart mobility, photovoltaic parks, municipal and residential buildings are either prepared for submission or already submitted to financing authorities in 2024
3. Projects for increasing energy efficiency in residential and public buildings, green areas, photovoltaic parks are in the design phase and will be submitted to financing authorities in 2024

2 Work Process Introduction

This section should list the working steps carried out, for example along the NZC Climate Transition Map, or related steps planned as well as outline timeline and milestones for future iterations for the continuous development of the Action Plan.

Work Process - combination of text and visual elements
1.General consideration : The Action Plan's preparation was based on adapting EU trends, strategic directions and policies to the specific local context, the whole process being a co-participatory one: although the Municipality coordinated the implementation of the Action Plan, the document was developed by constantly consulting the local stakeholders, because they are the NZC Coalition's pillars and they have been constantly part of the design , innovation and implementation processes for Municipality's projects/initiatives (detailed at page 76 – 77). **2. Design phase for Action Plan:** During the design phase for Action Plan leading staff and public servant from Suceava Municipality had several technical meetings with experts that are part of the project team in order to establish and define the future common actions to be implemented by Suceava Municipality on the road to climate neutrality. Following discussions between the project team from Suceava City Hall and the consultants, a clear schedule for the working groups was established. These meetings were held over two days and each meeting lasted approximately one hour and thirty minutes. Each working group was based on the themes agreed between the contracting authority and the consultants, and the order of the working groups was set so that each day touched on all the pillars being considered to bring the Municipality of Suceava closer to fulfilling its mission. The working groups have been named according to the theme as follows: Energy efficiency in public and residential buildings; Alternative energy; Public lighting; Public transport and traffic; Waste management; Water management; Public spaces; Cultural/social/financial/institutional systems. **Public consultation**: The online questionnaire is a practical and effective method of obtaining feedback from a large number of respondents in a structured way that can be easily interpreted in analysis. The present questionnaire was completed by 534 inhabitants of Suceava City and aimed to understand the existing situation in the field of climate impact as seen by citizens. The instrument applied determines an overview of the perception and behaviour of citizens regarding climate impact, which contributes to the decision maker regarding future actions to protect the environment. The questionnaire was published exclusively online and promoted via social media every 2 weeks from January to February 2023. The target group of this consultation phase is the entire population of the Municipality of Suceava, the aim being to identify the needs, the level of concern of the population about climate change and the level of awareness about its causes and consequences **(Survey results – Annex 2).** The results from the public survey were presented during each workshops, were discussed with the stakeholders and consist the baseline for identification and design of the projects proposed to be included in the Action Plan. **Basically the projects/actions were defined in accordance with citizens needs/comments/suggestions and the actions are directly linked with the problems identified directly by citizens.** More than this, according to Romanian legislation, as the Action Plan (that includes the extended list of projects from the most relevant ones related to climate neutrality were described into details both in Action and Investment Plan) is included into strategic document category, the document was posted on municipality website 30 days before the local council approval, following the public consultation procedure. More public surveys are planned to be done in implementation phase for most relevant and with major impact actions (like the ones concerning energy efficiency in public and residential buildings, smart & sustainable mobility, electric public transport for metropolitan area) and more important during evaluation phase of the projects. **This is meant to continue the process of local stakeholders (citizens also) involvement** in the mission process having as a direct result the feedback regarding the results, the achievements and also regarding the suggestion for improvements/upgrade of the proposed actions. The initial meetings were held at the Suceava City Hall, where the relevant local actors were previously invited by official addresses to outline the vision that the Municipality of Suceava must address in order to achieve the objectives assumed in the Mission.

Following initial discussions with the working groups (areas: Energy efficiency in public and residential buildings; Alternative energy; Public lighting; Public transport and traffic; Waste management; Water management; Public spaces; Cultural/social/financial/institutional systems), the first draft of the Climate City Contract was developed.

The process of developing and monitoring of climate neutrality projects (included into the Action Plan) can be divided into several steps:

Identify the current situation: The first step is to identify the current situation of the city's carbon footprint and energy consumption. This may involve analysing existing data or conducting research studies. This step can provide an overview of the city's environmental impact and help identify areas for improvement/intervention.

Setting targets: Once the current situation is known, the next step is to set targets for reducing carbon emissions. These targets should be ambitious but realistic and aligned with global or national climate change commitments.

Determine the key actions that need to be taken: Once targets are set, it is important to determine the key actions that need to be taken to achieve the targets. These actions can be soft (e.g. awareness and education campaigns), medium (e.g. energy efficiency projects) or hard (e.g. investment in renewable energy or electric transport projects). This stage should include an analysis of the costs and benefits of each action and an assessment of the impact on the objectives set.

Prioritize projects: Once key actions are identified, it is important to prioritize them according to their impact, feasibility and cost. This can help to identify the actions with the greatest potential to contribute to the achievement of the objectives without exceeding the allocated budget.

Measuring and monitoring progress: Once projects are implemented, it is important to monitor and measure progress. This can be done through relevant performance indicators such as carbon emissions or energy consumption. It is also important to monitor the budget and time allocated to each project.

How to involve stakeholders: During the process of developing and monitoring a portfolio of climate neutrality projects, it is important to involve stakeholders such as the local community, the private sector, local government and non-governmental organizations. This helps to create a framework for collaboration and to increase the involvement of all stakeholders in making decisions that lead to the achievement of the agreed objectives.

Apart of these actions described above local stakeholders (especially citizens) have been approach and included into the design phase of projects concerning for example residential buildings rehabilitation, green areas that are included in the Action Plan. Designated work groups have been established (with representatives from civil society, public institutions, university, architects, local experts), public surveys and public consultation (including meetings with residents from the buildings that are subject of future interventions) with a specific objective of increase the acceptance of citizens in the actions that the city is taking for its pathway to climate neutrality. These working groups (based on Mayor's decisions) will also work together with the municipality's' transition team in the implementation and evaluation phases of each specific project.

3. Cooperation at national level: In order to support the efforts of Suceava Municipality and the other two municipalities that are part of the mission in Romania a large consortium was created as part of the implementation of the project „**NetZeRoCities – National Centre** for **Competence and solutions for developing climatic neutral smart cities**" that started in 2023. The consortium coordinating NetZeRo Cities is composed of Technical University of Bucharest, National Institute for Research and Development in Computer Science ICI Bucharest, Technical University of Cluj-Napoca, Technical University of Construction Bucharest, "Ștefan cel Mare" University of Suceava, Holisun SRL, Beia Cercetare SRL, Datacor SRL, Inteligent Convergent Solutions SRL, SC Building Technology Group R SRL, Orange Romania SA and Robert Bosch SRL.

The **Centre of Competence** is a secure and efficient structure capable of providing a sustainable, predictable and streamlined environment for the development of research, development and innovation activities with a focus on contributing to climate change and the digital transition. **The Centre is conceived as an innovation hub, representing an indicator of excellence in research, development and innovation and acting as a support for cities in successfully accessing funding opportunities under the EU Climate Change Mission and in achieving the EU Climate Change Mission's objectives and key indicators.**

The aim is to support access to funding, increase the innovation capacity of the RDI system to create synergies between research and business, and create the critical mass of interdisciplinary skills needed to address the societal challenges associated with the EU Climate Change Mission. The Centre of Competence is a networking

tool of excellence to increase the chances of success in the EU Climate Change Mission and the Carbon Neutrality objective.

The main purpose of participating in this project is to benefit from the knowhow of the team members, to transfer the best practice example (already implemented by some of the project members), to identify, adapt and implement pilot projects in Suceava, replicate de existing ones from other Romanian cities. Suceava city would like to benefit from academic and technic knowledge of the project team members and more than this the issue of transferring the best practical solution for increasing the citizen's/stakeholders involvement into the implementation of Action Plan will be approach.

As referring to the local private sector it is highly important to iterate that we have already started the cooperation in the preparation phase for specific projects from different sector (for example for the electric busses with local public transport operator, for rehabilitation of heating transport and distribution network with local private operator) and for sure we will continue working together in implementation and evaluation phase.

4.Innovative actions for local governance for AP implementation phase: Suceava Municipality has a special designated **transition team** that is responsible for managing the entire process of Climate City Contract implementation, monitoring, evaluation and review. The team is composed of experts from different complementary departments within Suceava City Hall: Financial Department, Investment Department, European Projects Department, Legal Department, Urban Strategies Service, Public Procurement Service, Green Areas Directorate, Energy and local utilities Office, Owner Association and Residential Buildings Service, IT Department, Waste Management Department (Urban Energy Manager is it expected to join the team from 2024). The team is open for new members that will be able to join anytime in the next 7 years and it is coordinated by is under the coordination of the **European Projects, Investment, Strategy and Local Development Department.**

However, since the transition towards climate neutrality is not an individual responsibility, but rather a collective effort, Suceava Municipality, related to the experience in ongoing projects implementation, will launched an invitation to the entire local ecosystem to engage all the key local actors, stakeholders, private and public sector as a local **Net Zero City Coalition**, with the scope of serving the local climate-neutrality pursuits, it is expected to be created in the first half of 2024**.** The first step was the agreement signed in 2023 between Suceava Municipality and Suceava" Stefan cel Mare" University from which at least one application for European funding was sent already (pilot project for implementation of LI FI principle).

The local Net Zero City Coalition's work will focus on using already-existing local strategic documents (e.g., SUMP, SECAP, IUDS), out of the willingness to ensure the continuity and sustainability of priorities that were established through previously-approved framework papers but especially on **the Action Plan implementation, monitoring, reiteration and evaluation in direct correlation with the Mission's requirements** and local objectives & commitments. Maximizing the resulting effects and the impact of actions will be achieved through efficient communication, local commitment of the all involved stakeholders, common actions seen as a complementary component to the implementation and monitoring processes.

Within its efforts to **engage stakeholders and citizens** to local actions related to climate neutrality another initiative (linked with city hall website) was launched in the second half of 2023, called **Canter for Innovation and Civic Imagination** with the main objective as increasing the degree of citizen involvement in the process of adopting and applying decisions of public interest, but also increasing citizens' trust in local administration. Thus, the framework is created for defining the active role of the citizen, respectively the transmission of ideas, proposals and suggestions in the development and implementation of public projects especially the ones included in the Action Plan.

The internal Municipality's transition team includes public servants with experience in management, finance, technical, evaluation, publicity and dissemination. There are regular meetings with all involved persons: once per week in the presence of leading staff, at least twice per month with representatives from construction companies and private operators (if necessarily) and also anytime when it is required for the smooth implementation of the projects. Apart of this for the final evaluation for each project, a service contract is required with an external expert that has to evaluate and certify the project impact.

Additional to these aspects in order to ensure a good control in the implementation, specialized structure composed of people with experience in energy efficiency, key people from various departments of the local authority, interested local actors, to ensure the monitoring and reporting of activities assumed by the plan are organized. For the activities related to estimation of emission reduction and measurement, the impact of

investments we usually use to contract external experts, perform public surveys and organize workshops with local stakeholders.

The ongoing projects that are already into the implementation phase (with a total amount of 130.000.000 Euro) - are related to energy efficiency in public and residential buildings, green (100 % electric) public transport, sustainable mobility, photovoltaic park, rehabilitation of green areas, digitalization of public administration's services. This as to demonstrate that the municipality has already started the actions that have as direct objective climate neutrality at local level and reduction of GHG emissions.

All these ambitions mentioned above are expected to generate real, significant, measurable changes/improvement of the life quality in Suceava city and radically reduce GHG emissions. **On the roadmap for transformation of these priorities from strategy to reality, all the local stakeholders will be involved actively and responsible for achieving the climate neutrality efforts.** Thus, depending on their individual expertise, all the signatory stakeholders will contribute to fulfilling the strategic interventions mentioned above. They will provide expertise to the municipality and will be co-involved in various local projects (together with specific stakeholders and Municipality) that will lead to achieving the assumed climate neutrality.

Together with the Investment Plan, the Action Plan resulted in an integrated proposal that will help Suceava City to reach the local climate-neutrality goal and its related targets.

3 Part A – Current State of Climate Action

Part A "Current State of Climate Action" describes the point of departure of the city towards climate neutrality, including commitments and strategies of key local businesses, and informs the subsequent modules and the outlined pathways to accelerated climate action.

3.1 Module A-1 Greenhouse Gas Emissions Baseline Inventory

Module A-1 "Greenhouse Gas Emissions Baseline Inventory" should detail and describe the city's latest GHG inventory to establish the emission baseline and to establish the emissions gap to 2030 climate neutrality according to the inventory specifications defined in the Cities Mission's *Info Kit for Cities* and the process outlined in the Action Plan Guidance and Explanations.

A-1.1: Final energy use by source sectors				
Base year	**2021**			
Unit	**MWh/year**			
	Scope 1	Scope 2	Scope 3	Total
Buildings	**438.216**	**47.847**	N/A	**486.063**
(Fuel type/ energy used)	Biomass 113.116 Natural Gas 300.966 Wood 24.134	Electric energy 47.847	N/A	
Transport	**324.658**	**2.163**	N/A	**326.821**
(Fuel type/ energy used)	LPG 16.296 Diesel 150.103 Gasoline 158.259	Electric energy 2.163	N/A	
Waste	**51.546**	N/A	**1.652**	**53.198**
(Fuel type/ energy used)	Diesel 51.546	N/A	Electrical energy 1.652	
Industrial Process and Product[1] Use (IPPU)	**46.970**	**41.431**	N/A	**88.401**
(Fuel type/ energy	Natural gas	Electric energy	N/A	

used)	46.970	41.431		
Agricultural, Forestry and Land Use[2] (AFOLU)	**3.131**	**508**	N/A	**3.639**
(Fuel type/ energy used)	Diesel 3.131	Electric energy 508	N/A	

A-1.2: Emission factors applied						
(Please specify for primary energy type and GHG emission factor according to methodology used).						
For calculation in t or MWh of primary energy						
(Please indicate method used, e.g., GPC, IPCC, CRF, national etc.) **IPCC 2006**						
Primary energy/ energy source	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	F-gases (hydrofluorocarbons and perfluorocarbons)	Sulphur hexafluoride (SF_6)	Nitrogen difluoride (NF_3)
Electric energy 2021 *	0,701	N/A	N/A	N/A	N/A	N/A
Natural gas	0,202	N/A	N/A	N/A	N/A	N/A
Diesel	0,267	N/A	N/A	N/A	N/A	N/A
Gasoline	0,249	N/A	N/A	N/A	N/A	N/A
LPG	0,231	N/A	N/A	N/A	N/A	N/A
Biomass / wood waste	0,403	N/A	N/A	N/A	N/A	N/A
Wood	0,403	N/A	N/A	N/A	N/A	N/A
Bio-fuel	0	N/A	N/A	N/A	N/A	N/A
Renewable energy	0	N/A	N/A	N/A	N/A	N/A
Electric energy 2030 **	0,1	N/A	N/A	N/A	N/A	N/A

* Value estimated for CO2 for grid-supplied energy in 2021 (MWh/year to tons CO2/year) is 0,701
** In 2030 more than 67% of the electricity produced at national level is estimated to be from renewable sources (energy produced from photovoltaic parks in Suceava that will cover the entire public administration consumption). According to the action 1.2 from section B 2.2. – Photovoltaic parks (including alternative system for production of hydrogen) the electricity production from renewable sources (solar) is approx. 136.628 MWh/year. As the total consumption of Suceava Municipality is approx. 10.200 MWh/year, this means that the implementation of this specific action from the Action Plan will contribute with a total amount of 126.428 MWh/year transferred to national grid (equivalent of 26.837 t CO2 /year reduction).
*** For the other greenhouse gases information was not available. Future actions for database will be subject of the Action Plan (in partnership with Environmental Protection Agency, University of Suceava) with specific actions/investment for create a database for other greenhouse gases

A-1.3: ACTIVITY BY SOURCE SECTORS			
Base year: **2030**			
Buildings	**271.267 MWh/year**	**138.740 t CO2/year**	**N/A**
Action 1.1 (from section B-2.1)	5.452 MWh/year	21.132,96 t CO2/year	**N/A**
	1 transport and distribution network rehabilitated and modernized (energy efficient) 71 km of transport and distribution network rehabilitated 623 HEMS (Home Energy Management Systems) 8 thermal points modernized 312 distribution units – digitalized		**N/A**
Action 1.2	45.512MWh/year	29.210 t CO2/year	**N/A**

(from section B-2.1)	At least 2 facilities (photovoltaic parks) for production of alternative "green "energy 1 facility for "green "hydrogen production Production of at least 130.000 MWh/year Entire energy consumption for Suceava Municipality (lighting, buildings, electric public transport, electric vehicles) covered from "green" energy sources		**N/A**
Action 1.3 (from section B-2.1)	4.452 MWh/year	1.704 t CO2/year	**N/A**
	100 % of public lighting equipped with LED systems (2550 new ones), smart management and dimming system Introduction of LI FI concept		**N/A**
Action 5.1 (from section B-2.1)	120.675 MWh/year	31.112 t CO2/year	**N/A**
	65 residential buildings with more than 10.000 apartments/buildings with investments concerning increasing energy efficiency and reduction of CO2 emissions 40,000 residents targeted by awareness campaigns to promote reduction of energy consumption and change behaviour regarding environmentally friendly ways of living into the city		**N/A**
Action 5.2 (from section B 2.1)	10.521 MWh/year	7.230 t CO2/year	**N/A**
	10 municipal buildings (administrative buildings, educational units), with construction works for reduce energy consumption, increase energy efficiency, reduce GHG emissions, facilities for production of alternative energy, implementing an integrated system for monitoring, controlling and reducing energy consumption.		**N/A**
Action 6.1 (from section B-2.1)	84.655 MWh/year	48.351 t CO2/year	**N/A**
	1 smart climate neutrality masterplan 1 set of urban planning policies for climate neutral intervention in public and private buildings (including construction)		**N/A**

Transport	**165.440 MWh/year**	**65.808,77 t CO2/year**	**N/A**
Action 2.1 (from section B-2.1)	4.215 MWH/year	2.920,5 tons CO2/year	**N/A**
	30 km municipal bicycle lanes, 5 new stations for public bike sharing system 200 new regular and electric bicycles 200 citizens to use bikes on daily regular base		**N/A**
Action 2.3 (from section B-2.1)	11.335 MWh/year	6.986 t CO2/year	**N/A**
	50 new charging stations for electric vehicles 1 set of incentives for purchasing and use of electric vehicles 5000 new beneficiaries of incentives 400 new electric (public and private) vehicles		**N/A**
Action 2.2 (from section B-2.1)	74.754 MWh/year	36.558 tons CO2/year	**N/A**
	100 % electric metropolitan public transport 65 (12 m and 6 m) electric busses 25 smart public transport stations 1 integrated e-ticketing system, fleet management system		**N/A**
Action 2.4	75.136 MWh/year	19.344,27 tons CO2/year	**N/A**

(from section B-2.1)	22 km of new dedicated lanes for public transport along the main boulevards – ” green wave” 1 smart system for public transport priority in intersection, CCTV system and traffic management	**N/A**

Waste	**31.190 MWh/year**		**9.304 t CO2/year**
Action 3.1 (from section B-2.1) Action 3.2 (from section B-2.1)	31.190 MWh/year	7.624 t CO2 / year	1.680 t CO2/year
	100 digitized eco-islands for the separate waste collection and facilities for recycling, including smart bins using photovoltaic panels for solar energy production 2 voluntary collection centres hazardous waste (including construction waste) circular economy concept in construction sector 100 new street-smart waste bins powered by solar energy 55 % recycled municipal waste 1 waste water treatment plant rehabilitated 68 km of sewerage network rehabilitated		

Industrial Process and Product Use (IPPU)	**N/A**	**N/A**	**N/A**
N/A	N/A	N/A	N/A
Agricultural, Forestry and Land Use (AFOLU)	**1.040 MWh/year**	**281 t CO2/year**	**N/A**
Action 4.1 (from section B-2.1)	1.040 MWh/year	281 t CO2/year	**N/A**
	140 hectares of green areas rehabilitated 5.000 new trees planted		**N/A**

A-1.4: GHG emissions by source sectors				
Base year	**2021**			
Unit	**t CO2/year**			
	Scope 1	Scope 2	Scope 3	**Total**
Buildings	116.107	33.540	N/A	**149.647**
Transport	83.248	1.516	N/A	**84.764**
Waste	13.763	N/A	1.158	**14.921**
Industrial Process and Product Use (IPPU)	9.488	29.043	N/A	**38.531**
Agricultural, Forestry and Land Use (AFOLU)	836	356	N/A	**1.192**
Total	**223.442**	**64.455**	**1.158**	**289.055**

A-1.5: Graphics and charts

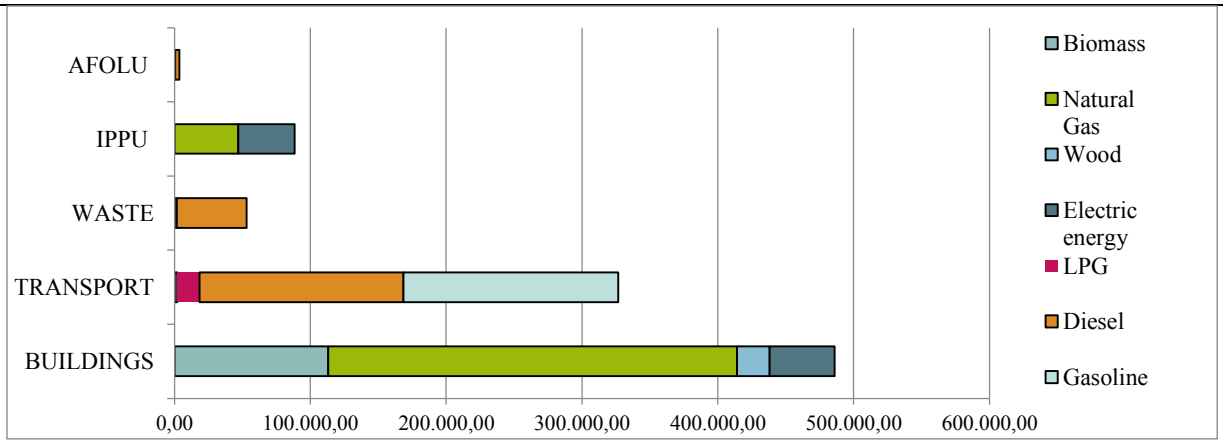


Figure no. 01 - Energy requirements 2021 (MWh/year)

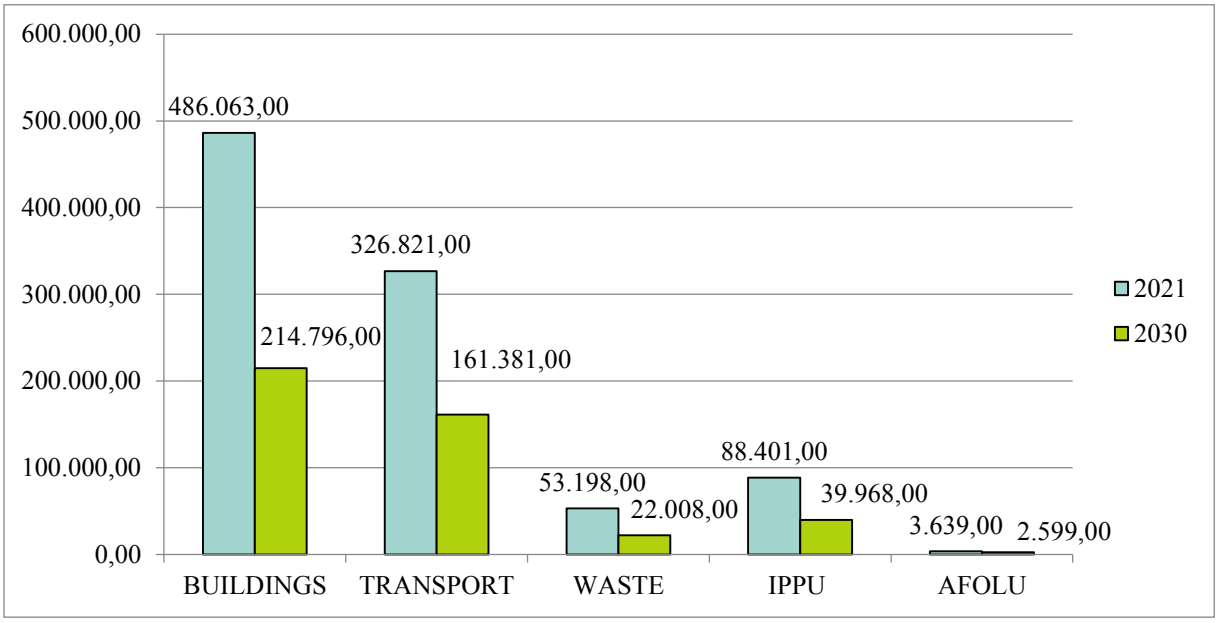


Figure no. 02 - Total energy reduction (removed/substituted) by field of action 2021 vs 2030

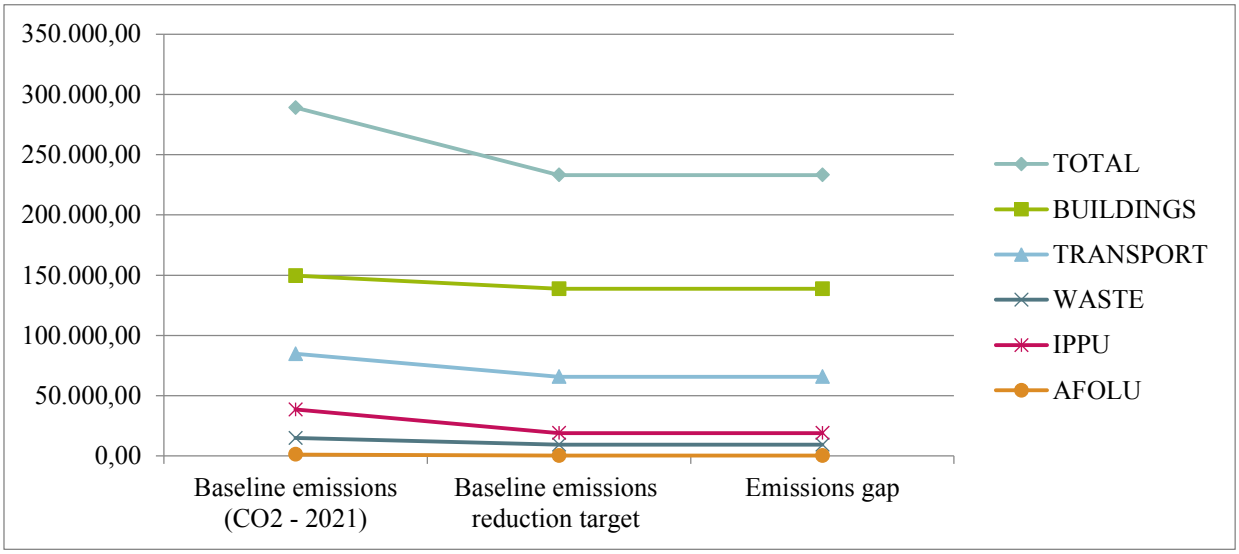


Figure no. 03 - CO2 (t) Reductions 2021-2030

	Baseline emissions	Baseline emissions reduction target	Emissions gap
TOTAL	**289.055**	**233.152**	**233.152**
BUILDINGS	149.647	138.740	138.740
TRANSPORT	84.764	65.809	65.809
WASTE	14.921	9.304	9.304
IPPU - Industrial Process and Product Use	38.531	19.018	19.018
AFOLU - Agricultural, Forestry and Land Use	1.192	281	281

Table no. 01 - CO2 (t) Reductions 2021-2030 (t/year)

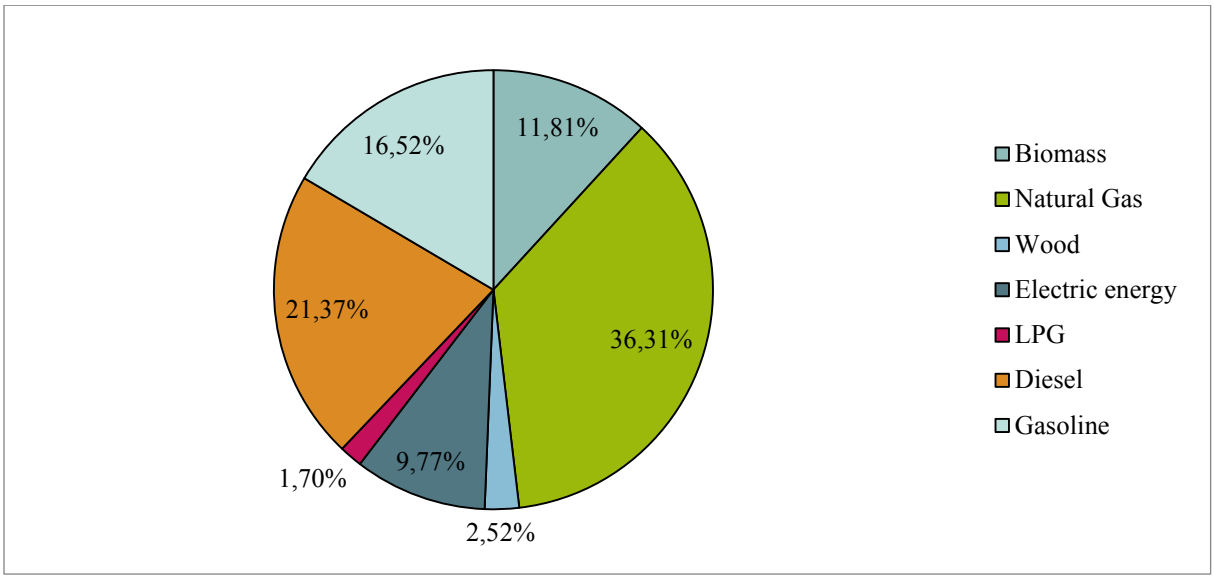


Figure no. 04 Suceava city energy profile 2021

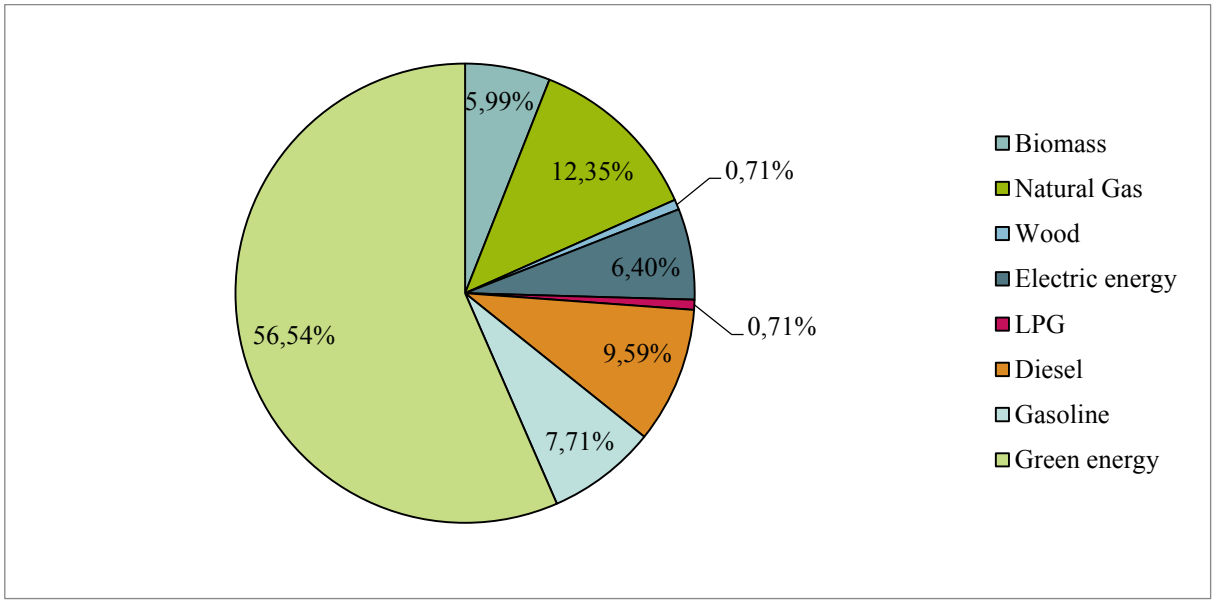


Figure no. 05 Suceava city energy profile 2030

A-1.6: Description and assessment of GHG baseline inventory

Sources of information for baseline inventory:

1.Suceava Sustainable Urban Mobility Plan (for Suceava urban functional area)

This strategic document provides information regarding mobility measures, general description of actions/initiatives (associated with estimation of CO2 emission reduction) but the information was of course connected mainly with transport sector. Other useful information was collected from different local public institutions, from National Institute of Statistics reports, public CCTV network periodic reports and from traffic studies performed into the city.

2.Suceava Integrated Urban Development Strategy (for Suceava urban functional area)

This strategic document provides information regarding local context, vision and list of proposed actions/initiatives/projects (associated with estimation of CO2 emission reduction) and the information were of course connected mainly with all sectors (building, energy, waste, transport)

3. Sustainable Energy and Climate Action Plan – Suceava city

This strategic document was used as a source of information and for the calculation methods. Even the baseline for the SECAP is 2019 during design phase for the Action Plan, updated information (energy consumption, modal split, fuel consumption) were collected from public institutions, private sector, energy production and distribution sector, energy and natural gas providers in order to upgrade the calculation for year 2021. Even the information was not included into a new version of SECAP the same methodology was used for calculation of energy used in different sectors and GHG emissions in all sectors.

For this reason, the SECAP was the main strategic document during the process of design the Action Plan. SECAP 2021- 2030 for Suceava city provides detailed information regarding energy demand calculation for different sectors (except industry and agriculture), takes into account estimations from the other strategic documents, provides detailed information on CO2 emissions calculation and what used methodology for different sectors in the city (except agriculture) and more important includes energy and CO2 estimations for 2030.

An important source of information was the existing technical documentation related to current (implementation phase) of future investment projects that are linked with energy efficiency and CO2 reduction like: rehabilitation and energy efficiency in public and residential buildings, electric metropolitan transport, photovoltaic parks, green areas, energy efficiency in schools, high schools, waste and water management. Same situation regarding sources of information is linked with the existing final technical reports for municipality's project that have already been implemented as:

- Rehabilitation and energy efficiency of public lighting
- Increase the energy efficiency for municipal and residential buildings
- Municipal electric vehicles (including pilot project for renewable energy production using photovoltaic panels) and charging stations
- Municipal 100 % electric public transport
- Smart and sustainable urban mobility projects

The technical documentations include energy audits and estimation for energy and emission reduction connected to different case studies and linked with constructed surface and for this reason we were able to have both baseline information and estimated values for energy consumption and CO2 emissions for the period of 2024 – 2030.

Information for other GHG, a part of CO2, were not available both on local and national level and for this reason future actions need to be undertaken by Suceava Municipality in partnership with Environmental Protection Agency and Suceava University in order to secure funding for pilot projects that will be able to provide database information, measurements and other details about GHG in general.

Even information/data related to all sectors included in the Action plan template were not available in local strategic documents (like SECAP) calculation have been made by using information available on the annual reports from the National Institute of Statistics and other technical and financial reports/paper works (for example there were no information in SECAP regarding AFOLU sector). In regards with all pollutants included in the section A1.2 there were consolation with experts from Environmental Protection Agency and searching for information in the periodic reports from local agency and national level (ministry). In the end, there were information only for CO2 and in the next period, Suceava Municipality and local stakeholders should address specific actions/measures/activities in order to create the infrastructure and local procedures for data collection related to other important GHG. In order to create formal conditions for more accurate and regular collection of data related

to energy consumption and GHG emissions Suceava Municipality rely on the results coming from the implementation of the project „**NetZeRoCities – National Centre for Competence and solutions for developing climatic neutral smart cities**" that started in 2023. The Centre of Competence is a secure and efficient structure capable of providing a sustainable, predictable and streamlined environment for the development of research, development and innovation activities with a focus on contributing to climate change and the digital transition. The Centre is conceived as an innovation hub, representing an indicator of excellence in research, development and innovation and acting as a support for cities in successfully accessing funding opportunities under the EU Climate Change Mission and in achieving the EU Climate Change Mission's objectives and key indicators.
Related future actions one of the most important activity in the next 10 years will be the monitoring of the proposed actions implementation and more important the evaluation of the impact and indicator's achievement after project implementation period.

2021 – BASELINE YEAR
The information and calculation made for the CO2 emissions related to the amount of energy consumption for each sector were done by using IPCC 2006 methodology and estimated values were done where that information were not available.
The baseline information for 2021 are:
CO2 emissions for 2021: 289.055 t CO2/year
Energy consumption for 2021: 958.112 MWh/year

Buildings - estimation made by using 2021 as a baseline year
Information related to the energy requirements of public buildings, residential buildings and tertiary buildings were not available in the SECAP (for the year 2021), but during design phase for the Action Plan, updated information (energy consumption, modal split, fuel consumption) the information were collected from public institutions, private sector, energy production and distribution sector, energy and natural gas providers in order to upgrade the calculation for year 2021. Even the information was not included into a new version of SECAP the same methodology was used for calculation of energy used in different sectors and GHG emissions in all sectors. CO2 emissions in tons/year were calculated by using the conversion factor and each type of energy in MWh/year. Regarding the calculation of the amount of electric energy consumption for building sector data were use from the local energy providers, the natural gas volume is linked with heating (but information was also available from the gas provider at local level), the amount connected to biomass comes from the private company that is operating the central heating power plant and wood is connected to house heating (main individual ones not collective apartments buildings).
● **486.063 MWh/year – total**
- Biomass: 113.116 MWh/year
- Natural gas: 300.966 MWh/year
- Wood: 24.134 MWh/year
- Electric energy: 47.847 MWh/year

● **149.647 tons CO2 emissions (51,77 % from total CO2 emissions)**
Transport sector - estimation made by using 2021 as a baseline year
The information linked with energy consumption for transport sector and amount of CO2 emissions were collected from the municipality annual reports (regarding charging station), reports from the local transport company (regarding consumption and emissions related to electric busses), traffic studies, traffic police reports, statistic reports and other strategic documents (SUMP) in connection with private transport sector and local modal split and calculation have been made with same methods used in SECAP.
● **326.821 MWh/year – total**
- LPG: 16.296 MWh/year
- Diesel: 150.103 MWh/year
- Gasoline: 158.259 MWh/year
- Electric energy: 2.163 MWh/year

● **84.764 tons CO2 emissions (29,32 % from total CO2 emissions)**

Waste sector - estimated at 5% from total CO2 emissions

The information for energy consumption and emissions coming from waste sector were, partially available from the municipal waste operator and form annual statistic reports. Beside this when calculation has been done for Action Plan we chose to estimate that these are 5% from the total city's emissions. This amount was established by taking into account available scientific documents (as Science Direct.com). Also the assumption was that the 5 % percentage will be set also for 2030.

● 53.198 MWh/year – total

- Diesel: 51.546 MWh/year
- Electric energy: 1.652 MWh/year

● 14.291 tons CO2 emissions (5,16 % from total CO2 emissions)

Industrial Process and Product Use - estimated at 13,3% of total CO2 emissions

The percentage was determined after the consultation of local strategic documents and information available from the National Institute so Statistics and in the same way the percent for electric energy was established at 70 % and for natural gas at 30 %.

As related to the economic sector Suceava has the following distribution:

Activity sector	Share(%)
Agriculture, forestry and related services	1.42
Commerce	38.10
Construction	7.78
Heavy industry (metallurgical industry, chemical industry, metal construction industry, etc.)	0.34
Light industry (food, textile, furniture and woodworking, etc.)	0.19
Education, health and social work	3.52
Production and supply of electricity and heat, gas and water, water capture, treatment and distribution	2.75
Recovery and disposal of waste and sewage	5.37
Services	38.90
Tourism services	1.64

● 88.401 MWh/year – total

- Natural gas: 46.970 MWh/year
- Electrical energy: 41.431 MWh/year

● 38.531 t CO2 emissions/year (13,3 % from total CO2 emissions)

Agriculture, Forestry and Land Use - estimated at 0,4 % of total CO2 emissions

For this sector we consider that the energy consumption and CO2 emissions can be estimated at 0,4 % from the total city's emissions, according to available data coming mainly from the National Institute of Statistics but also from other technical and financial reports/paper works. This percent is divided as: 70% for Diesel and 30% for energy. The Agriculture sector is less present in the city of Suceava and in this case maintenance costs for public park and green areas were taken into consideration.

● 3.639 MWh/year – total

- Diesel: 3.131 MWh/year
- Electric energy: 508 MWh/year

● 1.192 t CO2 emissions (0,41 % from total CO2 emissions)

2030 – SUCEAVA" GREEN" CITY

Suceava is to become a green city in 2030 with full electric public transport (including metropolitan area), sustainable and efficient public transport (separate lanes for PT, priority in intersection, incentives for PT passengers), alternative mobility (with facilities for electric vehicles), entire municipal (public buildings, electric public transport, public lighting, educational units) electric energy consumption provided from renewable sources (solar), recycling facilities for municipal waste, circular economy, energy efficiency in all municipal buildings and at least 50 % of residential ones, green areas and SMART innovative technologies for a better quality of life into the city.

The specific objectives of the SECAP (that have been considered for the Action Plan also) are the following:

- Increasing the energy performance of public buildings in order to improve thermal comfort and reduce greenhouse gas emissions;
- Increasing the energy efficiency of the public heating system in order to comply with environmental standards on atmospheric emissions;
- Sustainable energy development of Suceava city in order to increase energy efficiency, efficient use of resources, increase the share of renewable resources and protect the external environment.
- Increasing the energy efficiency of the public lighting system in order to reduce CO_2 pollutant emissions, increase traffic safety, reduce costs and increase the service life of the system;
- Improving public transport in Suceava in order to ensure a safer and more efficient urban transport;
- Sustainable urban development of Suceava city in order to increase the quality of life at local level

The targets (estimated in accordance with the actions included in the Action plan) for CO2 emissions and energy consumption (related to 2030) are:

1. **CO2 emissions 2030: 57.811 t CO2/year (at least 80% less than 2021)**
2. **Energy consumption 2030: 1.006.018 MWh/year (5% more than 2021)**

According to the information that have been included in the SECAP 2021 – 2030 the levels for energy consumption reduction and reduction of GHG emissions, for the sectors analysed in the strategic document, are:

2030 Buildings sector

The application of the proposed (SECAP) measures for the building fund in Suceava Municipality will have an important impact on the greenhouse gas emissions related to the energy consumption of the buildings in the analysed contour. Compared to 2019, the potential for reducing greenhouse gas emissions in buildings, equipment and utilities is 8,9%.

Total Buildings		
Reference energy consumption year 2015	MWh / year	852.131
Energy consumption in 2019	MWh / year	621.476
Potential reduction in energy consumption	MWh / year	230.655
Reference greenhouse gas emissions year 2015	tons of CO2 / year	138.058
Greenhouse gas emissions year 2019	tons of CO2 / year	100.645
Potential reduction in greenhouse gas emissions	tons of CO2 / year	37.413
Estimated costs for implementing the measures	Thousands of Ron	436.300

In the sector of local thermal energy production, a reduction of energy losses of 63.048 MWh / year is estimated, corroborated with a reduction of greenhouse gas emissions at a level of 12.736 tons of CO_2 / year, compared to 2019.

According to the calculation related to actions proposed to be implemented in the Action Plan, for buildings sector the estimation reduction is:

271.267 MWh/year - energy removed/substituted

138.740 t CO 2 / year

2030 Transport sector: The application of the proposed (SECAP) measures for the transport sector in Suceava Municipality will have a major impact on the greenhouse gas emissions related to energy consumption in the

analysed contour. Compared to 2019, the potential for reducing greenhouse gas emissions in the transport sector is 26,6%.

Total transports		
Reference energy consumption year 2015	MWh / year	291.988
Energy consumption in 2019	MWh / year	310.559
Potential reduction in energy consumption	MWh / year	88.966
Reference greenhouse gas emissions year 2015	tons of CO2 / year	74.898
Greenhouse gas emissions year 2019	tons of CO2 / year	79.650
Potential reduction in greenhouse gas emissions	tons of CO2 / year	21.187
Estimated costs for implementing the measures	Thousands of Ron	122.700

According to the calculation related to actions proposed to be implemented in the Action Plan, for transport sector the estimation reduction is:
165.440 MWh/year - energy removed/substituted
65.808,77 t CO 2 / year

2030 Waste sector - estimated at 5% from total CO2 emissions
For waste management, a reduction in energy consumption of 1.300 MWh / year is estimated, coupled with a reduction in greenhouse gas emissions to a level of 344 tons of CO2 / year, compared to 2019.

Waste management		
Natural gas consumption reference year 2015	MWh / year	5.361
Natural gas consumption in 2019	MWh / year	6.661
Potential to reduce energy losses	MWh / year	1.300
Greenhouse gas emissions reference year 2015	tons of CO2 / year	1.437
Greenhouse gas emissions year 2019	tons of CO2 / year	1.777
Potential reduction in greenhouse gas emissions	tons of CO2 / year	344
Estimated costs for implementing the measures	Thousands of Ron	75.000

According to the calculation related to actions proposed to be implemented in the Action Plan, for waste sector the estimation reduction is:
31.190 MWh/year - energy removed/substituted
9.304 t CO 2 / year

2030 - Industrial Process and Product Use
Even this sector was not considered and analysed at large scale in SECAP, there are some information related to local private utilities providers, as mentioned in the strategic document like:
For drinking water, sewerage and sanitation, a reduction in energy consumption of 1.834 MWh / year is estimated, coupled with a reduction in greenhouse gas emissions to a level of 486 tons of CO_2 / year, compared to 2019.

Drinking water, sewerage and sanitation		
Natural gas consumption reference year 2015	MWh / year	15.006

Natural gas consumption in 2019	MWh / year	18.340
Potential to reduce energy losses	MWh / year	3.335
Greenhouse gas emissions reference year 2015	tons of CO2 / year	398
Greenhouse gas emissions year 2019	tons of CO2 / year	486
Potential reduction in greenhouse gas emissions	tons of CO2 / year	88
Estimated costs for implementing the measures	Thousands of Ron	220.000

No specific information was available in the SECAP, but estimations were made for this sector taking into consideration electric energy and natural gas estimated consumption compared with 2021.
Even there are no specific actions in the Action Plan related to IPPU sector (apart of the ones included into 6.1 action from section B 2.2) the municipality will work together with private entities in our local ambition to achieve more environmentally friendly production processes, will encourage the private sector to replicate similar actions like:
production of alternative" green" energy, increase energy efficiency, reduce GHG emissions and will also design and implement local regulation in order to assist the private sector to use much more" green energy" in their production processes.
The estimation reduction is:
48.433 MWh/year - energy removed/substituted
19.018 t CO 2 / year

2030 - Agriculture, Forestry and Land Use
According to the calculation related to actions proposed to be implemented in the Action Plan, for Agriculture, Forestry and Land Use sector the estimation reduction are:
1.040 MWh/year - energy removed/substituted
289 t CO 2 / year

3.2 Module A-2 Current Policies and Strategies Assessment

Module A-2 "Current Policies and Strategies" should list relevant policies, strategies, initiatives, or regulation from local, regional, and national level, relevant to the city's climate neutrality transition.

A-2.1: List of relevant policies, strategies & regulations					
Type	Level	Name & Title	Description	Relevance	Need for action
(regulation/ policy/ strategy/ action plan	(Local, regional, national, EU)	(Name of policy/ strategy/ plans)	(Description of policy/ strategy/ plans)	(Describe relevance/ impact on climate neutrality ambition)	(List any suggested action in relation – to be further picked in Module C-1)

Policy	National	Romania Urban Policy	The first Urban Policy of Romania was adopted in 2021, with four major objective (green, resilient, inclusive, and well governed cities).	The second priority of the RUP is "Creating liveable and climate-smart cities, by developing green-blue infrastructure to mitigate and adapt to urban risks". The RUP includes measures linked to reducing air pollution and sustainable urban mobility.	All interventions planned are aligned with the objectives and priorities of the Urban Policy, particularly focusing on the development of Suceava Urban Functional Area.
Strategy	National	The National Integrated Plan for Energy and Climate Change 2021 – 2030	The National Plan for Energy and Climate Change was adopted in 2019 and was elaborated in accordance with the EU energy policy framework with specific and well defined objectives.	According to the Plan, Romania aims to increase its share of energy from renewable sources in the total energy consumption by 2030 by increasing the installed capacity of wind and photovoltaic plants (additional capacities of 6,9 MW from renewable energy).	Suceava is one of the three urban authorities which have joined the 100 Cities Mission and it is aligned with the objectives of the NPECC in terms of reducing GHG emissions and increasing the energy efficiency in cities.
Strategy	Regional	North - East Regional Development Plan 2021 – 2027	This strategic document will be the guideline for ERDF funding related to projects proposed in the Investment Plan. The Plan is identifying the main challenges, including the following: the regional and Urban - rural disparities are significant, the energy efficiency of buildings is low (with a particular focus on urban areas), urban areas require measures to extend green infrastructure, develop sustainable urban mobility.	Priority 3: A region with environmentally friendly approach Priority 4: A region with sustainable mobility. Priority 5: An accessible region	The projects included in the Action and Investment Plan are according with the priorities mentioned in the North - East strategic document.
Policy	Local	Green Transport for a Green City	The" green transport" policy was implemented at local level. Since early 2022, public transport is	Suceava was the first city with electric busses for public transport and now is the only Romanian city with 100 % electric public	The Green Transport Policy will be continued as a major contributor to the net zero objective. Further approaches

			100 % electric and the Municipality is currently implementing projects in order to extend the ”green public transport” concept to metropolitan area.	transport. The Municipality also implements the Green Friday project, that offers residents access to free public transport each last Friday of the month. In addition, Suceava was the first city with a municipal electric fleet, with more than 50 charging station for electric vehicles, 10 electric municipal bikes, incentives (as free charging and free parking for residents using an electric vehicle).	to encourage the use of public transport, extend the electric public transport to entire metropolitan area, and encouraging using the electric vehicles, 50 new charging stations for electric vehicles including urban planning regulations that encourage the development of private charging stations.
Policy	Local	Suceava - Green City	The Green City Policy implies the rehabilitation of 140 ha of green public areas, planting 5.000 new trees and creating green corridors along the main streets and boulevards in the city.	Implementing the Green City Policy is directly linked with the Climate-Neutral and Smart Cities Mission Action Plan, through the creation of carbon sinks, as well as an extended air, soil and water quality monitoring system.	The Green City Policy will be expanded in order to include measures related to green roofs and facades.
Action Plan	Local	Sustainable Energy and Climate Action Plan 2021-2030 (SECAP)	The SECAP is a strategic document targeting the reduction of GHG emissions, elaborated according to the methodology of the Covenant of Mayors on Climate and Energy.	SECAP identifies stationary energy and transport as the main sectors responsible for GHG emissions. The plan highlights that buildings are responsible for 51,7% of total emissions, while transport is responsible for 29,32%. Therefore, the action plan addresses stationary energy with priority. The SECAP includes a target of reducing the emissions by 55 % by 2030(compared to 2019).	Considering the high emissions from residential buildings, measures to accelerate interventions for energy efficiency are required. To this end, a comprehensive climate-neutrality masterplan for dense multi-apartment neighbourhoods and suburbs will be developed, to allow for scalability at the metropolitan level.
Strategy	Local	Integrated Urban Development Strategy for Suceava	The strategic document covers the level of the Urban functional area and includes	Specific Objective no. 3 Carbon neutral, green and resilient city aims to ensure an environmentally	The strategic document offers the strategic guidelines for becoming a climate

		Urban Functional Area 2021 – 2030	initiatives related to transition to climate neutrality	friendly development of the Municipality and its functional area so that GHG emissions are reduced by 50% by 2030, through the following investment priorities: Priority 3.1: Increasing energy performance at the level of collective housing complexes; Priority 3.2: Increasing energy performance in public buildings and public lighting systems; Investment Priority. Priority 3.3: Investments in the central heating system, renewable energy supply infrastructure and natural gas.	neutral at the urban functional area level
Strategy	Local	Sustainable Urban Mobility Plan for Suceava Urban Functional Area	The document was developed for Suceava Urban Functional Area and it is focuses on reducing carbon emissions, promoting green/alternative means of transport, sustainable mobility and increasing quality of life	The SUMP includes interventions on the road infrastructure, public transport, freight transport, alternative mobility, traffic management, alternative ways of traveling, promotion of cycling and walking. The main project is the one concerning metropolitan system of public transport (operated with 100 % electric busses), project that is currently into the implementation of first phase. This will create facilities for increasing the number of PT passengers in the urban functional area and reduce GHG emissions.	As the transport sector is the second source of CO2 emissions in Suceava, the Suceava team will focusses on implementation of the actions included in SUMP as for the first time the strategic document is covering the urban functional area (two cities and 8 villages).
Strategy	Local	District	The main objective	The Strategy aims at	The main

		Heating Strategy Suceava 2020-2030	of Strategy is to identify solutions for increasing the energy efficiency of the central heating system, in order to encourage using the centralized heating system (as Suceava is the only city in Romania having a city plans using only biomass).	reducing GHG emissions from the central transport and distribution heating system with 35% by 2030.	intervention is to be done in rehabilitation and increase energy efficiency of the transport and distribution network (more than 255 km), modernize and digitalize of thermal points.

A-2.2: Description & assessment of policies

1.General consideration: Suceava Municipality has the strategic documents recently updated (IUDS, SUMP, SECAP, Clean Transport Plan, City Heating Strategy). The General Urban Plan was also updated in 2023.

All these current policies are sufficient to support Suceava Municipality meeting its targets for climate neutrality.

These strategic documents include activities, policies, actions and projects that are focus on climate change challenges, improve the quality of life, sustainable mobility, increase of energy efficiency, reduction of energy consumption and GHG emissions, alternative ways of travelling, production of energy from renewable sources.

All current policies and local strategies are referring to specific chapters/domains/field of actions/project ideas included in the Action Plan, with specific actions, ideas, outcomes, investments. One of the most important aspect is that **these local strategic documents and policies were designed in cooperation with relevant local stakeholders,** were approved by the local decision makers and are the local background that allows the municipality to secure funding for projects implementation and more relevant are the framework (with specific technic, economic, social and environmental information) for the local sustainable development and the roadmap to climate neutrality. These strategic documents include activities, policies, actions and projects that are focused on climate change challenges, improve the quality of life, sustainable mobility, increase of energy efficiency, reduction of energy consumption and GHG emissions, alternative ways of travelling, production of energy from renewable sources. But more important, **these strategic documents include also specific references to available and suitable funding opportunities for each action/project mentioned in the documents**.

2.Strategies and Policies:

Romania Urban Policy – National Policy

The **Romanian Urban Policy** was adopted in 2021 and includes four major objectives (green & resilient, just & inclusive, competitive & productive & well-governed cities).

The second priority of the strategic document is "Creating liveable and climate-smart cities, by developing green-blue infrastructure to mitigate and adapt to urban risks". The policy includes measures linked to reducing of air pollution and sustainable urban mobility.

All interventions planned are aligned with the objectives and priorities of the Urban Policy, particularly focusing on the development of Suceava Urban Functional Area.

The National Integrated Plan for Energy and Climate Change 2021 – 2030 (NIPECC) – National Plan

The National Plan for Energy and Climate Change was adopted in 2019 and was elaborated in accordance with the EU energy policy framework, detailing the main objectives.

According to the Plan, Romania aims to increase its share of energy from renewable sources in the total energy consumption by 2030 by increasing the installed capacity of wind and photovoltaic plants. Suceava is one of the three urban authorities, which have joined the 100 Cities Mission, and it is aligned with the objectives of the NIPECC in terms of reducing GHG emissions.

North - East Regional Development Plan 2021 – 2027 – Regional Plan

This strategic documents will be the guideline for ERDF funding related to projects proposed in the Investment Plan. The Plan is identifying the main challenges, including the following: the regional and urban-rural disparities are significant, the energy efficiency of buildings is low (with a particular focus on urban areas), urban

areas require measures to extend green infrastructure, develop sustainable urban mobility,
Strategic Priority 3: A region with environmentally friendly approach – energy efficiency in public and private buildings, green infrastructure, production of energy from renewable sources
Strategic Priority 4: A region with sustainable multimodal urban mobility- transition to a zero emissions transport
Strategic Priority 5: An accessible region
The projects included in the Action and Investment Plan are according with the priorities mentioned in the North-East strategic document.

Green Transport for a Green City – Local Policy

The "green transport" policy was promoted at local level. Since early 2022 public transport is 100 % electric and the Municipality is currently implementing projects in order to extend the "green public transport" concept to metropolitan/functional area. Suceava was the first city with electric busses for public transport and now is the only Romanian city with 100 % electric public transport.
The Municipality also implements the Green Fridays project, which offers citizens access to free public transport each first Friday of the month.
Also Suceava was the first city with a municipal electric fleet, with more than 44 charging station for electric vehicles, 10 electric municipal bikes, incentives (as free charging and free parking for residents using an electric vehicle). The Green Transport Policy will be continued as a major contributor to the net zero objective. Further approaches to encourage the use of public transport, extend the electric public transport to entire metropolitan area, incentives for purchase and use of electric vehicles, 50 new charging stations for electric vehicles including urban planning regulations that encourage the development of private charging stations.

Suceava - Green City – Local Policy

The Green City Policy aims are the rehabilitation of 140 ha of green public areas, planting 5.000 new trees and creating green corridors along the main streets and boulevards in the city.
Implementing the Green City Policy is directly linked with the Climate-Neutral and Smart Cities Mission Action Plan, through the creation of carbon sinks, as well as an extended air, soil and water quality monitoring system. The Green City Policy will be expanded in order to include measures related to green roofs and facades.

Sustainable Energy and Climate Action Plan 2021-2030 (SECAP) – Local Action Plan

The SECAP is a strategic document targeting the reduction of GHG emissions, elaborated according to the methodology of the Covenant of Mayors on Climate and Energy. The SECAP identifies stationary energy and transport as the main sectors responsible for GHG emissions.
Most significantly, the plan highlights that buildings account for approx. 52 % of total emissions (particularly residential), while transport is responsible for approx. 30%. Therefore, the action plan addresses stationary energy with priority. Considering the high emissions from residential buildings, measures to accelerate interventions for energy efficiency are required.

Integrated Urban Development Strategy for Suceava Urban Functional Area 2021 – 2030 – Local Strategy

The strategic document covers the level of the Urban Functional Area (two cities and 8 villages from the metropolitan area) and includes initiatives related to transition to climate neutrality:
Specific Objective no. 3 - Carbon neutral, green and resilient city aims to ensure an environmentally friendly development of the Municipality and its urban functional area so that GHG missions are reduced by 50% by 2030, through the following priorities:
Priority 3.1: Increasing energy performance at the level of collective housing complexes;
Priority 3.2: Increasing energy performance in public buildings and public lighting systems;
Priority 3.3: Investments in the central heating system and renewable energy supply infrastructure
The strategic document offers the strategic guidelines for becoming a climate neutral at the urban functional area level.

Sustainable Urban Mobility Plan for Suceava Urban Functional Area – Local Strategy

The document was developed for Suceava Urban Functional Area and it is focuses on reducing carbon emissions, promoting green/alternative means of transport, sustainable mobility and increasing quality of life.
The SUMP includes interventions on the road infrastructure, public transport, freight transport, alternative mobility, traffic management, alternative ways of traveling, promotion of cycling and walking.
The main project is the one concerning metropolitan system of public transport (operated with 100 % electric busses), project that is currently into the implementation of first phase. This will create facilities for increasing

the number of PT passengers in the urban functional area and reduce GHG emissions.
As the transport sector is the second source of CO2 emissions in Suceava, the Suceava team will focusses on implementation of the actions included in SUMP as for the first time the strategic document is covering the urban functional area (two cities and 7 villages).

City Heating Strategy Suceava 2020-2030 – Local Strategy

The main objective of Strategy is to identify technical and financing solutions for increasing the energy efficiency of the central heating system, in order to encourage using the centralized heating system (as Suceava is the only city in Romania having a city heating plans using only biomass).
The main intervention is to be done in rehabilitation and increase energy efficiency of the transport and distribution network (more than 255 km), modernize and digitalize of thermal points.

3.Action Plan

The goals included in the Climate City Contract are covering (in an integrated vision and overall approach) the entire goals and ideas included in the already local approved strategic documents (local development strategy, sustainable urban mobility plan, sustainable energy action plan) as the Action Plan is acting like an ”umbrella strategic document”, for the entire city territory with a strategic, sustainable approach aimed at achieving objectives that determine the reduction of greenhouse gas emissions mainly (and as a tangible result from implementation of the actions) but more important with a direct effect on local economic development, improving the quality of life, creating strategic partnerships between local stakeholders and local administration and direct benefits for each single citizen (with connections to public transport, smart mobility, energy efficiency, heating, alternative energy and waste recycling), for public administration in relationship with common initiatives with academic and private sector for research, innovation and sustainable projects/actions and for any other local stakeholder included in the local Net Zero Coalition. .

But the Action Plan includes specific and integrated actions/projects and targets related to GHG emission reduction , with detailed technical documentation , financial information, implementation costs , milestones, indicators, results, stakeholders involved in implementation phase , actions that are additional that the ones already identified in existing strategic documents and that have been proposed as a result of the CCC process and are entirely responsible for the emission reduction targets assumed by Suceava Municipality in its pathway to achieve climate neutrality .

A-2.3: Emissions gap

	Baseline emissions		**Residual emissions / offestting[1]**		**Baseline emissions reduction target[2]**		**Emissions reductions in existing strategies[3]**		**Emissions gap (to be addressed by action plan)[4]**	
	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)	(absolute)	(%)
Buildings	149.647,00	51,77	10.907,00	19,51	**138.740,00**	**59,51**			138.740,00	59,50
Transport	84.764,00	29,32	18.955,00	33,91	**65.809,00**	**28,23**			65.809,00	28,22
Waste	14.921,00	5,16	5.617,00	10,05	**9.304,00**	**3,99**			9.304,00	3,99
Industrial Process and Product Use (IPPU)	38.531,00	13,33	19.513,00	34,91	**19.018,00**	**8,16**			19.018,00	8,15
Agricultural, Forestry and Land Use (AFOLU)	1.192,00	0,41	911,00	1,63	**281,00**	**0,12**			281,00	0,12
Total	**289.055,00**	**100**	**55.903,00**	**19,34**	**233.152**	**80,66**			233.152	**80,66**

[1] Residual emission represents the emissions that cannot be reduced through climate action and are being offset. Residual emission may amount to a maximum of 20 % of all emissions, as stated in the Mission Info Kit.
[2] Baseline reduction target = Baseline emissions – residual emissions.
[3] Emission reductions planned for in existing action planning and strategies should be quantified per sector.
[4] Emissions gap = Baseline emission reduction target – Emissions reduction in existing scenarios.

Sector	Baseline Emissions (Base Year: 2021)			Sectorial Macro-Actions			Emission Reduction due to Action Plans			Residual Emissions (Reference Year: 2030)		
	Absolute Value (t/y)	Share on the Total Baseline (%)	Per Unit Value (p.u.)	Code	Description	Overall Emissions Reductions (t/y)	Absolute Value (t/y)	Share on the Total Actions (%)	Per Unit Emisions w.r.t BY (p.u.)	Absolute Value (t/y)	Share on the Residual Emissions (%)	Per Unit Emisions w.r.t BY (p.u.)
Buildings				1.1.	Rehabilitation of municipal transport and distribution heating system	21.133,00						
				1.2.	Photovoltaic parks (including alternative system for production of hydrogen).	29.210,00						
				1.3.	Intelligent and efficient municipal public lighting	1.704,00						
				5.1.	Increasing energy efficiency of residential buildings to reduce GHG emissions and increase the quality of life of residents (including HEMS)	31.112,00						
				5.2.	Modernization of public institutions' buildings through refurbishment and increased energy efficiency	7.230,00						
				6.1.	Improved local urban regulations and policies for achieving climate neutrality	48.351,00						
Total	**149.647,00**	**51,77%**	**1,00**			**138.740,00**	**138.740,00**	**59,51%**	**0,93**	**10.907,00**	**19,51%**	**0,07**
Mobility & transport				2.1.	Extension of cycling facilities	2.920,00						
				2.2.	Integrated green (100 % electric) metropolitan public transport system	36.559,00						
				2.3.	Expansion of the public and private fleet of electric vehicles and installation of at least 50 charging stations by 2028	6.986,00						
				2.4.	Integrated urban mobility system and priority for public transport ("green wave")	19.344,00						
Total	**84.764,00**	**29,32%**	**1,00**			**65.809,00**	**65.809,00**	**28,23%**	**0,78**	**18.955,00**	**33,91%**	**0,22**
Waste				3.1.	Use of recyclable materials for local production of construction elements in the circular economy	7.624,00						
				3.2.	Rehabilitation of wastewater collectors, sewerage networks and rehabilitation and upgrading of Suceava wastewater treatment plant	1.680,00						
Total	**14.921,00**	**5,16%**	**1,00**			**9.304,00**	**9.304,00**	**3,99%**	**0,62**	**5.617,00**	**10,05%**	**0,38**
IPPU					Industrial Process and Product Use	19.018,00						
Total	**38.531,00**	**13,33%**	**1,00**			**19.018,00**	**19.018,00**	**8,16%**	**0,49**	**19.513,00**	**34,91%**	**0,51**
AFOLU				4.1.	Development of new green areas and planting green curtains (major roads area)	281,00						
Total	**1.192,00**	**0,41%**	**1,00**			**281,00**	**281,00**	**0,12%**	**0,24**	**911,00**	**1,63%**	**0,76**
TOTAL	**289.055,00**	**100,00%**	**1,00**			**233.152,00**	**233.152,00**	**100,00%**	**0,81**	**55.903,00**	**100,00%**	**0,19**

3.3 Module A-3 Systemic Barriers and Opportunities to 2030 Climate Neutrality

Module A-3 "Systemic Barriers and Opportunities to 2030 Climate Neutrality" should document the results of the stakeholder, systems and ecosystem mapping and identification of systemic barriers and opportunities.

A-3.1: Systems & stakeholder mapping				
(Fill out according to Action Plan Guidance and Explanations)				
System description	Stakeholders involved	Network	Influence	Interest
Infrastructure	**Suceava Local Council**	**Public Institution**	Suceava Municipality is a public administration institution responsible for local infrastructure, heating, public lighting, public transport, culture, public spaces, green areas, social activities, education, utilities. But Suceava Local Council is the decision maker's most important actor and each single initiative of the local public authority (Suceava Municipality) needs to be approved on technical, legal and financial aspect by the Local Council. In the past 15 years the Local Council was partner in many investment projects in the field of energy efficiency (public and private buildings), alternative heating production (biomass), rehabilitation of public lighting (LED systems), education buildings, public transport (100 % electric fleet), alternative vehicles (electric municipal fleet, charging stations for EV's – with incentives for charging also for private owners), traffic management, cycling lanes, electric bicycles and scooters, rehabilitation of central heating system, separate waste collection and recycling system, rehabilitation of the water and sewage system, green areas, rehabilitation of pedestrian (low emission zone) and road infrastructure, city ring.	The Suceava Local Council is considering to be the most relevant strategic dialogue partner for Suceava Municipality and will be invited to take active part in the decision and implementation stage of the activities included in the Action Plan.
Infrastructure	**TPL SA – Local and Metropolitan public transport operator**	**Public service – transport**	As being the local public transport operator and is preparing to become a metropolitan one from second part of 2024 the company was the main partner for Suceava municipality in the field of climate neutral mobility, running with 62 full electric busses (since 2022), with a smart, modern and efficient e –ticketing system in place, with facilities for elderly and disable people, incentives for students all	SUMP includes specific objectives for public transport and mobility and the next steps in the field of sustainable public transport is to extend the electric fleet (with more than 65 buses from 2024), extend the area of operation to metropolitan area (from 2024), improve the PT efficiency (separate bus lanes, traffic lights priority) and

			these with the main goal of making public transport more attractive, efficient and affordable for all citizens.	investments in alternative sources of production for electric energy (solar) with the main goal to cover the entire need for energy (related to public transport) from renewable sources.
Infrastructure	**Thermonet SA – local heating operator**	**Public service- central heating distribution**	As central heating in Suceava is still an industrial sector with significant environmental, efficiency and smart management issues the company is an important partner for local authorities in the field of the objectives included in the Suceava Heating Local Strategy, that is concerning private and public buildings and also the central heating transport and distribution network.	The main domains include: reduce the losses from the transport and distribution system, improve the efficiency, reduce the negative impact against environment, reduce the energy consumption and GHG emissions by implementing infrastructure projects (distribution network and digitalization of thermal points) and soft measures like: HEMS and awareness raising campaigns.
Infrastructure	**ACET SA – regional water and sewage operator**	**Public service – water and sewage**	As a regional water and sewage services provider the local operator has been an important partner for the municipality in the past 15 years, with common initiatives/investments in the field of rehabilitation of the waste water city plant, rehabilitation, modernization and extension of water and sewage network with the main objective as reducing the negative impact against environment.	The main objectives are related to efficient and sustainable water management (taking into consideration the huge impact of climate changes on water resources), reduce of losses into transport and distribution networks, increase the quality of efficiency of the sewage sector (including investments in modernization of the waste water treatment plant) with direct impact of the quality of life improvement and reducing the negative impact against nature and recently, as part of the Suceava Action Plan, investments in modern, efficient and ecological friendly solution for production of alternative energy necessarily for own consumption.
Infrastructure	**DIASIL & RITMIC SRL – municipal waste operator**	**Public service – waste**	In the past 5 years the local waste operator has been able to implement an efficient, sustainable and secure waste management, with facilities for separate waste collection (glass, paper, plastic), with facilities for processing and recycling the waste collected from Suceava city. Lately the company	Working together with the municipality the local waste operator main objective is to increase the percentage separate waste collection, recycling facilities with direct impact on the reduction of pollution, emissions and

			has been involved in recycling of construction materials and waste coming from construction sites and thus they are important actor on local level in the domain of circular economy practices.	increase the quality of life.
Capabilities	**Stefan cel Mare University Suceava**	**Academic and RDI**	The Stefan cel Mare University in Suceava has more than 11.000 students, it is the second largest university in the North East Region, it is an advanced research, innovation and education university, with an higher education level and its achievements in the field of innovation and research is recognized both on national and European level. The main domain for research activities are: information technology and communications, renewable energies, nanomaterials, robotics, mechatronics, electrical engineering.	The University is one of the main partner for Suceava Municipality in its effort for implementation of investments that create the local condition for climate neutrality. The University is one of the main partners in project „**NetZeRoCities – National Centre** for **Competence and solutions for developing climatic neutral smart cities**" and offers support for local initiatives in the field of climate neutrality, research, transfer of best practice initiatives and knowledge.
Process	**Owners associations**	**Civil society**	These associations are representing the interest of all the private owners of apartment located in common residential buildings. They work closely with the local supplier for utilities (water, gas, electricity, heating) and they facilitate the communication between municipality and the citizens thus they are a very important link for local investments in energy efficiency and "green" buildings.	There are periodic and constant consultation between local public administration and the owner's associations and the main purpose is the increase the quality of life, convince the citizens to cooperate with local authorities in projects concerning reduction of energy consumption and GHG emissions but also encouraging them (citizens) to implement private initiatives in these domains.
Association	**Suceava Association for Development and Investment – Transport**	**Association of cities/villages**	The association (two cities and 7 villages from Suceava metropolitan area) has as its main objective to implement the sustainable and ecological integrated public transport system for the functional area Suceava with facilities for electric vehicles also. This means that the public transport in Suceava functional area will be (from 2024) 100 % electric. Beside this, the association (city ring, photovoltaic parks) will	The main objective is to extend the beneficial effects of the climate neutrality interventions in the functional area and replicating as many types of interventions / projects / in initiatives as possible. This way the strategic documents (SUMP, IUDS) were designed for the entire surface covered by the functional area with objectives

			implement other common projects so this body is important for dissemination, outreach, awareness raising, project's replication and communication about climate neutrality with targets as: public administrations, private companies and citizens.	and intervention for each single local authority.
Finance	**North-East Regional Development Agency**	**Regional NGO**	The North-East Regional Development Agency was established as an NGO of public utility, responsible to financing the projects connected to regional development and in charge of Regional Operational Program for the North - East region, including non-reimbursable funds for projects implementation. One of the main priorities for Regional Programme 2021 – 2027 is investments in energy efficiency projects with a direct result of reduction of energy consumption and GHG emissions for future environmentally friendly local communities.	Regional Plan is the main source of financing projects that target climate neutrality (sustainable urban mobility, thermal rehabilitation of public and residential buildings, urban regeneration, green areas, alternative vehicles and public transport). Funds are allocated for each major city in the region and Suceava has an amount of 63.000.000 euro for project's implementation.
Finance	**Central Govern (Ministry of Energy, Ministry of Development, Public Works and Administration**	**Public (national) institution**	The Central Govern is responsible for implementation and financing of actions included into National Recovery and Resilience Plan 2022 – 2030. This programme includes facilities for financing of several strategic local projects in the domains of: energy efficiency in public and residential buildings, alternative (electric) public transport, sustainable urban mobility, waste and water management and most important increase the national production of energy from renewable sources (solar, wind).	Suceava municipality has already secured finance and start implementation for local projects (some of them included into Action Plan) like: energy efficiency in public and residential buildings, alternative (electric) public transport. The main domains of interest will be new local projects for renewable energy facilities (photovoltaic parks), production of" green" hydrogen, urban mobility and rehabilitation of municipal heating transport and distribution network.

Process	**Citizens**	**Civil society / NGO's/ Centre for Innovation and Civic Imagination (CIIC)**	Suceava's citizens are of course the final beneficiaries of the results coming from the implementation of the actions included into the Action Plan. Some of the main objectives for this common effort in AP implementation are: ensure the citizen's right of access to any public information, improve communication between local public administration institutions of Suceava municipality; But in the same time the civil society is consider to be one of the most important stakeholder and there was consultation not only while performing the plan but for almost each major investment and action implemented at local level. In the end the involvement of the citizens is consider to be highly important in the social innovation, civic co-design processes that are requested for Suceava's transition to climate-neutrality.	The main interests of citizens are related to the quality and cost of life into the city, healthy way of living, civic responsibility and involvement, environment protection, green spaces, climate changes' impact. Works need to be done for changing behaviour to a climate neutral one, for actively involvement in local initiatives like: environmentally ways of traveling, separate waste collection, recycling, reduce the energy consumption, for replication of municipal projects (energy efficiency in buildings, green roofs and facades) and in general for involvement of citizens in the administration process of the city, by participating, for consultative purposes, in the process of elaboration of public policies for urban development and in the decisions adopted by the local public administration of Suceava City.

The list of local stakeholders included into the stakeholder's map is linked directly with system barriers and opportunities as each of them has specific skills, levers and expertise that can directly contribute to a successful implementation of the proposed actions from the Action Plan.

Almost all the stakeholders are connected with specific domains/field of intervention (example: energy efficiency, sustainable urban mobility, central heating, public and residential buildings, research and development) and their abilities and experience are meant to add value, support and directly influence the roadmap to climate neutrality for Suceava City.

The most relevant aspect is that the cooperation between local public administration and relevant stakeholders (most of them nominated in the stakeholders map) for the next 7 years it is a continuous process as previous initiatives/projects/actions have been already developed /implemented in the past 15 years (as a specific example we will nominate the common initiative between municipality and local public transport operator that begun in 2020 with implementation of sustainable 100% electric public transport that has been expended (starting from 2024) with new facilities – electric buses, green wave and separate lanes for public transport, public transport monitoring and information centre).

A-3.2: Description of systemic barriers and opportunities – textual elements

Suceava Municipality has the strategic documents recently updated (IUDS, SUMP, SECAP, Clean Transport Plan, City Heating Strategy). As regarding the city planning and development documents The General Urban Plan was also updated in 2023.These strategic documents include activities, policies, actions and projects that are focus on climate change challenges, improve the quality of life, sustainable mobility, increase of energy efficiency, reduction of energy consumption and GHG emissions, alternative ways of travelling, production of energy from renewable sources.

Suceava city has taken significant steps towards climate neutrality, which is already an assumed goal in the local strategic documents.

1.Previous achievements: In the past 15 years there were many investment projects in the field of energy

efficiency (public and private buildings), alternative heating production (biomass), rehabilitation of public lighting (LED systems), education buildings, public transport (100 % electric fleet), alternative vehicles (electric municipal fleet, charging stations for EV's – with incentives for charging also for private owners), traffic management, cycling lanes, electric bicycles and scooters , rehabilitation of central heating system, separate waste collection and recycling system, rehabilitation of the water and sewage system, green areas, rehabilitation of pedestrian (low emission zone) and road infrastructure, city ring.

2. Challenges at local level: Suceava recognizes the urgent need to address the global climate crisis and minimize its impact on communities, the economy and the environment. It is recognized that the local community is currently contributing to this crisis through greenhouse gas emissions from transport, buildings, waste and other sources. The municipality's commitment to its responsibility to mitigate climate change is to achieve climate neutrality in terms of climate impact by 2030, and to meet this goal requires a reduction in local greenhouse gas emissions.

This is to be achieved through the following actions:

- Reduction of greenhouse emissions - emissions levels in Suceava will be reduced through various methods such as: increasing energy efficiency and use of renewable energy, promoting sustainable transport options, increasing the area of green spaces in the city, increasing the use of alternative transport;
- Offsetting carbon emissions - the remaining greenhouse gas emissions will be offset by investing in projects such as: renewable energy installations, reforestation;
- Encouraging public involvement and community action - so the community will actively participate and take collective responsibility in reducing the locality's greenhouse gas emissions;
- Annual progress reports - this will track and report annually on progress at the local level in order to have control over achieving the climate neutrality target;
- Conduct community awareness and education campaigns to understand that achieving climate neutrality will require sustained effort and significant investment.

On our road to reduce GHG emissions, we have encountered a number of barriers and milestones. From all these Suceava City has been able to find solutions for more than 80 %, but we do expect to face same similar ones in the next 7 years while the implementation phase of the projects mentioned in the Action Plan will started.

Even Suceava city has experience in the field of climate neutrality the task to decrease emissions becomes more difficult and complex and for this reason more systemic approach has to be taken to tackle the barriers.

3.Identified barriers: Summarising the barriers that Action Plan aims to approach:

Infrastructure – the main part of residential and public buildings was built before 1990 and for this single reason all these buildings are far than "environmentally friendly ", with very few of none energy efficiency investments, with a high level of energy consumption as more than 50 % are using natural gas for individual heating plant. Even technical solution is available since early 2000 there very few investments in building rehabilitation and energy efficiency have been made in the past years so addressing the housing and building sector is one of the main goal for the Action Plan.

National regulation and legislation – the construction permits and authorization for installation of solar and photovoltaic panels and for the connection to the national grid (in case of solar energy) are still difficult to obtain, the amount of requested official documents is quite high, there are a significant number of public institutions involved in the process, the amount of paper work and level of technical documentation is (probably) higher than any other European Union country. The level of bureaucracy is still high and even for municipalities the road from idea to implementation phase is still high and we have to mentioned at least 12 months for the entire process. All these need to be addressed in details by municipality and the other actors involved in implementation of the Action Plan.

Funds – The costs for implementation of the Action Plan initiatives and funding the intervention for climate neutrality barriers associated with the climate-neutrality are very high in comparison with the local budget of Suceava city. The local budget can cover only a small part of these costs so the Municipality still has to focus on external sources from which the most important are non-reimbursable funds in the NRRP and RP. Suceava city has experience in securing external sources but one of the main barrier is related to development of Public Private Partnership projects at local level and also as private sector is sometime difficult to approach (but still has a significant impact on city pollution and a high level of GHG emissions) one of the main challenges for Suceava Municipality will be to find the most appropriate way of motivating private investors to implement climate

neutrality projects in their business from industry, commerce and services sectors.

Communication and working with citizens and stakeholders - there are still gaps and less functional structures and methods connected with communication, transparency of public administration activity and initiatives, public consultation and common initiatives between public sector, private one and citizens. Work need to be done for reducing the gap between the public administration and citizens, urban and metropolitan environment, for increasing the level of acceptance, understanding, cooperation and communication between all stakeholders involved.

Behaviour change – there is always a mayor barrier when behaviour need to be changed like using less the own vehicle and switch to alternative ways of travelling (public transport, bikes, electric vehicles) or act and live responsibly in order to reduce the level of GHG emissions, increase energy efficiency and reduce the quantity of waste, increase the recycling percentage. The change is influenced in this specific case also by the living costs and the own contribution costs for investments (in case of residential buildings rehabilitation projects for example). Specific methods and actions need to be addressed as without a significand change in citizen's behaviour the success of climate neutrality projects could be seriously affected.

The goals included in the Climate City Contract are covering (in an integrated vision and overall approach) the entire ideas included in the already local approved strategic documents (local development strategy , sustainable urban mobility plan, sustainable energy action plan) as the Action Plan is acting like an "umbrella strategic document" for the entire city territory with a strategic, sustainable approach aimed at achieving objectives that determine the reduction of greenhouse gas emissions mainly (and as a tangible result from implementation of the actions) but more important with a direct effect on local economic development, improving the quality of life, creating strategic partnerships between local stakeholders and local administration and direct benefits for each single citizen (with connections to public transport , smart mobility, energy efficiency , heating , alternative energy and waste recycling) , for public administration in relationship with common initiatives with academic and private sector for research , innovation and sustainable projects/actions and for any other local stakeholder included in the local Net Zero Coalition.

However, since the transition towards climate neutrality is not an individual responsibility, but rather a collective effort, Suceava Municipality, related to the experience in ongoing projects implementation, will launched an invitation to the entire local ecosystem to engage all the key local actors, stakeholders, private and public sector as a local **Net Zero City Coalition**, with the scope of serving the local climate-neutrality pursuits, it is expected to be created in the first half of 2024 **.** The first step was the agreement signed in 2023 between Suceava Municipality and Suceava" Stefan cel Mare" University from which at least one application for European funding was sent already (pilot project for implementation of LI FI principle).

4.Key findings: Taking into account the key findings listed above, the main factors that can contribute to achieving climate neutrality in Suceava are:

- Adopt ambitious climate policies and plans: The municipality should develop ambitious climate policies and plans that include concrete measures to reduce greenhouse gas emissions, promote renewable energy and encourage sustainable development practices.
- Promoting renewable energy: Suceava should continue to encourage the use of renewable energy, including solar, wind and hydropower, through policies and projects that encourage the installation of solar panels on buildings and wind turbines in appropriate areas.
- Modal shift: Changing the mode of transport by promoting clean urban mobility, such as cycling, electric public transport or other clean modes of transport, will reduce greenhouse gas emissions from road transport.
- Improving energy efficiency: Improving the energy efficiency of existing buildings through measures such as thermal insulation, installation of double-glazed windows and changing heating systems will reduce energy consumption and therefore greenhouse gas emissions.
- Promoting the circular economy: The circular economy should be promoted at local level through recycling and re-use of waste, reducing the amount of waste generated and implementing projects that encourage the use of recycled materials.
- Community involvement: Community involvement is crucial to achieve a transition to climate neutrality. practices to reduce energy consumption and greenhouse gas emissions at individual level should be encouraged, but also by involving citizens in the planning process of sustainable and innovative urban

development

More than this, according to Romanian legislation, as the Action Plan (that includes the extended list of projects from the most relevant ones related to climate neutrality were described into details both in Action and Investment Plan) is included into strategic document category, the document was posted on municipality website 30 days before the local council approval, following the public consultation procedure**. More public surveys** are planned to be done in implementation phase for most relevant and with major impact actions (like the ones concerning energy efficiency in public and residential buildings, smart & sustainable mobility, electric public transport for metropolitan area) and more important during evaluation phase of the projects. This is meant to continue the process of local stakeholders (citizens also) involvement in the mission process having as a direct result the feedback regarding the results, the achievements and also regarding the suggestion for improvements/upgrade of the proposed actions.

Continue learning process: In regards with the lessons learned by the transition team members during the development of the Action Plan, these are connected with:

Learnings:

 Collaboration is crucial: The various initiatives involving universities, stakeholders, and citizens showcase the importance of collaboration in achieving complex goals like climate neutrality.

 Pilot projects are valuable: Testing innovative solutions through pilot projects allows for learning and improvement before wider implementation.

 Capacity building is essential: Equipping the administration with the necessary knowledge and skills is crucial for effective project management and decision-making.

Effectiveness:

 Transparency and engagement: Platforms like the Centre for Innovation and Civic Imagination (CIIC) and public consultations foster trust and encourage citizen participation, potentially leading to better solutions and stronger support.

 Flexibility and adaptation: The focus on adaptable financing and monitoring with evaluation allows for adjustments based on learning and changing circumstances.

Obstacles:

 Without information on specific challenges, it's difficult to pinpoint the exact obstacles Suceava City faces. However, common obstacles in climate neutrality efforts include securing long-term funding, overcoming public resistance to change, and ensuring effective coordination between different stakeholders.

Opportunities:

 Suceava's focus on collaboration and capacity building creates opportunities for knowledge sharing and learning from other cities facing similar challenges.

 The initiatives promoting citizen engagement need to be further strengthened to encourage active participation in decision-making and solution development. This will lead to more innovative and socially acceptable solutions.

 By addressing potential social and economic concerns and highlighting the co-benefits of climate action, Suceava can garner broader public support and encourage wider participation.

Beside these above mentioned aspects for the next steps in Suceava Municipality road to climate neutrality we have been able to identified some key aspects:

1. Evaluate Existing Initiatives:

 Assess the effectiveness of the key initiatives mentioned in the Action Plan, such as the development of electric vehicle infrastructure and the Urban Lab for Green Cities. This evaluation should consider factors like emission reduction achieved, cost-effectiveness, and public acceptance.

 Based on the evaluation, Suceava can prioritize scaling up successful initiatives and revise or discontinue initiatives with limited effectiveness (for the next stage and the revising phase of the CCC).

2. Align with City Vision:

 Consider Suceava's long-term vision for the future, as outlined in any strategic documents or public pronouncements. This vision might emphasize aspects like improved air quality, a healthy environment, or a thriving green economy.

 Prioritize actions that directly contribute to achieving the city's vision and ensure a just transition towards climate neutrality.

3.Additionally:

 Engage with stakeholders: Conduct consultations with citizens, businesses, and other relevant stakeholders to understand their priorities and concerns regarding climate action. This input can help refine Suceava's action plan and ensure it addresses the needs of the community.
 Monitor and adapt: Regularly monitor the progress of implemented actions and adapt them based on the results and changing circumstances.

As a conclusion in terms of barriers influencing the achievement of the 2030 emission reduction target, we mention*:*

- Limited financial resources - implementing emission reduction measures can be costly, which can be a barrier for local authorities, the private sector and the community at large.
- Behaviour and mind-set change - Suceava residents need to change their behaviour and adopt emission reduction practices, but this change can be difficult and may take time.
- Lack of information and awareness - many residents and businesses may not be sufficiently informed about the impact of greenhouse gas emissions and the benefits of reducing them, which can prevent effective measures from being implemented.
- Lack of adequate infrastructure - implementing measures to reduce emissions requires adequate infrastructure, such as public transport networks, separate waste collection systems or smart electricity grids.
- Lack of collaboration between sectors - implementing effective emission reduction measures requires close collaboration between different sectors, such as transport, energy and the residential sector, but this can be difficult to achieve due to differences in interests and perspectives.
- Insufficient or non-existent regulations - regulations and policy at national and local level can play an important role in promoting emission reductions, but in some cases, they may be insufficient or non-existent, which can hinder the implementation of effective emission reduction measures.
- Climate change itself - while it is important to reduce greenhouse gas emissions, climate change itself can affect Suceava's ability to implement emission reduction measures and its ability to adapt to climate change.

5.Involvement of local stakeholders:

As for involvement of relevant stakeholders (as detailed in several sections of the Action Plan) Suceava Municipality plan is to:

- Continue using the already active(existing) institutionalised stakeholders mechanisms like budgetary participation , local partnership with owners associations , Centre for Innovation and Civic Imagination (CIIC) , local thematic working groups / committees (for several domains like urban planning , green areas, energy, residential buildings) , public consultation process/platform – before, during and after implementation of local strategies/actions/initiatives/investments/projects and local stakeholders support groups (initiated as part of projects financed through European programmes like URBACT,CIVITAS, INTEREEG) . These groups have been created in the past 15 years and there are still active as there is a strong local partnership for different domains (sustainable urban development, green areas, electric vehicles, urban markets)
- Develop new mechanisms like **Net Zero Coalition ,** local RDI initiatives/projects like „**NetZeRoCities** – National Centre for **Competen**ce and solutions for developing climatic neutral smart cities” , **URBAN LAB ,** ongoing European projects like **KARMA -** Circular Economy in the Construction Sector - Acting Today for a Better Future with local working stakeholders group for implementation of circular economy concepts(reduce the municipal waste and increase the percentage of waste recycling)
- Extend the communication/dissemination and replication activities (related to NZC and climate neutrality) to regional and more important to national level by involvement of other relevant stakeholders for other Romanian cities that are not part of the Mission (through NZC mirror national program).

6.Commitment: Suceava's City story is one of resilience, community spirit and a commitment to shaping a brighter future. By embracing sustainability as a core value and leveraging the opportunities offered by the CCC, Suceava City will ensure a thriving green metropolis for generations to come.

This vision, born from a collective desire for a cleaner, healthier future, ignited a spark within the community. It

fuelled the creation of Suceava's Climate Action Plan, a roadmap towards becoming a **Net Zero City**. This plan, far from being a mere document, is a testament to the city's commitment, a story of collective action, innovation, and the unwavering belief in a brighter tomorrow.

Recognizing their contribution to the global climate challenge, the people of Suceava, along with their dedicated municipality, embarked on a journey of transformation. They acknowledged the reality – greenhouse gas emissions from various sources, including transportation, buildings, and waste, were contributing to the environmental crisis.

Fuelled by the success of previous initiatives, like becoming the first Romanian city with a 100% electric public transport fleet, Suceava saw the **Climate City Contract and Net Zero Cities Mission** as the perfect opportunity to accelerate their progress. The municipality, acting as a facilitator and coordinator, embarked on a collaborative journey, bringing together diverse stakeholders - residents, businesses, experts, and public officials - to co-create the action plan.

A-3.3: Description or visualisation of participatory model for the city climate neutrality – textual and visual elements

1.**General consideration**: Suceava City has been working in the past 10 years in order to identify the list of policies, actions, projects and interventions that need to be implemented in line with the roadmap to achieve the climate neutrality, the level of GHG reduction assumed by local strategic documents and the goals regarding proposed targets for improving the quality of life into the city.

Suceava City has established strategic partnership with universities from major Romanian cities (but with private operators also) as part of "**NetZeRoCities** – **National Centre** for **Competence and solutions for developing climatic neutral smart cities**" project, for whom the main objective is to work together in the field of exploring new dimensions of a smart and sustainable city as: smart and sustainable mobility, alternative "green" energy production, energy efficiency, environment protection, waste water handling, waste recycling, public health, heating and governance models.

The entire process has been done in collaboration with local stakeholders, it is a direct result of public consultations, meetings with local decision makers, representatives of owner's association, private sector, university sector and representatives from public institutions and more important each single characteristic form all city areas were taking into consideration, analysed and included into the local strategic documents.

As transition to climate neutrality is a complex and challenging process each single aspect need to be considered, each specific details for different city areas and sectors (heating, energy, transport, building, green areas) was analysed and specific solutions were identified for all sectors, was discussed with local stakeholders and experts in order to create the appropriate conditions for a smooth approach to the climate neutral goals assumed by the municipality.

Each single project/action from the Action Plan will act as indicators for what is needed within the whole city and in the same time will contribute to the general city objectives and goals.

2.Previous achievements: Several pilot projects have been designed, implemented and evaluated (green roofs, alternative energy sources, electric bikes, alternative public transport) with the main purpose of testing the innovative ideas/solutions that will have to be replicated at city scale level. Collaboration with citizens and local stakeholders have been done in different and specific ways and public consultations were mandatory for design of the projects that affect public and green areas, development of the local budget, design of local strategic documents like SECAP and SUMP.

One of the major project concerning system demonstrations for reduced emissions from transport is focusing on development of local infrastructure for electric vehicles charging together with introduction of public and private electric vehicles. The pilot project started in 2018 with 15 EV's for the municipal fleet and with 28 charging station for electric vehicles, followed by the second phase that consist in 14 new charging station, in 2022, that have as a direct result more than 280 private electric vehicles registered in Suceava city by the end of 2023.

Another goal for Suceava municipality (identified in the proposed projects from the Action Plan) is to reduce the largest sources of emissions from transport and increase the level of waste recycling into the city.

The most relevant actors/stakeholders directly involved both in design and implementation of the projects included in the Action Plan sign the Climate Neutrality Commitments document and together with important local stakeholders it was created the local framework for project implementation that concur to climate neutrality.

The Climate Neutrality Investment Plan for Suceava city also identifies different actors' investment needs to

implement the necessary actions even the main financial effort is to be done by local public authority.

3.Involvement of stakeholders(including citizens) local innovative model :The municipality started the implementation of actions for climate neutrality way before 2023 when the application was approved and the city was included into the list of 100 efficient and climate neutral cities and this is a prove of Suceava's commitment to NZC programme and policy, but the process of Action Plan's projects implementation requires developed forms of collaboration and dialogue between all stakeholders involved into planning, implementation and monitoring of proposed measures.

Suceava Municipality developed the collaboration with local stakeholders in order to improve efficiency, decision-making transparency and cross-border collaboration between public institutions, business environment, citizens and civil society .As a result, the municipality created (in 2018) the "budget participatory" platform, through which local stakeholders , citizens and members of the local community have the possibility to establish and propose a series of sustainable local development projects, in the field of energy efficiency, mobility, pollution reduction and to participate actively to define and prioritize process for local investment including financial aspects.

Local stakeholders (especially citizens) have been approach and included into the design phase of projects concerning for example residential buildings rehabilitation, green areas that are included in the Action Plan. Designated work groups have been established (with representatives from civil society, public institutions, university, architects and local experts), public surveys and public consultation (including meetings with residents from the buildings that are subject of future interventions) with a specific objective of increase the acceptance of citizens in the actions that the city is taking for its pathway to climate neutrality.

These working groups (based on local city decision) will also work together with the municipality's' transition team in the implementation and evaluation phases of each specific project.

The internal Municipality's transition team includes public servants with experience in management, finance, technical, evaluation, publicity and dissemination.

Apart of the public consultation process from the design phase for the climate contract **more public surveys/consultation are planned to be done in implementation phase** for most relevant and with major impact actions (like the already organised ones concerning energy efficiency in public and residential buildings, smart & sustainable mobility, electric public transport for metropolitan area) and more important during implementation and evaluation phase of the projects. This is meant to continue the process of local stakeholders (citizens also) involvement in the mission process having as a direct result the feedback regarding the results, the achievements and also regarding the suggestion for improvements/upgrade of the proposed actions.

There are regular meetings with all involved persons: once per week in the presence of leading staff, at least twice per month with representatives from construction companies and private operators (if necessarily) and also anytime when it is required for the smooth implementation of the projects. Apart of this for the final evaluation for each project a service contract is required with an external expert that has to evaluate and certify the project impact.

Additional to these aspects in order to ensure a good control in the implementation and to ensure the monitoring and reporting of activities assumed by the Action Plan, specialized structure composed of members with experience in energy efficiency, key people from various departments of the local authority, interested local actors, are organized.

For the activities related to estimation of emission reduction and measurement the impact of investments we usually use to contract external experts, perform public surveys and organize workshops with local stakeholders.

More than this in relationship with stakeholders involvement we have to mention that each year there are annual assembly for 136 owners associations (with more than 38.500 apartments) and a representative from municipality's staff is being present to each one of these with (among others) the objective of presenting the local strategy for next year, the projects that are proposed to be implemented and to facilitate the transfer of information / needs / requirements from the citizens to local public administration. **All feed backs are taking into consideration and included in the annually municipality plan for investments.**

Within its efforts to engage stakeholders and citizens to local actions related to climate neutrality another initiative (linked with city hall website) was launched in the second half of 2023, called **Centre for Innovation and Civic Imagination (CIIC)** with the main objective as increasing the degree of citizen involvement in the process of adopting and applying decisions of public interest, but also increasing citizens' trust in local administration.

Thus, the framework is created for defining the active role of the citizen, respectively the transmission of ideas,

proposals and suggestions in the development and implementation of public projects especially the ones included in the Action Plan. Public debates will be held on various topics of interest, in which representatives from various fields of activity will participate, such as: education, health, social assistance, infrastructure, environmental protection, public administration, culture, local councillors of the Municipality of Suceava, employees from Suceava City Hall, representatives of civil society and the business environment of Suceava City and other interested factors.

The **topics of debate** for CIIC Suceava are matters of general interest - public policies of urban development, strategies, sustainable development, urban planning, environmental protection, etc. and will cover the areas of construction, social assistance, public order and peace, urban planning, sport, education, culture, budget - finance, functioning of public services of local interest. The points of view expressed at the meetings will help to shape decisions in terms of focusing on the needs of local stakeholders (citizens, business, education, NGOs). At the same time, CIIC Suceava plays an essential role in reinvigorating the civic and initiative spirit of citizens, increase transparency and long-term strategic planning with results on improving the performance of local public administration.

The Centre is **a permanent laboratory** in which various forms of collaboration between relevant local actors in the municipality are developed. It will also test new ideas and innovative projects, aiming to use the creative potential of the Suceava community to develop urban innovation policies.

As referring to the entities mentioned in C1.1 section we have to add that we have already started the cooperation in the preparation phase for specific projects from different sector (for example for the electric busses with local public transport operator, for rehabilitation of heating transport and distribution network with local private operator) and for sure we will continue working for implementation and evaluation phase

In this regard, CIIC Suceava has the following objectives:

- ensure the citizen's right of access to any public information;
- improve communication between local public administration institutions of Suceava municipality;
- involve citizens in the administration of the city, by participating, for consultative purposes, in the process of elaboration of public policies for urban development and in the decisions adopted by the local public administration of Suceava City;
- bring to the attention of the local authorities of the municipality of Suceava the needs and problems of the citizens, as well as formulating suggestions for their solution;
- formulate recommendations on the upgrading of public services and local infrastructure;
- identify possible financial, material and human resources that could contribute to improving the administration of the city, and proposing solutions for a better use of them;
- in achieving the proposed aims and objectives, CIIC Suceava will communicate with the relevant department of Suceava City Hall.

4.Local/National/European level of collaboration : In the next 2 years Suceava Municipality **will implement a project having as a direct objective** : **to strengthen the knowledge of sustainable urban development, innovation, incubation and coordination skills for net-zero transition and specific climate-neutrality programmes and the key tools needed to deliver them in an integrated way in the Suceava administrations**.

Some of the activities are :

- Action plan for increasing the capacity for sustainable innovation within the administration;
- Analysis of existing capacity within Suceava to identify, develop and manage climate-neutrality projects to identify the capacity needs required to address gaps, leverage resources and enable future progress within the administration;
- Centralisation of existing strategies, action plans, current and future projects linked to climate neutrality to enable the development of an action plan for strengthening internal capacity in terms of processes, governance, skills, collaboration and impact monitoring;
- Good practice study visits for knowledge transfer and inspiration on urban climate-neutrality (in cooperation with a city partner from Norway).

Together with Suceava University and external experts we will create a local initiative called **Urban Lab for Green Cities** to enable climate-neutral and smart city solutions with the direct impact on encouraging social innovation, entrepreneurial education and public involvement from citizens, community groups and businesses in developing solutions that can be locally implemented in Suceava, prioritisation of most viable solutions aligned to

the main areas of climate-neutrality impact from the climate city contract and increase administrative capacity for climate - neutral urban governance.

A series of 7 workshops dedicated to a group of representatives from Suceava Municipality administrations involved in the urban, economic, social and environmental development of the district to strengthen their capacity in developing, financing, managing and partnering for impact on climate-neutral projects will be organized.

These workshops will include a theoretical component that will cover the innovation process and design thinking methods adapted to the roles and skills required by public administration for net-zero transition: innovation process for net-zero urban transition; systems thinking and stakeholder mapping; participatory methods for urban planning; foresight techniques for designing a successful climate-neutral city; ecosystem immersion for creative solutions; validation process and implementation roadmap; governance, funding and partner ecosystems.

Workshops will run in parallel with the incubation phase for climate-neutral solutions (A3) to enable administration representatives to apply theoretical knowledge from workshops practically in the management process for solution development.

The activities will include also common workshops and site visits with fellow Romanian Mission Cities Bucharest and Cluj Napoca and will focus on designing a monitoring process that can enable the future involvement of local actors and citizens as well as a set of recommendations for the institutional setting necessary to pursue the monitoring & evaluation activities and to inform the different decisional layers within the local administration, discuss progress, shared climate neutrality objectives and learnings from the programme and opportunities for collaboration.

5.Roadmap to implementation: As a conclusion the roadmap from a project idea to a successful implementation for all the actions included in the Action Plan and not only these ones need to include a specific approach that need to include at least the following milestones:

- SMART objectives and goals
- A continue activity for monitoring, evaluation and, if necessarily, adjustment of technical solution and investment plan
- Real and permanent communication with all local stakeholders, collaboration with the other Romanian cities engaged in NZC programme, with experts from European Commission and other European city partners
- Sustained support and engagement from local decision makers
- Adaptation of the investment approach for each single action/policy
- Dissemination, communication and best practice transfer
- Adaptable, flexible and" cost effeteness" financing scheme

Recognizing their contribution to the global climate challenge, the people of Suceava, along with their dedicated municipality, embarked on a journey of transformation. They acknowledged the reality – greenhouse gas emissions from various sources, including transportation, buildings, and waste, were contributing to the environmental crisis.

Fuelled by the success of previous initiatives, like becoming the first Romanian city with a 100% electric public transport fleet, Suceava saw the **Climate City Contract and Net Zero Cities Mission** as the perfect opportunity to accelerate their progress.

The municipality, acting as a facilitator and coordinator, embarked on a collaborative journey, bringing together diverse stakeholders - residents, businesses, experts, and public officials - to co-create the action plan.

4 Part B – Pathways towards Climate Neutrality by 2030

Part B represents the core of the Action Plan, shaped by local authorities, local businesses, and stakeholders, comprising of the most essential elements: scenarios, strategic objectives, impacts, action portfolios and indicators for monitoring, evaluation, and learning.

4.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways

Module B-1 "Climate Neutrality Scenarios and Impact Pathways" should list impact pathways, early and late outcomes and direct and indirect impacts (co-benefits) according to and adapted from the NZC Theory of Change and the AP Guidance – clustered by fields of action.

B-1.1: Impact Pathways					
Fields of action	**Systemic levers**	**Early changes (1-2 years)**	**Late outcomes (3-4 years)**	**Direct impacts (Emission reductions in tons CO_2)**	**Indirect impacts (co-benefits)**
Energy systems	Technology/ infrastructure	Increase efficiency of municipal heating transport and distribution	Reduce the loss from the network -24.125 Gcal/year	159.464,9	Improve the quality of life Reduce energy consumption Improved air quality Reduce GHG emissions
		Photovoltaic parks – production of green energy	Increase the production of "green" energy		
		100 % of public lighting system with LED lamps	Efficient public lighting system LI FI system tested		
	Governance & policy	Local regulation and requirements for recycling of construction materials	Reduced volumes of construction waste		
	Social innovation	Increased awareness related to alternative energy sources	Increase the "green energy " production		
Mobility & transport	Technology/ infrastructure	100 % electric and sustainable public transport in metropolitan area "Green wave" for public transport	Increase the number of PT passengers Reduce the private car journeys	65.809,69	Improved air quality and public health. Reduce and optimize travel times for PT Increased PT accessibility
		Expanded charging infrastructure for EV's and EV's number	Reduce the number of internal combustion vehicles		Improve the air quality and reduce GHG emissions
		Improved infrastructure for cycling	Bike friendly city		At least 200 people to use bikes as on a daily regular base
	Governance & policy	Promotion of alternative ways of travelling (public transport, EV's)	Incentives for EV's and electric public transport		Increase the number of PT passengers
		Local parking regulations and more efficient use of urban space	Reduced traffic volumes		Reduce traffic congestion
		Requirements for public procurements.	Increased use of electric vehicles (public fleets)		Reduce GHG emissions
	Social innovation	Changing behaviour related to smart mobility	Increased use of alternative mobility solutions		Increase the number of citizens with "eco-friendly" way of living

Waste & circular economy	Technology/ infrastructure	Upgrading wastewater treatment plant. 100 digitalized eco – islands.	Reduce the energy consumption for sewage system 25% recycled municipal waste.	9.304	Reduce GHG emissions Increase the percentage of recycled materials and recycling municipal waste Reduce energy consumption for construction materials production
	Governance & policy	Local policies and facilities for recycling DNSH principle	Mandatory recycling of construction materials		
	Social innovation	Development of voluntary collection centres	Potential for new job creation		
Green infrastructure & nature based solutions	Technology/ infrastructure	Rehabilitation and extension of parks and green areas Planting high absorption trees	"15 minutes' city "concept applied to green areas 5000 new trees 140 ha green spaces	281	Improve the quality of air and life into the city Reduce GHG emissions
	Social innovation	Introduce local incentives and facilities program for implementation of green roofs and facades for residential buildings.	At least 15 residential buildings with green roofs and facades		Improve quality of life in to the city Improve urban aesthetics Reduce GHG emissions
Built environment	Technology/ infrastructure	Reduce the use of natural gas for heating	65 residential buildings, 10.000 apartments Increase the new/existing nZEB private/residential buildings	48.351	Reduce the costs for heating Improve the air quality and reduce GHG emissions
		Innovative technical solution for energy efficiency (HEMS, photovoltaic panels, digital platforms)			

B-1.2: Description of impact pathways– textual and visual elements

(Describe, visualise, and contextualise pathways listed above)

Suceava's city journey towards a Net Zero City is paved with several key pathways, each with its own set of actions, expected outcomes, and potential benefits. By focusing on specific **systemic levers**, the city aims to achieve **early changes** within the next 1-2 years, leading to significant **late outcomes** by 2030. These outcomes will not only directly reduce **GHG emissions** but also generate a multitude of **indirect impacts (co-benefits)** that enhance the overall well-being of the city and its residents.

Energy Systems:
Upgrading the city's energy infrastructure and promoting renewable energy production through solar parks are crucial early steps. These actions are expected to improve efficiency, reduce energy consumption, and ultimately, contribute to cleaner air and a more sustainable future for Suceava.

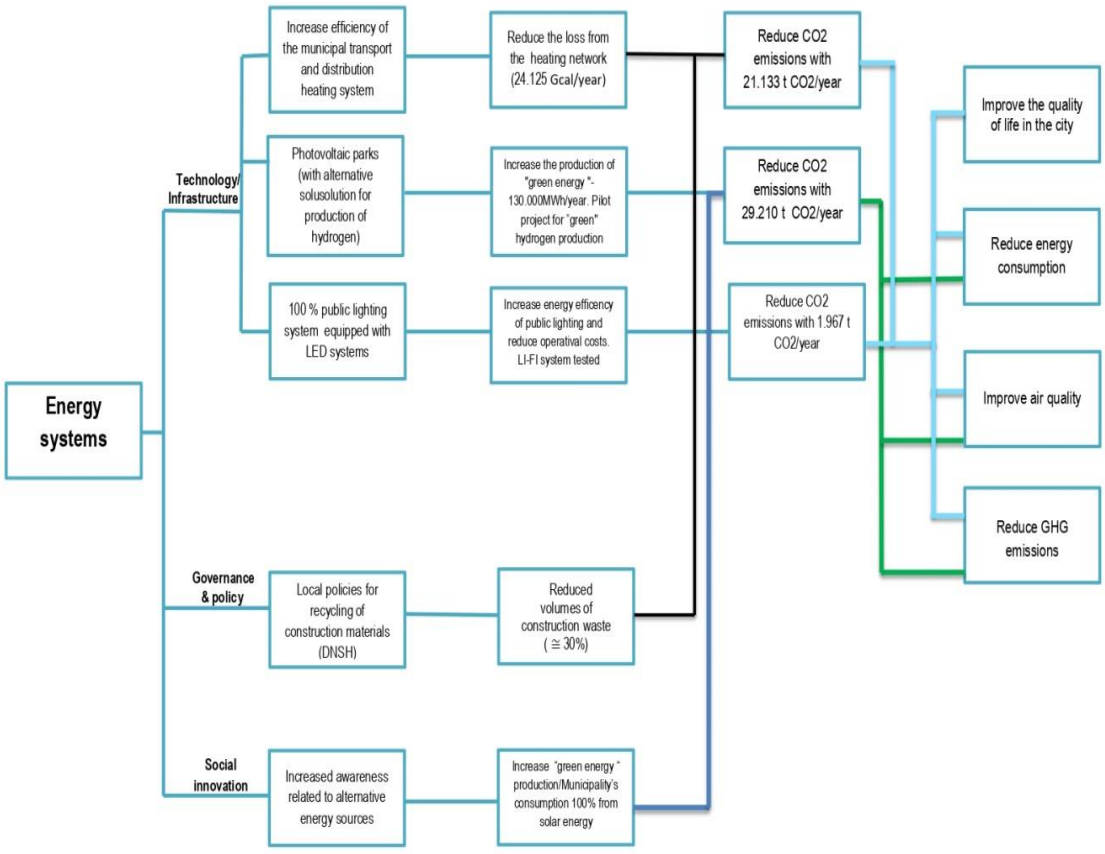
Mobility & Transport: Transforming the public transport system (on metropolitan area) to be 100% electric, coupled with promoting alternative modes of transportation like cycling, will significantly reduce reliance on private vehicles and their associated emissions.
This shift will not only contribute to cleaner air but also improve public health, reduce traffic congestion, and enhance accessibility for residents.

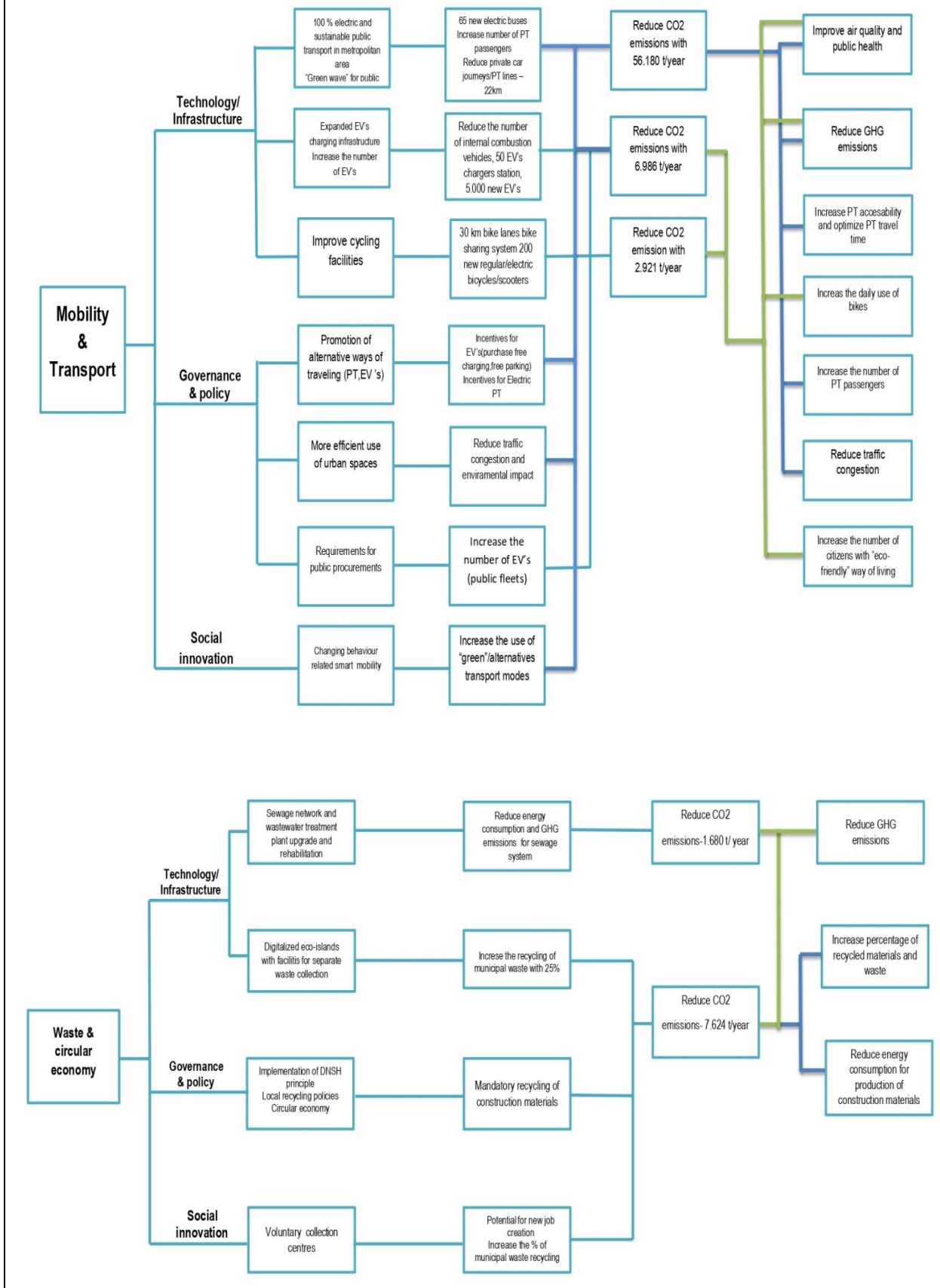
Waste & Circular Economy: Modernizing the waste management system and implementing robust recycling policies will not only reduce energy consumption but also divert significant waste from landfills, leading to a more circular economy and resource conservation. Additionally, this pathway can create new job opportunities in the recycling sector.

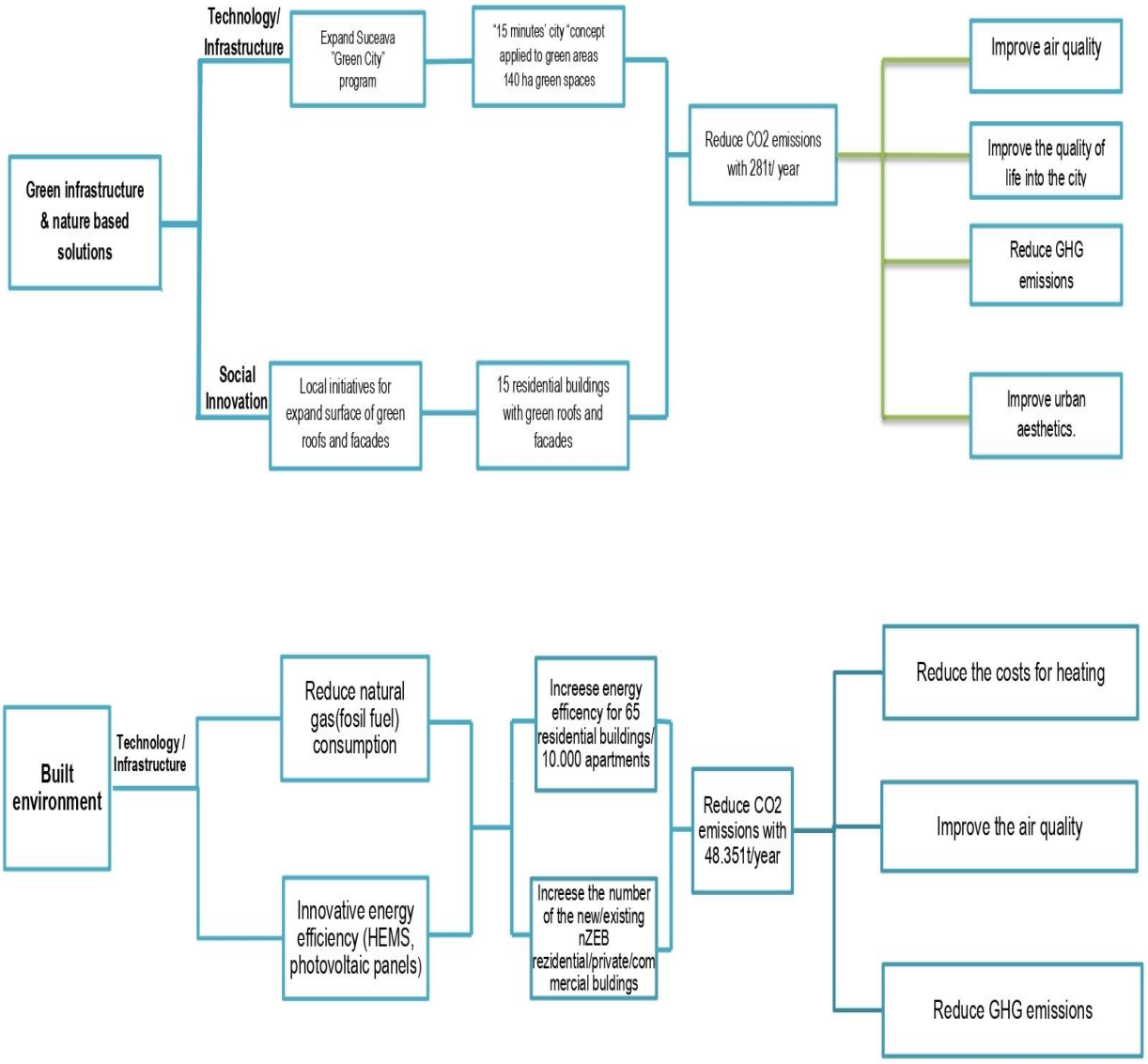
Green Infrastructure & Nature-Based Solutions: Investing in green spaces through park rehabilitation, tree planting, and implementing the "15-minute city" concept will not only improve air quality and public health but also enhance the city's aesthetics and provide valuable recreational opportunities for residents.

Built Environment: Enhancing the energy efficiency of buildings through innovative solutions like HEMS and photovoltaic panels will contribute to reduced reliance on fossil fuels for heating, leading to lower heating costs for residents and improved air quality. By actively pursuing these pathways, Suceava City can effectively address climate challenges, create a more sustainable and resilient city, and ultimately, shape a brighter future for generations to come. The Module B-3 table, Indicators for Monitoring, Evaluation and Learning, provides a comprehensive breakdown of all the relevant actions for this plan. It describes the indicators and desired targets for each individual project included in the Action Plan. The quantified effects of the impact pathways emerge from the indicators proposed for their measurement and evaluation, which allow a clearer understanding of the generated systemic changes.

Thus, the target values proposed in Module B-3 Indicators for Monitoring, Evaluation and Learning, together with their related metadata sheets, will allow us to properly evaluate the progress of the implemented actions and to study the status of our journey towards climate neutrality.




Mobility & Transport
Technology/ Infrastructure
Governance & policy
Social innovation
100 % electric and sustainable public transport in metropolitan area "Green wave" for public
Expanded EV's charging infrastructure Increase the number of EV's
Improve cycling facilities
Promotion of alternative ways of traveling (PT,EV 's)
More efficient use of urban spaces
Requirements for public procurements
Changing behaviour related smart mobility
65 new electric buses Increase number of PT passengers Reduce private car journeys/PT lines – 22km
Reduce the number of internal combustion vehicles, 50 EV's chargers station, 5.000 new EV's
30 km bike lanes bike sharing system 200 new regular/electric bicycles/scooters
Incentives for EV's(purchase free charging,free parking) Incentives for Electric PT
Reduce traffic congestion and enviramental impact
Increase the number of EV's (public fleets)
Increase the use of "green"/alternatives transport modes
Reduce CO2 emissions with 56.180 t/year
Reduce CO2 emissions with 6.986 t/year
Reduce CO2 emission with 2.921 t/year
Improve air quality and public health
Reduce GHG emissions
Increase PT accesability and optimize PT travel time
Increas the daily use of bikes
Increase the number of PT passengers
Reduce traffic congestion
Increase the number of citizens with "eco-friendly" way of living
Waste & circular economy
Technology/ Infrastructure
Governance & policy
Social innovation
Sewage network and wastewater treatment plant upgrade and rehabilitation
Digitalized eco-islands with facilitis for separate waste collection
Implementation of DNSH principle Local recycling policies Circular economy
Voluntary collection centres
Reduce energy consumption and GHG emissions for sewage system
Increse the recycling of municipal waste with 25%
Mandatory recycling of construction materials
Potential for new job creation Increase the % of municipal waste recycling
Reduce CO2 emissions-1.680 t/ year
Reduce CO2 emissions- 7.624 t/year
Reduce GHG emissions
Increase percentage of recycled materials and waste
Reduce energy consumption for production of construction materials



The Action Plan includes specific and integrated actions/projects and targets related to GHG emission reduction , with detailed technical documentation , financial information, implementation costs , milestones, indicators, results, stakeholders involved in implementation phase , actions that are additional that the ones already identified in existing strategic documents and that have been proposed as a result of the CCC process and are entirely responsible for the emission reduction targets assumed by Suceava Municipality in its pathway to achieve climate neutrality.

The Action Plan's vision, born from a collective desire for a cleaner, healthier future, ignited a spark within the community. It fuelled the creation of Suceava's Climate Action Plan, a roadmap towards becoming a **Net Zero City**. This plan, far from being a mere document, is a testament to the city's commitment, a story of collective action, innovation, and the unwavering belief in a brighter tomorrow.

Recognizing their contribution to the global climate challenge, the people of Suceava, along with their dedicated municipality, embarked on a journey of transformation.
They acknowledged the reality – greenhouse gas emissions from various sources, including transportation,

buildings, and waste, were contributing to the environmental crisis.
Fuelled by the success of previous initiatives, like becoming the first Romanian city with a 100% electric public transport fleet, Suceava saw the **Climate City Contract and Net Zero Cities Mission** as the perfect opportunity to accelerate their progress.

The municipality, acting as a facilitator and coordinator, embarked on a collaborative journey, bringing together diverse stakeholders - residents, businesses, experts, and public officials - to co-create the action plan.
This collaborative spirit permeated every step of the process for Action Plan development and implementation. Public consultations and workshops will have ensured that the plan impact will addressed the community's needs and concerns directly.

ACTIONS TIMELINE

FIELDS OF ACTION	LIST OF ACTIONS	TIMELINE
Energy systems	Rehabilitation of municipal transport and distribution heating system	2024 2028
	Photovoltaic parks and alternative system for production of hydrogen	2024 2028
	Intelligent and efficient municipal public lighting	2023 2026
Mobility & transport	Extension of cycling facilities	2024 2030
	Integrated green (100 % electric) metropolitan public transport system	2023 2030
	Expansion of the public and private fleet of electric vehicles and installation of at least 50 charging stations by 2028	2024 2028
	Integrated urban mobility system and priority for public transport ("green wave")	2023 2026
Waste & circular economy	Use of recyclable materials for local production of construction elements in the circular economy	2023 2028
	Rehabilitation of wastewater collectors, sewerage networks and rehabilitation and upgrading of Suceava wastewater treatment plant	2024 2029
Green infrastructure & nature-based solutions	Development of new green areas and planting green curtains (major roads area)	2023 2030
Built environment	Increasing energy efficiency of residential buildings to reduce GHG emissions and increase the quality of life of residents (including HEMS)	2023 2030
	Modernization of public institutions' buildings through refurbishment and increased energy efficiency	2023 2030
Soft interventions	Improved local urban regulations and policies for achieving climate neutrality	2023 2030

4.2 Module B-2 Climate Neutrality Portfolio Design

Module B-2 “Climate Neutrality Portfolio Design” should contain a project description for **each intervention planned**, including interventions by local businesses and industry, according to the template B-2.1, including actions those interventions targeted at enhancing carbon sinks to address residual emissions. Narrative analysis and comments can be provided in B-2.2. A summary of how residual emissions are addressed, should be provided in B-2.3.

B-2.1: Description of action portfolios - textual or visual		
Fields of action	**Portfolio description**	
	List of actions	**Descriptions**
Energy systems	1.1 Rehabilitation of municipal transport and distribution heating system	Modernization and increase energy efficiency (reduce of losses) for the central heating transport and distribution system. Reduce the loss from the network with 24.124,96 Gcal/year. Rehabilitation of more than 71 km of heating distribution network (primary and secondary), 623 HEMS, digitalization of 312 distribution units , 8 thermal points modernized
	1.2 Photovoltaic parks (including alternative system for production of hydrogen).	The project aims to redevelop a degraded site to revitalize and reduce air pollution while producing electricity from renewable sources (solar). The photovoltaic park will production will cover the entire consumption of electric energy for the municipality (including the electric PT fleet). Estimated installed capacity: 19.928 MWh/year. The floating park will have an electrical load of around 6500 MWh/year, generating alternative electricity with low carbon footprint electricity used for "green "production of hydrogen. With projects implementation Suceava Municipality will be able to cover its entire energy consumption (for all municipal buildings) from renewable and alternative sources, the energy consumption for electric public (local and metropolitan transport) will be also provided by renewable sources. The other projects (industrial sector and PPP investment) include two separate projects for photovoltaic parks with a total energy production of 110.200 MWh/year. Total installed capacity: 136.628MWh/year.
	1.3 Intelligent and efficient municipal public lighting	Implementation of the efficient public lighting concept for the rest of 20 % of the public lighting network with LED systems (2550) and connect this new investments to already in function remote management and dimming systems and introduction of the Li-Fi concept .
Mobility & transport	2.1 Extension of cycling facilities	Development of the municipal bicycle lanes by at least 30 km until 2030 and modernised of the existing lanes, development of the public bike and scouters sharing system (minimum 5 new stations) with also acquisition of new regular and electric bicycles/scouters (200).
	2.2 Integrated green (100 % electric) metropolitan public transport system	100% green public metropolitan transportation fleet: purchase of 65 electric buses Smart public transport stations: the modernization of 25 stations equipped with easy access for low mobility passengers, e ticketing, LCD displays etc. Integrated e ticketing systems, CCTV system Public transport dedicated lanes: at least 22 km of new dedicated lanes for buses along main streets and boulevards.
	2.3 Expansion of the public and private fleet of electric vehicles and installation of at least 50 charging stations by 2028	Extension of the network of public electric charging stations at least 50 new charging stations. Increase the number of public and private electric vehicles. Incentives for the residents and private companies purchasing electric vehicles (local taxes, subsidies (both national and local); parking and free charging) – at least 5.000 new beneficiaries by 2030.
	2.4 Integrated urban mobility system and priority for public transport ("green wave")	Public transport dedicated lanes: at least 22 km of new dedicated lanes for buses along main streets and boulevards Introduction of priority systems at traffic light intersections for local public transport, creation of dedicated lanes for transport (electric buses), increase in the number of electric buses, electric minibuses, traffic lights (green light), traffic management centre (information, surveillance), "Smart parking" application, interactive map for public transport and road traffic. Reducing

		road traffic pollution and congestion. Planting of protective green curtains along main roads (to reduce noise pollution, GHG emissions and improve quality of life). Promoting smart mobility both through the development of a road and parking area dedicated to the development and testing of outdoor ambient intelligence technologies and products, and ICT solutions for connected and semi-autonomous vehicles. Test advanced solutions for intelligent urban traffic routing for decongestion and minimization of pollutant effects.
Waste & circular economy	3.1 Use of recyclable materials for local production of construction elements in the circular economy	Establishment of two voluntary collection centres to meet the needs of the population to dispose of: textile waste, paper/cardboard, plastic, small electrical and electronic waste, large household items, hazardous waste, wood/furniture, glass, tires, metal, garden waste, miscellaneous construction waste. Development of an efficient waste management system by increasing separate collection capacities, preparing for reuse and recovery of waste in order to continue the process of compliance with the specific directives and the transition to the circular economy (100 digitized eco-islands) including smart bins using photovoltaic panels for solar energy production. Improving waste management system, reducing the amount of unsorted waste, promoting recycling and reducing environmental impact. Increase the recycling activities connected to materials from construction works and implement the DNSH (Do Not Significant Harm) principle in all public investments and constructions projects.
	3.2 Rehabilitation of wastewater collectors, sewerage networks and rehabilitation and upgrading of Suceava wastewater treatment plant	At the moment, the sewage pipes do not ensure the complete transport of wastewater to the treatment plant, as there are losses that lead to the pollution of water courses in Suceava (Cetatii). There are also targets (houses or economic agents) that are not connected to the sewerage network, wastewater being discharged into the nearby water courses (Cetății) Therefore, by rehabilitating and changing the collector pipes that transport wastewater to the treatment plant, especially the collector that takes wastewater from the Obcini district - Alexandru cel Bun – Centru- Calea Unirii area, it will be possible to eliminate wastewater losses and implicitly the pollution of water courses in the Suceava municipality. The project for upgrading the waste water treatment plant will have as direct results significant improvement the degree of purification and increase the efficiency of the wastewater treatment system.
Green infrastructure & nature-based solutions	4.1 Development of new green areas and planting green curtains (major roads area)	Reconversion and reuse of degraded land in Suceava City. Planting 5000 ornamental trees, resistant to climate change, with a high CO2 absorption capacity, which will constitute a plant protection curtain (against noise) and reduce urban pollution (along the main traffic arteries in the city and into residential areas). Protecting existing wild area , unique in an urban habitat; Identify innovative ways of visual and auditory interaction with the protected biotope without disturbing its natural processes; Landscaping of the park forest functions with all the necessary facilities and equipment (paths, resting places, playgrounds, places for appropriate sports activities, public lighting, etc.); Addressing accessibility and links to build and planted spaces, nearby tourist and local interest objectives (140 hectares in Zamca and Sipote area).
Built environment	5.1 Increasing energy efficiency of residential and private buildings to reduce	Increasing energy efficiency in residential/private buildings by implementing an integrated energy monitoring, control and reduction system. The main aim of the energy retrofitting /

	GHG emissions and increase the quality of life of residents (including HEMS)	modernization of existing buildings is to reduce heat consumption for space heating and hot water preparation 65 residential buildings, 10.000 apartments, 480.000 sq. The same solutions are to be implemented into private buildings (mainly commercial and industrial ones). Identifying energy saving potential in existing buildings. Promoting appropriate energy efficiency measures such as thermal insulation, replacement of energy systems with more efficient technologies and use of viable renewable energy sources. Installation of sensors and automation systems to monitor and control energy consumption in real time. Creation of data platforms for collecting, managing and interpreting energy efficiency information and integrating it into the city's Digital Twin concept. Promoting solutions to transform neighbourhoods into entities capable of producing more energy from renewable sources than they consume, thus contributing to fighting climate change and ensuring sustainable urban development. Promoting public-private partnerships for the energy renovation of buildings and the development of a smart connected city infrastructure. Create awareness campaigns to promote energy reduction and the adoption of low environmental impact practices.
	5.2 Modernization of public institutions' buildings through refurbishment and increased energy efficiency	Increase energy efficiency in at least 10 municipal buildings (administrative buildings, educational units), with construction works for reduce energy consumption, increase energy efficiency, reduce GHG emissions, facilities for production of alternative energy, implementing an integrated system for monitoring, controlling and reducing energy consumption. The main aim of the energy rehabilitation/upgrading measures of the existing buildings is to reduce heat consumption for space heating and hot water preparation while ensuring comfortable microclimate conditions. Identifying energy saving potential in existing buildings. Promoting appropriate energy efficiency measures such as thermal insulation, replacement of energy systems with more efficient technologies and use of viable renewable energy sources. Installation of sensors and automation systems to monitor and control energy consumption in real time, Creation of data platforms for collecting, managing and interpreting energy efficiency information and integrating it into the city's Digital Twin concept. Promoting solutions to transform neighbourhoods into entities capable of producing more energy from renewable sources than they consume, thus contributing to fighting climate change and ensuring sustainable urban development, promoting public-private partnerships for the energy renovation of buildings and the development of a smart connected city infrastructure. Create awareness campaigns to promote energy consumption reduction and the implementation of low environmental impact practices.
Soft interventions	6.1 Improved local urban regulations and policies for achieving climate neutrality	Design, approve, implement and monitoring an innovative SMART climate-neutrality city plan, with regulation and policies (including incentives) related to increase the energy efficiency and reduce GHG emissions for residential buildings and with specific „ climate neutral „ requirements for construction of new residential buildings (energy efficiency, green spaces, access to public transport, use of recycling construction materials, renewable energy production) with focus on nZEB principles and improve the quality of life into the city . The city plan need to have also a set of urban planning principles for climate neutral interventions for existing public

		and private buildings, dissemination and awareness campaigns, replication and changing behaviour trough a, climate neutral, one for citizens. Implementation of a ”pilot project” for a climate neutral city neighbourhood and ideas for replication.

Each of the signatories of the Commitments Document were part of local working groups in the CCC preparation process, they are partners with municipality in common investment projects from some of these are included in the Action Plan.
In some specific actions **we have already started the cooperation** in the preparation phase for specific projects from different sector (for example for the electric busses with local public transport operator, for rehabilitation of heating transport and distribution network with local private operator) and we will continue working for implementation and evaluation phase, as these projects are into the implementation phase already with the grant contracts signed in 2023 or 2024.

Suceava Municipality sees the Climate City Contract as a living document, that will be updated and upgraded, as for implementation monitoring sessions will be organized, along with annual re-iteration sessions, in order to fix the necessary updates, depending on the evolution of the local / regional / national / European context and the new European and national directives to be set with regards to climate neutrality and also to get engagement from a local / regional mix of private and public actors. More details regarding the connection between signatories and actions are to be found in table 6, 7 and 14 from the Investment Plan.

All the action there are included in the Action Plan are expected to generate real, significant, measurable changes /improvement of the life quality in Suceava city and radically reduce GHG emissions. **On the roadmap for transformation of these priorities from strategy to reality, all the local stakeholders will be involved actively and responsible for achieving the climate neutrality efforts.** Thus, depending on their individual expertise, all the signatory stakeholders will contribute (during design, implementation and evaluation phase) to fulfilling the strategic interventions mentioned above. They will provide expertise to the municipality and will be co-involved in various local projects (together with specific stakeholders and Municipality) that will lead to achieving the assumed climate neutrality.

B-2.2: Individual action outlines		
INTERVENTION		
Action outline	Action name	**Rehabilitation of municipal transport and distribution heating system**
	Action type	Technical intervention
	Action description	Modernization and increase energy efficiency (reduce of losses) for the central heating transport and distribution system. Reduce the loss from the network with 24.124,96 Gcal/year. Rehabilitation of more than 71 km of heating distribution network (primary and secondary), 623 HEMS, digitalization of 312 distribution units, 8 thermal points modernized
Reference to impact pathway	Field of action	Energy system
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	Modernized and efficient energy central transport and distribution heating system
Implementation	Responsible bodies/person for implementation	Municipality, Heating distribution operator
	Action scale & addressed entities	All city surface
	Involved stakeholders	Municipality of Suceava, Private Heating Distribution operator, Owner’s Association, Ministry of Energy, Regional Development Agency North – East
	Comments on implementation	Technical documentation

Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	Electric energy – 5.452 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	21.132,96 t CO2
	Total costs and costs by CO2 unit	Total cost – 89.130.300 Euro 4.218 Euro / t CO2
Action outline	Action name	**Photovoltaic parks (including alternative system for production of hydrogen)**
	Action type	Technical intervention
	Action description	The project aims to redevelop a degraded site to revitalize and reduce air pollution while producing electricity from renewable sources (solar). The photovoltaic park will production will cover the entire consumption of electric energy for the municipality (including the electric PT fleet) - estimated capacity 19.928 MWh/year. The second project is related to floating park (Dragomirna lake) that will use existing water source for production of hydrogen and will have an electrical load of around 6500 MWh/year, generating alternative electricity with a low carbon footprint electricity used for "green "production of hydrogen. Hydrogen is estimated to be used for alternative public transport vehicles (pilot project) and /or for admission to natural gas transport network (reduce the GHG emissions). The other projects (industrial sector) include two separate projects for photovoltaic parks with a total energy production of 110.200 MWh/year. One of these projects will be implemented by the regional water and sewage provider and will cover 40 % of their own consumption. The second one will be Public Private Partnership investment with 131.648 photovoltaic panels and 78 ha. The industrial sector and residential buildings owners will be encouraged to implement projects concerning solar energy production in order to reduce the GHG emissions and the amount of consumption from fossil fuel. Total estimated capacity: 136.628 MWh/year.
Reference to impact pathway	Field of action	Energy system
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	Increase the local green and renewable energy production
Implementation	Responsible bodies/person for implementation	Municipality of Suceava, Ministry of Energy
	Action scale & addressed entities	Metropolitan level
	Involved stakeholders	Municipality of Suceava, Ministry of Energy, Local Private Energy Operator
	Comments on implementation	N/A
Impact & cost	Generated renewable energy (if applicable)	136.628 MWh/year
	Removed/substituted energy, volume, or fuel type	45.512 MWh/year Natural Gas
	GHG emissions reduction estimate (total) per emission source sector	29.210 t CO2 /year

	Total costs and costs by CO2 unit	81.170.000 Euro 2.779 Euro/ t CO2
Action outline	Action name	**Intelligent and efficient municipal public lighting**
	Action type	Technical intervention
	Action description	Implementation of the efficient public lighting concept for the rest of 20 % of the public lighting network with LED systems (2550) and connect this new investments to already in function remote management and dimming systems and introduction of the Li-Fi concept .
Reference to impact pathway	Field of action	Energy system
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	100 % energy efficient public lighting and testing the new Li-Fi technology for a smart public lighting
Implementation	Responsible bodies/person for implementation	Municipality of Suceava and Private Lighting Operators
	Action scale & addressed entities	All city surface (public lighting – streets, parks, public spaces , open markets)
	Involved stakeholders	Municipality of Suceava , Private Lighting operator , Suceava ,, Stefan cel Mare,, University , Regional Development Agency North – East
	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	Electric energy – 4.452 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	1.704 t CO2/year
	Total costs and costs by CO2 unit	3.352.020 Euro 1.967 Euro / t CO2
Action outline	Action name	**Extension of cycling facilities**
	Action type	Physical / Spatial intervention
	Action description	Development of the municipal bicycle lanes by at least 30 km until 2030 and modernised of the existing lanes, development of the public bike and scouters sharing system (minimum 5 new stations) with also acquisition of new regular and electric bicycles/scouters (200).
Reference to impact pathway	Field of action	Mobility & Transport
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	Increase the number of citizens using bikes as an alternative way of travel and reduce traffic congestion
Implementation	Responsible bodies/person for implementation	Municipality of Suceava
	Action scale & addressed entities	Main boulevards and connection routes to leisure an central areas
	Involved stakeholders	Municipality of Suceava , Local Public Transport Company and local NGO's
	Comments on implementation	N/A
Impact & cost	Generated renewable energy (if applicable)	N/A

	Removed/substituted energy, volume, or fuel type	Electric energy: 191 MWh/year Diesel: 1.981 MWh/year Gasoline: 2.043 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	2.920,5 t CO2/year
	Total costs and costs by CO2 unit	4.480.000 Euro 1.533,9 Euro /t CO2
Action outline	Action name	**Integrated green (100 % electric) metropolitan public transport system**
	Action type	Technical intervention
	Action description	Implementation of a public transport system in the metropolitan area, operated with electric buses, bus station, passenger information system, e-ticketing system, public transport monitoring and information centres. The project will increase the number of passengers/users for public transport at metropolitan level, reduce GHG emissions and increase the quality of life in the project area. 100% green public metropolitan transportation fleet: the purchase of 65 electric public transport buses, charging station for electric busses. Smart public transport stations: the modernization of 25 stations equipped with easy access for low mobility passengers, e-ticketing, LCD displays etc. Integrated e ticketing systems, CCTV system.
Reference to impact pathway	Field of action	Mobility&Transport
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	Switch from personal vehicle to green public transport for residents into the metropolitan area (access to work, education ,health , leisure)
Implementation	Responsible bodies/person for implementation	Municipality of Suceava , Metropolitan Public Transport Operator , Association of Metropolitan Development – Transport
	Action scale & addressed entities	Metropolitan Area
	Involved stakeholders	Municipality of Suceava , Metropolitan Public Transport Operator , Association of Metropolitan Development – Transport, citizens , NGO's
	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	LPG: 5.366 MWh/Year Diesel: 33.552 MWh/Year Gasoline: 35.836 MWh/Year
	GHG emissions reduction estimate (total) per emission source sector	36.558,92 t CO2/year
	Total costs and costs by CO2e unit	47.700.000 Euro 1.304,7 Euro / t CO2
Action outline	Action name	**Expansion of the public and private fleet of electric vehicles and installation of at least 50 charging stations by 2030**
	Action type	Technical/Soft intervention
	Action description	Extension of the network of public electric charging stations at least 50 new charging stations. Increase the number of public and private electric vehicles .Incentives for the residents and private companies purchasing electric vehicles (local taxes, subsidies (both national and local); parking and free charging) – at least 5.000 new beneficiaries by 2030.

Reference to impact pathway	Field of action	Mobility&Transport
	Systemic lever	Technology/Infrastructure/Policies
	Outcome (according to module B-1.1)	Replace the classic engine vehicles with alternative ones (electric/hybrid) Implementation of charging stations for electric vehicles in each neighbourhood of the city 1000 new electric vehicles (public and private)
Implementation	Responsible bodies/person for implementation	Municipality of Suceava
	Action scale & addressed entities	Each city neighbourhood
	Involved stakeholders	Municipality of Suceava , private operators (taxi, delivery , car dealers, maintenance) , NGO's
	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	Electric energy: 304 MWh/year LPG: 1.183MWh/year Diesel: 4.731 MWh/year Gasoline: 5.117MWh/year
	GHG emissions reduction estimate (total) per emission source sector	6.986 t CO2/year
	Total costs and costs by CO2 unit	21.300.000 Euro 3.048,9 Euro /t CO2
Action outline	Action name	**Integrated urban mobility system and priority for public transport ("green wave")**
	Action type	Technical intervention
	Action description	Introduction of priority systems at traffic light intersections for local public transport, creation of dedicated lanes for transport (electric buses), increase in the number of electric buses, electric minibuses, traffic lights (green light), one way main boulevards, traffic management centre (information, surveillance), "Smart parking" application, interactive map for public transport and road traffic. Reducing road traffic pollution and congestion. Planting of protective green curtains along main boulevards (to reduce noise pollution, GHG emissions and improve quality of life). Promoting smart mobility through the development of a road and parking area dedicated to the development and testing of outdoor ambient intelligence technologies and products, ICT solutions for connected and semi-autonomous vehicles. Test advanced solutions for intelligent urban traffic routing for decongestion and minimization of pollutant effects. Public transport dedicated lanes – 22 km along main boulevards
Reference to impact pathway	Field of action	Mobility Transport
	Systemic lever	Technical/Soft intervention
	Outcome (according to module B-1.1)	Switch from personal vehicle to green public transport for residents (access to work, education, health, leisure), increase the attraction of public transport , increase the number of PT passengers
Implementation	Responsible bodies/person for implementation	Municipality of Suceava, Local Public Transport Operator
	Action scale & addressed entities	City area
	Involved stakeholders	Municipality of Suceava, Local Public Transport Operator, Traffic Police, Stefan cel Mare University, Regional Development Agency North – East

	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	Electric energy: 543 MWh/Year LPG: 2.589 MWh/Year Diesel: 34.275 MWh/Year Gasoline: 37.729 MWh/Year
	GHG emissions reduction estimate (total) per emission source sector	19.344,27 t CO2/year
	Total costs and costs by CO2 unit	20.800.000 Euro 1.075,25 Euro / t CO2
Action outline	Action name	**Use of recyclable materials for local production of construction elements in the circular economy**
	Action type	Technical intervention
	Action description	Establishment of two voluntary collection centres to meet the needs of the population to dispose of: textile waste, paper/cardboard, plastic, small electrical and electronic waste, large household items, hazardous waste, small animal carcasses, wood/furniture, glass, tires, metal, garden waste, miscellaneous construction waste. Development of an efficient waste management system by increasing separate collection capacities, preparing for reuse and recovery of waste in order to continue the process of compliance with the specific directives and the transition to the circular economy (100 digitized eco-islands) including smart bins using photovoltaic panels for solar energy production. Improving waste management system, reducing the amount of unsorted waste, promoting recycling and reducing environmental impact. Increase the recycling activities connected to materials from construction works and implement the DNSH (Do Not Significant Harm) principle in all public investments and constructions projects. Promoting the use of recyclable building materials, reducing the consumption of natural resources, improving the sustainability and durability of buildings
Reference to impact pathway	Field of action	Waste & circular economy
	Systemic lever	Technology/Infrastructure/Policies
	Outcome (according to module B-1.1)	Reduce the quantity of waste , increase recycling capacities and development of the circular economy concept (55 % recycled municipal waste)
Implementation	Responsible bodies/person for implementation	Municipality of Suceava, Private Recycling Operator
	Action scale & addressed entities	City area
	Involved stakeholders	Municipality of Suceava, Private Recycling and Waste Management Operator, Construction Companies, NGO's, Owner's Associations
	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	Electric energy: 112 MWh/year Diesel : 21.867 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	7.624 t CO2/year

	Total costs and costs by CO2 unit	5.800.000 Euro 760,75 Euro / t CO2
Action outline	Action name	**Rehabilitation of wastewater collectors, sewerage networks and rehabilitation and upgrading of Suceava wastewater treatment plant**
	Action type	Technical intervention
	Action description	At the moment, the sewage pipes do not ensure the complete transport of wastewater to the treatment plant, as there are losses that lead to the pollution of water courses in Suceava (pr. Cetății). There are also targets (houses or economic agents) that are not connected to the sewerage network, wastewater being discharged into the nearby water courses (pr. Cetății) Therefore, by rehabilitating and changing the collector pipes that transport wastewater to the treatment plant, especially the collector that takes wastewater from the Obcini district - Alexandru cel Bun – Centru-Calea Unirii area, it will be possible to eliminate wastewater losses and implicitly the pollution of water courses . Improper operation of the municipal wastewater treatment plant has a major negative impact on the outfall, namely on the Suceava river as the treatment plant has been the source of major pollution of the Suceava River, which has led to fish mortality and, implicitly, to the impairment of the ecological balance of the water body. The project for upgrading the waste water treatment plant will have as direct results significant improvement the degree of purification, increase the efficiency of the wastewater treatment system and sludge discharge with facilities for dehydration , drying of sludge , with phosphor recovery installation, increase the energy efficiency , reduce GHG emissions and alternative energy production (biogas).
Reference to impact pathway	Field of action	Waste & circular economy
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	Reduction of the waste water impact of natural environment, increase the capacity of the waste water treatment plant. conservation of biodiversity
Implementation	Responsible bodies/person for implementation	Municipality of Suceava , Regional Water and Sewage Operator
	Action scale & addressed entities	District areas
	Involved stakeholders	Municipality of Suceava , Regional Water and Sewage Operator , Regional Development Agency North – East
	Comments on implementation	N/A
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	Electric energy: 1.013 MWh/year Diesel : 8.198 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	1.680 t CO2/year
	Total costs and costs by CO2 unit	12.000.000 Euro 7.142,8 Euro /t CO2
Action outline	Action name	**Development of new green areas and planting green curtains (major roads area)**
	Action type	Nature based solution
	Action description	Reconversion and reuse of degraded land in Suceava City. Planting ornamental trees (5000) resistant to climate change, with a high CO2 absorption capacity, which will constitute a plant protection curtain (against noise) and reduce urban pollution (along the main traffic arteries in the city and into residential areas)

		Protecting existing wild nature, unique in an urban habitat; Identify innovative ways of visual and auditory interaction with the protected biotope without disturbing its natural processes; Landscaping of the park forest functions with all the necessary facilities and equipment (paths, resting places, playgrounds, places for appropriate sports activities, public lighting, etc.);Addressing accessibility and links to build and planted spaces, nearby tourist and local interest objectives(140 hectares in Zamca and Sipote area)
Reference to impact pathway	Field of action	Green infrastructure
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	At least 140 hectares of rehabilitated green areas into the city
Implementation	Responsible bodies/person for implementation	Municipality of Suceava , The Order of Romanian Architects
	Action scale & addressed entities	City area
	Involved stakeholders	Municipality of Suceava , University of Suceava (Faculties of Forestry), The Order of Romanian Architects , Environmental Protection Agency, NGOs , North -East Regional Development Agency.
	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	N/A
	Removed/substituted energy, volume, or fuel type	Electric energy: 126 MWh/year Diesel: 914 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	281 t CO2/year
	Total costs and costs by CO2 unit	35.217.000 Euro 125.327 Euro /t CO2
Action outline	Action name	**Increasing energy efficiency of residential and private buildings to reduce GHG emissions and increase the quality of life of residents (including HEMS)**
	Action type	Technical Intervention
	Action description	Increasing energy efficiency in residential buildings by implementing an integrated energy monitoring, control and reduction system (at least 65 residential buildings with more than 10.000 apartments). The same solutions are to be implemented into private buildings (mainly commercial and industrial ones) – Total = 480.000 sq. Production of green energy (photovoltaic and solar panels), green roofs and facades. The main aim of the energy retrofitting/modernization of existing buildings is to reduce heat consumption for space heating and hot water preparation while ensuring comfortable microclimate conditions. Identifying energy saving potential in existing buildings. Promoting appropriate energy efficiency measures such as thermal insulation, replacement of energy systems with more efficient technologies and use of viable renewable energy sources. Installation of sensors and automation systems to monitor and control energy consumption in real time. Creation of data platforms for collecting, managing and interpreting energy efficiency information. Promoting solutions to transform neighbourhoods into entities capable of producing more energy from renewable sources than they consume, thus contributing to fighting climate change and ensuring sustainable urban development. Promoting public-private partnerships for the

		energy renovation of buildings and the development of a smart connected city infrastructure. Create awareness campaigns to promote energy reduction and the adoption of low environmental impact practices.
Reference to impact pathway	Field of action	Built environment
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	Improved energy efficiency for at least 10.000 apartments and residential/private buildings
Implementation	Responsible bodies /person for implementation	Municipality of Suceava, The Order of Romanian Architects , Owner's Associations
	Action scale & addressed entities	City area
	Involved stakeholders	Municipality of Suceava , The Order of Romanian Architects , Owner's Associations, NGOs North -East Regional Development Agency
	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	2.426 MWh/year
	Removed/substituted energy, volume, or fuel type	Electric energy: 4.126 MWh/year Natural gas: 66.052 MWh/year Wood : 17.013 MWh/year Biomass : 33.484 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	31.112 t CO2/year from Buildings
	Total costs and costs by CO2 unit	80.000.000 Euro 2.571,4 Euro /t CO2
Action outline	Action name	**Modernization of public institutions' buildings through refurbishment and increased energy efficiency**
	Action type	Technical intervention
	Action description	Increase energy efficiency in at least 10 municipal buildings (administrative buildings, educational units), with construction works for reduce energy consumption, increase energy efficiency, reduce GHG emissions, facilities for production of alternative energy, implementing an integrated system for monitoring, controlling and reducing energy consumption. The main aim of the energy rehabilitation/upgrading measures of the existing buildings is to reduce heat consumption for heating and hot water preparation while ensuring comfortable microclimate conditions. Identifying energy saving potential in existing buildings. Promoting appropriate energy efficiency measures such as thermal insulation, replacement of energy systems with more efficient technologies and use of viable renewable energy sources. , Installation of sensors and automation systems to monitor and control energy consumption in real time, Creation of data platforms for collecting, managing and interpreting energy efficiency information and integrating it into the city's Digital Twin concept. , Promoting solutions to transform neighbourhoods into entities capable of producing more energy from renewable sources than they consume, thus contributing to fighting climate change and ensuring sustainable urban development, Promoting public-private partnerships for the energy renovation of buildings and the development of a smart connected city infrastructure. Create awareness campaigns to promote energy reduction and the adoption of low environmental impact practices.
Reference to impact pathway	Field of action	Built environmental
	Systemic lever	Technology/Infrastructure
	Outcome (according to module B-1.1)	Reduce the level of energy consumption and increase energy efficiency in public buildings (at least 10)

Implementation	Responsible bodies/person for implementation	Municipality of Suceava
	Action scale & addressed entities	Public buildings
	Involved stakeholders	Municipality of Suceava, North-East Regional Development Agency, Environmental Protection Agency, Technical University of Construction Bucharest, National Competence Centre for the Development of Climate Neutral and Smart Cities (NetZero Cities), University "Ștefan cel Mare" of Suceava
	Comments on implementation	Technical documentation
Impact & cost	Generated renewable energy (if applicable)	390 MWh/year
	Removed/substituted energy, volume, or fuel type	Electric energy: 2.616 MWh/year Natural gas: 7.905 MWh/year
	GHG emissions reduction estimate (total) per emission source sector	7.230 t CO2
	Total costs and costs by CO2 unit	22.190.000 Euro 3.069,1 Euro / t CO2
Action outline	Action name	**Improved local urban regulations and policies for achieving climate neutrality**
	Action type	Other intervention
	Action description	Design, approve, implement and monitoring an innovative SMART climate neutrality city plan, with regulation and policies (including incentives) related to increase the energy efficiency and reduce GHG emissions for residential/private buildings and with specific „climate neutral„ requirements for construction of new residential/private buildings (energy efficiency, green spaces, access to public transport, use of recycling construction materials, renewable energy production) with focus on nZEB principles and improve the quality of life into the city. The city plan need to have also a set of urban planning principles for climate neutral interventions for existing public and private buildings, dissemination and awareness campaigns, replication and changing behaviour through a, climate neutral" one for citizens. Implementation of "pilot projects" for climate neutral city neighbourhoods and ideas for replication.
Reference to impact pathway	Field of action	Soft Intervention
	Systemic lever	Policy & Governance
	Outcome (according to module B-1.1)	55% of the private buildings to improve energy performance
Implementation	Responsible bodies/person for implementation	Stakeholders from the local NZC action working group
	Action scale & addressed entities	City area
	Involved stakeholders	Stakeholders from the local NZC action working group
	Comments on implementation	N/A
Impact & cost	Generated renewable energy (if applicable)	3.590 MWh/year
	Removed/substituted energy, volume, or fuel type	Electric energy: 8.574 MWh/year Natural gas: 56.723 MWh/year Biomass : 19.358 MWh/year
	GHG emissions reduction estimate (total)	48.351 t CO2/year

	per emission source sector	
	Total costs and costs by CO2 unit	25.000.000 Euro 517 Euro / t CO2

B-2.3: Summary strategy for residual emissions

Suceava Municipality will continue to update the local strategic documents for the period 2030-2038 in order to identify the specific actions, main actors, the most efficient approach and financial sources with the main goal of continue the local efforts for reduction of GHG emissions, increase energy efficiency, reduce the energy consumption, increase the production of "green energy "and improve the quality of life into the city.

Total emissions that are not accounted in this Action Plan: 55.903 t CO2/year (19,34%).

The Net-Zero City Action Plan brings together all major interventions planned by the Municipality to achieve climate neutrality by 2030. The activities and proposals described in this plan include priority projects from local strategies and were estimated to reduce CO2 emissions to a target of 80,66%.

Offsetting measures are already included in the current Action Plan, as the proposed interventions include major carbon sink projects (rehabilitation and/or expansion of the existing parks/green areas, planting of 150.000 trees, metropolitan green belt, energy efficiency in residential buildings), with an offsetting effect that was accounted for in the 80.66% target. The strategy to address these residual emissions will give priority to local offset projects, and in particular to sinks and nature-based solutions projects, which also bring great co-benefits, particularly for the ecosystem services they provide and which have become essential for adaptation to climate change (temperature regulation, flood prevention, etc.) and for improving the quality of life in key aspects such as better physical and mental health and in a more democratised way, developing these systems in public spaces and proximity.

Priority will therefore be given to the local natural carbon sinks, projects/actions/initiatives, especially creation of new green areas, planting trees (150.000) resistant to climate change, with a high CO2 absorption capacity, addressing also to flood mitigation and biodiversity , that which will constitute a plant protection curtain (against noise) and reduce urban pollution in different location from Suceava City as: Manastirii Hill (11 hectares – 110.000 trees), Tineretii Neighbourhood (2 hectares - 1.800 trees), Europa Neighbourhood (2 hectares - 1.800 trees), Burdujeni Sat Neighbourhood (14 hectares- 40.000 trees), increasing the green infrastructure in the city, with specific investments for creating new urban habitats and protection of the existing wild nature, (Suceava river banks 221 hectares), with ecosystems that have high carbon sink potential.

The proposed local strategy/approach (**carbon sink projects)** for residual emissions includes also:

Buildings – as buildings are responsible for 59,51 % of the total CO2 emissions more specific actions need to be implemented like: continue the rehabilitation of the entire municipal distribution networks, increasing the energy efficiency of residential buildings (additional 8000 apartments), energy efficiency in private buildings, energy efficiency in public buildings (there are not under municipality's administration – County Council, other public institutions) promoting the adoption of the new principle for all new buildings (especially in private sector), increase the utilisation of renewable energy sources solar, wind, biomass), heat storage technology, heat pumps, HEMS, carbon capture and storage technologies. Special attention need to be taking into consideration related to changing behaviour and acceptance of climate neutral intervention among citizens.

Transport – the proposed intervention from the Action Plan will be replicated and implemented at large scale covering the entire surface of Suceava City. Municipality is determined to implement actions like: extension of cycling facilities, congestion charge, extension of pedestrian facilities and Low Emission Areas, incentives and promotion campaigns for use of alternative ways of travelling and alternative vehicles (especially electric vehicles), sustainable urban mobility initiatives (reduce the number of private vehicles with classic engine, reduce traffic congestion), increase the attractively of PT and number of passengers, travel plans for different social categories (with accent to sustainable and alternative way of travel). Also with referring to the infrastructure there will be initiatives in the same scenario attempt to reduce traffic inside the city area, like

construction of city ring, constructing new transportation infrastructure and by implementing new local public policies that encourage inhabitants to embrace a more climate-neutral way of living and moving with a direct result in reduction of CO2 emissions associated with transportation.

Waste – actions will follow the pathway to reduce the impact of waste against environment like: upgrade the municipal waste management system, increased selective waste collection facilities, change citizens behaviour and encourage them to participate to municipal's efforts for separate waste collection and recycling, increase the percentage of construction waste recycled, extend the concept of circular economy, increase the utilisation of recycled materials into construction sector, innovative actions (compost stations, cooking oil recycling facilities).

IPPU - private sector will be encouraged to extend the implementation of measures regarding energy efficiency (including commerce and services), increase the investments in alternative energy production units (solar, wind), increase the number of alternative vehicles in private fleets, increase the utilisation of recycled materials into production processes and more important develop the number of local projects implemented by Public Private Partnership entities.

AFOLU – actions will be related to promote economic efficiency of local markets, sustainable production of local goods, sustainable development and conservation of green spaces.

Suceava City will continue working in the next 10 years in order to identify the list of policies, actions, projects and interventions that need to be implemented in line with the roadmap to address the residual emissions, the level of GHG reduction that will be identified and assumed by local strategic documents and the goals regarding proposed targets for improving the quality of life into the city.

Transition to climate neutrality is a complex and challenging process, but the next step related to residual emissions is expected to be a complex and provocative. For this reason, each single aspect need to be considered, each specific details for different city areas and sectors (heating, energy, transport, building, green areas) will have to be analysed, specific solutions, replicated or innovative ones, need to be identified for all sectors, discussed with local stakeholders and experts in order to create the appropriate conditions for a smooth approach to the goals assumed by the municipality in relationship with residual emissions.

Based on the local experience in the field of energy efficiency projects and also on the knowledge that will accrue from the implementation of the Action Plan, Suceava Municipality, through its Transition Team, we consider that we will be able to achieve our ambitions related to residual emissions and continue the local efforts for becoming a nearly zero GHG emissions city.

The following aspects will be considered for approaching the residual emissions:
Cumulative effect: Repeated and sustained efforts over time can lead to a more significant and lasting reduction in emissions compared to short-term bursts of activity.
Technological advancements: Technological innovations in areas like renewable energy, energy efficiency, and sustainable transportation are constantly evolving. More time allows for the adoption and integration of these advancements into the city's strategies, potentially leading to solutions that are more effective.
Behaviour change: Encouraging sustainable behaviour changes among citizens takes time and sustained effort. Continued awareness campaigns, education initiatives, and infrastructure improvements over a longer period can lead to a gradual shift towards more sustainable practices.
Learning and adaptation: Implementing and monitoring the effectiveness of strategies takes time. The document emphasizes ongoing analysis and adaptation based on experience and knowledge gained over time. This iterative approach can lead to continuous improvement and refinement of the strategies, potentially leading to greater impact in the end. Finally, in any case, carbon sequestration by artificial techniques will be developed and carbon credits will be included in the NETZERO strategy to ensure the achievement of neutrality.

4.3 Module B-3 Indicators for Monitoring, Evaluation and Learning

Module B-3 "Indicators for Monitoring, Evaluation and Learning" should contain a selection of indicators taken from the Comprehensive Indicator Sets developed by NZC. The following should be provided: An overview

table listing the indicators selected per outcome and impact including targets and evaluation points (B-3.1); and a metadata table for each indicator selected, as specified in the Comprehensive Indicator Sets (B-3.2).

Outcomes/ impacts addressed	Action/ project	**Indicator No.** (unique identified)	Indicator name	Target values		
				2025	2027	2030
CO2 emissions reduction	Actions included in the Action Plan	SV-NZC-01	CO2 emissions	20 %	50 %	80 %
Percentage of the citizens happy/comfortable with the quality of the life into Suceava city	Actions included in the Action Plan	SV-NZC-03	Quality of life	50 %	55 %	65 %
Value saved for each house owner/year	1.1Rehabilitation of municipal transport and distribution heating system 1.2 Photovoltaic parks (including alternative system for production of hydrogen) 2.2 Integrated green (100 % electric) metropolitan public transport system 3.1 Use of recyclable materials for local production of construction elements in the circular economy 5.1 Increasing energy efficiency of residential buildings to reduce GHG emissions and increase the quality of life of residents (including HEMS) 5.2Modernization of public institutions' buildings through refurbishment and increased energy efficiency	SV-NZC-04	House owner Savings (Euro)	125 Euro	85 Euro	55 Euro
Total municipal cost (energy/fuel)	1.1Rehabilitation of municipal transport and distribution heating system 1.2 Photovoltaic parks (including alternative system for production of hydrogen) 1.3 Intelligent and efficient municipal public lighting 2.2 Integrated green (100 % electric) metropolitan public transport system 2.4 Integrated urban mobility system and priority for public transport ("green wave") 3.1 Use of recyclable materials for local production of construction elements in the circular economy 3.2Rehabilitation of wastewater collectors, sewerage networks and rehabilitation and upgrading of Suceava wastewater	SV-NZC-05	Municipal Savings (Euro)	2.900 .000 Euro	1.850 .000 Euro	850.000 Euro

	treatment plant 5.1 Increasing energy efficiency of residential buildings to reduce GHG emissions and increase the quality of life of residents (including HEMS) 5.2Modernization of public institutions' buildings through refurbishment and increased energy efficiency					
Trips made with alternative ways of travelling (public transport / electric vehicles / bikes)	2.1 Extension of cycling facilities 2.3 Expansion of the public and private fleet of electric vehicles and installation of at least 50 charging stations by 2028 2.4 Integrated urban mobility system and priority for public transport ("green wave") 6.1 Improved local urban regulations and policies for achieving climate neutrality	SV-NZC-06	Modal share	42%	48%	52 %
Surface of green spaces	2.4 Integrated urban mobility system and priority for public transport ("green wave") 4.1 Development of new green areas and planting green curtains (major roads area)	SV-NZC-07	Hectares	40	100	140

B-3.2: Indicator Metadata	
Indicator Name	CO2 Emissions
Indicator Unit	Tons of CO2 per Year
Definition	Reduction of CO2 emissions
Calculation	Periodic reports, measurements and regular monitoring
Indicator Context	
Does the indicator measure direct impacts (i.e., reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it impact?	Buildings, Transport, Waste, IPPU, AFOLU
Does the indicator measure indirect impacts (i.e., co-benefits)?	no
If yes, which co-benefit does it measure?	N/A
Can the indicator be used for monitoring impact pathways?	yes
If yes, which NZC impact pathway is it relevant for?	SV-NZC-01
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	Monitoring reports
Expected availability	Baseline and periodic data
Suggested collection interval	Twice per year
References	
Deliverables describing the indicator	Monitoring reports
Other indicator systems using this indicator	Reference Framework for Sustainable Cities, ISO 37110:2022 Sustainable cities and communities,

	Romania Urban Policy Indicators
B-3.2: Indicator Metadata	
Indicator Name	Air quality
Indicator Unit	Air quality
Definition	General Air Quality Index
Calculation	Periodic reports from Romanian National Air Quality Monitoring Network
Indicator Context	
Does the indicator measure direct impacts (i.e., reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it impact?	Buildings, Transport, Waste, IPPU, AFOLU
Does the indicator measure indirect impacts (i.e., co-benefits)?	yes
If yes, which co-benefit does it measure?	Improve the quality of life into the city
Can the indicator be used for monitoring impact pathways?	yes
If yes, which NZC impact pathway is it relevant for?	SV-NZC-02
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	Reports and data from web platform (national)
Expected availability	Daily
Suggested collection interval	Once per year
References	
Deliverables describing the indicator	Air quality indexes
Other indicator systems using this indicator	Romania Urban Policy Indicators
B-3.2: Indicator Metadata	
Indicator Name	Quality of life
Indicator Unit	Percent
Definition	Percentage of the citizens happy/comfortable with the quality of the life into Suceava city
Calculation	Urban Surveys
Indicator Context	
Does the indicator measure direct impacts (i.e., reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it impact?	Buildings, Transport, Waste, IPPU, AFOLU
Does the indicator measure indirect impacts (i.e., co-benefits)?	yes
If yes, which co-benefit does it measure?	GHG emissions reduction; Improve the Air Quality; Increase the energy efficiency for buildings and reduce the cost for utilities .
Can the indicator be used for monitoring impact pathways?	yes
If yes, which NZC impact pathway is it relevant for?	SV-NZC-03
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	Urban Surveys – local and national level (local public institutions and central govern)
Expected availability	At least twice in 10 years
Suggested collection interval	At least twice in 10 years
References	
Deliverables describing the indicator	Urban survey for measurements of the people's

	satisfaction regarding quality of life into the city
Other indicator systems using this indicator	Romania Urban Policy Indicators
B-3.2: Indicator Metadata	
Indicator Name	House owner Saving
Indicator Unit	Euro
Definition	Average energy cost savings per household/owner
Calculation	Household Surveys
Indicator Context	
Does the indicator measure direct impacts (i.e., reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it impact?	Buildings, Transport, Waste
Does the indicator measure indirect impacts (i.e., co-benefits)?	yes
If yes, which co-benefit does it measure?	GHG emissions reduction; Improve the Air Quality; Increase the energy efficiency for buildings and reduce the cost for utilities.
Can the indicator be used for monitoring impact pathways?	yes
If yes, which NZC impact pathway is it relevant for?	SV-NZC-04
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	Surveys performed by National Institute for Statistics(national level)
Expected availability	At least twice in 10 years
Suggested collection interval	At least twice in 10 years
References	
Deliverables describing the indicator	Household Surveys
Other indicator systems using this indicator	Romania Urban Policy Indicators
B-3.2: Indicator Metadata	
Indicator Name	Municipal Savings
Indicator Unit	Euro
Definition	Average energy cost savings for public institutions
Calculation	Detailed budget for public administrations
Indicator Context	
Does the indicator measure direct impacts (i.e., reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it impact?	Buildings, Transport, Waste
Does the indicator measure indirect impacts (i.e., co-benefits)?	yes
If yes, which co-benefit does it measure?	GHG emissions reduction; Improve the Air Quality; Increase the energy efficiency for public buildings and reduce the cost for utilities.
Can the indicator be used for monitoring impact pathways?	yes
If yes, which NZC impact pathway is it relevant for?	SV-NZC-05
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	Detailed budget for public administrations
Expected availability	Each year
Suggested collection interval	Each year
References	
Deliverables describing the indicator	Local public authority Financial Assessment

Other indicator systems using this indicator	Reference Framework for Sustainable Cities, Romania Urban Policy Indicators
B-3.2: Indicator Metadata	
Indicator Name	Modal share for public transport and non-motorized trips
Indicator Unit	Percent
Definition	Increase the number of trips done by alternative ways of traveling (public transport / electric vehicles/bikes)
Calculation	Traffic surveys and CCTV (traffic) data
Indicator Context	
Does the indicator measure direct impacts (i.e., reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it impact?	Transport, Waste
Does the indicator measure indirect impacts (i.e., co-benefits)?	yes
If yes, which co-benefit does it measure?	GHG emissions reduction; Improve the Air Quality and the quality of life into the city
Can the indicator be used for monitoring impact pathways?	yes
If yes, which NZC impact pathway is it relevant for?	SV-NZC-06
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	Traffic surveys and CCTV(traffic) data
Expected availability	Baseline and periodic data
Suggested collection interval	Every 4 years
References	
Deliverables describing the indicator	Traffic surveys and CCTV data
Other indicator systems using this indicator	Reference Framework for Sustainable Cities ,Romania Urban Policy Indicators
B-3.2: Indicator Metadata	
Indicator Name	Surface of green spaces
Indicator Unit	Hectares
Definition	Increase the surface of green spaces into the city and increase the percentage of green square meters/capita
Calculation	Land / urban database and measurements
Indicator Context	
Does the indicator measure direct impacts (i.e., reduction in greenhouse gas emissions?)	yes
If yes, which emission source sectors does it impact?	AFOLU
Does the indicator measure indirect impacts (i.e., co-benefits)?	yes
If yes, which co-benefit does it measure?	GHG emissions reduction; Improve the Air Quality and the quality of life into the city
Can the indicator be used for monitoring impact pathways?	yes
If yes, which NZC impact pathway is it relevant for?	SV-NZC-07
Is the indicator captured by the existing CDP/ SCIS/ Covenant of Mayors platforms?	yes
Data requirements	
Expected data source	URBAN GIS , Municipal Green Space Register or other available open-source land use data base
Expected availability	Data available and updated annually
Suggested collection interval	Annually
References	
Deliverables describing the indicator	Detailed land use analysis

Other indicator systems using this indicator	Reference Framework for Sustainable Cities, Romania Urban Policy Indicators

5 Part C – Enabling Climate Neutrality by 2030

Part C "Enabling Climate Neutrality by 2030" aims to outline any enabling interventions, i.e., regarding organizational setting or collaborative governance models or related to social innovations – designed to support and enable the climate action portfolios described in Module B-2 as well as aiming to achieve co-benefits outlined in the impact pathway (Module B-1).

5.1 Module C-1 Organisational and Governance Innovation Interventions

Module C-1 "Organisational and Governance Innovation Interventions" consists of a summary table, listing organizational and governance interventions and describing their impact (C-1.1) and a section for more detailed descriptions and comments (C-1.2).

C.1.1: Enabling organisational and governance interventions					
Intervention name	Description	Responsible entity/ dept./ person	Involved stakeholder	Enabling impact	Co-benefits
Climate City Local Support Group	A group of local public servants, experts and stakeholders all with expertize and responsibilities connected with climate neutrality	Suceava Municipality's Energy Manager	Representatives from municipality's departments, environment association, public institutions, local companies responsible for energy, heating, water and waste management /providers, citizens	Coordinate and provide technical support for the implementation of the Climate Action Plan	Stronger local commitment for climate neutral actions Adequate implementation of proposed actions
Metropolitan Development Association – Transport	An association of two cities and 7 villages from metropolitan area with a designated objective of improve public transport condition and reach 100 % electric public transport in the area	The Association Chief Executive Group	Representatives from all 9 municipalities, local transport company, traffic police department, passenger's association and local traffic police	Implementation of projects for electric sustainable public transport, road infrastructure, traffic lights and traffic management with the final result of increase the number of PT passengers and reduce private cars journeys	Improve the quality of life in metropolitan area Reduce GHG emissions and traffic congestion Reduce traffic accidents Change behaviour and increase PT attractively
Academic local and national partnership	Collaboration between public administration and several technical universities for research and innovation	Suceava City and University of Suceava	University from Cluj Napoca, Bucharest and other cities from Romania Private companies Research and	Development, testing and implementation of different solution for smart and sustainable city	Facilitate the transfer of best practice solutions between cities and academic sector

	activities in order to find solutions for city challenges and implement pilot innovative projects		technical experts Students		Facilitate the implementation of the research studies Development of research and innovation skills for young generation
Suceava Climate Pact	Local association of public institutions, university and private companies engaged in climate transition activities and projects	Suceava City	Owners association Environmental Protection Agency Private companies	Design, implementation and evaluation of local initiatives, actions, policies and projects focussed on climate transition	Increase the number of local initiatives Improve cooperation between different sectors of activity Improve the quality of life.
Sustainable Urban Development Commission	A local organization with competence in sustainable urban planning and climate neutral intervention	Suceava city	Urban Planners, Architects, local experts, NGO's, representatives from public institutions and private companies	Development of local, zonal and city strategies and policies and plans from climate neutral perspective	Improve urban aspect in terms of buildings, public spaces, green areas Integrate urban planning, construction regulation with DNSH and climate neutral principles
Climate Neutral Platform	Interactive website for communication between all stakeholders, public authorities and citizens in the domain of climate neutrality	NGO's	All stakeholders identified in the Action Plan	Improve direct and transparent communication, increase the local support for climate neutral initiatives	A better level of understanding for climate neutrality concepts and objectives Changing behaviour

C-1.2: Description of organisation and governance interventions – textual and visual elements

1.Improved local/internal organisational and governance models:

The municipality has an important role to play in leading the local climate transition towards the goal set by joining the 100 Smart and Climate Neutral Cities Mission by 2030.The role that Suceava will play in the coming period is to become the initiator of the decarbonisation process at local level by providing a concrete example of best practice, thus being the first city to commit to involving most of the local stakeholders in the climate transition process.

The internal **Municipality's transition team** includes public servants with experience in management, finance, technical, evaluation, publicity and dissemination. There are regular meetings with all involved persons: once per week in the presence of leading staff, at least twice per month with representatives from construction companies and private operators (if necessarily) and also anytime when it is required for the smooth implementation of the projects. Apart of this for the final evaluation for each project, a service contract is required with an external expert that has to evaluate and certify the project impact.

Additional to these aspects in order to ensure a good control in the implementation, specialized structure composed of people with experience in energy efficiency, key people from various departments of the local authority, interested local actors, to ensure the monitoring and reporting of activities assumed by the plan are organized. For the activities related to estimation of emission reduction and measurement, the impact of investments we usually use to contract external experts, perform public surveys and organize workshops with

local stakeholders.
As almost all public authorities, **Suceava Municipality has an internal monitoring and evaluation system for capital investment planning** with representatives from different departments, but considering the complexity and high importance of the investments included in the Action Plan we will need to upgrade and constantly update the internal system especially for the monitoring of process-mapping deviation.

The transition team members (that are responsible for planning & reporting) skills and commitments are essential as usually approved reports are mandatory for the reimbursement of costs.
In order to create the condition for dissemination and replication of the Action Plan projects/objectives/actions at national level Suceava Municipality will work together with Bucharest and Cluj-Napoca as climate neutrality ambassadors for Romanian cities.
This actions have already started and few distinct activities have been organized at national level (one in Bucharest where all three cities were able to present their local strategies for next 7 years) and the most relevant one is the event in Cluj Napoca where decision makers from national, regional and local administration have signed an agreement that establish the terms for future cooperation with other cities from Romania on their pathway for becoming climate neutral.

Each specific department (technical, financial, monitoring and implementation) has established his own internal procedures and the ones related to cooperation with other departments therefor at the institutional level to ensure the appropriate framework for successful implementation of the climate neutrality actions.
European projects department is the main responsible (along with the Transition Teams members - different experts from different departments) for design, funding, implementation and evaluation of the projects/initiatives included into Action Plan. For the moment, our efforts are concentrated to preparation of technical documentation in order to secure financing from ERDF and other external sources mainly for the implementation of climate neutral initiatives included and assumed in the Action Plan and in parallel to implementation of the already granted contracts for local climate neutral investments.
The actual organization and management of this ambitious process will follow an open approach towards the general public and all stakeholders, so that the focus is on dialogue and collaboration between stakeholders, both through public consultation and information gathering from all sectors of interest, providing opportunities for involvement in an equitable and participatory governance.
Therefore, through the climate contract the local authority shows once again that the Municipality of Suceava aims to involve citizens in the current processes of development of the city, demonstrating a public management oriented towards the citizen and the relevant factors of the local plan.

2.**Cooperation at national level:** In order to support the efforts of Suceava Municipality and the other two municipalities that are part of the mission in Romania, the Project „**NetZeRoCities – National Centre for Competence and solutions for developing climatic neutral smart cities**".
The consortium coordinating NetZero Cities is composed of POLITECHNIC University of Bucharest, National Institute for Research and Development in Computer Science ICI Bucharest, Technical University of Cluj-Napoca, Technical University of Construction Bucharest, "Ștefan cel Mare" University of Suceava, Holisun SRL, Beia Cercetare SRL, Datacor SRL, Inteligent Convergent Solutions SRL, SC Building Technology Group R SRL, Orange Romania SA and Robert Bosch SRL.
The Centre of Competence is a secure and efficient structure capable of providing a sustainable, predictable and streamlined environment for the development of research, development and innovation activities with a focus on contributing to climate change and the digital transition.
The Centre is conceived as an innovation hub, representing an indicator of excellence in research, development and innovation and acting as a support for cities in successfully accessing funding opportunities under the EU Climate Change Mission and in achieving the EU Climate Change Mission's objectives and key indicators.
The aim is to support access to funding, increase the innovation capacity of the RDI system to create synergies between research and business, and create the critical mass of interdisciplinary skills needed to address the societal challenges associated with the EU Climate Change Mission. The Centre of Competence is a networking tool of excellence to increase the chances of success in the EU Climate Change Mission and the

Carbon Neutrality objective.
The main objectives of the Competence Centre are:

1. **Methodologic framework**

Establishing the methodological framework for the Competence Centre, focusing on supporting Romanian cities in achieving Climate Neutrality, with a focus on the requirements of individuals, local businesses, local governments and regional and national authorities.

2. **Governance of Climate Neutral Cities**

Establish city governance models and policies for climate action. Inspired by what has worked for peer cities in the EU and adapted to local and regional administrative, economic and social barriers and needs, Governance will support a systemic transformation of Romanian cities, following a holistic approach to promote innovation and implementation of measures.
The Competence Centre will propose plans (integrated and multi-level governance) and help local administrations to take a strategic, holistic and long-term approach to climate investments, including the collaboration of all relevant actors in the city.

3. **Collaboration platform**

Design and implement a Competence Centre Platform to support collaboration between national and European institutions to achieve Climate Neutrality, integrating social inclusion, diversity and participation of all stakeholders in communities.

4. **Climate Actions Services**

Increase and improve the introduction of enabling technologies (digitalization) in cities and support the transition to green technologies in areas such as sustainable mobility, energy efficiency or green urban planning to achieve Climate Neutrality. The aim is to demonstrate a systemic innovation approach to green transition in governance, transport, energy, construction and recycling, supported by strong digital technologies (i.e. systemic innovation in the urban investment value chain).

5. **Drivers for Climate Neutral Cities and Smart Campuses**

Developing best practices (for green and digital twin transformations) to fully harness greenhouse gas emissions and air pollution data to implement smart mobility, smart energy grid delivery, improved energy efficiency in buildings, water and waste management, and more, leading to increased awareness of climate change. The aim is to build an Innovation Hub (Smart Campus) for cities in Romania to inspire, learn and replicate ideas and solutions from the EU Climate Change Mission.

6. **Net Zero Competence Centre**

Defining the operational, financial and legal conditions for the creation of the Competence Centre to ensure its future sustainability.
The main purpose of participating in this project is to benefit from the know-how of the team members, to transfer the best practice example (already implemented by some of the project members), to identify, adapt and implement pilot projects in Suceava, replicate de existing ones from other Romanian cities.
Suceava city would like to benefit from academic and technic knowledge of the project team members and more than this the issue of transferring the best practical solution for increasing the citizen's/stakeholders involvement into the implementation of Action Plan will be approach.
As referring to the entities mentioned in C1.1 section we have to add that we have already started the cooperation in the preparation phase for specific projects from different sector (for example for the electric busses with local public transport operator, for rehabilitation of heating transport and distribution network with local private operator) and for sure we will continue working together for implementation and evaluation phase.

5.2 Module C-2 Social and Other Innovation Interventions

Module C-2 "Social and Other Innovation Interventions" consists of a summary table, listing organizational and collaborative governance interventions and describing their impact (C-2.1) and a section for more detailed descriptions and comments (C-2.2).

C.2.1: Enabling social innovation interventions					
Intervention name	**Description**	**Responsible entity/ dept./ person**	**Involved stakeholder**	**Enabling impact**	**Co-benefits**
Social& Media coverage	Social and media campaigns designated for raising awareness, information and stakeholders(citizens) involvement	Suceava City	All stakeholders	The main purpose of these campaigns are to inform the local community about NZC actions, concept, ideas and disseminate the information at local level	Increased citizens and stakeholders awareness and involvement Improve local communication between authorities and civil society Increase the visibility and acceptance for city's actions.
Online NZC workshops	Invite citizens and local stakeholders to participate in at least one annual event participants related to City's projects, climate neutral actions and policies	Suceava City	Citizens and specific stakeholders	Provide information and ask for feedbacks regarding city's actions and projects trough climate neutrality	Improve citizens' acceptance for municipality's actions Disseminate the information and results Adaptation and adjustment of municipal working plan and strategy according to citizens feedback.
Climate forum for education units	Young people gather to discuss and develop climate solutions and innovative actions	Suceava City, educational units	NGO's	Involvement of both teachers and young generation in the transition process and climate neutral activities	Improve young generation's acceptance for municipality's actions Improve local communication between authorities and young generation Increase the number of young people trained and aware of climate neutrality
NZS Summer University	Educational events with curricula that include: energy efficiency, reduction of energy consumption, alternative and sustainable mobility, innovation and research activities	Suceava City, Universities from Suceava, Bucharest, Cluj Napoca and other Romanian cities	Students, experts, influencers from Romanian cities	Students will participate in specific courses and practical activities that will be able to improve their level of knowledge regarding climate neutrality	Increase the number of students trained and aware of climate neutrality actions and concepts. Increase the number of academic units that have climate neutrality activities, courses Increase the innovation

					and research activities with practical solutions developed and implemented into pilot projects
Electric public transport and electric vehicles forum	As Suceava city is the first Romanian city with an electric municipal fleet and charging stations network , first Romanian city with 100% electric public transport local area and future metropolitan area a national forum will be organized for promotion of use of alternative vehicles	Suceava city and local transport company	Car dealers, bus dealers, University, NGOs	Local authorities, local transport companies and citizens will benefit from Suceava city experience and expertise in the EV'S domain	Increase the number of electric vehicles both private and public, the number of electric busses in Romanian cities Transfer the best practice experience and know how Encourage citizens to use alternative vehicles Improve the quality of life and reduce GHG emissions
Suceava ride	Workplaces and facilities for developing the cycling-friendly concept into Suceava City	Suceava City	Association of cyclists, NGOs, businesses , citizens, local authorities, educational units	Promote alternative way of traveling – cycling in order to reduce private car usage and traffic emissions	Increase the numbers of cyclists Develop the cycling facilities (lanes) Implementation of « bike sharing « pilot project
Centre for Innovation and Civic Imagination (CIIC)	Suceava city opened in 2023 the Centre for Innovation and Civic Imagination (CIIC) with activities related to communication between local public administration and citizens. This structure will be updated and will provide information, support, technical expertise and communication channels related also to climate neutrality. Local, national and European events will be promoted trough this new upgraded facility, interaction between citizens, students, young generation experts, businesses and NGOs will be facilitated.	Suceava City	Citizens mainly, University experts and representatives from public and private companies	The intervention is meant to stimulate and encourage civic engagement and innovation, increase support and participation to all actions that will allow to achieve climate neutrality	Stronger local support for city's actions Improve quality of life into the city Integrated and coordinated efforts, which could enable higher GHG reduction Improved communication n between all stakeholders and local authorities Increased of Innovation activities Transfer the best practice experience and know how
NetZero Caravan	Specific initiatives, activities and events that involves citizens, experts and city representatives will be organized in public places	Suceava City and Suceava University	Citizens , local stakeholders, NGOs	Encourage and engages citizens to work and live in sustainable and environmentally friendly ways	Improve quality of life into the city. Improved communication between all stakeholders. Increase the number

					of citizens trained and aware of climate neutrality actions and concepts.

C-2.2: Description of social innovation interventions – textual and visual elements

Suceava's vision for 2030 is: to become a green city in 2030 with full electric public transport (including metropolitan area), sustainable and efficient public transport (separate lanes for PT, priority in intersection, incentives for PT passengers), alternative mobility (with facilities for electric vehicles), entire municipal (public buildings, electric public transport, public lighting, educational units) electric energy consumption provided from renewable sources (solar), recycling facilities for municipal waste, circular economy, energy efficiency in all municipal buildings and at least 50 % of residential ones, green areas and SMART innovative technologies for a better quality of life into the city.

In the last 15 years, Suceava Municipality was involved in many European projects, being a partner in European city networks, in various domains like: public transport, energy efficiency, electric vehicles, green areas, smart initiatives for citizens with the main goal of preparation for the climate change mitigation (HORIZON 2020, CIVITAS, URBACT, INTERREG).

In recent years, one of the main focuses of Suceava municipality was energy efficiency and also Suceava city is working hard on resilience and flexibility for the green economy.
Some of the previous projects are:

- Electro mobility – electric vehicles for a green municipality
- Modern and efficient public lighting management in Suceava Municipality- modernization of the public lighting on the entire area of Suceava Municipality and replacement of classical lighting units with LED lighting units in the educational units of Suceava Municipality
- Integrated system of ecological public transport in Suceava Municipality
- Increasing the energy efficiency of the Suceava City Hall building
- APPLIED – Computerized, Quality and Accessible Local Public Administration for All in Suceava,
- CARD4ALL – Connecting Cities, Citizens and Services - a city accessible to all citizens
- Revitalization of urban public space in Suceava
- ALTERECO – A demonstration of transport ALTERnatives to protect the Ecology of Europe
- MATRA KAP – Improvement of Solid Waste Management System for Suceava City
- CATCH – Clean Accessible Transport to protect Community Health
- SMILE – Towards Sustainable Mobility for peopLe in urban arEas

- PLUME – Clean Cities for a Clean Europe
- SWAM – Facilities for separate waste collection and recycling

The ongoing projects that are already into the implementation phase (with a total amount of 130.000.000 Euro) - are related to energy efficiency in public and residential buildings, green (100 % electric) public transport, sustainable mobility, photovoltaic park, rehabilitation of green areas, digitalization of public administration's services. This as to demonstrate that the municipality has already started the actions that have as a direct objective climate neutrality at local level and reduction of GHG emissions.
Suceava Municipality focusses on local stakeholders (especially citizens) involvement in projects design, implementation and monitoring. There will be actions and specific efforts to bring relevant stakeholders together and involve them in a co-creation process, often in very practical contexts such as sustainable mobility, cycling, energy efficiency in each neighbourhood.

The projects proposed for implementation in the Action Plan combine specific actions related to climate and health and also testing of specific ways of working both in designated areas and at city level, changing behaviour, transfer of best practice example form national and European cities and in the end integrate the learnings in a governance model for scaling these solutions in the city as a whole and in other cities.
A special attention will be allocating to Public Private Partnership projects and for specific actions that are related to private sector (industrial, commerce, services) that will be encouraged to replicate the public sector ideas and solutions.
The performance and monitoring indicators of the actions proposed in the Action Plan are represented by the final annual energy consumption and associated CO_2 emissions, which will be compared with the values determined by the Emission Reference Inventory for the chosen reference year, 2021, as well as with the achievement of the proposed targets.
In order to ensure a good control in the implementation, it is recommended to set up a specialized structure composed of people with experience in energy efficiency, key people from various departments of the local authority, interested local actors, to ensure the monitoring and reporting of activities assumed by the plan. It is recommended that the specialized structures carry out the following activities in order to successfully meet the objectives proposed by the plan:

- Regular monitoring of the progress of actions and assessment of their impact;
- Periodic reporting of local actors on the results of the plan;
- Participation in local, national or international events to benefit from the experience of other municipalities regarding the implementation of Action Plan.

Some of the necessarily conditions that have to be simultaneously created at local level for the successful implementation of the proposed actions are:

1. **Financing:** the total amount necessary need to be either allocated or secured from local budget, central budget, National Operational Programs, NRRP other European funds and private funds.
2. Human resources: public servants, consultants, external experts and stakeholders will have to be allocated and trained to work together for a common purpose
3. Team city and spirit: citizens especially and stakeholder's engagement are essential for successful implementation of the actions.
4. Working venues and infrastructure ; allocation of working spaces designated to the NZC mission , equipment, materials and promotion materials for activities like Net Zero Caravan , Civic Innovation events (replicated from Cluj Napoca experience) , workshops and dissemination campaigns.

5.3 Module C-3 Financing of Action Portfolio

Module C-3 "Financing of Action Portfolio" should contain the list of action portfolios and interventions outlined in Modules B-2, and those from C-1 and C-2 with cost implication to provide a summary list of interventions that need to be unpacked in the Investment Plan.

C-3.1: Summary of interventions with cost implication (to be unpacked in Investment Plan)					
Action/ intervention name	Responsible entity and person	Start/end date	Field of action	Impact	Total cost estimated
Rehabilitation of municipal transport and distribution heating system	Municipality of Suceava, Heating distribution operator	2024-2028	Energy systems	21.132,96 t CO2 /year	89.130.300 Euro
Photovoltaic parks and alternative systems for production of hydrogen	Municipality of Suceava, Ministry of Energy	2024-2028	Energy systems	29.210 t CO2 /year	81.170.000 Euro
Intelligent and efficient municipal public lighting	Municipality of Suceava	2023-2026	Energy systems	1.704 t CO2 / year	3.352.020 Euro
Extension of cycling facilities	Municipality of Suceava, Local Transport Company and NGOs	2024-2028	Mobility & transport	2.920,5 t CO2 / year	4.480.000 Euro
Integrated green (100 % electric) public transport	Municipality of Suceava, Metropolitan Public Transport Operator, Association of Metropolitan Development – Transport	2023-2030	Mobility & transport	36.558,92 t CO2 / year	47.700.000 Euro
Expansion of the public and private fleets of electric vehicles and installation of at least 50 charging station till 2030	Municipality of Suceava	2024-2028	Mobility & transport	6.986 t CO2 / year	21.300.000 Euro
Integrated urban mobility system and priority for public transport (“green wave”)	Municipality of Suceava, Local Public Transport Operator	2023-2026	Mobility & transport	19.344,27 t CO2 / year	20.800.000 Euro
Use of recycling materials for local production of construction elements in the circular economy	Municipality of Suceava, Private Recycling Operator	2023-2028	Waste and circular economy	7.624 t CO2 / year	5.800.000 Euro
Rehabilitation of the waste water collectors, sewage networks and rehabilitation and upgrading of Suceava waste water treatment plant	Municipality of Suceava, Regional Water and Sewage Operator	2024-2029	Waste and circular economy	1.680 t CO2 / year	12.000.000 Euro
Development of new green areas and planting green curtains(major roads area)	Municipality of Suceava, The Order of Romanian Architects	2023-2030	Green infrastructure & nature based solutions	281 t CO2 / year	35.217.000 Euro
Increase energy efficiency of residential buildings to reduce GHG emissions and increase the quality of life for residents (including HEMS)	Municipality of Suceava, The Order of Romanian Architects , Owners Associations	2023-2030	Built environment	31.112 t CO2 / year	80.000.000 Euro

Modernization of public institutions buildings through refurbishment and increased energy efficiency	Municipality of Suceava	2023-2030	Built environment	7.230 t CO2 / year	22.190.000 Euro
Improved local urban regulations and policies for achieving climate neutrality	Stakeholders from the local NZC action working group	2023-2030	Soft intervention	48.351 t CO2 / year	25.000.000 Euro

The overall budget for the actions incorporated in this plan amounts to 448.139.320 Euro.

6 Outlook and next steps

This section should draw any necessary conclusions on the Action Plan above and highlight next steps and plans for further refining the Action Plan as part of the Climate City Contract.

Plans for next CCC and Action Plan iteration – textual elements

1. Integrated Communication Strategy:

Maximizing the resulting effects and the impact of actions is achieved through efficient communication, a complementary component to the implementation and monitoring processes.

Citizens and the main stakeholders should be informed, by categories of recipients, by sending correct messages and on the understanding of the recipient, so that the categories of public and citizens - beneficiaries of public services, perceive the direct benefits resulting from the measures implemented.

The flow of information must often be directed at influential political factors at national and international level, by organizing a strong lobbying activity, leading to obtaining the necessary sources of funding to materialize the actions envisaged in the SECAP and Action Plan.

Specific objective 1: Increasing stakeholder's awareness of the importance and benefits of implementing measures to improve energy efficiency and the use of renewable energy sources.

Specific objective 2: Education and training at all levels for the awareness and gain of the local community by the local administration in order to implement the actions included in the Action Plan.

Specific actions:

Organizing events that have as a scope:

- Informing and raising awareness among end consumers about the importance and benefits of implementing energy efficiency measures;
- Promoting the use of energy-efficient equipment and appliances, as well as renewable energy sources, for final consumers;
- Information on existing energy labelling systems, standards and norms aimed at improving the energy efficiency of products and services, including buildings and vehicles;
- Promoting energy efficiency mechanisms and financial instruments for energy saving;
- Reducing the environmental impact of industrial activities and the production, transport, distribution and consumption of all forms of energy;
- Promoting high energy efficiency technologies, modern measurement and control systems, as well as energy management systems, for monitoring, continuous assessment of energy efficiency and forecasting of energy consumption;
- Cooperation between final consumers, producers, suppliers, energy distributors and public bodies in order to increase energy efficiency;
- Applying modern principles of energy management and developing the market for energy services;
- Promoting fundamental and applied research in the field of energy efficiency;
- Supporting innovation and the transfer of clean technologies in the economy.

The measures proposed to achieve the specific objectives of reducing greenhouse gas emissions in the field of communication for the Municipality of Suceava are:

- **Measure 7.1:** Annual organization of "Smart Energy Days";
- **Measure 7.2:** Mobilize civil society to participate in organizing events organized locally and

promoting the fight against climate change "Earth Hour" - March 27, "Earth Day" - April 22, "Mobility Week" - September 16-22, " Environment Day"- June 5;

- **Measure 7.3:** Include in the composition of the delegations participating in the international events dedicated to energy efficiency (Energy Week, Week of Cities, etc.) the opinion leaders from the civil society and representatives of the local media;
- **Measure 7.4:** Organizing competitions between the categories of schools, young people, users, endowed with prizes to motivate the involvement in the implementation of the actions included in the Action Plan;
- **Measure 7.5:** Carry out public awareness campaigns on climate change and ways to reduce the negative environmental impact of energy consumption;
- **Measure 7.6:** Organizing events in partnership with the local public administration - NGO - business environment in order to promote the technologies applicable at the local level in the field of energy efficiency and the use of renewable energy sources;
- **Measure 7.7:** Development of information, education or specialized training programs for both providers and users of public services, with the aim of training skills for the rational and efficient use of energy in the operation of buildings and facilities.

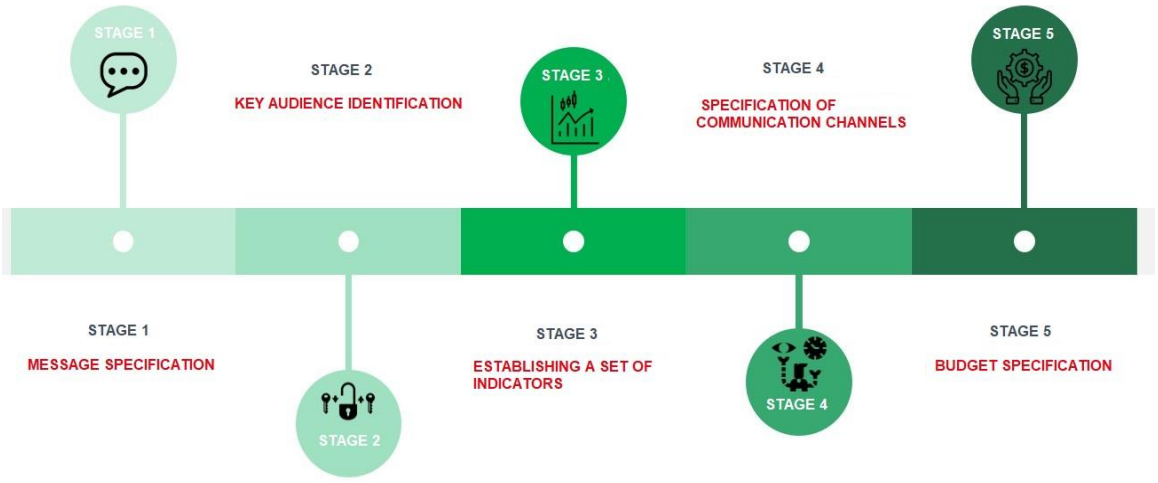
Through a clear communication and promotion strategy, the local actors will be permanently informed and motivated about the content of the Action Plan as well as about its implementation phases.

This will aim to the communication of messages in a clear and correct manner to all categories of recipients concerned, through favourable communication channels, in order to avoid and reduce the risks of the target audience - the community, not perceiving the direct benefits resulting from the measures implemented according to the Action Plan. The objectives of the Communication Strategy of the Action Plan for the City of Suceava are the following:

- To increase and consolidate the degree of notoriety of Suceava Municipality Climate Neutrality Action Plan.
- To raise awareness of its role and contribution to the community.
- To increase the level of information of the beneficiaries of this action.

The communication strategy of the Climate Neutrality Action Plan for the City of Suceava will focus on achieving the following steps, which are necessary for the successful implementation of this action.

Message specification



The message specification will emphasize the effect it will produce in order to achieve the desired result. The message will convey most of the objectives contained in the Climate Neutrality Action Plan such as the measures to be implemented, but also the expected results that will belong to the technical sphere. The construction of the message will take into account the target groups, as well as their level of knowledge in the field, so the awareness / familiarity with the subject will be easily reached.

The communication strategy will have the following set of indicators:

- Level of awareness regarding the Suceava Municipality Climate Neutrality Action Plan;
- The level of confidence in the implementation measures of Suceava Municipality Climate Neutrality Action Plan;
- Information and publicity materials;
- Information and communication events;
- Studies performed to determine the degree of satisfaction of the target audience

The results will be centralized, interpreted and in case new solutions are required, other scenarios will be developed for adaptation and control over the implementation process of the Climate Neutrality Action Plan in general, of the Communication Strategy in particular.

Each Climate Neutrality Action Plan related communication activity will be monitored, measuring its media impact, reflected in media coverage. There will be a monitoring of articles / interviews in the press and a file containing promotional materials (brochures / leaflets, etc.) made by the Municipality of Suceava, as well as materials from the press promoting SECAP or related actions, all of which are archived.

2. Create the appropriate local conditions for implementation of the Action Plan

The Municipality has the obligation to employ / recruit the appropriate technical expert for the position of City Energy Manager that is able to provide consultancy and technical assistance for planning, implementation and monitoring of measures/projects that are aim to increase energy efficiency. The City Energy Manager together with other experts from the Municipality will have to provide the support for data collection, monitoring and implementation of the energy related projects, as:

Preparation of legally required reports and information to the Energy Efficiency Directorate of the Ministry of Energy and to other public authorities that legally require information

Monitoring the application and implementation of the Energy Efficiency Improvement Program (EEIP) and regularly informing those responsible for the implementation of the Program on how it is being carried out and providing specific support.

Centralization/sorting of consumption data for the purchase of electricity, methane gas, heat and drinking water

Collecting and evaluating relevant data for the CO2 emissions inventory and updating this inventory by measuring progress. Specialized support in NetZero Cities projects for the energy transition towards climate neutrality that the Municipality is carrying out.

Consultancy on the implementation of investment projects to ensure increased energy and economic efficiency - quantification of impacts of implemented projects.

Consultancy in the drafting of design themes, justification notes and tender documents for public procurement with the subject (or part of the subject) of energy consumption and production or the reduction/efficiency of energy consumption, increasing the coverage from local renewable sources

Technical consultancy in the management of all energy resources, including the implementation of modern energy monitoring systems, maintenance and updating of databases on absolute and specific energy consumption and energy production from renewable sources

Collection of energy data to update the databases of the analysis sectors in accordance with: The Annual Energy Efficiency Improvement Program (PIEE), the Climate and Sustainable Energy Action Plan (PACED), the Multi-Annual Plan to increase the number of nearly zero energy buildings (nZEB Plan), the Plan to achieve climate neutrality (NetZero City Plan)

Collects information on monthly and annual energy consumption, in physical and value units (electricity, heat, natural gas, fuels), as follows:

- Electricity consumption for street lighting;
- Fuel and electricity consumption of public transport;
- Energy consumption (electricity, heat, natural gas and other fuels) in own buildings and all public institutions under the local public authority;
- Annual consumption of electricity, natural gas and heat by the population
- Preparation of energy efficiency reports, including: analysis of energy consumption trends, specific consumption trends, opportunities to implement energy efficiency measures/projects, procurement of energy efficient equipment

Suceava Municipality and the other two municipalities that are part of the mission in Romania will benefit from the implementation of the project „**NetZeRoCities – National Centre for Competencue and solutions for developing climatic neutral smart cities**" that started in 2023.

The consortium coordinating NetZero Cities is composed of universities, public institutions, independent experts, private companies with the main objective: providing a sustainable, predictable and streamlined environment for the development of research, development and innovation activities with a focus on contributing to climate change and the digital transition.
The aim is to support access to funding, increase the innovation capacity of the RDI system to create synergies between research and business, and create the critical mass of interdisciplinary skills needed to address the societal challenges associated with the EU Climate Change Mission and it is a networking tool of excellence to increase the chances of success in the EU Climate Change Mission and the Carbon Neutrality objective.
The process of developing and monitoring a portfolio of climate neutrality projects (included into the Action Plan) can be divided into several steps:

- Identify the current situation: The first step is to identify the current situation of the city's carbon footprint and energy consumption. This may involve analysing existing data or conducting research studies. This step can provide an overview of the city's environmental impact and help identify areas for improvement/intervention.
- Setting targets: Once the current situation is known, the next step is to set targets for reducing carbon emissions. These targets should be ambitious but realistic and aligned with global or national climate change commitments.
- Determine the key actions that need to be taken: Once targets are set, it is important to determine the key actions that need to be taken to achieve the targets. These actions can be soft (e.g. awareness and education campaigns), medium (e.g. energy efficiency projects) or hard (e.g. investment in renewable energy or electric transport projects). This stage should include an analysis of the costs and benefits of each action and an assessment of the impact on the objectives set.
- Prioritize projects: Once key actions have been identified, it is important to prioritize them according to their impact, feasibility and cost. This can help to identify the actions with the greatest potential to contribute to the achievement of the objectives without exceeding the allocated budget.
- Measuring and monitoring progress: Once projects are implemented, it is important to monitor and measure progress. This can be done through relevant performance indicators such as carbon emissions or energy consumption. It is also important to monitor the budget and time allocated to each project.
- How to involve stakeholders: During the process of developing and monitoring a portfolio of climate neutrality projects, it is important to involve stakeholders such as the local community, the private sector, local government and non-governmental organizations. This helps to create a framework for collaboration and to increase the involvement of all stakeholders in making decisions that lead to the achievement of the agreed objectives.

The main purpose of participating in this project is to benefit from the knowhow of the team members, to transfer the best practice example (already implemented by some of the project members), to identify, adapt and implement pilot projects in Suceava, replicate the existing ones from other Romanian cities.
Suceava city will to benefit from academic and technic knowledge of the project team members and more than this the issue of transferring the best practical solution for increasing the citizen's/stakeholders involvement into the implementation of Action Plan will be approach.

3. Early start for projects implementation and permanent innovation

Even the Action Plan is to be submitted in June 2024 and the Climate City Contract has not been signed yet Suceava Municipality has already begin the implementation of many climate neutrality-related investment projects financed by NRRP (14 projects for energy efficiency of public and residential buildings, smart city, green public transport, circular economy and most important: **rehabilitation of the central heating network**

system and photovoltaic park - have been submitted and grant contacts have been signed already). Technical documentation was finalized and are ready to be submitted for financing by the 2021-2027 Regional Plan (North East) (urban renewal, green areas, green corridors, electric buses, charging stations, cycling infrastructure, energy efficiency in public and private buildings etc.).

4. National/local level of cooperation

In order to create the condition for dissemination and replication of the Action Plan projects/objectives/actions at national level Suceava Municipality need to cooperate with Bucharest and Cluj-Napoca as climate neutrality ambassadors for Romanian cities.

This actions have already started and few distinct activities have been organized at national level (one in Bucharest where all three cities were able to present their local strategies for next 7 years) and the most relevant one is the event in Cluj Napoca where decision makers from national, regional and local administration have signed an agreement that establish the terms for future cooperation with other cities from Romania on their pathway for becoming climate neutral.

Apart of the public consultation process from the design phase for the climate contract **more public surveys are planned to be done in implementation phase** for most relevant and with major impact actions (like the already organised ones concerning energy efficiency in public and residential buildings, smart & sustainable mobility, electric public transport for metropolitan area) and more important during evaluation phase of the projects. This is meant to continue the process of local stakeholders (citizens also) involvement in the mission process having as a direct result the feedback regarding the results, the achievements and also regarding the suggestion for improvements/upgrade of the proposed actions.

Local stakeholders (especially citizens) have been approach and included into the design phase of projects concerning for example residential buildings rehabilitation, green areas that are included in the Action Plan. Designated work groups have been established (with representatives from civil society, public institutions, university, architects and local experts), public surveys and public consultation (including meetings with residents from the buildings that are subject of future interventions) with a specific objective of increase the acceptance of citizens in the actions that the city is taking for its pathway to climate neutrality**. These working groups (based on local city mayor decision) will also work together with the municipality's transition team in the implementation and evaluation phases of each specific project.**

Within its efforts to engage stakeholders and citizens to local actions related to climate neutrality another initiative (linked with city hall website) was launched in the second half of 2023, called **Centre for Innovation and Civic Imagination** with the main objective as increasing the degree of citizen involvement in the process of adopting and applying decisions of public interest, but also increasing citizens' trust in local administration. Thus, the framework is created for defining the active role of the citizen, respectively the transmission of ideas, proposals and suggestions in the development and implementation of public projects especially the ones included in the Action Plan.

5. Working together at European level

As being part of 100 climate neutral European cities family Suceava Municipality need to work together will other European city partners that are sharing the same objectives related to energy efficiency and GHG emission reduction. This will facilitate the transfer of best practice solution and know how between European cities, will facilitate access to innovative and energy efficient technologies and solutions and will create the condition for a smoothest transition to climate neutrality at European level.

In the same time, as experienced while the Action Plan was designed, Suceava Municipality is keen to continue working together with experts nominated by the European Commission trough NetZeRo Cities Project in order to have access to technic and specialized support for the projects related to energy transition towards climate neutrality that the Municipality is implementing.

6. Monitoring the implementation of the Climate Neutrality Action Plan

The performance and monitoring indicators of the actions proposed in the Climate Neutrality Action Plan of Suceava Municipality are represented by the final annual energy consumption and associated CO_2 emissions, which will be compared with the values determined by the Emission Reference Inventory for the chosen reference year, 2021, as well as with the achievement of the proposed targets. In order to ensure a good

control in the implementation, we will set up a specialized structure composed of people with experience in energy efficiency, key people from various departments of the local authority, interested local actors, to ensure the monitoring and reporting of activities assumed by the plan. This specialized structures will have to carry out the following activities in order to successfully meet the objectives proposed by the plan:

- Regular monitoring of the progress of actions and assessment of their impact;
- Periodic reporting of local actors on the results of the plan;
- Participation in local, national or international events to benefit from the experience of other municipalities regarding the implementation of Action Plan.

Monitoring the implementation of the Action Plan is an important action as it can lead to measures to accelerate the reduction of greenhouse gas emissions in the event of delays in targets. An important chapter in the monitoring process is the quantification of the amounts spent from the reference year to the monitoring year for the implementation of the proposed measures. Expenditure will be presented separately on two components: direct expenditure (actually used to implement the measures) and indirect expenditure (amounts spent on salaries, consultancy, dissemination, etc.).

The Climate City Contract will go through an annual review and update process, based on iteration sessions organized by the Net Zero City Coalition. Thus, based on the learning gained through the daily implementation of the Action Plan, the Municipality and its transition team will intervene with improvements in the content of the CCC related documents.

As we stated, we will use a model of reflexive governance, in which participation and deliberation across the Net Zero City Coalition will help us implement an intervention system based on common commitment, by taking into account the perspectives of all the actors involved. During the annual iteration sessions for CCC review, all the knowledge systems provided by the Net Zero City Coalition members will be activated, and the results of the consultations with them will be recorded in the updated version of the documentation.

Citizens' involvement will play an important role in this regard. Thus, both the elaboration of the Action Plan and its implementation, respectively its update, will allow us to continue using, developed and upgrade exiting innovative governance model (already described in this initial version of the Action Plan), with information that will be reflected in the future iterations for the CCC review.

The internal management teams (for each project) includes public servants with experience in management, finance, technical, evaluation, publicity and dissemination. There are regular meetings with all involved persons once per week in the presence of leading staff, at least twice per month with representatives from construction companies and private operators (if necessarily) and also anytime when it is required for the smooth implementation of the projects. Apart of this for the final evaluation for each project a service contract is required with an external expert that has to evaluate and certify the project impact.

Additional to these aspects in order to ensure a good control in the implementation and to ensure the monitoring and reporting of activities assumed by the Action Plan, specialized structure composed of members with experience in energy efficiency, key people from various departments of the local authority, interested local actors, stakeholders are organized and will be active in the implementation phase for projects included in Action Plan.

Suceava Municipality has a special designated **transition team that** is responsible for managing the entire process of Climate City Contract implementation, monitoring, evaluation and review. The team is composed of experts from different complementary departments within Suceava City Hall: Financial Department, Investment Department, European Projects Department, Legal Department, Urban Strategies Service, Public Procurement Service, Green Areas Directorate, Energy and local utilities Office, Owner Association and Residential Buildings Service, IT Department, Waste Management Department (Urban Energy Manager is it expected to join the team from 2024).

The team is open for new members that will be able to join anytime in the next 7 years and it is coordinated by is under the coordination of the **European Projects, Investment, Strategy and Local Development Department.**

However, since the transition towards climate neutrality is not an individual responsibility, but rather a collective effort, Suceava Municipality, related to the experience in ongoing projects implementation, will

launched an invitation to the entire local ecosystem to engage all the key local actors, stakeholders, private and public sector as a local **Net Zero City Coalition**, with the scope of serving the local climate-neutrality pursuits, it is expected to be created in the first half of 2024**.**

Net Zero City Coalition's work will focus on using already-existing local strategic documents (e.g., SUMP, SECAP, IUDS), out of the willingness to ensure the continuity and sustainability of priorities that were established through previously-approved framework papers but especially on **the Action Plan implementation, monitoring, reiteration and evaluation in direct correlation with the Mission's requirements** and local objectives & commitments.

Maximizing the resulting effects and the impact of actions will be achieved through efficient communication, local commitment of the all involved stakeholders, common actions seen as a complementary component to the implementation and monitoring processes.

The inventory of greenhouse gas emissions must be restored after a period of at least 4 years, according to the recommendations issued by the Covenant of Mayors.

The recalculated emissions can thus be compared with the emissions in the reference year, in accordance with other indicators (population evolution, economic data, etc.) in order to obtain relevant conclusions about the state of implementation of the Action Plan.

Once some of the proposed measures have been implemented and the emissions inventory has been revised, the Municipality:

- May revise estimates for the final forecast year (2030) based on information gained from implemented actions;
- It can maintain the estimates reported in the Action Plan, if they are in line with the savings made during the implementation of the measures.

7 Annexes

Annex 1 – Suceava city – general information

Annex 2 – Results of public survey (CCC)

Annex 1 – Suceava city – general information

2. SUCEAVA MUNICIPALITY – GENERAL ANALYSIS

2.1. General Information

Suceava Municipality is located in the northeastern part of Romania, 47°40`38" north latitude and 26°19`27" east longitude, approximately in the center of the Suceava Plateau - on two relief steps: a plateau, with a maximum altitude that reaches 435 m on Țarinca Hill and the floodplain with the terraces of the Suceava river, with an altitude below 330 m.

It has an area of approximately 53 km^2 and a population of 116,583 inhabitants at the end of 2015. It is the capital of Suceava County, part of the North-East Region.

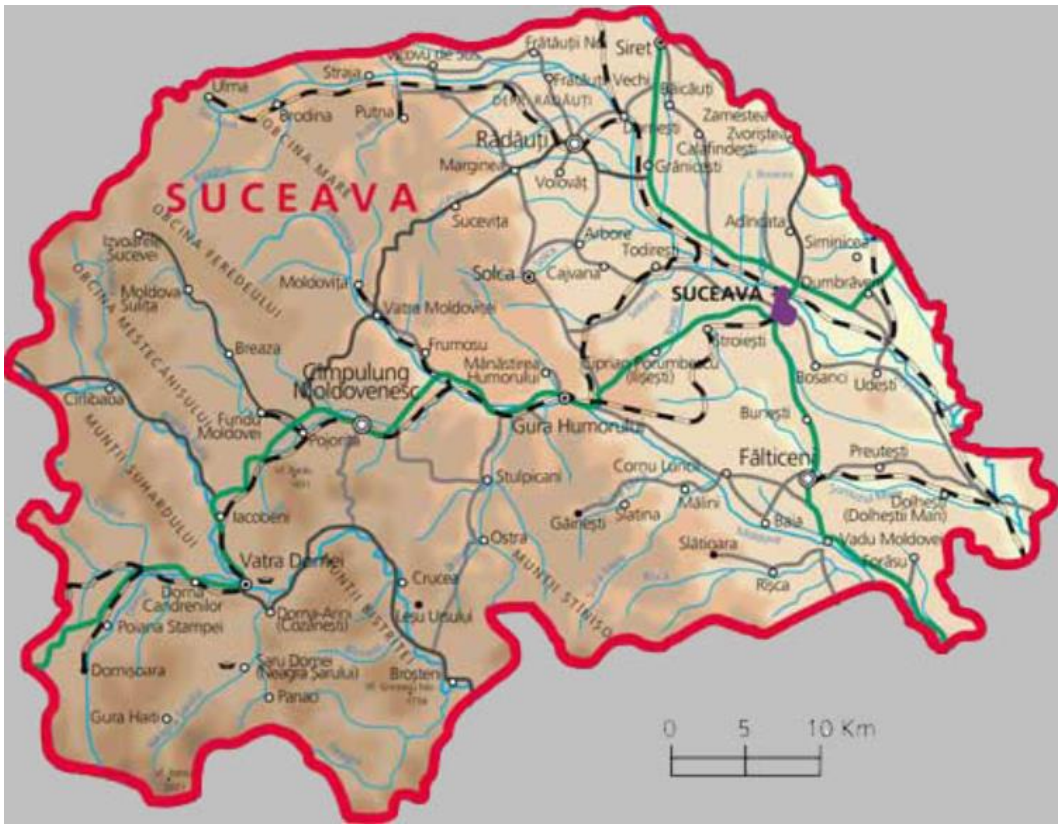


Fig. 3- Geographical location of Suceava Municipality

The municipality of Suceava is a second rank locality, established according to the provisions of Law no. 351/2001, regarding the approval of the National Spatial Planning Document - Section IV "Network of localities", based in Piatra-Neamț, development region which also includes the counties: Iași, Bacău, Neamț, Botoșani, Vaslui.

2.2. Surface area of Suceava Municipality

Administratively, the North-East Development Region is the largest region in terms of population and area. This region includes 6 counties: Bacău, Botoșani, Iași, Neamț, Suceava and Vaslui.

In accordance with art. 2 of Law no. 351/2001 regarding the approval of National Spatial Planning Document, the ranking of localities is the following:

a) rank 0 - The capital of Romania, a municipality of European importance,

b) rank I - municipalities of national importance, with potential influence at a European level,

c) rank II - municipalities of inter-county or county importance, or with a balancing role in the locality network,

d) rank III - cities,

e) rank IV - villages that are administrative centers of a commune,

f) rank V - component villages of communes and villages belonging to municipalities and cities.

Thus, from a territorial point of view, the Suceava Municipality is included, according to the National Spatial Planning Document (P.A.T.N.) - section IV-A, in the category of urban localities of rank II - municipality of inter-county importance.

The administrative territory of Suceava Municipality, with a total area of 5,210 ha, includes the following categories of land, classified according to use, destination, occupied areas, as follows:

Agricultural land - 2 314 ha, of which:

- arable – 1 984 ha;
- orchards – 17 ha;
- pastures – 273 ha;
- hayfields – 40 ha.

Non-agricultural land – 2 896 ha, of which:

- forestry – 573 ha;
- waters, ponds – 186 ha;
- roads – 53 ha;
- buildings and adjoining areas – 2 058 ha;
- unproductive land – 26 ha (according to the data provided by the Cadastre Service - land resources).

The following table shows the situation of land areas in Suceava Municipality, according to the PUG (General urban plan) approved in 1999.

INDICATOR	Unit	Area
Total urban area	**ha**	**3 529.20**
Areas related to public institutions and services, other functions of public interest	ha	340.00
Areas of medium and high-rise housing, including complementary functions	ha	259.00
Areas of low-rise housing, including complementary functions	ha	1 036.50
Areas related to industrial, storage and agricultural units of which:	ha	546.00
Industrial and storage units	*ha*	*401.00*
Agricultural units	*ha*	*145.00*
Green areas, leisure and sports	ha	450.00
Forest / leisure areas	ha	186.00
Suggested areas for greening	ha	50.00
Special purpose and territorial equipment areas, of which	ha	438.70
Road communication routes	*ha*	*298.70*
Railways	*ha*	*73.00*
Constructions related to technical-municipal networks	*ha*	*59.00*
Special purpose areas	*ha*	*4.00*
Orchard areas	ha	8.00
Water areas	ha	215.00

Table 2.1. The situation of the land surfaces in Suceava Municipality [9]

2.3. Terrain

The characteristic aspect of the terrain of Suceava is that of a vast amphitheatre, opening towards the valley of the Suceava river, with the maximum height of 435 m (Ţarinca hill) and the minimum of 270 m (in the area of the Suceava riverbed).

The relief in the city area and its surroundings is very varied, with a fragmentation in the form of plateaus, ridges (cuesta) and hills (Zamca - 385 m, Viei - 376 m, Mănăstirii - 375 m, Ţarinca - 435 m) separated by the valleys of the rivers Suceava, Şcheia, Tîrguluţ (Cacaina), Bogdana and Morii.

[9] *Report PUG Suceava 2010*

Fig. 4. County of Suceava, topography
(Source: http://www.maphill.com/romania/suceava/panoramic-maps/physical-map/)

The slopes of the terrain are quite varied. Most of them, about 60% of the surface of the territory, are below 3°, 25% of the territory has slopes between 3 and 10°, and 15% of the territory has slopes above 10°.

The main landforms in the city and the surrounding area, of Quaternary age, can be classified into three major groups:

- The plateaus, widely undulating, represented by Zamca hill and Cetăţii hill. The ridges are found only in the southeastern part of the city;
- he deluvial slopes (about 25% of the surface), appeared as a result of the active dynamics of the geomorphological processes (landslides, splash and linear erosions), are found especially in the upper basin of Târgului valley, on the western and south-eastern slopes of Zamca Hill and on the right slope of Suceava;

- Alluvial plains, modeled in the form of steps, have embedded characteristics.

These were detached as steps by the successive deepening of the Suceava riverbed thusly:

- A step between 0 and 2 m, floodable;
- A higher step between 2 and 4 m, periodically flooded;
- the last step between 4 and 7 m is the highest of the plain.

In addition to these three steps of the plain, there are six more terraces:

- 20-25 m terrace in the area of the former Burdujeni slaughterhouse;
- 60-70 m terrace, Burdujeni hill;
- 100 m terrace, Viei hill and Monastery hill;
- terrace of 130-140 m, Velnița hill;
- 150-160 m terrace, Țarinca hill;
- 180-190 m terrace, Căprăriei hill.

2.4. Climate

The northern position of Suceava Municipality determines a temperate-continental climate with Baltic influences, with a cooler and wetter character, largely due to the Atlantic and continental anticyclones.

The figure below shows the evolutions in the case of August temperatures in Romania, for 16 climate models and for the overall average.

The multiannual average temperature recorded at the Suceava meteorological station, during the years 1961-2009, was 7.90°C, with an absolute minimum in 1963 of -31.80°C and an absolute maximum in 1952 of 38.60°C.

The average multiannual amount of atmospheric precipitation recorded in the same time interval was 613.9 l / sqm.

The dominant winds are those from the NW (over 30% of the days), in the direction of the Suceava river valley. The average monthly wind speed is around 3.5 m / s.

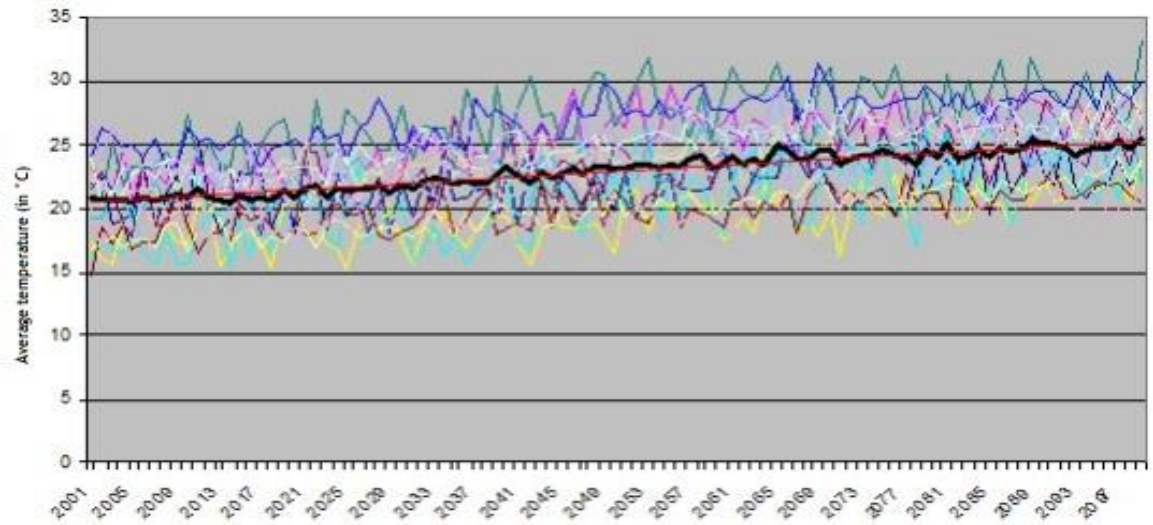


Fig. 5. Evolutions in the case of August temperatures in Romania, for 16 climate models and for the overall average (in black)
*(**Source** http://www.meteoromania.ro/anm)*

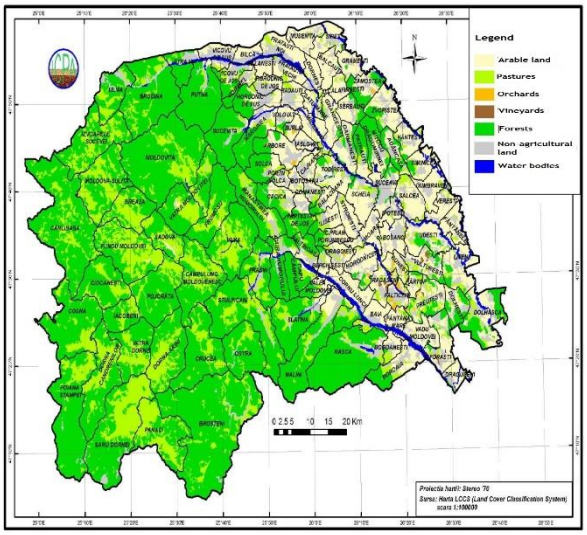
The northern air brings snow in winter and cold rains in spring and autumn. From the east there are continental climatic influences with drought in summer, clear skies, frost and blizzards in winter. Precipitation in the form of rain represents 70-80% of the total. The lowest amounts of precipitation are recorded in February, and the most abundant amounts are usually in May and June.

The city of Suceava is located in climate zone IV with the conventional calculation temperature θe = -21°C, and the northern position of Suceava determines a temperate-continental climate with Baltic influences, with a cooler and wetter, largely due to Atlantic and continental anticyclones.

The number of degrees-days for the heating period is 3865. The average heating period is 222 days per year (according to SR 1907/1997).

2.5. Hydrographic network

From a hydrographic point of view, the Suceava Municipality is located in the hydrographic basin of the Siret River through its tributary on the right side of the Suceava River.



The Suceava River springs from the Lucina massif and has a length of 170 km, and on the territory of Suceava Municipality it has a general direction of northeast-southeast flow and crosses the territory of the municipality from northwest to southeast.

For the most part, the course of the river is lined with dams on both banks, and the depression corridor created by erosion by this river reaches widths of up to 2 km.

On the right side, the river Suceava receives as tributaries the streams Șcheia and Cetății, and on the left, the streams Depoului, Dragomirna (on which Dragomirna Lake was arranged to supply water to the city), Mitocul, Podu Vătafului, Varnița and Mereni.

Scheia stream has a winding course with asymmetrical slopes and partially forms the natural border with Șcheia commune.

Lakes are arranged on the Cetățuia valley and its tributaries.

The course of this stream shows sudden changes of direction, and on the territory of the city there are asymmetrical slopes, the one on the right side specific to the cuestas.

The Suceava River creates a 1.5 km wide riverbed near the city, mostly non-floodable, as a result of the measures to dam and protect the space affected by the industrial and leisure area. Over time, the Suceava River has undergone successive movements to the South-Southwest, leaving behind the opposite side of the old riverbed in the form of terraces.

Fig. 6. Suceava River
*(**Source**: www.google.ro)*

The average multiannual flow measured at Iţcani station is 16.50 m^3 / sec, and the maximum flow, measured in 2006 was 548 m^3 / sec.

The surface water resources, as well as the underground ones, have been exploited since ancient times, as sources of water supply for homes and industrial units, but also for irrigating agricultural land.

2.6. Population

The number of inhabitants and the geographical distribution within the Suceava Municipality varied over time depending on the oscillations of the two determining demographic indicators: the natural movement and the migratory movement.

According to the census conducted in 2011[10], the population of Suceava was 117,949 inhabitants, increasing compared to the previous census in 2002, with 105,865 registered inhabitants.

On January 1, 2018[11] the population of Suceava was 123,416 inhabitants, increasing compared to the situation reported according to the 2011 census.

The majority of the inhabitants are Romanians (91.3%). For 3.57% of the population, ethnicity is not known, and from a confessional point of view, most of the inhabitants are Orthodox (83.98%), but there are also minorities of Pentecostals (4.11%) and Roman Catholics (1.6%). For 7.5% of the population, the confessional affiliation is not known.

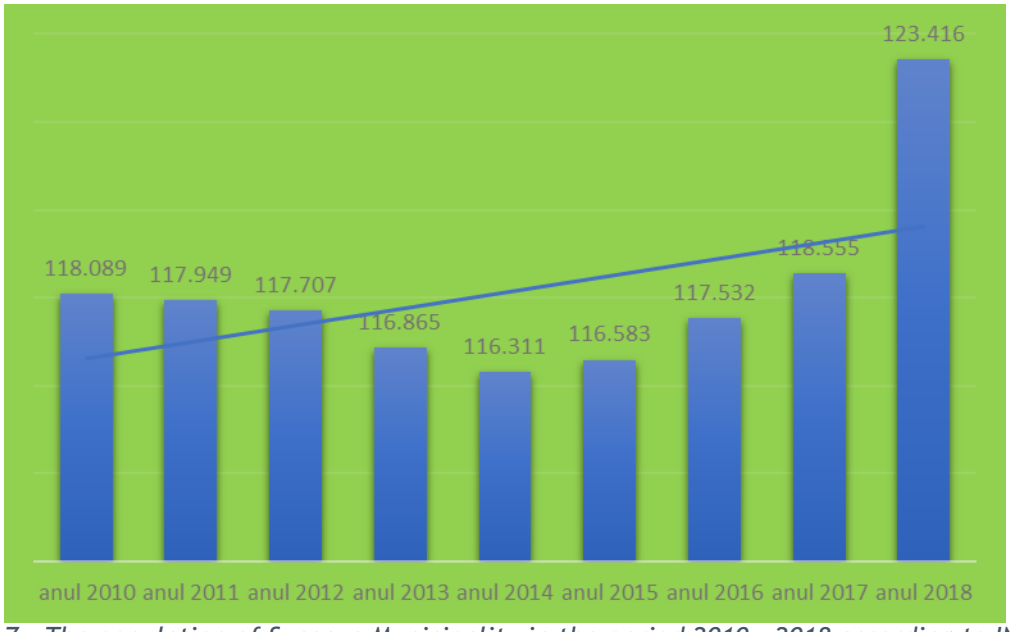


Fig. 7. The population of Suceava Municipality in the period 2010 - 2018 according to INSSE

As can be seen from the chart above, a population growth trend was determined between 2010 and 2018.

2.7. History[12]

Archaeological discoveries attest, on the site of the current city, the existence of free Dacian settlements. They have been inhabited since the earliest period of human society, the Paleolithic. Excavations near the Fortress of Suceava have

[10] *INSSE_ Suceava Municipality Population*
[11] *INSSE_ Suceava Municipality Population*
[12] *http://primariasv.ro/portal/suceava*

confirmed an ancient settlement from the early Neolithic period, 7000 years ago, of the Criș culture.

From the Bronze Age (2nd millennium BC), two tombs in stone boxes have been found, discovered in the western part of the city. There is other evidence of the existence of human settlements in the Iron Age, the first millennium BC.

For the first centuries of our era, vestiges of the free Dacians were discovered, on the left bank of the Scheia stream, from the 2nd - 3rd century AD, which by the type of houses, the technique of pottery - prove ancient Dacian traditions and the influence of Roman civilization. (From the same period, there is still a cemetery in the area of Ana Ipătescu Street).

The old village settlements date back to the migration of peoples, which in the 14th century were grouped in the eastern part of the current city, where the first nucleus of the future medieval city was formed.

The transformation of the rural settlement into an urban settlement reached its peak in the 14th century, which determined Petru I Mușat (1375-1391) to change his royal residence from Siret to Suceava, which thus became for more than two centuries, the capital of Moldavia (from 1388 - 1566). That is when the royal courts and the Mirăuți church (the first metropolitan cathedral) as well as the Șcheia Fortress and the Fortress of Suceava were built.

For two centuries 15th - 16th, Suceava occupied a prominent place in the history of Moldavian cities, being the most important center of production of goods and internal and external trade, as well as the main customs crossing point of the country through which all the merchant caravans were forced to pass.

However, the heyday of Suceava was reached during the reign of the great ruler Stephen the Great (1457-1504), who gave it increased attention, consolidating the Fortress, the Royal Court, adding new and important constructions to the city, taking care of its economic and cultural development.

In the summer of 1476, the ambitious Muhammad II tried his luck under the city walls, but the strong resistance of the Moldavians shattered his will for victory and forced him to retreat shamefully. Stefan had made Suceava a strategic point of his defense system. In 1497, for 21 days and nights in a row, the Ottoman cannons struck the walls, but they remained unshaken. The fortress was never conquered by force of arms.

The successors of Ştefan cel Mare - Bogdan cel Orb, Ştefăniță Vodă, but especially Petru Rareş, continued the policy of their predecessors, contributing to economic, artistic and cultural development of Suceava.

On May 21, 1600, the armies of the Voievod Mihai Viteazul entered the Fortress without a fight, thus concluding the act of the first Union of Wallachia, Transylvania and Moldavia. On May 26, Ioan Capturi, the new Burgrave of Suceava, swears allegiance to the great Voivode who called himself "lord of Wallachia and Transylvania and of the whole country of Moldavia."

Without reaching the level of the age of Stephen the Great - Petru Rareş, Suceava experienced a new moment of economic and cultural flourishing during the reign of Vasile Lupu (1634 - 1653), followed by its decline favored by the destruction caused by the Turkish-Polish wars. Gradually, the favorite residence of Petru Rareş's descendants became Iaşi, although Suceava was not suddenly abandoned.

From the second half of the 17th century, the city began to decline at an accelerated pace. The Fortress is destroyed so that it cannot be used by the hostile rulers of the Ottoman Porte or by the Polish armies in conflict with the Turks.

In 1775, northern Moldavia came under Austrian rule. Under Habsburg rule this territory is called Bukovina. Passing first to the province of Galicia, in 1849 it became an autonomous province and depended directly on the Austrian imperial crown. Bukovina was divided into two regions - Suceava and Chernivtsi. From 1868, Suceava became a county capital. In 1860 the boys' gymnasium was established, in 1871 the court, then a barracks and a hospital. Towards 1871, a railway line was built to Ițcani, from Dornești, connecting Burdujeni with old Romania. At the beginning of the 20th century, the power plant was built, the water and sewerage installation was introduced, and several credit banks were set up.

On November 6, 1918, Suceava was liberated from foreign rule, at that time numbering 1 424 houses with 10 200 inhabitants.

In the interwar period, Suceava - the capital of the county with the same name is developing slowly from an economic point of view. Suceava was more of a trading center, where the products of the mountain and plain area were exchanged. On the eve of the Second World War, the city industry was represented by only two mills, a sausage factory, a sugar factory, a pigment factory, an oil press, two tanneries and craft workshops. During this period, the "Ştefan cel Mare" boys' high school, a girls' high school, a commercial gymnasium, a boys 'industrial gymnasium, and a girls' vocational high school, two primary schools and two kindergartens operated in Suceava.

After the Second World War, Suceava experienced an economic and social development under the communist regime. Thus, the most important industrial structures that processed raw materials from this part of the country (paper mills, wood processing, machinery and equipment, glass, food industry, light industry) were concentrated in the northeastern part of the city, on the shores of Suceava, and in the west, in the Şcheia area.

The rapid industrialization of Suceava, since the 1960s, has led to the construction of new housing estates, as well as public buildings, a new hospital with over 700 beds, a cultural center, the Institute of Higher Education, hotels, parks and new markets. As another consequence of the industrial development, the transport increases, so we mention the Salcea airport (12 km from the city), the modernization of the three train stations, the public transport.

After 1989, the Suceava Municipality experienced an economic decline, as a result of the restructuring of the national economy, which determined that the large companies to restrict their activity, most of them reaching dissolution. Gradually, private economic agents appear on the market, which, together with services and trade, are beginning to shape a revival of the city's economy. With the "invasion" of hypermarkets, the city of Suceava is gradually transformed into a polarizing shopping center for the entire northern part of Moldova.

2.8. Socio-economic characteristics [13]

The development of economic activities involves the generation of travel with a significant share in both the transport of people and the transport of goods (by ensuring the flow of raw materials, materials and finished products).

According to the data presented in the *Sustainable Urban Mobility Plan of Suceava Municipality*, 44,453 active employees are registered in Suceava Municipality, distributed to the 3,865 employers based in this locality.

The main employers who registered in 2016 over 500 employees are presented in the table below.

Employer	Number of active employees
The County Emergency Hospital „Sf. Ioan cel Nou " Suceava	1 515
"Ştefan cel Mare" University of Suceava	1 358
D.G.A.S.P.C.	1 218

[13] *Sustainable Urban Mobility Plan of Suceava Municipality*

Employer	Number of active employees
Acet S.A. Suceava	889
Mopan Suceava	750
Suceava Municipality	743
Betty Ice	658
Ambro	629

Table 2.2. The main employers in Suceava Municipality registered in 2016[14]

According to the information presented in the table above, the first three positions in the ranking based on the number of employees are occupied by public institutions.

The figure below shows the territorial distribution of jobs in Suceava Municipality

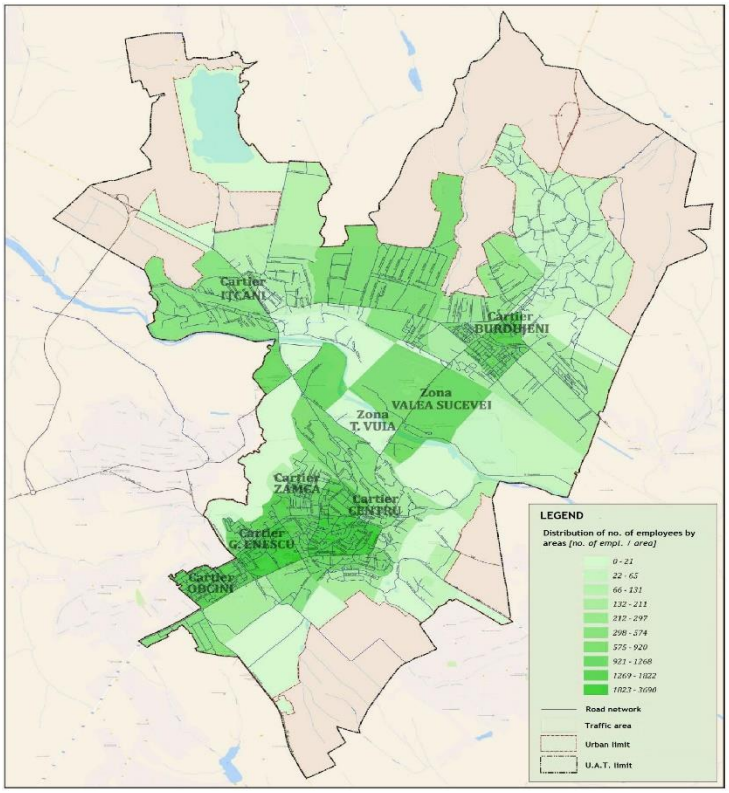


Fig. 8. Territorial distribution of jobs

The table below shows the situation of the number of employers by type of activity carried out.

Economic activity	Number of employers

[14] *Sustainable Urban Mobility Plan of Suceava Municipality*

Economic activity	Number of employers
Wholesale and retail trade, repair of motor vehicles and motorcycles	1 239
Professional, Scientific and Technical Activities	374
Transport and storage	300
Construction	279
Manufacturing industry	258
Hotels and Restaurants	183
Information and Communications	114
Activities of administrative and support departments	102
Other service activities	91
Health and Social Work	81
Real estate transactions	75
Agriculture, Forestry and Fisheries	55
Financial intermediation and insurance	45
Entertainment, Cultural and Recreational Activities	32
Education	26
Water distribution, Sanitation, Waste management, Decontamination activities	16
Extractive industry	3
Production and supply of electricity and heat, gas, hot water and air conditioning	3

Table 2.3. The types of economic activities in Suceava Municipality registered in 2016[15]

In the current situation, the activities carried out at the level of the local economy are the consequence of the restructuring manifested in the last 20 years which led to the decline of industrial activities, along with the massive development of those in the fields of trade and services, the latter becoming the majority.

Education

In Suceava Municipality, in the school year 2020-2021, the courses took place in 40 educational institutions: 17 kindergartens, 10 general schools, 10 colleges (secondary education), a post-secondary school, a state university, under the administration of Suceava Municipality; these are:

- Kindergarten with normal schedule no. 1 “PINOCCHIO”,

[15] *Sustainable Urban Mobility Plan of Suceava Municipality*

- Kindergarten with normal schedule no. 2 “MARIA MONTESSORI”,
- Kindergarten with normal schedule no. 3 “NEGHINIȚĂ”,
- Kindergarten with normal schedule no. 4 “PITICOT”,
- Kindergarten with normal schedule no. 5,
- Kindergarten with normal schedule no. 7,
- Kindergarten with normal schedule no. 8,
- Kindergarten with normal schedule no. 9 “NOROCEL”,
- Kindergarten with normal schedule “OBCINI”,
- Kindergarten with normal schedule no. 12 “ȚĂNDĂRICĂ”,
- Full day Kindergarten no. 1 “GULIVER”,
- Full day Kindergarten no. 2 “AȘCHIUȚĂ”,
- Full day Kindergarten no. 3 “DUMBRAVA MINUNATĂ”,
- Full day Kindergarten no. 6,
- Full day Kindergarten “A.B.C.”,
- Full day Kindergarten no. 9 “PRICHINDEL”,
- Full day Kindergarten no. 16 “1-2-3”,
- Gymnasium school with grades I-VIII no. 1,
- Gymnasium school with grades I-VIII no. 3,
- Gymnasium school with grades I-VIII no. 4,
- Gymnasium school with grades I-VIII no. 5 “JEAN BART”,
- Gymnasium school with grades I-VIII no. 6,
- Gymnasium school with grades I-VIII no. 7 “GRIGORE GHICA VOIEVOD”,
- Gymnasium school with grades I-VIII no. 8,
- Gymnasium school with grades I-VIII no. 9 “ION CREANGĂ”,
- Gymnasium school with grades I-VIII no. 10,
- Gymnasium school with grades I-VIII no. 11 “MIRON COSTIN”,
- National College of Informatics “SPIRU HARET”,
- National College “PETRU RAREȘ”,
- Technical College “SAMUIL ISOPESCU”,
- National College “MIHAI EMINESCU”,
- College of Economics “DIMITRIE CANTEMIR”,
- Art College “CIPRIAN PORUMBESCU”,
- Technical College of Food Industry,
- Technical College “PETRU MUȘAT”,
- National College “ȘTEFAN CEL MARE”,
- Technical College “ALEXANDRU IOAN CUZA”,
- The Sports Lyceum,
- Post-secondary Sanitary School,
- Orthodox Lyceum Theological Seminary,

- „Ştefan cel Mare" University of Suceava which continues the cultural and higher education traditions from Bukovina

Also, in the municipality of Suceava there is also private university education, which is represented by branches of some private universities in the country, such as:

- "Spiru Haret" University of Bucharest,
- "Petre Andrei" University of Iasi,
- "Dimitrie Cantemir" Christian University of Bucharest.

The health system [16]

In Suceava Municipality, the medical services are provided, mainly, by the County Emergency Hospital „Sfântul Ioan cel Nou". In 2006, the following health care facilities operated in Suceava Municipality:

- Public facilities:
  - a hospital,
  - a medical dispensary,
  - 11 school medical offices,
  - a student medical office,
  - 41 individual family doctors' offices,
  - a pharmacy,
  - a specialist outpatient clinic,
  - a hospital outpatient clinic,
  - 31 dental offices,
  - 39 specialised medical offices,
  - a specialised medical civil professional associations,
  - a nursery,
  - a blood transfusion center,

- Private facilities:
  - a hospital,
  - 75 specialised medical offices,
  - 68 dental offices,
  - 8 medical laboratories,,
  - 5 dental laboratories,
  - 55 pharmacies,
  - 6 pharmaceutical places of business,

[16] *Sustainable Energy Action Plan of Suceava Municipality*

- 5 pharmaceutical warehouses,
- 6 individual family doctors' offices,
- 11 general practice offices.

In the category of health resources, along with health care facilities, an important position is occupied by medical staff. n 2006, at the level of Suceava municipality, the following categories were active in the public health care system:

- 323 doctors, of which 56 family doctors,
- 61 dentists,
- 7 pharmacists,
- 1.127 medical staff.

The following categories were registered in the private health sector at the end of 2006:

- 35 doctors, of which 2 family doctors,
- 59 dentists,
- 99 pharmacists,
- 288 medical staff.

2.9. Transport network

Road infrastructure

According to the classification of localities - Law no. 351/2001 with the subsequent amendments and completions, the Suceava Municipality is classified as an administrative unit of rank II of inter-county importance. Also, by GD no. 998/2008, Suceava Municipality is one of the 13 poles of urban development. According to the Strategic Concept of Territorial Development Romania 2030, Suceava Municipality is an OPUS regional pole with functional specificity.

The connections of Suceava and its functional urban area with the big cities are ensured by the following main roads:

- E85 – DN 2 (București – Suceava – Siret);
- E58 – DN17 (Suceava – Gura Humorului – Dej);
- E58 – DN29 (Suceava – Botoșani);
- DN29A (Suceava – Dorohoi).

The nearest municipalities and cities are shown in the table below:

Municipalities / Cities at a distance of up to 50 km	Estimated time by car	Municipalities / Cities at a distance of over 50 km	Estimated time by car
Salcea (Airport – 14 km)	17min	Câmpulung Moldovenesc (72 km)	1h30min

Municipalities / Cities at a distance of up to 50 km	Estimated time by car	Municipalities / Cities at a distance of over 50 km	Estimated time by car
Fălticeni (25 km)	45min	Piatra Neamț (105 km)	2h10min
Gura Humorului (37 km)	55min	Vatra Dornei (112 km)	2h10min
Rădăuți (38 km)	50min	Iași (144 km)	2h30min
Siret (42 km)	45min	Bacău (147 km)	2h30min
Botoșani (45 km)	50min	Bistrița Năsăud (191 km)	3h40min

Table 2.4. The distance between the city of Suceava and the most important cities and municipalities in the area
Source: Google Maps Estimation

The road distance between Suceava Municipality, located approximately in the center of the functional urban area and the largest urban centers in Romania is as follows:

Route	Distance in km	Estimated time
Suceava – București	444 km	6h30min
Suceava – Iași	148 km	2h30min
Suceava – Brașov	323 km	5h30min
Suceava – Constanța	539 km	7h10min
Suceava – Timișoara	624 km	8h50min
Suceava - Cluj Napoca	302 km	5h10min
Suceava - Craiova	679 km	9h10min

Table 2.5. The distance between Suceava and the big urban centers in Romania
Source: Google Maps Estimation

Fig. 9. The road distance between Suceava and the large urban centers in Romania
Source: Google Maps

The main road network that connects Suceava Municipality with the component localities of the functional urban area and with the major urban centers of Romania consists of 4 highway segments, 8 European road segments and 6 county road segments. The connection between Suceava and localities in the functional urban area, such as Rădăuți and Fălticeni is ensured by the European road E85.

The European road E58 provides the connection with Botoșani, DN29A with Adâncata, Zvoriștea and Dorohoi, and DN17 with Stroiești, Iliești, Păltinoasa and Gura Humorului.

The road network is mainly arranged radially. The northwestern entrance to the city is by the E85 road, the north entrance by DN29A, the eastern entrance by E58, the southern one by E85, and the western one by DN17. Suceava has a bypass next to the localities of Șcheia and Sfântul Ilie DN2-DN17-DN2. Currently, there is a project idea for the eastern bypass of the municipality that would link DN2 with DJ 29 to Botoșani. The project is in the records of CNAIR and has an estimated value of 22.5 million EURO, to be implemented in the period 2024-2030.

The connections between the mentioned entry / exit points to the municipality are made by:

- Sofia Vicoveanca Boulevard, on the southern side of the city
- Humorului Street, on the western side of the city
- Chernivtsi Street, on the western side of the city
- Grigore Alexandru Ghica Street, on the NW direction
- 22 December 1989 Street, on the northern side of the city
- Cuza Voda Street, on the eastern side of the city

The existing street plot consists of streets of different categories, from wide-profile streets to narrow streets. This situation has resulted from the development of the city during its history. Thus, the old part of the city has winding streets, with low geometric elements, which no longer correspond to the existing traffic values. To these were added new streets with wide cross-sections. There have also been arterial bypasses in the municipality, which ensure the diversion of transit traffic outside the city in all directions.

The road network includes Category II Streets (connecting roads, which provide major traffic between functional and residential areas), Category III Streets (collectors, which take traffic flows from functional areas and direct them to connecting streets), and IV (for local use, which provide access to housing and for regular or occasional services).

The situation of the roads and municipal street networks, according to the data provided by the Suceava Municipality is the following: a length of 201 km, 323 streets, an area of 1,381,276 m^2.

Rail transport

Rail transport is a sector of major interest for Romania, including in the context of EU policies over the last 25 years to increase the modal share of rail transport. For the development of a competitive railway industry, the European Commission's efforts have focused on opening up rail transport to market competition, improving interoperability and safety in rail transport, and developing transport infrastructure.

The municipality of Suceava is connected to the European railway network TEN-T Core by the highway 500 (Bucharest, Ploiesti, Buzau, Focșani, Adjud, Roman, Pașcani, Suceava) which enters the municipality through the southeast and the highway 502 (Suceava - Vama - Floreni - Ilva mică) which enters the municipality through the west and is connected to line 500 between Suceava Nord and Suceava Burdujeni stations.

The Pașcani - Dărmănești section of line 500, a section with a double and single electrified line, which would be modernized in the period 2021-2025, is in the pending project phase. The railway connection with Ukraine is made on the Dărmănești - Vicșani section, a section with a simple non-electrified line, for which there is an electrification and modernization project in preparation, to be implemented in 2021-2025, according to the data from the General Transport Master Plan of Romania. The Vicșani - Vicșani Border line - simple non-electrified - is also in the project preparation phase for electrification and modernization for the period 2021-2025.

Highway 502 (Ilva Mică - Suceava), double and single electrified line is in the project phase waiting for modernization in the period 2025-2030. This would ensure the connection with Hungary on the route Ilva Mică - Dej - Cluj-Napoca - Oradea - Arad - Curtici - Border.

The connection with the Republic of Moldova is not ensured at present, the nearest destination being Ungheni, on the route Suceava-Verești - Dolhasca - Pașcani - Târgu Frumos - Iași - Ungheni Prut. The double electrified line Roman - Iași with connection Pașcani is in the project phase waiting for modernization in the period 2021-2025 according to the General Transport Master Plan of Romania.

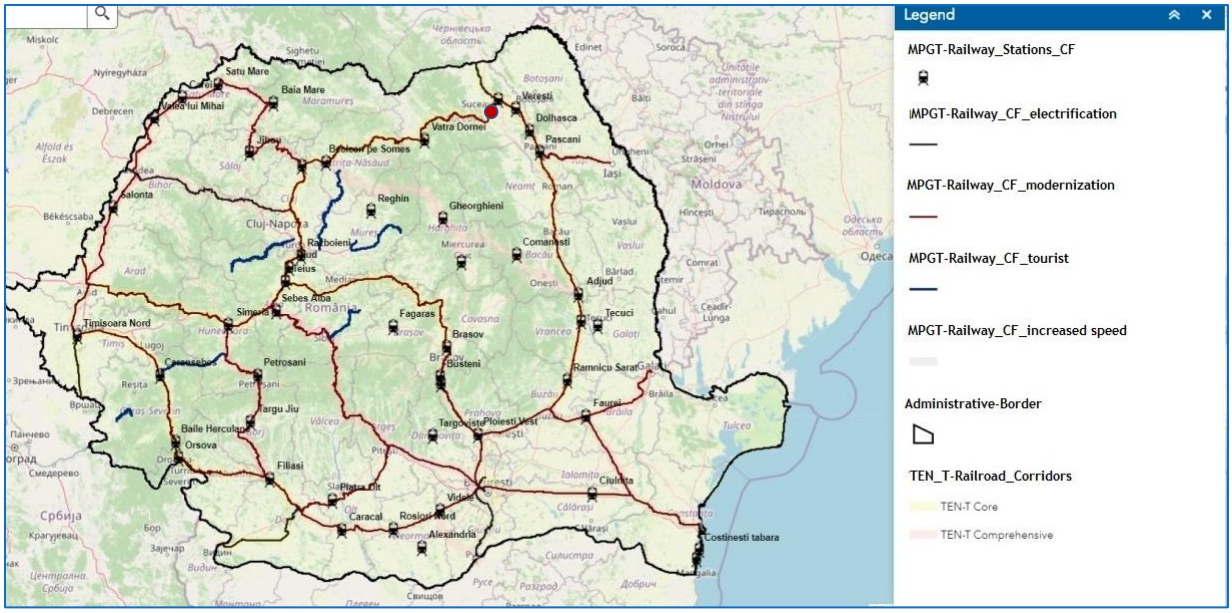


Fig. 10. The Romanian TEN-T rail network

Source: General Transport Master Plan of Romania - Interactive map

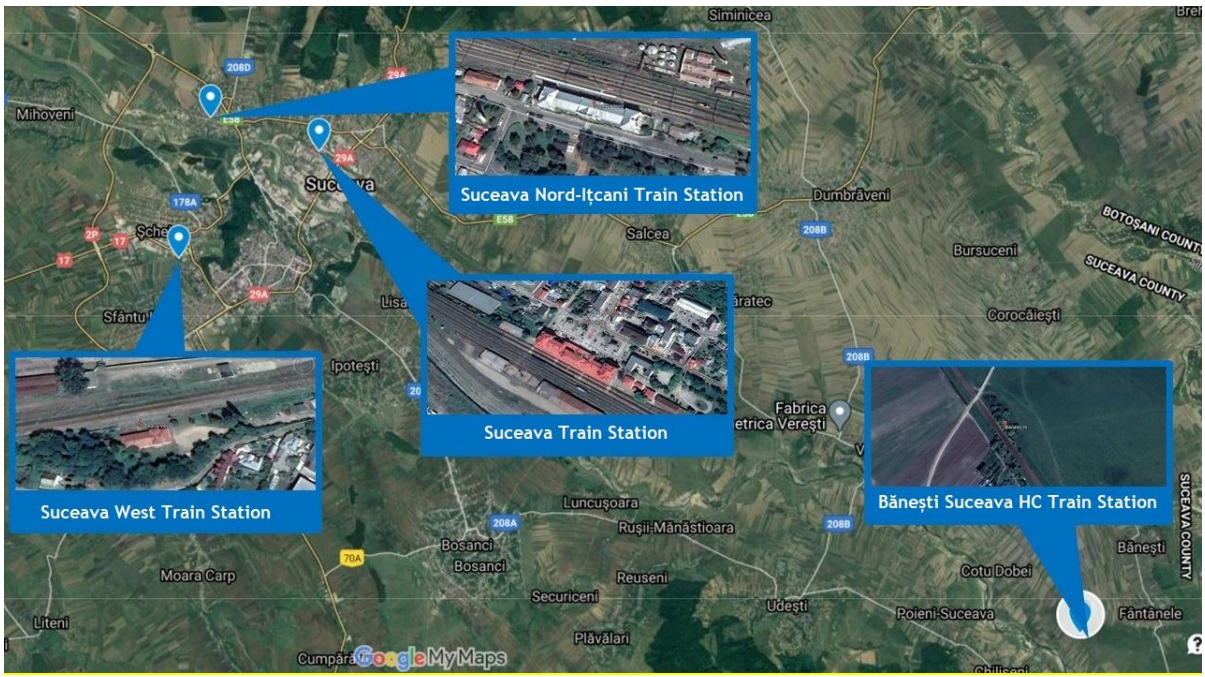


Fig. 11. The location of railway stations in the metropolitan area of Suceava

Source: General Transport Master Plan of Romania - Interactive map and Google Earth images

The municipality is connected to the national railway network through the Suceava (Burdujeni) and Suceava Nord-Iţcani stations. The Suceava metropolitan area is connected to the national network and through the Suceava West and Bănești HC stations.

According to mersultrenurilor.ro, Suceava station is the point of departure / arrival for a number of 57 trains operated by SNTFC. Thus, 8 trains are in the category (IRN), 39 trains are in the Regio (R) category, 9 Interregio (IR) trains and 1 Regio Express (RE) train.

Suceava Nord-Iţcani Station is the point of departure for 29 trains, Suceava West for 8 trains, and Bănești Station for 20 trains.

Suceava Railway Station is a first class railway station, located on an interoperable traffic section, open to passenger and freight traffic. It is equipped with a ticket office, information desk for local and international traffic, ticket vending machines, waiting room, Railway Transport Police station, taxi rank. Suceava Nord-Iţcani station (disused) is a second degree station, located on an interoperable traffic section, open to passenger and freight traffic. It is equipped with a ticket office, information desk, and a waiting room.

At local level, the two stations represent intermodality points at the level of Suceava Municipality, being connected to the local public transport network through lines 2, 3 for Suceava Railway Station and 5, 28 for Suceava Railway Station Nord-Iţcani. Suceava Train Station also has its own taxi rank.

Airline transport

Ștefan cel Mare Suceava International Airport is located east of Suceava Municipality, on the administrative territory of Salcea. It is under the administration of the Suceava County Council, being established in 1962. The distance from the Airport to the center of Suceava Municipality is about 12.5 km.

In the General Transport Master Plan of October 2014, Suceava Airport was classified as a small regional airport, but the projects proposed in the document aimed to develop it into an international airport due to a catchment area of 974,480 inhabitants[17] in Suceava, Neamt, and Botosani counties, but also from Ukraine. Potential passengers are from the business area, tourists or people working abroad.

[17] General Transport Master Plan, page 313, 2014 AECOM

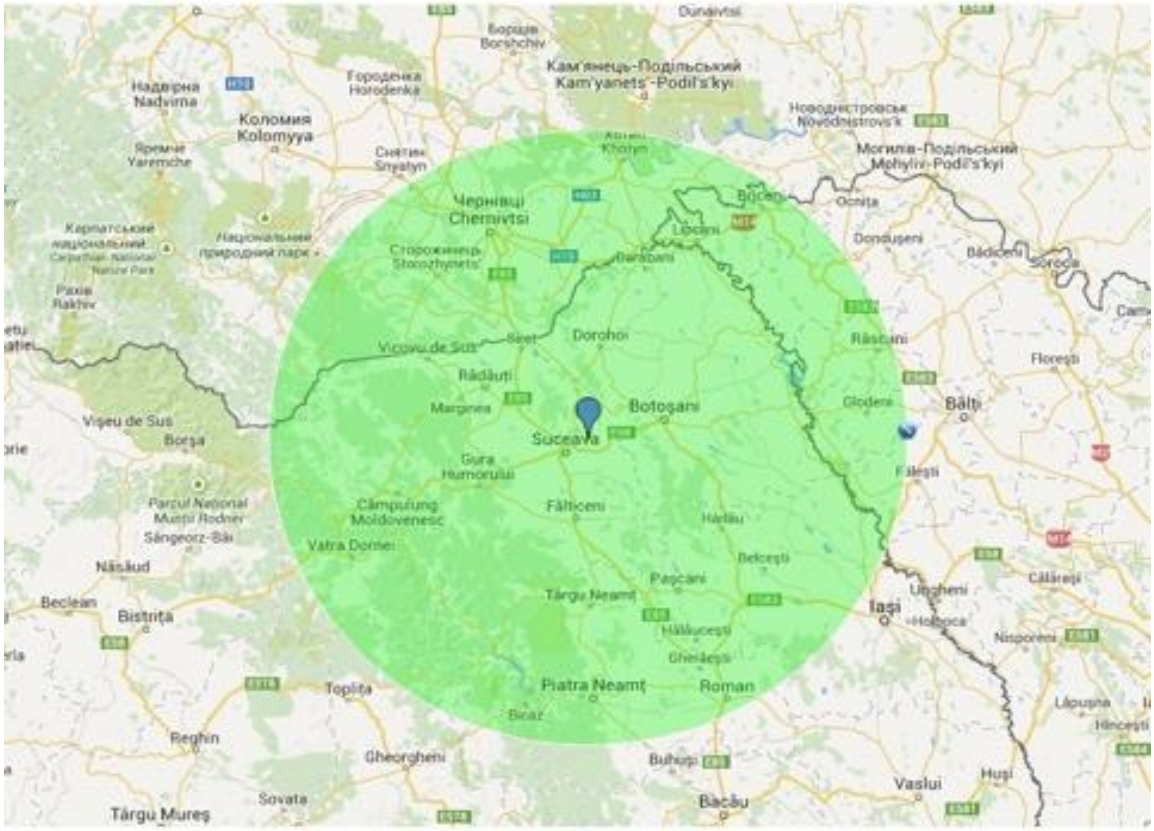


Fig. 12. The catchment area of the Suceava International Airport
Source: Ștefan cel Mare International Airport Suceava

To increase passenger traffic, the airport was closed between January 2014 and October 2015 for modernization and expansion. The concrete runway was paved and widened, a new control tower was built and an instrument landing system was introduced.

Suceava Airport is located in the city of Salcea, on the E58 road, at a distance of 12 km east of the city center and 30.5 km from the Botosani Municipality.

From the center of Suceava you can reach the airport by car or by public transport. The airport is not included in the coverage area of the local public transport, the company TRANS CM providing transport services at an interval of one hour, between 4:00 and 23:00, on route 171 (Obcini - Burdujeni Station - Airport). The journey by public transport from the city center to Suceava Airport is about an hour, compared to 20 minutes by car. The establishment of new public transport lines linking the airport to all neighborhoods of the municipality, would help to make it more accessible.

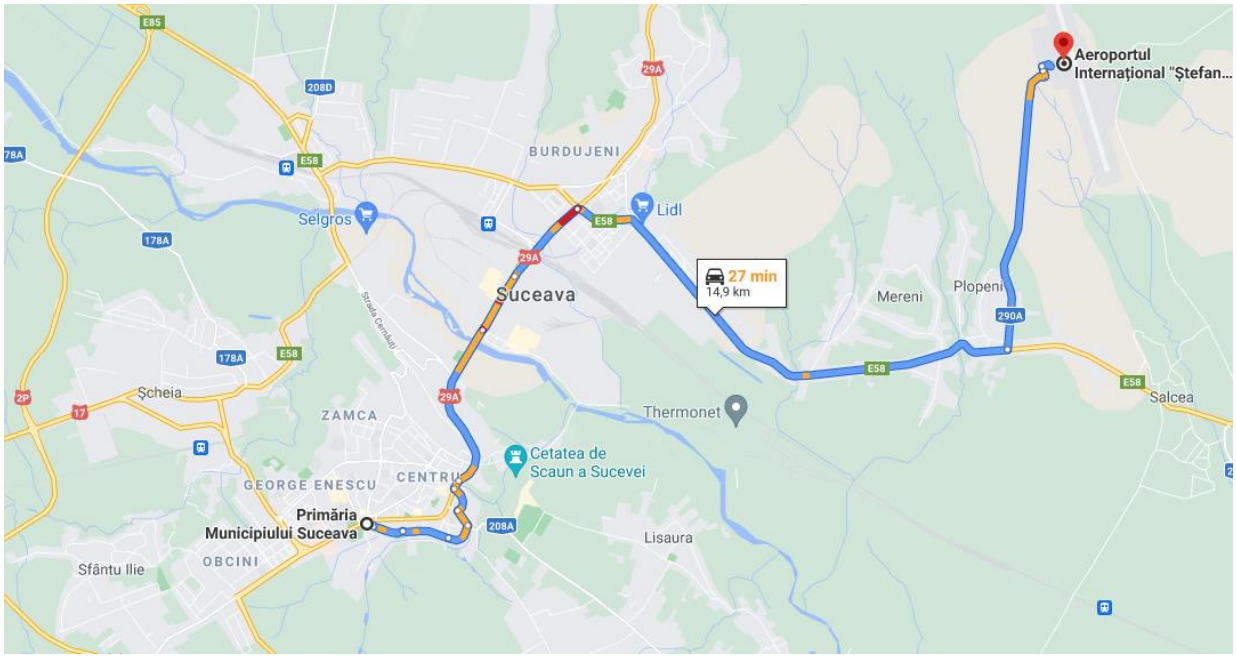


Fig. 13. Travel time to the airport by car
Source: Google Maps

Suceava Airport registered a decreasing trend in terms of the number of flights from 2008 to 2013, and after the renovation works the number of flights increased steadily until 2019. Most passengers were transported in 2018 according to the figures below.

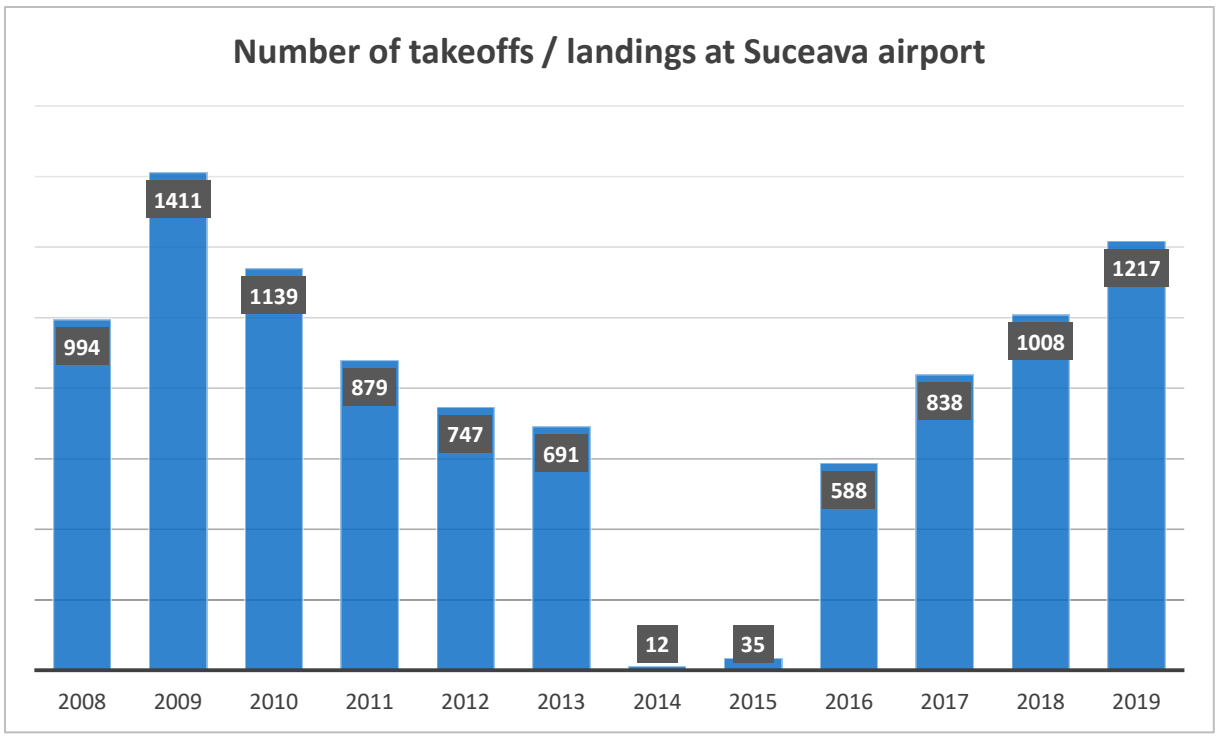


Fig. 14. Number of take-offs/landings at Suceava International Airport
Source: Romania's urban policy. Indicator processing: https://citadini.ro/baza-de-date-urbane/

The 2020 SARS COV-2 pandemic has meant a significant reduction in international air traffic. In April 2020, after the quarantine was instituted in Suceava, most flights to and from Germany and England were cancelled.

The reduction of traffic at Suceava airport created, according to Suceava County Council, losses of 6 million lei. At the same time, the pandemic adaptation costs put additional pressure on the airport budget and it had to accept the state aid granted by the Romanian Government. The situation has improved during the summer season, due to the relaxation of traffic restrictions.

Despite the current context caused by the SARS COV-2 pandemic, the Suceava County Council has invested 3.3 million euros to expand the terminal with a space of 1,400 square meters to improve the airport's handling capacity to 300 passengers per hour. The airport will also continue to expand its parking lots and transport connections with Suceava by creating two access roads from Burdujeni and Dumbrăveni.

In spite of the challenges posed by the SARS COV-2 pandemic, Suceava International Airport is essential for the economic development of the North East Region. The airport can increase the mobility of the population in the area and the tourist potential, but a better connection with the city of Suceava is needed.

Local public transport

In order to encourage citizens to use sustainable modes of transport, it is necessary to implement an efficient public transport network. In recent years, European cities have implemented a number of initiatives to increase the quality and frequency of public transport use, but so far there has been no significant reduction in the use of personal cars. Some air quality indicators have improved slightly, but greenhouse gas emissions from road transport have continued to rise steadily and many cities continue to exceed EU safety thresholds for pollution.

A higher percentage of the municipality's population compared to the national average is satisfied with the transport services in Suceava. Thus, 67% of the inhabitants of Suceava are satisfied with the public transport, 27% of the inhabitants declaring themselves very satisfied. A percentage of 6% of those interviewed stated that they are very dissatisfied with public transport in Suceava.

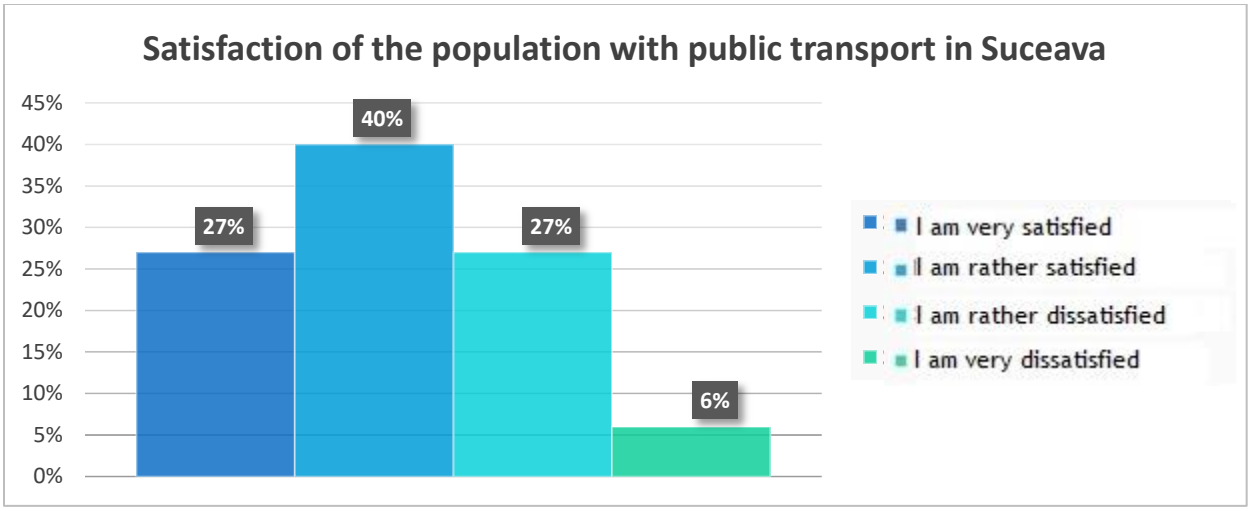


Fig. 15. Satisfaction with public transport

Source: Romania's Urban Policy. Urban indicator data processing: https://citadini.ro/baza-de-date-urbane/

Most people in Suceava are less than 10 minutes from a public transport station, but easy access is considered at about 5 minutes - 400 meters.

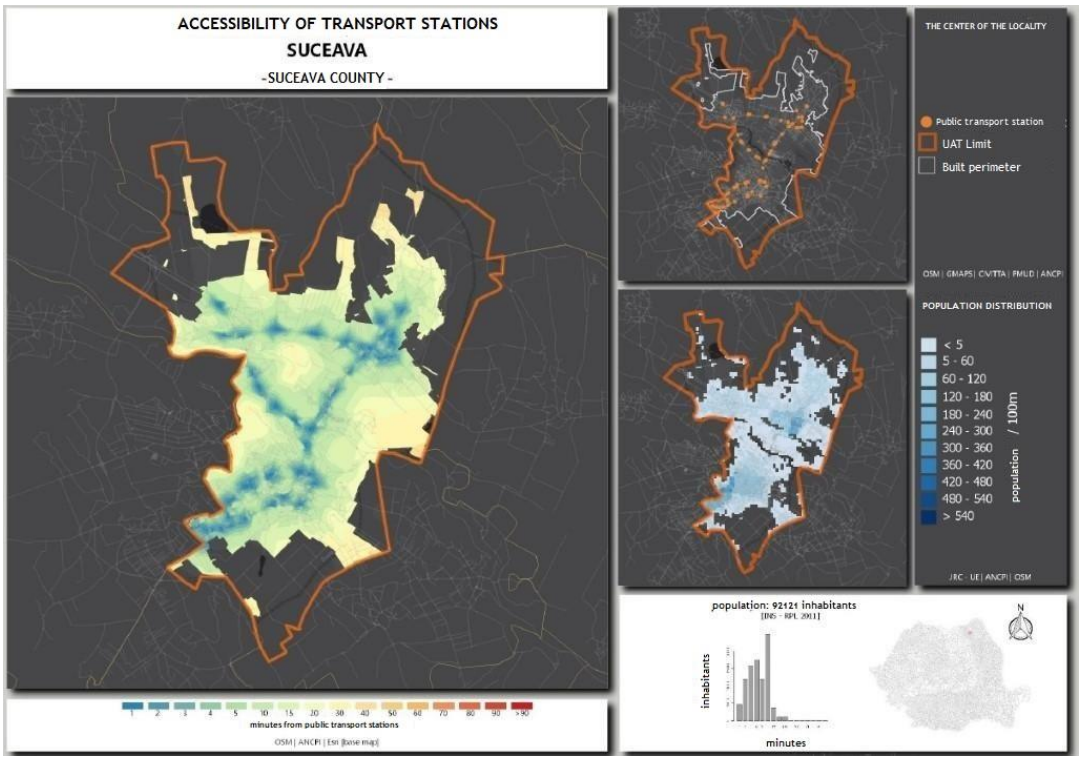


Fig. 16. Accessibility of transport stations in Suceava

Source: Romania's Urban Policy. Urban indicator data processing: https://citadini.ro/baza-de-date-urbane-harti/

Due to the layout in relation to the important streets, high schools and faculties have ensured accessibility to at least one public transport station, at a maximum of 400 meters. This makes public transport necessarily efficient, including

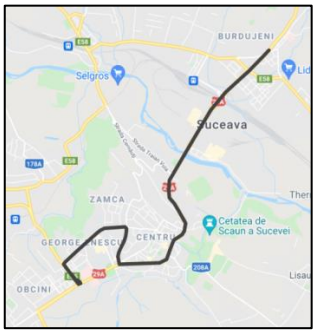
complementarity with non-motorized access mobility from stations to educational institutions.

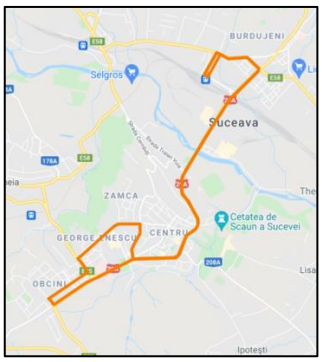
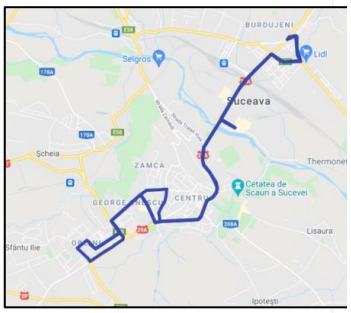
The public transport operator from Suceava Municipality, TRANSPORT PUBLIC LOCAL SA SUCEAVA, was established in 2005, being registered as a joint stock company (SA) in accordance with the provisions of Law no. 31/1990 republished, being registered at the Trade Registry Office of Suceava under no. J33 / 966/2005, headquartered in Suceava, Str. Traian Vuia 5 A, Suceava County. The duration of operation of S.C TRANSPORT PUBLIC LOCAL SA is unlimited, starting from the date of registration at the Trade Register Office attached to the Suceava Court.

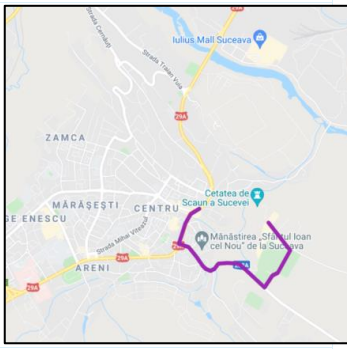
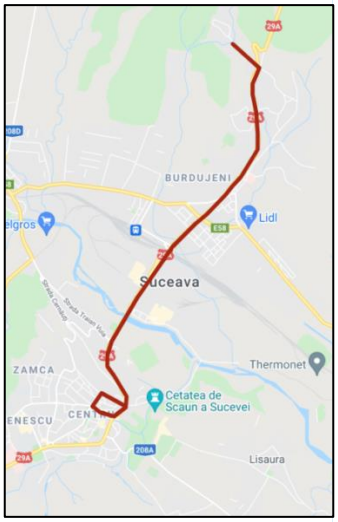
The shareholder of TRANSPORT PUBLIC LOCAL SA is the Local Council of Suceava Municipality.

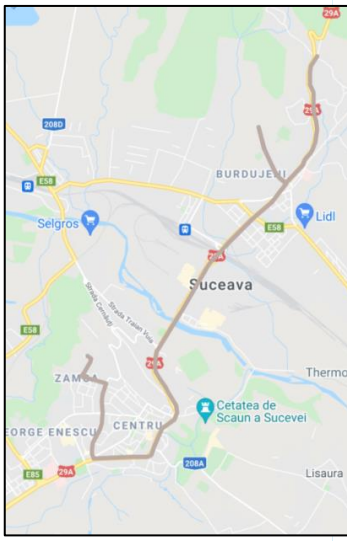
Based on the Contract for the delegation of the management of the public passenger service in Suceava Municipality, awarded by Local Council Decision no. 333/2016 on the assignment in delegated management of the local public transport service of persons by regular transports in the Suceava Municipality and in accordance with the provisions of Regulation (EC) no. 1370/2007, the municipal public transport operator TRANSPORT PUBLIC LOCAL SA has the exclusive right to provide the local public transport service in Suceava Municipality.

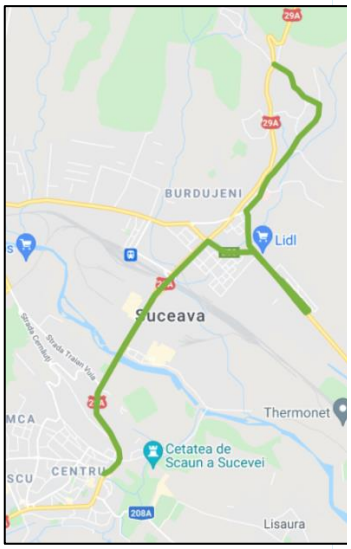
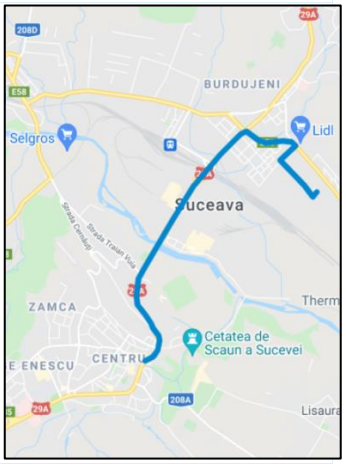
The bus routes are shown in the table below:

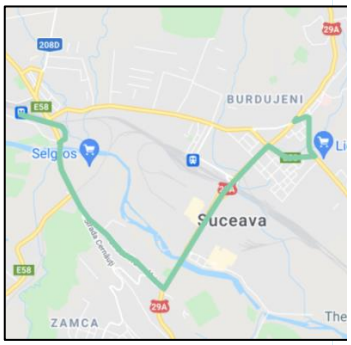
Route no.	Last station	Kilometers	Bus route	
Line 1	CINEMA BURDUJENI - GEORGE ENESCU	16	Cinema - Orizont - IRIC - Carrefour - Bazar - Sala Sporturilor - „Petru Muşat” College - Center - Bank - Polyclinic - County Hospital - Obcini Flori - Mobilă - Curcubeu - Nordic - Cathedral - Polyclinic - Bank - Center - "Petru Muşat" College - Sports Hall - Bazar - Carrefour - Orizont - Cinema	

Route no.	Last station	Kilometers	Bus route	
Line 2	BURDUJENI TRAIN STATION - OBCINI neighborhood via HOSPITAL	20,6	Burdujeni Train Station - Comlemn - Cantină - Moldova - Orizont - IRIC - Carrefour - Iulius Mall - Bazar - Sports Hall - „Petru Muşat” College - Center - Bank - Polyclinic - County Hospital - Metro - Corduș School no. 9 - Obcini Flori - Mobilă - Curcubeu - Nordic - Cathedral - Polyclinic - Bank - Center - "Petru Muşat" College - Sports Hall - Iulius Mall - Bazar - Carrefour - Orizont - Moldova - Cantină - Ramiro - ANL neighborhood - Burdujeni Train Station	
Line 3	BURDUJENI TRAIN STATION - Şcheia Bearing Factory and return	24,1	Burdujeni Train Station - Comlemn - Cantină - Moldova - Orizont - IRIC - Carrefour - Bazar - Sports Hall - "Petru Muşat" College - Center - Bank - Polyclinic - County Hospital - Obcini Flori - CFR West Passage - Bypass - Rulmentul - Jumbo - Bermas - Suceava West Train Station - Mobilă - Curcubeu - Nordic - Cathedral - Polyclinic - Bank - Center - "Petru Muşat" College - Sports Hall - Bazar - Carrefour - Orizont - Moldova - Cantina - Ramiro - ANL neighborhood - Burdujeni Train Station	
Line 4	BURDUJENI CINEMA - OBCINI neighborhood via MĂRĂȘEȘTI	22	Cinema - Warehouse - Torino - Market - Orizont - IRIC - Carrefour - Iulius Mall - Bazar - Sports Hall - "Petru Muşat" College - Center - Bank - Polyclinic - Cathedral - Curcubeu - Mobilă - Obcini Flori - Metro - Corduș - IRE Block - Grocery shop - „Ion Creangă” School - Obcini Flori - Mobilă - Curcubeu - Confecția - Polyclinic - Bank - Center - „Petru Muşat” College - Sports Hall - Iulius Mall - Bazar - Carrefour -	

Route no.	Last station	Kilometers	Bus route	
			Orizont - Market - Torino - Warehouse - Neuro Hospital - Cinema	
Line 5	IȚCANI NORTH STATION - OBCINI neighborhood via HOSPITAL	18,6	Gara Iţcani - Pedway - Străduința - Betty Ice - Petrom - TPL - Sticlă - „Petru Mușat” College - Center - Bank - Polyclinic - County Hospital - Metro - Corduș - IRE Block - Grocery shop - School no.9 - Obcini Flori - Mobilă - Curcubeu - Nordic - Cathedral - Polyclinic - Bank - Center - „Petru Mușat” College - Sticlă - TPL - Petrom - Selgros - Străduința - Pedway - Iţcani Train Station	
Line 7	CENTER - FORTRESS OF SUCEAVA and return	5,5	Center - Power Plant - Pacea Cemetery - Fortress of Suceava - Pacea Cemetery - ”Sf. Ioan” Monastery - Center	
Line 15	EUGEN DOBRILĂ STREET - GROPI - ORIZONT - BURDUJENI VILLAGE “ȘPAC”	18,4	Eugen Dobrilă Street – Gropi - Burdujeni Village “Șpac” - General School No. 6 – Tabita - Cpt. Grigore Andrei Street - Cpt. Grigore Andrei Street – Electric Bus Base - Cpt. Grigore Andrei Street - Cinema – Burdujeni Town Hall – Orizont - I.R.I.C. – Carrefour – Bazar - Sports Hall - Vocational School – Centru - Casa Cărții – Bus Terminal - Sf. Dumitru Church - Vocational School - Sports Hall - Bazar Carrefour - CFR Pedway – Orizont - Burdujeni Town Hall - Cpt. Grigore Andrei Street - Cpt. Grigore Andrei Street – Electric Bus Base - Cpt. Grigore Andrei Street– Tabita - General School No. 6 -	

Route no.	Last station	Kilometers	Bus route	
			Burdujeni Village "Șpac" - Eugen Dobrilă Street – "Gropi"	
Line 17	BURDUJENI VILLAGE "ȘPAC"- POLYCLINIC - TIBITA	23,1	Burdujeni Village "Șpac" - General School No. 6 - Tabita - Grigore Andrei Street - Grigore Andrei Street end of line - Grigore Andrei Street - Burdujeni Cinema – Moldova - Orizont - I.R.I.C. – Carrefour – Bazar - Sports Hall - Vocational School - Center – Bank – Polyclinic - Mărășești Cathedral - U.G.I.R.A. - House of Pensions - U.G.I.R.A. - Cathedral – Mărășești – Polyclinic – Bank - Center - Vocational School - Sports Hall – Bazar – Carrefour - Orizont - Burdujeni Cinema - Grigore Andrei Street - Grigore Andrei Street end of line -Grigore Andrei Street – Tibita - Șc. Gen. Nr. 6 - Burdujeni Sat "Șpac"	
Line 21	BURDUJENI VIL LAGE - ȘCHEIA BEARING FACTORY and return	26,6	Burdujeni Village - School no. 6 - Cinema - Orizont - IRIC - Carrefour - Bazar - Sports Hall - „Petru Mușat" College - Center - Bank - Polyclinic - Cathedral - Curcubeu - Mobilă - CFR West Passage - Bypass - Rulmentul - Jumbo - Bermas - Suceava West Station - Mobilă - Curcubeu - Nordic - Cathedral - Polyclinic - Bank - Center - „Petru Mușat" College - Sports Hall - Bazar - Carrefour - Orizont - Cinema - General School No. 6 - Burdujeni Village	

Route no.	Last station	Kilometers	Bus route	
Line 22	BURDUJENI VILLAGE - ORIZONT - POD DE PIATRA	19,9	Burdujeni Village "Șpac" - Vasile Pârvan Street - Lev Tolstoi Street - Pod De Piatra - Tibeco - Neuropsychiatric Hospital - Depozit De Ouă - Tinereții end of line - Constantin Sofroni Street - Torino - Burdujeni Market - Orizont - I.R.I.C. - Carrefour - Bazar Sports Hall - Vocational School - Center 1 - Center 2 - Vocational School - Sports Hall - Bazar - Carrefour - Orizont - Burdujeni Market - Tinereții Neighborhood end of line - Constantin Sofroni Street - Torino - Depozit De Ouă - Neuropsychiatric Hospital - Tibeco - Pod De Piatra - Lev Tolstoi Street - Vasile Pârvan Street - Burdujeni Village "Șpac"	
Line 23	GHEORGHE COZORICI (LANISTE) - ORIZONT	10,7	Gheorghe Cozorici (Laniste) - Traian Popovici (Laniste) - Owners Association 31 (Eroilor) - Torino - Burdujeni Market - Orizont - I.R.I.C. - Carrefour - Bazar - Sports Hall - Vocational School - Center - Center - Vocational School - Sports Hall - Bazar Carrefour - Orizont - Burdujeni Market - Gheorghe Cozorici (Laniste)	

Route no.	Last station	Kilometers	Bus route	
Line 26	"LA STEJARI" NEIGHBORHOOD - AL DUMBRĂVII - CARREFOUR	12,9	"La Stejari" Neighborhood – Al Dumbrăvii - Juice Factory - Al. Dumbrăvii Intersection –Ghe. Doja Street - Conlemn-Ramiro - Cantina I.R.I.C. – Moldova – Orizont - I.R.I.C. – Carrefour - Bazar Sports Hall - Vocational School - Center – Centru - Vocational School - Sports Hall – Bazar – Carrefour - Orizont – Moldova - Cantina I.R.I.C. Conlemn-Ramiro – Adria - Juice Factory - "La Stejari" Neighborhood – Al Dumbrăvii	
Line 28	BURDUJENI CINEMA - IȚCANI NORTH STATION and return	14,7	Cinema - Warehouse - Torino - Market - Orizont - IRIC - Carrefour - Bazar - Sports Hall - Sticlă - TPL - Petrom - Selgros - Străduința - Pedway - Iţcani Train Station - Pedway - Străduința - Betty Ice - Petrom - TPL - Sticlă - Bazar - Carrefour - Orizont - Market - Torino - Warehouse - Neuro Hospital - Cinema	

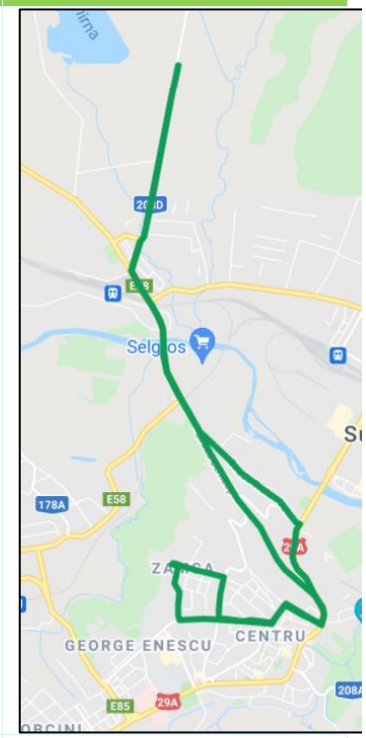
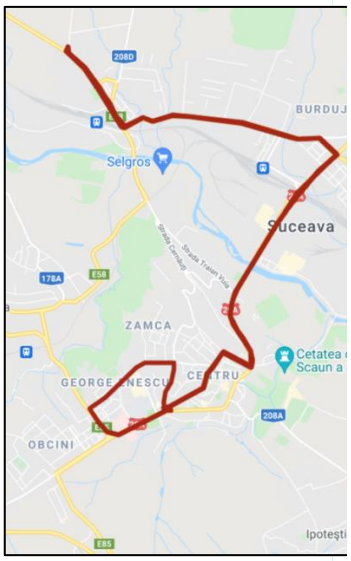
Route no.	Last station	Kilometers	Bus route	
Line 29	WATER PUMPING STATION - ZAMCA PARK - AVICOLA	17,3	Water Pumping Station - Avicola Iţcani Mill - Cfr Iţcani Pedway - Betty Ice - Omv Petrom - Cernăuţi Street - Mircea Şeptilici Street - Cernăuţi Street - Ştefan Ştefureac Street - Market - Bus Terminal Matei Vişniec Theater - Mărăşeşti Cathedral - Food Industry Lyceum - Zamca Park - Bucovina Medical Center - Grigore Ureche Street - Mopan Stand - Mărăşeşti Cathedral - Matei Vişniec Theater - Bus Terminal - Market -Sf. Dumitru Church - Vocational School - Sticlă - T.P.L. - Omv Petrom - Betty Ice - Cfr Iţcani Pedway- Iţcani Mill - Avicola - Water Pumping Station	
Line 30	GOSTAT IŢCANI - RAMIRO - POLYCLINIC - IŢCANI DEPOT	22,7	Gostat Iţcani - Defelcom - Iţcani Depot - Iţcani Pedway - Centrofarm Georghe Doja - Pictor Romeo Calancea - Aleea Dumbrăvii - Ramiro - Cantina - I.R.I.C. - Moldova - Orizont - I.R.I.C. - Carrefour - Bazar - Sports Hall - Vocational School - Cuptorul De Aur - Bus Teminal - Petru Rareş National College- Polyclinic - Obcini Hospital - Mobilă - Curcubeu - Nordin - Cathedral - Polyclinic - Petru Rareş National College - Bus Teminal - Sf. Dumitru Church - Vocational School - Sports Hall - Bazar - Carrefour - Orizont - Moldova - Cantina I.R.I.C. - Ramiro - Aleea Dumbrăvii - Gheorghe Doja 87 - Pictor Romeo Calancea - Centrofarm - Iţcani Pedway - Iţcani Depot - Defelcom - Gostat Iţcani	

Table 2.6. Bus routes in Suceava

The TPL operator's fleet consists of 92 buses, with the following characteristics:

- Capacity: 20 Irisbus buses (30 seats, 78 standing), 3 Irisbus buses (30 seats, 76 standing), 3 Irisbus buses (27 seats, 77 standing), 3 Irisbus buses (28 seats, 77 standing); 2 Mercedes-Benz buses (30 seats, 59 seats), 1 Mercedes-Benz bus (31 seats, 64 standing), 1 Irisbus bus (31 seats, 69 standing), 2 Otokar buses (15 seats, 8 standing), 10 Karsan Jest buses (12 seats, 11 standing), 22 Karsan Jest Electric buses (11 seats, 11 seats), 25 Granton electric buses (31 seats, 42 seats).
- ▫ Size: 58 12 meter buses and 37 6 meter buses.
- ▫ Year of manufacture: 1 bus manufactured in 2000, 2 buses manufactured in 2002, 6 buses manufactured in 2004, 1 bus manufactured in 2005, 20 buses manufactured in 2006, 3 buses manufactured in 2009, 2 buses manufactured in 2013, 10 buses manufactured in 2015, 5 buses manufactured in 2019, 35 buses manufactured in 2020, 7 buses manufactured in 2021.
- ITS facilities (CCTV, passenger info, fleet management): 42 buses (only buses manufactured in 2020 and 2021).
- Pollution norms: E2 (one bus), E3 (29 buses), E4 (3 buses), E5 (12 buses), Electric (47 buses).

The entire bus fleet is owned by the Suceava Municipality, being handed over as return goods to the operator Transport Public Local SA Suceava according to the delegation contract concluded between the parties.

The following table shows the public transport stations in Suceava:

No.	Station Name
1.	Burdujeni Cinema
2.	Orizont
3.	I.R.I.C
4.	Carrefour
5.	Bazar
6.	Sports Hall
7.	Vocational School
8.	Centre
9.	Bank
10.	Polyclinic
11.	Mărășești Cathedral
12.	Curcubeu
13.	Mobilă
14.	Obcini (return at the park traffic light)

15.	Obcini-flori
16.	Nordic
17.	Burdujeni Train Station
18.	Comlemn
19.	Cantina I.R.I.C
20.	Iullius Mall
21.	Hospital
22.	Metro
23.	Corduș
24.	General school no. 9
25.	CFR Pedway
26.	Moldova
27.	Ramiro
28.	Obcini
29.	Suceava West Station intersection
30.	Depozitul de ouă
31.	Torino
32.	Burdujeni Market
33.	I.R.E Block
34.	Obcini Grocery shop
35.	Confecția
36.	Ștefan Cel Mare University
37.	Neuropsychiatric Hospital
38.	Iței Train Station
39.	C.F.R. Passage
40.	Străduința
41.	Betty Ice
42.	Peco Petrom
43.	T.P.L
44.	Sticlă
45.	Corduș
46.	Sellgros
47.	Dobrilă Eugen Street – “Gropi”
48.	General school no. 6
49.	Tabita
50.	Cpt. Grigore Andrei Street 1
51.	Cpt. Grigore Andrei Street – Electric Bus Base
52.	Cpt. Grigore Andrei Street 2
53.	Casa Cărții – Roundabout
54.	Bus Terminal
55.	SF. Dumitru Church
56.	Burdujeni Town Hall
57.	Burdujeni Village - Șpac
58.	LIDL

59.	Radio AS
60.	George Enescu
61.	Suceava West Station intersection
62.	Vasile Pârvan Street
63.	Lev Tolstoi Street
64.	Pod de Piatră
65.	Tinereții Neighborhood – end of line
66.	Constantin Sofroni Street
67.	Center 1
68.	Center 2
69.	Intersection of Ghe. Cozorici Street – Traian Popovici Street (Lanișteneighborhood)
70.	Traian Popovici Street
71.	Owners Association 31 (Eroilor Street)
72.	"La Stejari" – Aleea Dumbrăvii
73.	Juice Factory
74.	Intersection of Aleea Dumbrăvii – Ghe. Doja Street
75.	Comlemn – Ramiro
76.	Cantina I.I.C
77.	Adria
78.	Pumping station
79.	Avicola
80.	Iţcani Mill
81.	CFR Iţcani Pedway
82.	OMV Petrom
83.	Intersection of Cernăuți Street – Mircea Șeptilici Street
84.	Intersection of Cernăuți Street –Ștefan Ștefureac Street
85.	Market
86.	Bus Terminal
87.	Matei Vișniec Theatre
88.	Food Industry Lyceum
89.	Zamca Park
90.	Bucovina Medical Centre
91.	G. Ureche Street – Mopan stand
92.	Matei Vișniec Theatre
93.	Market (SF. Dumitru Church)
94.	Bocational School
95.	Gostat Iţcani
96.	Defelcom
97.	General school no. 7
98.	Centrofarm

99.	7 Boxe
100.	Aleea Dumbrăvii
101.	Main Market
102.	Petru Rareș National College

Table 2.7. Public transport stations in Suceava Municipality

The price of a ticket is 2.5 RON for a single trip, and TPL Suceava offers the possibility to purchase season tickets with unlimited travel for all lines. The types of subscriptions are shown in the table below:

Type of card	Number of trips	Price (RON)
Ticket	1	2.5
One day subscription	Unlimited	6
7 day subscription	Unlimited	27
15 day subscription	Unlimited	46
Monthly subscription	Unlimited	75
Non-nominal subscription	Unlimited	115
Subsidized subscription for students	Unlimited	37.50
Subsidized subscription for students	Unlimited	37.50

Table 2.8. Types of public transport cards in Suceava Municipality

Source: Website Transport Public Local Suceava, 2020: *https://www.tpl-sv.ro/*

TPL Suceava offers free services for the following categories of people:

- Former political detainees (holder or surviving spouse) - Decree-Law no. 118/1990
- Refugees / deportees (holder or surviving spouse) - Law no. 189/2000
- War veterans / widows of veterans - Law no. 44/1994
- Heroes of the Revolution and the descendants of those who died in the Revolution of December 1989 - Law no. 341/2004
- People with special needs - this card is received by people with severe disabilities or impairment, personal assistants of people with severe disabilities and professional personal assistants of people with severe disabilities or impairment. These cards are valid for public transport throughout the country (regardless of domicile).

Subscription issuing points are as follows:

- CENTER Bus Station

  Open: Monday-Friday 7.00 - 18.00; closed on Saturdays, Sundays and public holidays

  Monthly, 15-day, 7-day, one-day, non-nominal subscriptions, subscriptions for pupils / students, special cards are issued
- OBCINI – Flori Bus Station

Open: Monday-Friday 7.00 - 15.00; Closed on Saturdays, Sundays and public holidays

15-day, 7-day, one-day, non-nominal monthly subscriptions are issued for pupils / students

- BURDUJENI – Dispatcher end of line Burdujeni Station
  Open: Monday-Friday 5.00 - 22.00; Saturday and Sunday 8.00 - 16.00
  Monthly, 15-day, 7-day, one-day, non-nominal subscriptions are issued
- BURDUJENI – Dispatcher end of line Cinema Burdujeni
  Open: Monday-Friday 5.00 - 22.00; Saturday and Sunday 8.00 - 16.00
  Monthly, 15-day, 7-day, one-day, non-nominal subscriptions are issued
- TPL HEADQUARTERS – Traian Vuia Street, no. 5A
  Open: Monday-Friday 7.00 - 15.00; Closed on Saturdays, Sundays and public holidays

Suceava has 26 taxi ranks with a capacity of 191 vehicles. It is not allowed to exceed the capacity of the stations. These stations are marked with signs indicating the number of regulated places. The map above shows the location of the taxi ranks in the municipality, and the table provides more information about the location and number of places in each taxi rank.

No.	Taxi rank	Landmark	No. of places
1	Calea Obcinilor	Calea Obcinilor	10
2	Curcubeu	Zorilor Street	15
3	Centrul de Calcul	Universității Street	5
4	Bucovina Store	Ștefan cel Mare Street	10
5	Balada	Mitropoliei Street	3
6	Hotel Bucovina	Parcare Hotel Bucovina	10
7	Cultural Center	Ciprian Porumbescu Street	4
8	Centrul de Calcul	Ștefăniță Vodă Street	10
9	Bus terminal	Armenească Street	10
10	Main Market	Petru Rareș Street	6
11	School Inspectorate	Calea Unirii	2
12	Orizont	Calea Unirii	10
13	Burdujeni Market	calea Burdujeni	5
14	Burdujeni Train Station	Nicolae Iorga Street	16
15	Iţcani Train Station	Gării Street	15
16	Ambianța Obcini	Intersecția strada Victoriei și Stațiunii	5
17	Petrom Obcini	B-dul 1 Decembrie 1918	5
18	Bazar Burdujeni	calea Unirii	14
19	Iţcani Pedway	Gheorghe Doja Street	7
20	Zimbru Complex	Universității Street	5

21	Mobila	B-dul George Enescu	5
22	Cathedral	Intersecția strada Grigore Ureche cu B-dul George Enescu	5
23	Sagra	Zamca Street	5
24	Polyclinic	Ștefan cel Mare Street	3
25	Miron Costin School	Păcii Street	2
26	Bancpost Center	Meseriașilor Street	4

Table 2.9. Taxi ranks in Suceava Municipality
Source: Sustainable Urban Mobility Plan of Suceava Municipality, 2016

Following public consultations, it emerged that although all taxi dispatchers have mobile applications for taking orders (TIN Taxi, CIP Taxi), none of the taxi companies in Suceava operate accessible cars for people with disabilities. Better taxation legislation and drastic quality control methods (drastic penalties if taxi drivers are not fitted, if rides are refused, if taxis are not cleaned, etc.) as well as allowing alternative Uber-type transportation services to create competition, would contribute to raising the level of services provided.

Intercity transportation

The intercity routes in Suceava County are operated by private operators licensed by ARR and were assigned to them by public tender by the Suceava County Council. They have more commercial activity than public passenger transport, without the application of the urban transport standards in force and the Regulation (EC) No 1370/2007 of the European Parliament and of the Council on public passenger transport services by rail and by road and repealing Council Regulations (EEC) Nos 1191/69 and 1107/70.

According to the information provided by the Suceava County Council, the intercity routes that are connected with the Suceava Municipality are:

Route code	Departure	Arrival	Transport capacity
035	Suceava	Cornu Luncii	minimumum 16
011	Suceava	Fălticeni	minimumum 13
010	Suceava	Liteni	minimum 16
151	Suceava	Vatra Dornei	minimum 28
020	Suceava	Vărătec	minimum 36
143	Suceava	Stroiești	minimum 19
002	Suceava	Hanțești	minimum 19
004	Suceava	Zamostea	minimum 30
037	Suceava	Bălăceanca	minimum 19
013	Suceava	Lisaura	minimum 19
032	Suceava	Botoșana	minimum 55

006	Suceava	Moara	minimum 33
009	Suceava	Ipotești	minimum 19
003	Suceava	Gramești	minimum 19
005	Suceava	Plăvălari	minimum 53
018	Suceava	Grigorești	minimum 49
022	Suceava	Corocăiești	minimum 53
021	Suceava	Verești	minimum 53
027	Suceava	Solca	minimum 47
024	Suceava	Siret	minimum 48
025	Suceava	Zamostea	minimum 26
026	Suceava	Siret	minimum 26
030	Suceava	Suceava	minimum 47
033	Suceava	Iaslovăț	minimum 53
142	Suceava	Cajvana	minimum 51
150	Suceava	Brodina	minimum 48
029	Suceava	Rădăuți	minimum 58
032	Suceava	Botoșana	minimum 59
001	Suceava	Berești	minimum 19
085	Suceava	Iaslovăț	minimum 26
007	Suceava	Ciprian Porumbescu	minimum 33
171	Suceava	Ștefan cel Mare	minimum 30
036	Suceava	Bănești	minimum 28
023	Suceava	Pătrăuți	minimum 29
034	Suceava	Solonețu Nou	minimum 19

Table 2.10. Schedule of county / regular rides in Suceava Municipality

2.10. Green spaces

[18] The surface of the green spaces in Suceava is approximately 2 373 884 m^2, of which:

- 686 030 m^2 are parks,
- 326 475 m^2 are traffic squares,
- 241 379 m^2 are alignments,
- 1 120 000 m^2 is land (including land affected by landslides).

In addition to the parks with relatively large areas (Şipote Park, Zamca), you can find many green spaces with a decorative role as well as green spaces with

[18] *Sustainable Energy Action Plan of Suceava Municipality*

limited access (the green space at the Hanul Domnesc, the Sf. Ioan cel Nou Monastery, the Sf. Dumitru Church - Royal Court).

The peri-urban green spaces in Suceava included in group I, subgroup 4 are divided as follows:

- Forest parks - this includes Şipote Park,
- Forests of landscape interest around cultural monuments. This includes the forests around the Fortress of Suceava and the Zamca Fortress,
- Forest strips around hotels, motels, tourist cabins,
- Forests for the conservation and intensive development of game and recreation through hunting of special interest - Pătrăuţi.

In residential areas, green spaces are represented by hedges and grassy areas.

2.11. Urban planning regulations

Increasing the energy performance of buildings is an action of major and general interest in the context of saving energy in buildings, improving the built urban environment and protecting the environment.

The energy performance of buildings is expressed by the following performance indicators:

- energy class;
- total specific energy consumption;
- CO_2 equivalent emission index.

The promotion of measures to increase the energy performance of buildings, taking into account the external climatic conditions and location, the requirements of indoor comfort in terms of costs, energy performance requirements, and to improve the urban appearance of localities is regulated by Law no. 372/2005 on the energy performance of buildings.

Thus, in accordance with the provisions of ***Law no. 372/2005*** on the energy performance of buildings, new buildings, for which the reception at the end of the works is carried out starting with December 31, 2020, will be buildings with an energy consumption from conventional sources that is almost equal to zero. As an exception,

new buildings owned / managed by public administration authorities to be received after 31 December 2018 will be buildings with an energy consumption from conventional sources that is almost zero.

At the same time, following the review of its implementation, ***Directive 2010/31 / EU*** was amended in 2018 by ***Directive (EU) 2018/844***, in order to accelerate the cost-effective renovation of existing buildings and the promotion of smart technologies in buildings. Under the Clean Energy Package, the revised Directive complements energy efficiency legislation. The aim of the Directive is to improve the energy performance of buildings in the EU, taking into account different climatic and local conditions.

EU countries need to set optimal minimum energy performance requirements. These should be reviewed every five years.

They must cover the building, its components and the energy used for:

- heating the building;
- cooling the building;
- domestic hot water;
- ventilation;
- lighting;
- other technical systems of the building.

Directive (EU) 2018/844 also requires EU countries ***to develop long-term renovation strategies to support the renovation of residential and non-residential buildings***, both public and private, into a highly energy efficient and decarbonised building stock by 2050. Strategies shall set out a roadmap with measures and domestically established measurable progress indicators, taking into account ***the EU's 2050 long-term goal of reducing greenhouse gas emissions by 80-95% compared to 1990***.

The roadmap should include guidelines for 2030, 2040 and 2050 and specify how they contribute to the achievement of the EU's energy efficiency targets, in line with the Energy Efficiency Directive 2012/27/EU.

In addition, the revised directive:

- extends the scope of the current inspection regime for heating and air conditioning systems to include combined (ventilated) systems and to take into account the performance of systems under typical operating conditions;
- encourages the use of information and communication technologies and intelligent building automation and control technologies;

- supports the launch of recharging infrastructure for electric vehicles in the car parks of buildings by requesting the installation of ducting infrastructure and recharging points;
- introduces a "smart readiness indicator" to assess the ability of buildings to adapt to occupant needs, optimize their functioning and interact with the network.[19]

The level of energy required for buildings with an energy consumption from conventional sources of almost zero, is established by technical regulations, differentiated by areas with potential from renewable energy sources and is regularly updated, depending on technical progress. In order to increase the energy performance of buildings and the transition to buildings with an energy consumption from conventional sources that is almost equal to zero, the Ministry of Regional Development and Public Administration, as the competent authority of the central administration, initiates normative acts promoting measures that are mainly aimed at:

- adequate use of structural funds to increase the energy efficiency of buildings, especially housing;
- efficient use of funds attracted from public financial institutions;
- coordinating the use of European Union funds with national ones, in order to stimulate investments in energy efficiency, in order to achieve national objectives;
- management of financial resources allocated from public funds for financing, in accordance with the law, the elaboration of technical-economic documentation, energy performance certificates, technical expertise reports and energy audit, as well as for the execution of major building renovation works included in programs to increase the energy performance of buildings.

Local government authorities may finance, within the limits of funds approved annually for this purpose in local budgets, the execution of major renovation works on residential buildings and buildings of public interest and utility, included in programs to increase the energy performance of buildings. Thermal rehabilitation can also be done from non-reimbursable sources, such as the *Regional Operational Program*.

[19] Source: *http://publications.europa.eu/resource/cellar*

2.12. Public utilities

The city of Suceava is equipped with a supply and sewerage network, a methane gas network, district heating and an electricity distribution network.

Drinking water supply system [20]

The Suceava Water Supply System ensures the water supply of the inhabitants of Suceava and 7 communes:

- Ipotești township (Ipotești, Lisaura and Tișăuți villages),
- Șcheia township (Șcheia and Mihoveni villages),
- Berchișești township (Berchișești and Corlata villages),
- Cornu Luncii township (Băișești, Brăiești and Cornu Luncii villages),
- Ciprian Porumbescu township (Ciprian Porumbescu village),
- Drăgoiești township (Lucăcești and Măzănăești villages),
- Moara township (Bulai, Liteni, Moara Carp, Moara Nica villages).

The catchment consists of two parallel catchment fronts, one consisting of 40 wells (old front) and one consisting of 35 wells (new front). These wells are arranged parallel to the Moldova River, on a length of about 3000 m, at a distance of about 75 m between them. The wells are made of metal column, with a diameter of Ø12 3/4" and have a depth of about 16-17 m near the aquifer.

The transport of drinking water from Source Berchișești to the Sfântu Ilie water management unit is done by gravity through two wires / transport pipes.:

- The main transport pipeline Wire 1 which has a total length of 29 km, built in the year / P.I.F. 1969, transports drinking water from Source Berchișești to Sfântu Ilie Reservoirs, made of the following materials:

  - 4 km of 800 mm Dn steel from the Berchișești catchment to the No. 1 aeration / deaeration tank located at Corlata,
  - 25 km of PREMO DN 600 mm from the No. 1 aeration / deaeration tank located in Corlata to the Sfântu Ilie Reservoirs;

[20] *Information provided by ACET S.A. Suceava on 22.06.2021*

- Main transport pipeline Wire 2 which has a total length of 29 km, built in / P.I.F. 1992, transports drinking water from Source Berchișești to Sfântu Ilie Reservoirs, made of the following materials:

  - 4 km of 800 mm Dn steel from the Berchișești well field and up to the No. 2 aeration / deaeration tank located at Corlata,
  - 25 km of PREMO Dn 600 mm from the No. 1 aeration / deaeration tank located in Corlata to the Sfântu Ilie Reservoirs.

The storage of the necessary water for the consumers from Suceava Municipality is carried out at the level of the three water management units and a complex of tanks for aeration / deaeration, by means of 8 tanks (+2 aeration + 1 buffer), with a total capacity of 38 750 m^3 (+ 600 m^3 vent + 150 m^3 buffer).

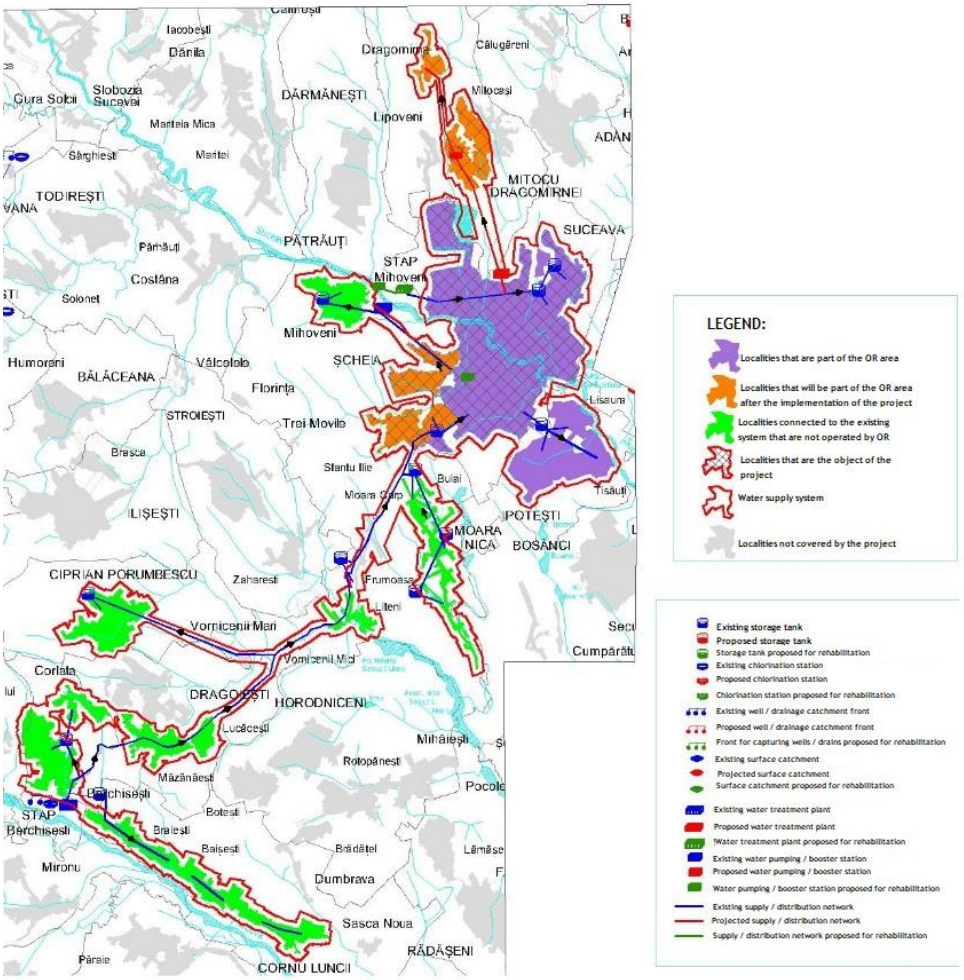


Fig. 17. Diagram of the Suceava water supply system

The volume of water captured in 2019, under normal operating conditions, was 14.825.250 m^3, of which:

- 13 693 714 m^3 came from Source Berchișești,
- 1 131 536 m^3 came from Source Mihoveni,

the average daily flow is about 40 617 m^3/day, with a drinking water delivery schedule of 24 hours / day.

ACET S.A. Suceava has been operating as a regional operator since October 1, 2005. The supplied water is monitored daily in terms of quality, based on laboratory analyzes that monitor the concentration of chemical parameters, important macrobiological indicators for defining drinking water. Monitoring is done according to a pre-defined schedule.

The evolution of the drinking water consumption billed to the population in the Suceava Municipality, in the period 2017-2019, is presented in the graph below [21]:

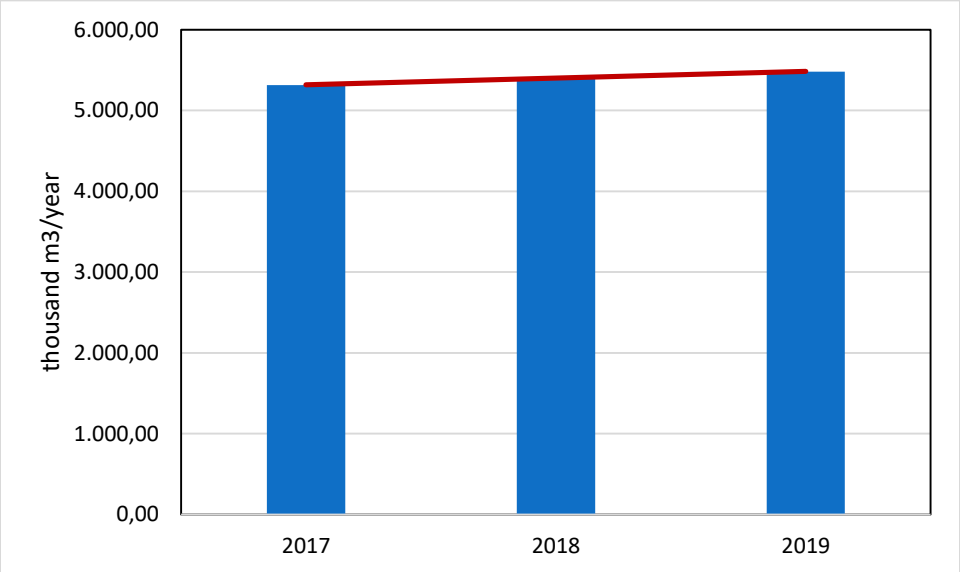


Fig. 18. Evolution of drinking water consumption in Suceava Municipality

Pumping stations in the distribution network

The distribution of water to consumers is done both by pumping and by gravity. At the level of ATU Suceava there are 7 pumping stations:

- *The old Sf. Ilie* pumping station was put into operation in 1989, in order to pump water from the 600 m^3 Sfântu Ilie buffer tank into the 1 000 m^3 Sfântu Ilie

water tower. This station is in reserve because the new Sf. Ilie pumping station has been built. It is equipped with 4 pumps with Qn = 80 m^3 / h; Hn = 50 mCA; Pn = 22 kW; Un = 400 V,

- *The new Sf. Ilie pumping station* was put into operation in 2012, in order to pump water from the 600 m^3 Sfântu Ilie buffer tank into the 1,000 m^3 Sfântu Ilie water tower. It is equipped with 4 pumps with Qn = 90 m^3 / h; Hn = 42 mCA; Pn = 18.5 kW; Un = 400 V,
- *The Zamca 2 pumping station* pumps water, which reaches gravitationally from the Sfântu Ilie reservoirs to the Zamca 2 water management unit, in Zamca 2 water tower. It is equipped with 4 pumps with Qn = 200 m^3 / h; Hn = 40 mCA; Pn = 45 kW; Un = 400 V,
- *The Zamca 4 pumping station* was put into operation in 2012, in order to supply water to an area of Suceava, located at a high altitude, respectively the area of the intersection of Marasesti Street with G. Enescu Blvd., area where there are tower blocks. It is located in the building of the Zamca 4 thermal point and is equipped with a "booster" pumping unit, consisting of 3 pumps, one with variable speed to keep the discharge pressure constant. The maximum flow of the "booster" group is 72 m^3 / h, with H = 35 mCA,
- *The Burdujeni 1 pumping station* is located in Suceava, on Ion Carp Fluerici Street and was put into operation in 2012, in order to pump water from the distribution network in the reservoirs of the Burdujeni 2 water management unit. It is equipped with 2 pumps with the characteristics Qn = 72 m^3 / h and H = 77 mCA and 3 pumps with Qn = 44 m^3 / h and H = 60 mCA,
- *The Burdujeni 2 pumping station* is located in the same location as the Burdujeni 2 tanks. It was put into operation in 2012 in order to pump water from the water tank 150 m^3 Burdujeni 2 into the tank 500 m^3 Burdujeni 3. It is equipped with 3 pumps with Qn = 72 m^3 / h and H = 54 mCA,
- *The Burdujeni 3 pumping* is located in the same location as the Burdujeni 3 tanks. It was put into operation in 2012 in order to pump water from the 500 m^3 Burdujeni 3 water tank into the distribution network.

The evolution of the total quantity of drinking water distributed in Suceava, in the period 2017-2019, is presented in the graph below [22]:

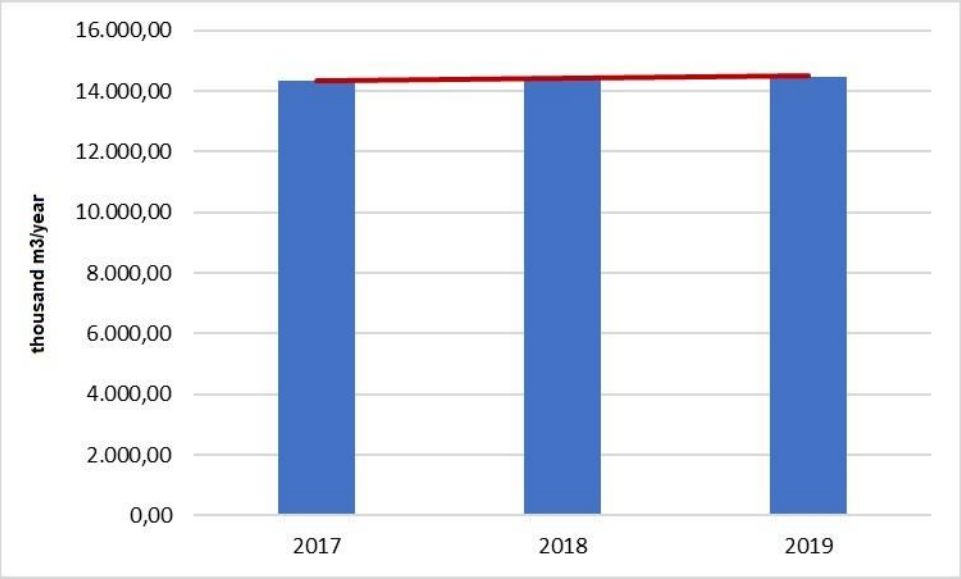


Fig. 19. Evolution of the total quantity of drinking water distributed in Suceava Municipality

Reservoirs

The storage of the necessary water for the consumers from Suceava Municipality is carried out at the level of the three water towers and a complex of tanks for aeration / deaeration, by means of 8 tanks (+2 aeration + 1 buffer), with a total capacity of 38 750 m^3 (+ 600 m^3 ventilation + 150 m^3 buffer) as follows:

- Corlata aeration / deaeration tanks, with a total storage capacity of 600 m^3 (2 x 300 m^3) tanks for aeration / deaeration of the Berchișești-Sf. Ilie transport pipelines, located at an altitude of 485 m, on the territory of Corlata village, 4 km from the water source ,
- *The Sfântu Ilie water management unit* – located at an altitude of 406 m, on Ion Irimescu street, Suceava municipality, with a total storage capacity of 31 000 m^3, consisting of:
  - 2 x 10 000 m^3 partially buried tanks, built in 1976,
  - 1 x 10 000 m^3 partially buried tank, built in 1970,
  - 1 x 1 000 m^3 water tower, built in 1980,

Drinking water from the Sfântu Ilie storage tanks is gravitationally transported to the Zamca 2 storage tanks and, respectively, to the Burdujeni 1 Pump Station,

- *The Zamca 2 water management unit* - located on Ilie Ilașcu Street, with a total storage capacity of 2000 m^3 consists of a partially buried concrete tank, built in 1963 and rehabilitated in 2012,

- *The Burdujeni 2 water management unit* – located on Cpt. Grigore Andrei Street, with a total storage capacity of 5,400 m^3 consisting of:
  - 1 x 5 000 m^3 partially buried, circular, concrete storage tank, built in 1982,
  - 1 x 250 m^3 partially buried, circular, concrete storage tank, built in 1964 and rehabilitated in 2013,
  - 1 x 150 m^3 buffer tank for SP Burdujeni 2 partially buried, circular, concrete buffer tank for SP Burdujeni 2, built in 1965 and rehabilitated in 2013,
- *The Burdujeni 3 water management unit*, located in the "Stejăriș" area, near Ștefan Luchian Street, with a total storage capacity of 500 m^3 consists of a partially buried tank, built in 2009.

Technical condition of water distribution networks

The drinking water distribution system of the Suceava UAT is mainly divided into two areas, with the Suceava River as a natural divider. The distribution network related to the Suceava Municipality is of the annular type, with a total length of 233,600 km and diameters between Dn 50 mm and Dn 800 mm. Data on the characteristics of the pipes that make up the water distribution network in Suceava Municipality can be found in the table below.

Material	Length (m) by age (years)				Total (m)	Total (%)
	< 10 years	> 10 years	> 20 years	> 30 years		
FD	17 382	0	0	0	17 382	7%
PEID	94 533	0	0	0	94 533	40%
OL	0	1 202	18 939	72 344	92 485	40%
AZBO	0	0	4 872	450	5 322	2%
FONTA	0	0	0	14 760	14 760	6%
PREMO	0	0	0	8 355	8 355	4%
PVC	0	0	0	763	763	1%
Total (m)	111 915	1 202	23 811	96 672	233 600	100%
Total (%)	48%	1%	10%	41%	100%	100%

Table 2.11. The technical characteristics of the pipes that make up the water distribution network in Suceava Municipality

According to the information presented by ACET, the pace of expansion of the water distribution network, as well as the actual lengths of this utility in Suceava Municipality is presented in the table below.

Reference year / Total network length	2000	2010	2015	2020
Existing water distribution networks in the year 2000:	139051 m			
Length of the extended water distribution network in the period 2000-2010: 55.198 ml - ISPA Program 2005-2010 - Municipality investment programs (water network extensions in Tineretului and Putna-Burdujeni neighborhoods, Biruinței street and Gr. Al. Ghica Ițcani street, Sofia Vicoveanca blvd.		194249 m		
Extended water distribution network length through the Operational Programme Environment 2007-2013: 31.293 ml			225542 m	
Length of water distribution network proposed for extension through the Large Infrastructure Operational Programme 2014-2020: 9,661 ml				235203 m

Table 2.12. The pace of expansion of the water distribution network in Suceava Municipality

The situation of the main indicators regarding the water supply in Suceava Municipality is presented in the table below.

Electricity consumption	Cs [kWh/mc abstracted water] = 0,48 kWh/m^3
Length of distribution network	226 km
Daily water supply time	24 hours
Number of hours in the day when the water pressure is insufficient	Ø
Number of inhabitants who repeatedly do not have water pressure in the network	Ø

Number of justified claims about service provision	756 / year (recorded on the basis of telephone calls and written complaints, registered at the ACET SA Suceava Dispatch Office)
Number of outages in the water supply system	394 / year
Average / minimum duration, in which the reported faults are remedied	average is 6 hours
The degree of metering of the connection	97%
Transport capacity of the water intake structure	F1= 809 l/s (Premo/OL 800) F2 = 380 l/s (Premo / OL 600) Mihoveni = 73 l/s
Degree of use of the water intake structure	100 %
Number of network failures	492 / an
Specific water consumption	3.8 mc/person/month – block of flats 4.2 mc/person/month – house

Table 2.13. The main indicators regarding the water supply in Suceava Municipality

Considering that ACET SA Suceava is in the evaluation phase of the project "Development of water and wastewater infrastructure in Suceava County" - the priority axis of the Large Infrastructure Operational Programme hich was to be implemented in the period 2014-2020, it was estimated that at the end of the year 2020, all the residential areas of the municipality, both the existing ones and those provided by the urban plans elaborated by the Suceava municipality, would have a public water distribution infrastructure, as well as wastewater collection.

Public sewerage system

Suceava has a predominantly unitary sewerage system for collecting and transporting domestic water and for receiving rainwater. Only in some areas, in the city center and in the Iţcani and Burdujeni neighborhoods, rainwater from the catchment areas and domestic wastewater are collected in a separating / dividing system. The entire public sewer system is approximately 275 km long.

The wastewater collection system is divided by the Suceava River into two main collection areas. The part located south of the Suceava River (right bank of the river) collects wastewater from the city center and the Şcheia neighborhood. The

network located north of the Suceava River (left bank of the river) collects wastewater from the Valea Suceava shopping area and partly from the Burdujeni and Iţcani neighborhoods.

The sewer system includes:

- the collector network,
- two retention basins,
- seven wastewater pumping stations,
- Suceava treatment plant.

According to the information provided by the ACET company, the operating area of the company in Suceava, in 2015, includes the following categories of users:

	Economic agents	Public institutions	Population		Total
			Associations	Houses	
Contracts	809	86	124	7 143	8 162
Water connections	927	96	1.934	7 054	10 011
Sewer connections	903	96	1.934	5 142	8 075

Table 2.14. Categories of users served by the water supply and sewerage system in Suceava Municipality in 2015

From the presented data it is observed that, at the level of Suceava municipality, the houses are connected in smaller numbers to the centralized sewerage system offered by the company ACET SA.

The lengths of the sewerage network, both the existing ones and the ones planned to be completed by the end of 2020 at the level of Suceava municipality are presented in the table below:

Reference year / Total network length	2010	2010	2015	2020
Sewerage systems existing in 2000:	186 668			
Extended sewer network length in the period 2000-2010: 58.632 ml - ISPA Program 2005-2010 - Municipality investment programs (water network extensions in Tineretului and Putna-Burdujeni neighborhoods, Biruinţei street and Gr. Al. Ghica Iţcani street, Sofia Vicoveanca blvd.		245 300 m		
Extended sewer network length			275 900 m	

Reference year / Total network length	2010	2010	2015	2020
through the Operational Programme Environment 2007-2013: 30,060 ml				
Length of water distribution network proposed for extension through the Large Infrastructure Operational Programme 2014-2020: 11.975 ml				287 875 m

Table 2.15. The lengths of the sewer network in Suceava Municipality

The situation of the main indicators regarding the collection, transport and treatment of wastewater in the municipality of Suceava is presented in the table below.

The length of the sewage network	288 km
Number of connections	8210 pcs
Sewer-connected population	84 040 persons
Energy consumption in the sewerage and treatment system	Cs [kWh/mc sewage water] = 0,60 kWh/mc
Number of justified claims for service provision	2748 / year 85% are caused by improper operation of the internal sewer system by the user. On this occasion, we consider the need to implement an information program for citizens: "The sewerage network is not a landfill in Suceava"
Average / minimum duration, in which the reported faults are remedied	the average is 2 hours

Table 2.16. The main indicators regarding the wastewater collection, transport and treatment system in Suceava Municipality

The evolution of the amount of wastewater billed to the population in the municipality of Suceava, in the period 2017-2019, is presented in the graph below [23]:

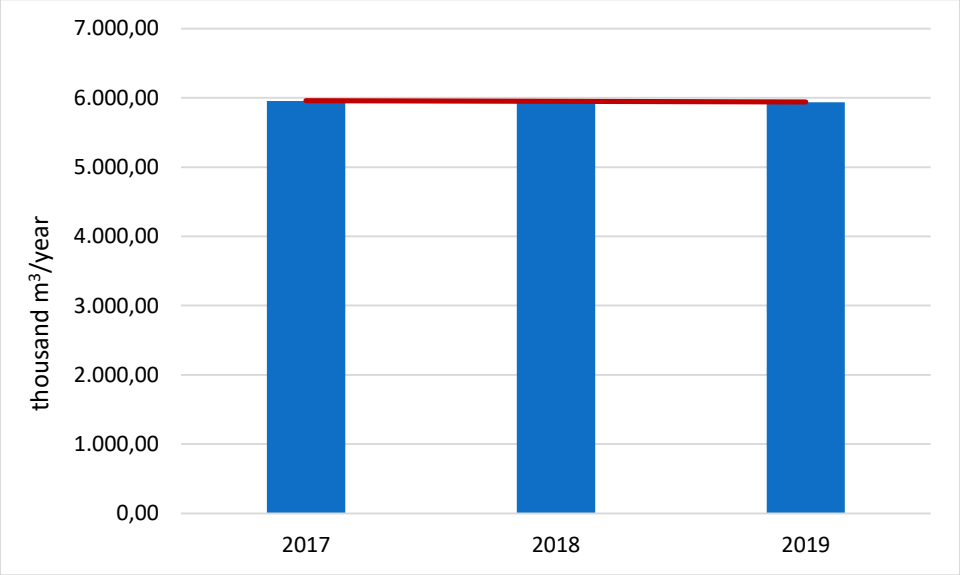


Fig. 20. Evolution of the amount of waste water in Suceava Municipality

Wastewater pumping stations

In the Suceava sewerage system there are 7 domestic water pumping stations, of which 5 were built and one was rehabilitated, as a result of the extension of the sewerage network through the Operational Programme Environment.

The table below shows the domestic water pumping stations that serve the Suceava sewerage system.

No.	Name of the pumping station	No. of pumps	Q (m^3/h)	Hp (m)	P (Kw)	Year of installation
1	Mirăuți	2	1440.00	6	50.00	2010
2	Tăbăcăriei	4	648.00	9	37.00	2015
3	SPAU 1 – Victor Panaițeanu	2	32.40	16	7.00	2015
4	SPAU 2 – Veteranii	2	72.00	12	7.50	2015
5	SPAU 3 – Aurel Vlaicu	2	46.80	11	7.00	2015
6	SPAU 4 – Al. Voievodica	2	21.60	11	3.40	2015
7	SPAU 5 – Revoluționari	2	32.40	11	7.00	2015

Table 2.17. Domestic water pumping stations that serve the Suceava sewage system

Wastewater treatment plant

Through ISPA support, the new Wastewater Treatment Plant was completed in 2011, with projected flows presented in the table below.

Population equivalent - LE	140000
Daily flow specific to dry periods m^3/day	49 377
Flow specific to dry periods l/s	700
Flow specific to wet periods l/s	1172

Table 2.18. The planned flow rates of the new sewage treatment plant in Suceava Municipality

The figure below shows the model of a municipal wastewater treatment plant.

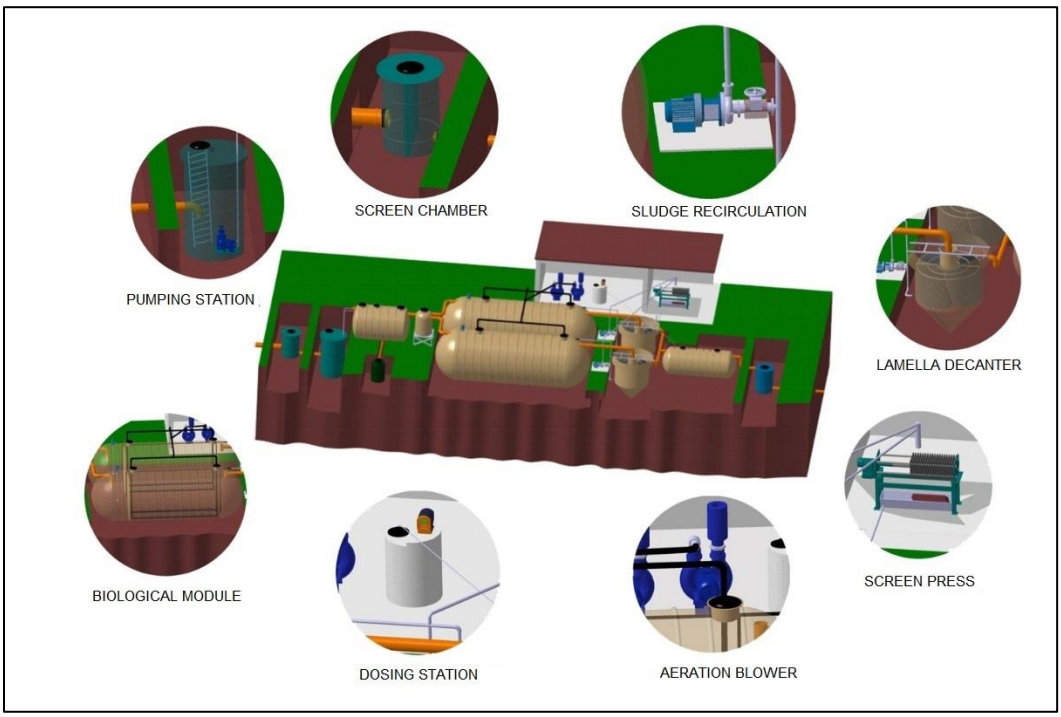


Fig. 21. Municipal sewage plant - model

The new treatment plant includes the following stages:

- *Mechanical (primary) stage* consisting of:
  - Raw sewage room with general BY-PASS,
  - Screen station and chamber with a local sub / distribution and control center,
  - Intermediate pumping station,
  - Flow measuring device,

- Grit / grease separator,
- Distribution chamber,
- Primary clarifier,
- Primary sludge pumping station,

➢ *The biological stage (secondary and advanced)* consisting of:

- Activated sludge tank (AST),
- Phosphorus precipitation system (chemical removal of phosphorus),
- Aeration station with a local sub / distribution and control center,
- Final sedimentation tank (FST),
- Recirculated sludge pumping station,
- Excess sludge pumping station.

The line of sludge - its treatment and disposal involves the following steps:

➢ Gravitational pre-thickening for primary and excess sludge,
➢ Anaerobic fermentation tank provided with a local sub / distribution and control center,
➢ Gravitational thickening station,
➢ Sludge dehydration and addition of quicklime + local sub / distribution and control center,
➢ Temporary sludge storage area,
➢ Supernatant buffer tank and pumping station,
➢ Gas utilization system,
➢ Gas storage tank and standby flame,
➢ Thermal power plant.

Technical condition of sewerage networks

The table below shows the technical characteristics of the pipes that make up the sewerage network in Suceava.

Material	Length (m) depending on nominal pipe diameter (mm)																Total	
	200	250	300	400	500	600	700	800	900	1000	1200	1400	1600	2000	640 /960	900/ 1200	m	%
Simple concrete	5150	350	71 055	75 966	40 459	13 032		6647						5934	5618	600	224 811	81%
Prestressed concrete			3000			800		2600		1778							8178	3%
Vitrified clay pipe	820		4220		1760	1030		630									8460	3%
PE			15 274	2721	1485	4287	888	4189	111	2058					962		31 975	12%
GRP											360	1178	815	206			2559	1%
Total	5970	350	93 549	78 687	43 704	19 149	888	14 066	111	3836	360	1178	815	6140	6580	600	275 983	100 %

Table 2.19. Technical characteristics of the pipes making up the sewerage network in the Suceava Municipality

A large part of the sewerage network, 219 km, respectively 79% of the sewerage pipes are not reinforced, with couplings. A length of 71 km representing 26% of the sewerage network was built during the period in which works were undertaken to extend and rehabilitate the collectors through the ISPA and Operational Programme Environment, in the period 2008 - 2015.

Through the works started within the Operational Programme Environment financing program, the sewerage network was extended by approximately 32 km and was rehabilitated over a length of approximately 6.5 km. PEID-CR (high density-corrugated polyethylene) pipes with diameters of 250 mm - 400 mm and PAFSIN for pipes with a diameter of more than 500 mm were provided.

In the Suceava wastewater system there are no wastewater discharges in rainy weather, rainwater mixed with wastewater being collected in the two retention basins built in the ISPA program. They store rainwater during the rain, after which it is pumped back into the sewer system and treated in the treatment plant.

At the level of Suceava County, the company ACET SA Suceava has proposed several investment objectives regarding the Modernization of the water and wastewater infrastructure, which we present in the table below.2

Priority Urban Agglomeration	**Total costs (Lei)**
Agglomeration – Suceava (Suceava Municipality and Salcea city)	118,045,112 of which:
Extension and rehabilitation of water and wastewater networks (Execution contract)	*110,647,850*
Reverse Siphon Rehabilitation (Design and Execution Contract)	*7,397,262*
Agglomeration – Fălticeni	79,591,694 of which:
Extension and rehabilitation of water and wastewater networks (Execution contract)	*39,448,271*
Rehabilitation of Wastewater Treatment Plant (Design and execution contract)	*40,143,423*
Agglomeration - Rădăuți	90,433,464 of which:
Extension and rehabilitation of water and wastewater networks (Execution contract)	*60,600,927*
Rehabilitation of Wastewater Treatment Plant (Design and execution contract)	*29,832,537*

Agglomeration - Vatra Dornei	43,108,752 of which:
Extension and rehabilitation of water and wastewater networks (Execution contract)	*22,136,305*
Rehabilitation of Wastewater Treatment Plant (Design and execution contract)	*20,972,447*
Agglomeration - Gura Humorului	74,201,304 of which:
Extension and rehabilitation of water and wastewater networks (Execution contract)	*52,787,393*
Rehabilitation of Wastewater Treatment Plant (Design and execution contract)	*21,413,911*
Extension and rehabilitation of catchment fronts and water treatment plants in Suceava, Fălticeni, Gura Humorului, Vatra Dornei and Rădăuți (Design and execution contract)	*28,980,407*

Table 2.20. Investments in the modernization of water and wastewater infrastructure

The following projects were pursued for the water supply network of Suceava municipality:

- Rehabilitation of the water distribution network on a length of 25 207 m,
- Extension of the water distribution network over a length of 31 915 m,
- Rehabilitation and metering of a number of 826 connections and installation of 250 DN 100 hydrants on the existing network,
- Execution of a number of 1088 new metered connections and installation of 320 DN 100 hydrants on network extension,
- Execution of a new pumping station for water supply of the upper part of Pictor Panaiteanu Street; it will be integrated into the SCADA system.

The following projects were pursued for the Suceava wastewater network:

- Extension of sewerage network by 31 595 m,
- Execution of a number of 1035 new connections,
- Rehabilitation of 6226 m of existing sewerage network,
- Rehabilitation of a number of 273 existing connections,
- Execution of 5 new wastewater pumping stations, on Pictor Paniteanu Street, Veterans Area, Aurel Vlaicu Street, Al. Voievidca and Depoului Street,
- Execution of 5 new domestic water collection basins related to the new pumping stations,
- Rehabilitation of Tăbăcărie Wastewater Pumping,

- Execution of a new Reverse Siphon for the crossing of the Suceava River.

[24]At the time of completion, the total number of water connections that have been counted in proportion of 89.54% was 25 535. In the area of operation of ACET S.A. Suceava, the population that is connected to the public water supply system is 164 603 people, and the population connected to the public sewerage system is 137 281 people.

The number of customers is expected to increase in the coming years as a result of the continued expansion of the operating area.

2.13. Electricity and gas

Electricity

In order to create a modern energy sector, in line with the principles of the European Union for the liberalization of electricity and gas markets capable of meeting consumer demand, in 2011 regulatory activity focused on increasing the transparency of the electricity and natural gas markets, promoting the production of electricity produced from renewable sources, promoting the production of electricity produced in new cogeneration capacities.

On the administrative territory of Suceava Municiplity there are the following producers of electricity:

- Bioenergy Suceava, with injection in the Conexiuni Suceava station,
- Administrația Bazinală de Apa Siret, SGA Suceava and CHEP Mihoveni with injection in PT 208.

The transport of electricity is provided by SC TRANSELECTRICA SA, a company that has the following in the area:

- ▫ Suceava 400/110 kV substation,
- LEA 400 kV double circuit FAI - Suceava respectively Roman Nord - Suceava,
- 110 kV power lines that make the interconnections between Suceava County and neighboring counties:
  - LEA 110 kV Timișești – Suceava,
  - LEA 110 kV Poiana Teiului – Suceava.

[24] http://acetsv.ro

0.4 kV substations and supply points for urban distribution are supplied from the substations through 6 kV and 20 kV medium voltage underground networks.

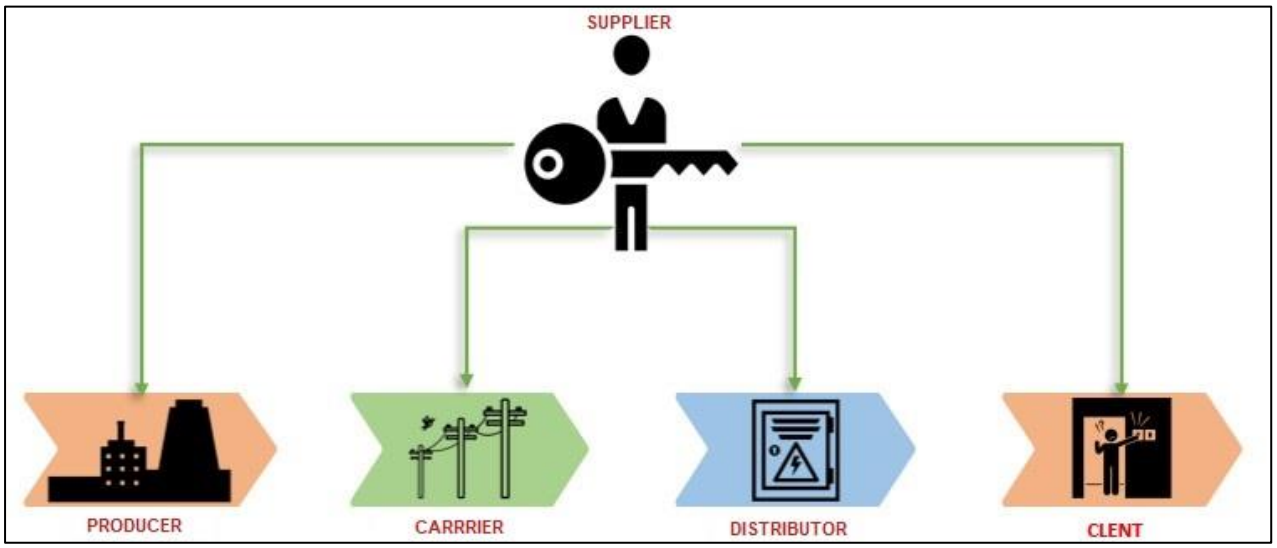


Fig. 22. The structure of the electrical supply system

Regarding the processing stations in Suceava, in 2019 there were 295 pieces, of which:

- 35 Aerial Transformation Stations, mounted on the pole,
- 180 Transformation Stations located in built cabins,
- 21 Transformation Stations located in metal cabins,
- 59 were Transformation Stations located in concrete containers.

The distribution of electricity is provided by DELGAZ GRID which has a good technical condition of the installations. Through the Annual Maintenance Program (PAM), SC DELGAZ GRID aims to:

- increase the operational safety of the installations,
- fulfillment of the performance indicators in the electricity distribution activity, in accordance with the Code of the Electricity Distribution Network and the License for the provision of the electricity distribution service,
- satisfying the requirements of customers, electricity consumers or beneficiaries of the services offered.

The Annual Maintenance Program (PAM) sets out the maintenance strategy for DELGAZ GRID as a distribution licensee.

[25] In 2021, Delgaz Grid invests 20 million lei for the modernization of the electricity network in 8 localities in Suceava County. Thus:

- 51 km of overhead electrical networks will be modernized,
- 2 000 connections will be replaced,
- a new low voltage network will be built on a length of 12.3 km.

At the level of Suceava County, the distribution company Delgaz Grid started a series of investments in Iaslovăț, Botoșana, Cajvana, Volovăț, Cornu Luncii, Drăgușeni, Brăiești and Horodniceni, to replace the classic / non-insulated low voltage networks with conductors. At the same time, works were planned for the transformation stations, as well as the replacement of some damaged network elements: distribution boxes, poles, consoles, etc., but also works for grooming the vegetation that comes into contact with the electrical network.

In 7 of the 8 localities, the investments were completed, and by the end of July this year they will be completed in Horodniceni.

The works carried out within these investments will contribute to the significant reduction of the time and duration of power supply interruptions in case of breakdowns in the electricity distribution system in the 8 localities of Suceava County, the estimated number of beneficiaries being about 10 000.

The annual investment plans carry out works of:

- improvement in voltage level,
- increasing the capacity of electricity networks,
- rehabilitation of energy installations,
- installation of remote control equipment in substations and stations with integration in the SCADA system,
- construction of new distributors in the transformation stations and circuit doubling to increase the operational safety of consumers in Suceava and the metropolitan area (Scheia, Lisaura, Ipotești).

At the level of 2019, the total number of electricity consumers in Suceava was 50 704, of which:

- Household consumers – 46 988,
- Public institutions – 265,
- Small consumers – 3359,
- Large consumers – 92.

[25] https://delgaz.ro/

The figure below shows the evolution of the total number of electricity consumers in Suceava from 2017 to 2019.

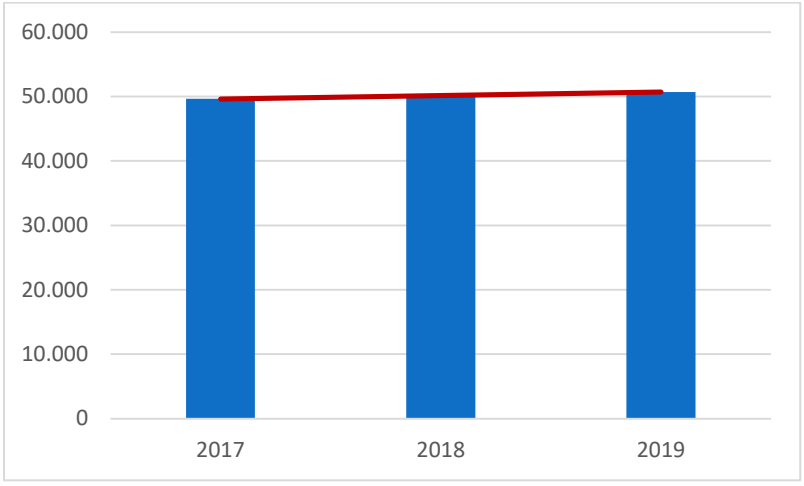


Fig. 23. Total number of electricity consumers in Suceava Municipality

At the level of 2019, the distribution of electricity consumption within the Suceava Municipality was made on a length of 883.10 m, of which:

- 189.20 m represents the total length of the underground medium voltage power lines,
- 556.40 m represents the total length of the low voltage underground power lines,
- 55.10 m represents the total length of medium voltage overhead power lines,
- 82.40 m represents the total length of low voltage overhead lines.

The figure below shows the evolution of the total lengths of the existing electricity distribution networks in Suceava Municipality from 2017 to 2019.

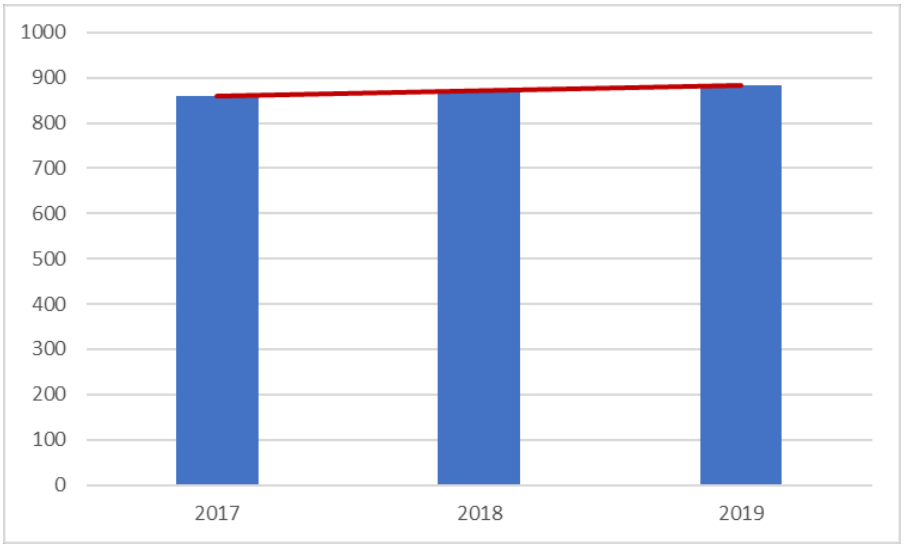


Fig. 24. Total length of existing electrical distribution networks in Suceava municipality

They serve domestic and private consumers (industrial and non-industrial). Electrical connections for household consumers in blocks of flats are underground, as well as for industrial consumers; the electrical connections for individual household consumers are overhead. Low voltage power lines are mostly overhead mounted on concrete poles.

Thermal energy

SC Thermonet SRL Suceava, after being awarded the contract for delegating the management of the public service of transport, distribution and supply of thermal energy in Suceava, starting with 15.10.2015, is the operator of this service according to HCL 273 / 15.10.2015.

In accordance with the provisions of contract no. 30104/66/2015 regarding the delegation of management by concession of the public service of transport, distribution and supply of thermal energy art.13 let. a) imposes as obligations on the part of the delegator, Suceava Municipality, to hand over to the delegate SC Thermonet SRL, on the date of entry into force of the delegation contract, all the goods, installations, equipment and endowments related to the entire activity.

The thermal energy transmission and distribution system is a component of the centralized thermal energy supply system of Suceava municipality together with the Source of thermal energy production, SC Bioenergy Suceava SA.

The high efficiency biomass cogeneration power plant, SC Bioenergy Suceava SA, has an installed electrical capacity of 29.65 MWe and an installed thermal capacity of 130.53 MWt.

The main components of the SC Bioenergy Suceava SA plant are:

- superheated steam boilers: 4x30t / h, 77 bar, 5400C, with operation on wood biomass,
- 1x29.65 MW steam turbine, with the possibility to operate both in back pressure and in condensation; the thermal capacity available at the level of the heat exchanger for district heating is 71.43 MWt,,
- generator 29.65 MWt,
- CAF 9 1x15 MWt hot water boiler with biomass operation which delivers heat to the district heating system through two 15 MWt and 1.5 MWt heaters respectively,
- CAF 6, CAF 7, CAF 8, 3x14.7 MWt hot water boilers with natural gas operation which deliver heat to the district heating system through two 30MWt heat exchangers.

The thermal energy transmission and distribution system in Suceava has the following components:

- the hot water pumping station in the thermal transport network stage I and II on the premises of SC Bioenergy SA,
- the thermal transport networks belonging to SC Thermonet SA (Bioenergy-CT2 section) which ensure the connection between the thermal power plant and the concessioned networks with a length of 3.3 km. Two economic agents are supplied from this network,,
- The concessioned thermal transport networks have a total length of pipes of 54.525 km located above ground in proportion of 31.93% of the total length, respectively 68.07% underground. They transport the thermal agent between CT2 and the thermal points.

The routes of the hot water transport networks are of the radial type, with transverse connections between the district heating systems to ensure the supply of consumers in safe and efficient conditions..

Of the total transport pipelines of 54.53 km total length:

- 23,87 km rehabilitated with pre-insulated pipes with damage monitoring wire,
- 30,66 km classic pipes with low efficiency insulation.

The thermal transport networks, owned by the Suceava Municipality are located both overhead - about 31.93% and underground - 68.07%. They are composed of steel pipes with diameters between Dn 500 and Dn 700, in a 44.56% pre-insulated system and respectively insulated with mineral wool mattresses (for pipes installed above ground) for 28.20% or 2 layers of bituminous fiberglass felt for pipes mounted in thermal ducts for 27.24%.

The transport system in the Suceava Municipality, concessioned by SC Thermonet SRL, includes the following lines in operation, as follows:

- The Line between CT2 and the C1 bifurcation chamber of the I and II Lines, with 1xDn700 mm and 2xDn500mm pipes that supply 37 urban thermal substations (PT) under concession (16 PT fed from the I Line and 21 PT fed from the II Line) and 11 PTs from third parties with distribution own (DP),
- Line I City - with 2xDn 500mm pipes that supply the thermal points in the Center area, Ana Ipătescu, Mihai Viteazu and Areni - respectively 16 PT and 10 DP,
- Line II City – with 2xDn500mm pipes that supply the thermal points in the Zamca, George Enescu and Obcini areas - respectively 21 PT,
- Burdujeni Line – between CT2 and Burdujeni, which supplies 11 urban PTs in the Cuza Voda and Gară neighborhood

Constructively, the transport networks are made of helically welded pipes for diameters between Dn 400 - Dn 700 and the material is steel OLT 35 K II or OL 52.2.

The networks include:

- bends or pipe segments, reductions for the modification of the transport section for the thermal agent,
- steel flanged non rising stem gate valves, with manual actuation and after 2007 valves with spherical impeller were installed, and for diameters larger than 200 mm with actuator reduce
- movable supports (with sliding, rolling or after rehabilitation E-Muff One time compensators) or fixed (with profiles embedded in the construction elements, with flanges and stop plates or concrete block with shield) that take over and transmit to the ground, through thermal channels, static and dynamic loads,
- thermal insulation from mineral wool mattresses protected with black or galvanized sheet (for pipes installed above ground) for 28.20% or 2 layers of bituminous fiberglass felt for pipes mounted in thermal channels for 27.24%, respectively insulation related to pre-insulated pipes with polyurethane foam and protective jacket in a proportion of 44.56%, corresponding to a minimum temperature loss (for these pipes the insulation and sealing of the welded joints of the pipe ends is done with the help of sleeves of the same material as the mechanical protective jacket of the pipe insulation, as well as with the help of polyurethane foam injection installations),
- construction elements (pillars, supports, thermal ducts, concrete chambers).

The thermal transport network supplies the following thermal substations:

- 11 thermal substations with their own distribution belonging to other institutions,
- 48 thermal substations operated by SC Thermonet SRL which supply apartments in block-type buildings, private houses, economic agents and municipal buildings.

In the thermal substations, the preparation of the thermal agent for heating and of the domestic hot water is performed using as primary agent the hot water from the thermal energy transmission system.

The existing thermal substations in Suceava Municipality operate, either according to direct schemes of connection to the two-tube transport system, or according to schemes with two-stage series connection for the preparation of hot water for consumption.

Currently, the buildings and equipment related to the 48 urban PTs are in operation of the centralized heat supply system in Suceava Municipality.

The current technical condition of the unrehabilitated thermal substations is unsatisfactory, mainly due to the age of the equipment and installations, between 24

and 50 years. Worn and obsolete, they operate with low efficiencies, are provided with minimum measurement and control installations (manometers, thermometers), very few of them being equipped with metering and automation installations. Many of the machines and equipment of the thermal substations have remained unchanged since commissioning, respectively heating circulation pumps, hot water pumps, add-on pumps, expansion system, etc.

Existing electric pumps have had a considerable service life, operate at low efficiencies of about 50%, which leads to high electricity consumption and low performance and they are not adequate to the characteristic of the distribution networks, modifiable by the installation of cost allocators at the level of the apartments in condominiums.

The secondary thermal networks related to the 48 Thermal Substations, with a total pipe length of 322 km are composed of 4 or 3 pipes::

- two heating pipes,
- a hot water supply pipe,
- a hot water recirculation pipe.

These ensure the distribution of the heating medium and the domestic hot water from the heating substations to the final consumers.

The rehabilitation program of the transmission and distribution networks, as well as of the thermal substations in the Suceava Municipality, started in 2007 and was carried out as follows:

- in 2007, 9 thermal substations were rehabilitated (indoor installations and related distribution networks) and the section C2 - C18 primary circuit networks (Line I),
- in 2008, two thermal points were rehabilitated (indoor installations and related distribution networks),
- in 2009, 5 thermal points were rehabilitated (indoor installations and related distribution networks) and 5.8 km route of primary circuit networks,
- in 2010, 0.8 km of primary circuit networks were rehabilitated and modernization works were carried out at 2 thermal substations.

The secondary thermal networks are composed of 4 or 3 pipes (two for heating and one for domestic hot water, respectively for the rehabilitated areas there is also an a.c.c. recirculation pipe). These pipes have diameters between Dn15 and Dn300 and are usually located underground in thermal ducts. Their thermal insulation is made of mineral wool, protected with polyethylene foil or asphalted cardboard, or polyurethane foam insulation for the networks of 16 thermal substations. Their age is between 8 and 50 years.

Out of the total distribution pipes, only 38.45% were rehabilitated, and 253.71 km, respectively 62.55% are unrehabilitated pipes.

Natural gases

In Suceava Municipality, the natural gas supply system consists of medium pressure and low pressure networks.

The distribution of natural gas is provided by DELGAZ GRID, and in 2019, the total number of natural gas consumers in Suceava was 30 279 of which:

- Household consumers – 28 407,
- Tertiary consumers – 383,
- Assimilated consumers – 7,
- Secondary consumers – 228,
- Commercial consumers – 1254.

The figure below shows the evolution of the total number of natural gas consumers in Suceava from 2017 to 2019.

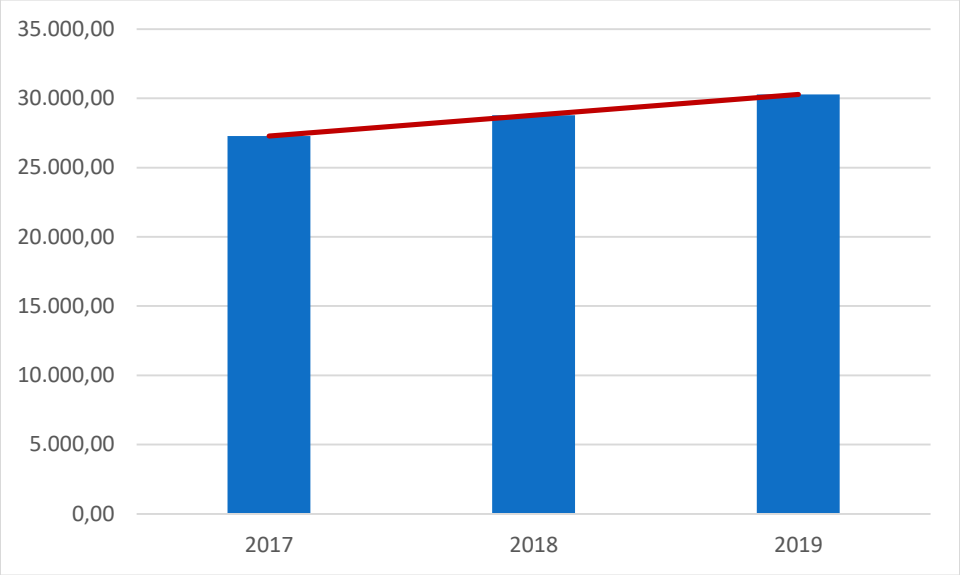


Fig. 25. Total number of natural gas consumers in Suceava Municipality

In 2019, the distribution of natural gas consumption within the Suceava Municipality was done on a length of 213 m and the figure below shows the evolution of the total lengths of existing natural gas distribution networks in Suceava from 2017 to 2019.

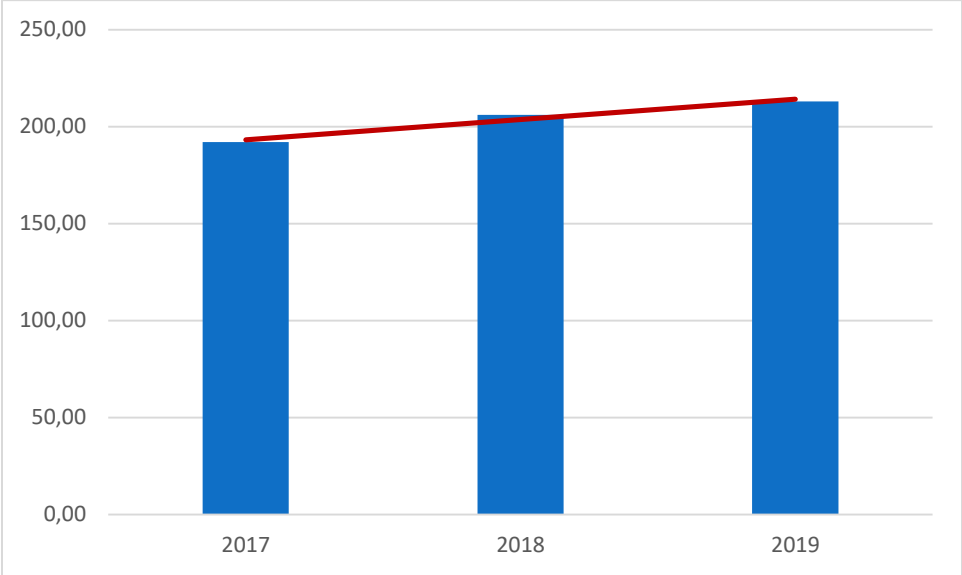


Fig. 26. Total length of existing natural gas distribution networks in Suceava municipality

In 2019, the Suceava Municipality was equipped with:

- 15 sector measurement control stations,
- 70 measuring control stations for consumers,
- 5819 total number of connections.

2.14. Public lighting

The public lighting system in Suceava Municipality consists of 258 kilometers of network, with a total installed power of 510 kW, and the table below shows the components of the electricity distribution network that supplies public lighting installations.

Network section location	Year of commissioning
LES 0,4 kV str. D. Dan pl. 1	1990
LES 0,4 kV str. St. cel Mare pl. 1	1982
LES 0,4 kV str. Parc Prefectura pl. 2	1982
LES 0,4 kV str. Trandafirilor pl. 3	1982
LES 0,4 kV str. Pinilor pl. 4	1982
LES 0,4 kV str. A. Nucului	1982
LES 0,4 kV str. Al. Ienceanu	1982
LES 0,4 kV str. Mihai Viteazu pl. 1	1976
LES 0,4 kV str. S.F. Marian	1976
LES 0,4 kV Parc S.F. Marian	1976

Network section location	Year of commissioning
LES 0,4 kV str. Mihai Eminescu pl. 2	1976
LES 0,4 kV str. Mărăști	1976
LES 0,4 kV str. V. Micle	1976
LES 0,4 kV str. G. Enescu	1976
LES 0,4 kV str. D. Vodă pl. 3	1976
LEA 0,4 kV str. Tabacarilor	1976
LEA 0,4 kV str. Caramidarilor	1976
LEA 0,4 kV str. I. Creanga pl. 2	1976
LEA 0,4 kV str. P. Rares pl. 3	1976
LES 0,4 kV str. Dealului pl. 1	1981
LES 0,4 kV str. Strand pl. 2	1976
LES 0,4 kV str. T. Vuia pl. 3	1976
LES 0,4 kV str. Cernauti sp. PT 107 pl. 4	1976
LEA 0,4 kV str. E. Teodoroiu pl. 1	1986
LEA 0,4 kV str. Plevnei pl. 2	1986
LEA 0,4 kV str. Gh. Doja pl. 3	1986
LEA 0,4 kV str. 22 Decembrie	1986
LES 0,4 kV str. Cuza Vodă	1986
LES 0,4 kV str. Calea Unirii	1986
LES 0,4 kV str. Tipografiei pl. 1	1986
LES 0,4 kV str. St. Dracinschi pl. 2	1986
LES 0,4 kV str. E. Hurmuzachi pl. 1	1986
LEA 0,4 kV str. St. Dracinschi pl. 3	1986
LES 0,4 kV str. Alex cel Bun pl. 4	1986
LES 0,4 kV str. Universitatii	1986
LES 0,4 kV str. Alex cel Bun garaj	1986
LES 0,4 kV str. Alei pl. 1	1976
LES 0,4 kV str. A. Crimca	1976
LES 0,4 kV str. St. cel Mare pl. 2	1976
LES 0,4 kV str. St. cel Mare towards the Court pl. 3	1976

Network section location	Year of commissioning
LEA 0,4 kV str. Cernauti towards Suceava pl. 1	1976
LES 0,4 kV str. Morii	1976
LEA 0,4 kV str. Semicercului pl. 2	1976
LEA 0,4 kV str. Izv.	1976
LEA 0,4 kV str. Sipotului	1976
LEA 0,4 kV str. Cernauti towards Itcani pl. 3	1976
LEA 0,4 kV str. T. Robeanu	1976
LES 0,4 kV str. N. Labis	1976
LES 0,4 kV str. M. Septilici	1976
LEA 0,4 kV str. A. Vlaicu towards PT 95 pl. 1	1983
LEA 0,4 kV str. I. Caragiale	1983
LEA 0,4 kV str. A. Vlaicu towards PT 49 pl. 2	1983
LEA 0,4 kV str. Zamca sus pl. 1	1976
LEA 0,4 kV str. I. Ilascu	1976
LES 0,4 kV str. Parc Zamca pl. 2	1976
LES 0,4 kV str. Narciselor pl. 2	1976
LEA 0,4 kV str. Zamca jos pl. 4	1976
LES 0,4 kV str. D. Para	1976
LES 0,4 kV str. N. Milescu	1976
LEA 0,4 kV str. Gh. Doja towards Itcani pl. 1	1975
LEA 0,4 kV str. A. Dumbravii	1975
LES 0,4 kV str. Gh. Doja PT 184 - troleu pl. 3	1976
LES 0,4 kV str. Calea Unirii - Billa	2012
LES 0,4 kV str. St. cel Mare pl. 1	1962
LES 0,4 kV str. Spate hotel	1962
LES 0,4 kV str. N. Balcescu pl. 2	1962
LES 0,4 kV str. C. Porumbescu pl. 3	1962
LES 0,4 kV str. Cultural center	1962
LES 0,4 kV str. Mitropoliei pl. 1	1974
LES 0,4 kV str. Ciresilor	1974

Network section location	Year of commissioning
LES 0,4 kV str. I. V. Viteazu pl. 2	1974
LES 0,4 kV str. Teatru pl. 3	1974
LES 0,4 kV str. Parc pl. 4	1974
LES 0,4 kV str. A. Ipatescu pl. 4	1974
LES 0,4 kV str. G. Buliga pl. 1	1986
LES 0,4 kV str. M. Viteazu pl. 2	1986
LES 0,4 kV str. 6 Noiembrie pl. 3	1986
LES 0,4 kV str. Arcasilor pl. 4	1986
LES 0,4 kV str. S. Isopescu pl. 1	1962
LES 0,4 kV str. T. Vladimirescu pl. 2	1962
LES 0,4 kV str. Sc. Gen.	1962
LES 0,4 kV str. Liceu	1962
LEA 0,4 kV str. M. Sadoveanu pl. 1	1961
LEA 0,4 kV str. G. Doja pl. 1	1966
LEA 0,4 kV str. Plaiului	1966
LEA 0,4 kV str. Plaiului	1966
LEA 0,4 kV str. Mitocelului pl. 2	1966
LEA 0,4 kV str. 22 Decembrie pl. 1	1966
LEA 0,4 kV str. Eternitatii	1966
LEA 0,4 kV str. Plevnei pl. 2	1966
LEA 0,4 kV str. Infratirii	1966
LES 0,4 kV str. A. Ipatescu pl. 1+2	1985
LES 0,4 kV str. N. Balcescu pl. 3	1985
LES 0.4 kV str. Curtea Domnească pl 4	1985
LES 0.4 kV str. S. Muzică pl 4	1985
LES 0.4 kV str. Dornelor pl 1	1986
LES 0.4 kV str. Duzilor	1986
LEA 0.4 kV str. Zona CIA	1986
LES 0.4 kV str. T. Vuia pl 1	1962
LES 0.4 kV str. C. Unirii pl 2	1962
LES 0.4 kV str. N. Labiș pl 3	1962

Network section location	Year of commissioning
LEA 0.4 kV str. N. Labiș	1962
LES 0.4 kV str. S. Procopovici	1962
LES 0.4 kV str. C. Obcinilor pl 1	1962
LES 0.4 kV str. St. Tomșa	1964
LEA 0.4 kV str. St. Tomșa	1964
LES 0.4 kV str. Șt. Cel Mare pl 2	1964
LES 0.4 kV str. Alei Bl. H4 pl 3	1964
LES 0.4 kV str. A. Voichița pl 4	1964
LES 0.4 kV str. A. Ipătescu pl 1	1970
LES 0.4 kV str. Cetății pl 2	1970
LES 0.4 kV str. Șt. Vodă	1970
LES 0.4 kV str. Baza Sport	1970
LEA 0.4 kV str. L. Arbore	1970
LES 0.4 kV str. C. Unirii pl 3	1970
LEA 0.4 kV str. Mirăuți pl 4	1970
LEA 0.4 kV str. Grădinilor	1970
LEA 0.4 kV str. P. Mușat pl 5	1970
LEA 0.4 kV str. T. Ștefaneli	1970
LES 0.4 kV str. G. Enescu pl 1	1971
LES 0.4 kV str. Oituz pl 2	1971
LES 0.4 kV str. Universității	1971
LES 0.4 kV str. Alei Mărășești	1971
LES 0.4 kV str. Mărășești pl 1	1966
LES 0.4 kV str. Universității pl 2	1966
LES 0.4 kV str. Parc Patinuar	1966
LES 0.4 kV str. Alei Mars. pl 3	1966
LEA 0.4 kV str. Cabana A pl 1	1965
LEA 0.4 kV str. E. dobrilă pl 2	1965
LEA 0.4 kV str. Făgetului	1965
LEA 0.4 kV str. 22 Dec. pl 3	1965
LEA 0.4 kV str. V. Pîrvan pl 4	1965

Network section location	Year of commissioning
LEA 0.4 kV str. T. Popeea	1965
LEA 0.4 kV str. Molidului	1965
LES 0.4 kV str. C. Unirii pl 1	1966
LES 0.4 kV str. C. Unirii pl 2	1966
LEA 0.4 kV str. Sălciilor pl 3	1966
LEA 0.4 kV str. Solidarității	1966
LES 0.4 kV str.T. Vuia pl 4	1966
LES 0.4 kV str. 6 Noiembrie pl 1	1966
LES 0.4 kV Alei Mărăşeşti pl 2	1966
LES 0.4 kV Alei Mărăşeşti pl 1	1966
LES 0.4 kV str. Mărăşeşti pl 1	1966
LES 0.4 kV str.Mărăşti pl 2	1966
LES 0.4 kV str. M. Eminescu	1966
LES 0.4 kV str. I.G. Zbierea	1966
LES 0.4 kV Alei pl 3	1966
LEA 0.4 kV str.A.G. Ghica pl 1	1962
LEA 0.4 kV str.Zefirzlui pl 2	1962
LEA 0.4 kV str.Cîmpului pl 3	1962
LEA 0.4 kV str. Mitocului	1962
LEA 0.4 kV str. G. Coşbuc pl 1	1986
LEA 0.4 kV str.Parcului pl 1	1977
LES 0.4 kV str.Parc Cetate pl 2	1977
LES 0.4 kV str.Platou Cetate pl 3	1977
LES 0.4 kV b+dul 1 Dec. pl 1	1967
LEA 0.4 kV str. Sp. Falt. pl 3	1967
LES 0.4 kV str.Mitropoliei pl 1	1967
LES 0.4 kV str.Izv. Sucevei pl 2	1967
LES 0.4 kV str. Casa de Oaspeţi pl 3	1967
LES 0.4 kV str. Uzina	1967
LES 0.4 kV str. T. Vuia pl 1	2001
LEA 0.4 kV str. 6 Noiembrie pl 1	1968

Network section location	Year of commissioning
LES 0.4 kV str. Mihai Viteazu pl 2	1968
LES 0.4 kV str. Republicii	1968
LES 0.4 kV str.Liceu p. Rareş	1968
LES 0.4 kV str.Alei Republicii	1968
LES 0.4 kV Alei Mărăşeşti pl 1	1969
LEA 0.4 kV str. Universităţii pl 1	1969
LEA 0.4 kV str. Bradului	1969
LEA 0.4 kV str. Plevnei pl 1	1968
LEA 0.4 kV str. Carieirei	1968
LEA 0.4 kV str. Mioriţei pl 2	1968
LEA 0.4 kV str. V. Babeş	1968
LEA 0.4 kV str. Pietrăriei	1968
LEA 0.4 kV str. Căprioarei	1968
LEA 0.4 kV str. Lev Tolstoi pl 3	1968
LEA 0.4 kV str. N. Grigorescu pl 1	1968
LEA 0.4 kV str. Cuza Vodă pl 2	1968
LEA 0.4 kV str. Alei PT 77	1968
LEA 0.4 kV str. Eroilor pl 1	1976
LEA 0.4 kV str. Fundătură	1976
LES 0.4 kV str. V. Bumbac pl 1	1969
LES 0.4 kV str. Prefecture	1969
LES 0.4 kV str. Nucului pl 2	1969
LES 0.4 kV str. Alei pl 1	1969
LEA 0.4 kV str.G. Vindereu	1969
LES 0.4 kV str. T. Vladimirescu pl 2	1969
LEA 0.4 kV str. A. Vlaicu pl 1	1962
LEA 0.4 kV str. A. Vlaicu fund.	1962
LEA 0.4 kV str. Merilor	1962
LEA 0.4 kV str. Perilor	1962
LEA 0.4 kV str. Aviatorului	1962
LEA 0.4 kV str. A. Voivdica pl 2	1962

Network section location	Year of commissioning
LES 0.4 kV str. Gării pl 3	1962
LES 0.4 kV str. Parc gară	1962
LES 0.4 kV str. N. Bălcescu pl 1	1970
LES 0.4 kV str. C. Porumbescu	1970
LES 0.4 kV str.V. Alexandri pl 2	1970
LES 0.4 kV str. Armenească	1970
LES 0.4 kV str.D. Gherea	1970
LES 0.4 kV str.Plăieşilor	1970
LES 0.4 kV str. D. Onciu pl 1	1983
LES 0.4 kV str. C. Domnească	1983
LES 0.4 kV str.Alei	1983
LEA 0.4 kV str.Depoului pl 1	1969
LEA 0.4 kV str. Stadionului	1969
LEA 0.4 kV str. 28 Noiembrie	1969
LEA 0.4 kV str. Micşunelelor	1969
LEA 0.4 kV str. E. Porumbescu	1969
LES 0.4 kV str. Oituz pl 1	1971
LES 0.4 kV str.d. Cantemir pl 1	1972
LES 0.4 kV str. M. Costin	1972
LES 0.4 kV str. Narciselor pl 2	1972
LES 0.4 kV str.Alei bl. GZ	1972
LES 0.4 kV str. bl. Belvedere	1972
LES 0.4 kV str. Aleea Saturn pl 1	1973
LES 0.4 kV str.f-ca Tricotaje pl 2	1973
LES 0.4 kV str.Piața Mică	1973
LES 0.4 kV str. C.Obcinilor pl 1	2004
LES 0.4 kV str. Aleea Saturn pl 1	2002
LES 0.4 kV str. Zorilor	2002
LES 0.4 kV str. A. Vlaicu pl 1	1983
LES 0.4 kV str. Liliacului	1983
LES 0.4 kV str. Cernăuților pl 2	1983

Network section location	Year of commissioning
LES 0.4 kV str. Pod apă pl 3	1983
LES 0.4 kV str. Intersecție	1983
LES 0.4 kV str. Pasarela pl 4	1983
LEA 0.4 kV str. Lev Tolstoi pl 1	1972
LEA 0.4 kV str. Ștefan Luchian	1972
LEA 0.4 kV str.22 Decembrie	1972
LEA 0.4 kV str.Crângului pl 2	1972
LEA 0.4 kV str. Dumbrăvii	1972
LEA 0.4 kV str. T. Popea	1972
LES 0.4 kV str. Universității pl 1	1974
LES 0.4 kV str. Aleea Venus	1974
LES 0.4 kV b-dul 1 Decembrie pl 1	1974
LES 0.4 kV str. Universității pl 2	1974
LES 0.4 kV str. Scurta	1974
LES 0.4 kV str. Teilor pl 3	1974
LES 0.4 kV str. Parc Areni	1974
LES 0.4 kV str. Lazar Vicol pl 1	1975
LES 0.4 kV str. Bl. Vapor	1975
LES 0.4 kV str. Zorilor pl 1	1975
LES 0.4 kV str. Alei Zorilor 2	1975
LES 0.4 kV str. Scurtă	1975
LES 0.4 kV str. L. Vicol pl 1	1976
LES 0.4 kV str. Alei L. Vicol	1976
LES 0.4 kV B-dul G. Enescu pl 2	1976
LES 0.4 kV str. Universității	1976
LES 0.4 kV str. L. Vicol pl 1	1976
LES 0.4 kV str. N. Iorga pl 1	1975
LES 0.4 kV str. C. Unirii	1975
LES 0.4 kV str. Florilor pl 2	1975
LES 0.4 kV str. J. Bart pl 3	1975
LEA 0.4 kV str. G. Doja pl 1	1975

Network section location	Year of commissioning
LEA 0.4 kV str.B. Lăzăreanu	1975
LEA 0.4 kV str.E. Racoviță	1975
LEA 0.4 kV str.Gr. Cobălcescu	1975
LEA 0.4 kV str.A. Vlahuță	1975
LEA 0.4 kV str. Bucevschi	1975
LEA 0.4 kV str. C. Moraru pl 2	1975
LEA 0.4 kV str. M. Dosoftei	1975
LEA 0.4 kV str. Biruinței	1975
LEA 0.4 kV str.A. Pumnul	1975
LEA 0.4 kV str.Muncitorului	1975
LEA 0.4 kV str.Mitocului	1975
LEA 0.4 kV str.V. Lupu	1975
LEA 0.4 kV str.G. Ștefan	1975
LEA 0.4 kV str. B. St. Delavrancea	1975
LEA 0.4 kV str. A. Gr. Ghica	1975
LES 0.4 kV str. A. Ipătescu pl 1	1977
LES 0.4 kV str. Al. I.Grămadă	1977
LES 0.4 kV str. Libertății	1977
LES 0.4 kV str. Mitropoliei	1977
LES 0.4 kV str. Șt. Cel Mare pl 2	1977
LES 0.4 kV str. Parc pl 3	1977
LES 0.4 kV str. Alei Bancă	1977
LES 0.4 kV str. Lic. Aliment. Pl 1	1992
LEA 0.4 kV str. M. Sadoveanu pl 2	1975
LEA 0.4 kV str. I.P.Pincio	1975
LEA 0.4 kV str. Petuniilor pl 2	1975
LES 0.4 kV str. Șt,O.Iosif	1975
LEA 0.4 kV str. Platoului	1975
LES 0.4 kV str. M. Septilici	1975
LEA 0.4 kV str. M.Kogălniceanu	1975

Network section location	Year of commissioning
LES 0.4 kV str. Sub. Turturică pl 1	1975
LES 0.4 kV str. Alee PT+Sc.pl 1	1976
LES 0.4 kV B-dul G. Enescu pl 2	1976
LES 0.4 kV str. C. Burdujeni pl 1	1976
LES 0.4 kV str. Piața pl 2	1976
LES 0.4 kV str. Luceafărului pl 1	1977
LES 0.4 kV str. Luceafărului pl 1	1984
LES 0.4 kV str. C. Unirii pl1	1976
LEA 0.4 kV str. P. Panaiteanu pl 1	1977
LES 0.4 kV str. Lalelelor pl 1	1978
LES 0.4 kV str. Sc.+Alei lp 2	1978
LES 0.4 kV str. Luceafărului pl1	1977
LES 0.4 kV str. Zorilor	1977
LES 0.4 kV str. Obcinilor pl 2	1977
LES 0.4 kV B-dul G. Enescu pl 3	1977
LEA 0.4 kV str. C. Gr. Andrei pl 1	1978
LEA 0.4 kV str. Șt. Răzvan	1978
LEA 0.4 kV str. Spicului	1978
LEA 0.4 kV str. Eternității	1978
LEA 0.4 kV str. Iasomiei	1978
LEA 0.4 kV str. Alunului	1978
LES 0,4kV str. Jupiter pl 1	1978
LES 0,4kV str. Jupiter pl 1	1978
LES 0,4kV str. sp. Sc. Soferi	1978
LES 0,4kV str. Lalelelor pl 1	1978
LES 0,4kV str. Jupiter	1978
LES 0,4kV str. Lalelelor pl 1	1978
LES 0,4kV str. St. Tomsa pl 1	1978
LES 0,4kV str. Marasesti pl 1	1978
LES 0,4kV str. Zimbrului	1978
LES 0,4kV str. Jean Bart pl 1	1978

Network section location	Year of commissioning
LEA 0,4kV str. A. Gr. Ghica pl 1	1978
LEA 0,4kV str. Livezilor	1978
LEA 0,4kV str. Lipoveni	1978
LES 0,4kV str. Lalelelor pl 1	1980
LES 0,4kV b-dul G. Enescu pl 2	1980
LES 0,4kV str. Lalelelor pl 1	1980
LES 0,4kV str. Str.Alei pl 1	1980
LES 0,4kV str. G. Ureche pl 1	1980
LES 0,4kV str. T. Niculuta pl 1	1980
LES 0,4kV str. Independenței pl 3	1981
LES 0,4kV str. Alei Indp.	1981
LES 0,4kV str. Rarau pl 1	1981
LES 0,4kV str. Soimului pl 2	1981
LES 0,4kV str. Celulozei	1981
LES 0,4kV str. Calimani	1981
LES 0,4kV str. I. Neculce pl 1	1980
LES 0,4kV str. Baladei pl 1	1981
LES 0,4kV str. C. Unirii	1981
LES 0,4kV str. Alei pl 1	1981
LES 0,4kV str. Tineretului pl 1	1976
LES 0,4kV str. Rindunicii	1976
LES 0,4kV str. Aurorei	1976
LES 0,4kV str. C Burdujeni pl 2	1976
LES 0,4kV str. C. Unirii pl 3	1976
LES 0,4kV str. Privighetorii pl 1	1980
LES 0,4kV str. Baladei pl 1	1981
LES 0,4kV str. Alei PT	1981
LES 0,4kV str. M. Damaschin pl 2	1981
LES 0,4kV str. Celulozei pl 1	1981
LES 0,4kV str. Narciselor pl 1	1981
LES 0,4kV str. bl. T 96 pl 1	1976

Network section location	Year of commissioning
LES 0,4kV str. bl. Visinilor pl 1	1981
LES 0,4kV str. O. Bancila pl 2	1981
LES 0,4kV str. Narciselor	1981
LES 0,4kV str. Stejarului pl 1	1981
LES 0,4kV str. I. Neculce pl 1	1981
LES 0,4kV str. Stejarului	1981
LEA 0,4kV str. N. Iorga pl 1	1985
LES 0,4kV str. Tabacariei pl 1	1983
LES 0,4kV str. Aurorei pl 1	1982
LES 0,4kV str. M. Damaschin pl 1	1983
LES 0,4kV str. Baladei	1983
LES 0,4kV str. Avintului pl 1	1982
LES 0,4kV str. Bujorilor	1982
LES 0,4kV str. Brindusei pl 1	1982
LES 0,4kV str. Rindunicii	1982
LES 0,4kV str. Amurgului pl 1	1983
LES 0,4kV str. Muncii	1983
LES 0,4kV str. Muncii Alei	1983
LES 0,4kV str. Tineretului pl 2	1983
LES 0,4kV str. Prieteniei	1983
LES 0,4kV str. Moto Velo pl 1	1982
LES 0,4kV str. G. Antipa pl 1	1983
LES 0,4kV str. Tabacariei	1983
LES 0,4kV str. Alei PT pl 1	1983
LES 0,4kV str. G. Antipa pl 1	1983
LES 0,4kV str. Tabarcei pl 2	1983
LEA 0,4kV str. Tabacariei	1983
LES 0,4kV str. Bujorilor pl 1	1985
LES 0,4kV str. Amurgului pl 1	1985
LES 0,4kV str. Alei Scoala	1985
LES 0,4kV str. Amurgului pl 1	1985

Network section location	Year of commissioning
LES 0,4kV str. Păcii pl 2	1985
LES 0,4kV str. Alei	1985
LES 0,4kV str. Eroilor	1985
LES 0,4kV str. Alei Eroilor	1985
LES 0,4kV str. Alei PT pl 1	1985
LES 0,4kV str. Amurgului pl 1	1985
LES 0,4kV str. Tineretului	1985
LES 0,4kV str. Păcii pl 1	1985
LES 0,4kV str. Prieteniei pl 1	1986
LES 0,4kV str. Parcare pl 2	1986
LES 0,4kV str. A. Iancu pl 1	1984
LES 0,4kV str. H. C. Crisan	1984
LES 0,4kV str. P. Rares pl 2	1984
LEA 0,4kV str. Prunului	1984
LES 0,4kV str. Rulmentului pl 1	1986
LES 0,4kV str. Alei PT	1986
LES 0,4kV str. C. Obcinilor pl 2	1986
LES 0,4kV str. Alei PT pl 1	1987
LES 0,4kV str. Statiunii pl 1	1986
LES 0,4kV str. Alei Statiunii	1986
LES 0,4kV str. Slatioarei pl 2	1986
LES 0,4kV str. Bistritei	1986
LES 0,4kV str. Alei Victoriei pl 1	1991
LES 0,4kV str. Victoriei pl 1	1991
LES 0,4kV str. Viitorului pl 2	1991
LES 0,4kV str. Alei Viitorului	1991
LES 0,4kV str. Magurei pl 1	1992
LES 0,4kV str. Alei Magurei pl 2	1992
LES 0,4kV str. Viitorului pl 1	1991
LES 0,4kV str. Alei PT	1991
LES 0,4kV str. Viitorului pl 1	1988

Network section location	Year of commissioning
LES 0,4kV str. Alei Viitorului	1988
LES 0,4kV b-dul. 1 Dec pl 1	1987
LES 0,4kV str. Dornelor pl 2	1987
LES 0,4kV str. Alei PT	1987
LES 0,4kV str. Castanului pl 1	1986
LES 0,4kV str. Mesteacanului	1986
LES 0,4kV str. I. G. Zbiera pl 1	2002
LES 0,4kV str. A. V. Miclea pl 1	1988
LES 0,4kV str. Plecări din PT-uri	1988
LES 0,4kV str. Privighetorii	2004
LES 0,4kV str. Pic Serban Rusu Arbore	2010
LES 0,4kV str.Pict Serban Rusu Arbore	2010
LEA 0,4kV str. Zefirului	2010
LES 0,4kV str. Mircea Hrisca	2009
LES 0,4kV str. Mircea Motrici	2009
LES 0,4kV str. Constantin Sofroni	2009
LES 0,4kV str. Eusebiu Camilar	2009

Table 2.21. Components of the electricity distribution network that supply public lighting

According to the information analyzed:

- 80% of the electricity distribution network that supplies the public lighting installations are installed underground,
- 20% of the electricity distribution network that supplies the public lighting installations are installed overhead.

Although the public lighting network covers the entire street network, there are very big problems, the cables are old, some of them are over 50 years old.

The public lighting service in Suceava Municipality includes:

- Street-road lighting,
- Street-pedestrian lighting,
- Architectural lighting,
- Ornamental lighting,
- Ornamental-festive lighting.

The public lighting in Suceava Municipality is provided by approximately 6,400 luminaires, of which approximately 80% are LED type luminaires.

From the perspective of the activities of providing the lighting service to the population of Suceava Municipality, there are two main measures:

- ensuring the continuity and supply of public lighting in the parameters designed through the existing system,
- making investments in infrastructure for the modernization and expansion of public lighting according to the real needs of urban development, for beautifying the city with architectural and ornamental lighting appropriate to the conditions of a modern European urban center.

The public lighting system includes:

- public street lighting;
- lighting of public roads: streets, sidewalks, squares, intersections, pedestrian crossings, bridges;
- festive and landscape lighting;
- architectural lighting..

The public lighting system in Suceava Municipality was designed according to::

- traffic intensity:
  - number of vehicles / hour;
  - traffic lane;
  - direction of traffic;
- the complexity of the path configuration:
  - infrastructure;
  - traffic changes;
  - neighbourhood;
- traffic control:
  - the existence of signs and road signs;
  - the existence of traffic lights;
- separation of certain lanes for other categories of participation in traffic:
  - lanes specially designed for certain categories such as: trucks, buses, bicycles, pedestrians.

To increase energy efficiency in the field of public lighting, in the period 2010-2011, through the Regional Operational Program 2007-2013, Priority Axis 1 - Supporting the sustainable development of cities - urban growth poles, Key area of intervention 1.1 - Integrated urban development plans, Sub-domain: Urban development poles, the project *"Modernization of public lighting on the main artery in Suceava municipality"* was started.

The specific objective of the project was the modernization of public lighting on the main thoroughfare - 1 Decembrie 1918 Boulevard (Sofia Vicoveanca Boulevard - Calea Obcinilor section), 1 Mai Boulevard (Calea Obcinilor - Mărășești Street section), Ștefan cel Mare Street (Mărășești Street - Ștefan Dracinski Street section), Ana Ipătescu Boulevard (Ștefan Dracinski Street section - Cernăuți Street), Calea Unirii (section Cernăuți Street - Calea Burdujeni Street), Calea Burdujeni Street (Calea Unirii section - Cuza Vodă Street), Cuza Vodă Street (end section of Burdujeni Street), for which the following were aimed at:

- construction of an underground power supply line for the lighting system,
- installation of modern luminaires on new poles by means of metal brackets,
- making electrical connections and power supply columns,
- grounding of the new installation,
- using the ignition command of the new lighting system.

Another program was implemented in 2017, within the project Modern and efficient management of public lighting in Suceava municipality in which the replacement of existing luminaires that were aged, damaged and of low operating efficiency was considered. The project, in an estimated value of 20 400 thousand lei, aimed at:

- dismantling of 3843 existing luminairies and handing them over to the beneficiary,
- dismantling the metal supports for the existing luminaires and handing them over to the beneficiary,
- adaptation for attachment of new luminaires on existing poles (pegs, brackets, metal fabrications, etc.),
- installation of 3843 luminaires with LED technology,,
- replacement / installation of 3,741 connection boxes on the lighting poles,,
- cable replacement / mounting from the junction boxes to the luminaire,
- acquisition and installation of remote management equipment,
- commissioning of lighting system and remote management system.

The estimated value of the project was later supplemented so that luminaires in schools and high schools could be replaced.

In 2018, within the Suceava municipality, the modernization of approximately:

- 4000 luminaires,
- 3600 poles, of which:
  - 2400 metal poles,
  - 930 concrete poles,
  - 270 cast iron poles.

was performed.

2.15. Sanitation

The Sanitation Service includes 3 activities:

- Street sanitation,
- Household sanitation,
- Waste storage.

The collection, transport and recovery of recyclable waste is the responsibility of the sanitation operator, respectively the Association of SC Diasil Service SRL- SC Ritmic Com SRL.

At the time of writing, in Suceava, waste was collected in two fractions:

- wet fraction (household waste),
- dry fraction (recyclable waste).

The collection system was modernized in 2018, after the award of the public sanitation contract by public tender.

The following have been arranged for condominium type homes:

- 100 buried platforms, with a collection capacity of 11 m^3, respectively two compartments of 3 m^3 each, for the wet fraction and a compartment of 5 m^3 for the recyclable dry fraction)
- 100 semi-buried platforms, with a collection capacity of 9 m^3, respectively two compartments of 3 m^3 each, for the wet fraction and a compartment of 3 m^3, for the dry fraction (recyclable)

By arranging the 200 platforms, the daily collection capacity reached 2000 m^3 / day.

Also, 19 of the 30 sites, equipped with bell-type containers, were arranged for sorting / recycling of four fractions:

- glass,
- metals,
- plastic,
- paper / cardboard.

The waste collection schedule for condominium homes is daily and / or whenever needed. For the individual houses, 12 000 bins with a capacity of 120 l were distributed, 6 000 for each of the two fractions.

In total, in Suceava Municipality, there are:

- 718 sites, of which:
  - 361 for companies,
  - 96 for institutions,
  - 261 for the population,
- 114 bins, of which:
  - 94 for companies,
  - 2 for institutions,
  - 18 for the population
- 1263 containers, of which:
  - 413 for companies,
  - 151 for institutions,
  - 699 for the population.

For the smooth running of the waste collection contract, a total of 22 machines are used in Suceava, of which:

- 4 compaction garbage trucks with an average capacity of 15 m^3 compacted for semi-buried underground platforms, equipped with a hydraulic system for lifting containers of 3 m^3, with a transport capacity of 60 m^3,
- 3 compaction garbage trucks with an average capacity of 15 m^3 compacted for underground platforms, equipped with a special hydraulic system for lifting underground platforms (composed of pump, distributor, hoses, connections with automatic coupling), with a transport capacity of 45 m^3,
- 10 compaction garbage trucks with an average capacity of compacting 15 m^3 equipped with devices for lifting Eurocontainers of 1.1 m^3 and Eurobarrels of 120 liters, with a transport capacity of 150 $m^{3,}$
- a compaction garbage truck with an average capacity of compacting 15 m^3, equipped with a bell type 2,5 m^3 lifting device for Eurocontainers for the collection of municipal waste dry fraction (degree of waste compaction 1: 5),
- a special vehicle for the collection of bulky waste from the population, public institutions and economic agents, not assimilated to household waste (furniture, electrical and electronic equipment, etc.),

- a special vehicle for the collection of waste from households, generated by activities of redevelopment and interior rehabilitation of individually owned houses / apartments,
- two hook-lift trucks equipped with containers with an equivalent capacity of at least 1,1 m^3 and a trailer with containers with an equivalent capacity of at least 18 m^3 for the transport of residual waste resulting from sorting at the Moara landfill.

The Moara landfill is an ecological landfill, located about 1 km northwest of the village of Moara and 1 km northeast of Vornicenii Mici. The first cell of the Moara landfill covers an area of 7.5 hectares and ensures the processing of 100 000 tons of waste per year.

The deadline for the completion of the landfill was the end of 2011, and it was comissioned in stages:

- at the end of 2010, the first cell of the landfill near the city of residence was put into use
- in the spring of 2011, the second cell of the landfill was put into use.

The project provided for the construction of two municipal landfills, at Moara and Pojorâta, 5 transfer stations, as well as the necessary infrastructure for waste collection and transport, including selective collection in urban and rural areas.

In 2019, at the level of Suceava municipality were processed::

- 34 285 tons of waste, of which:
  - 70% represented waste disposed of in landfills,
  - 30% waste sent for recycling
- 2302 tons of selectively collected waste, and the share of selectively collected waste is shown in the figure below.

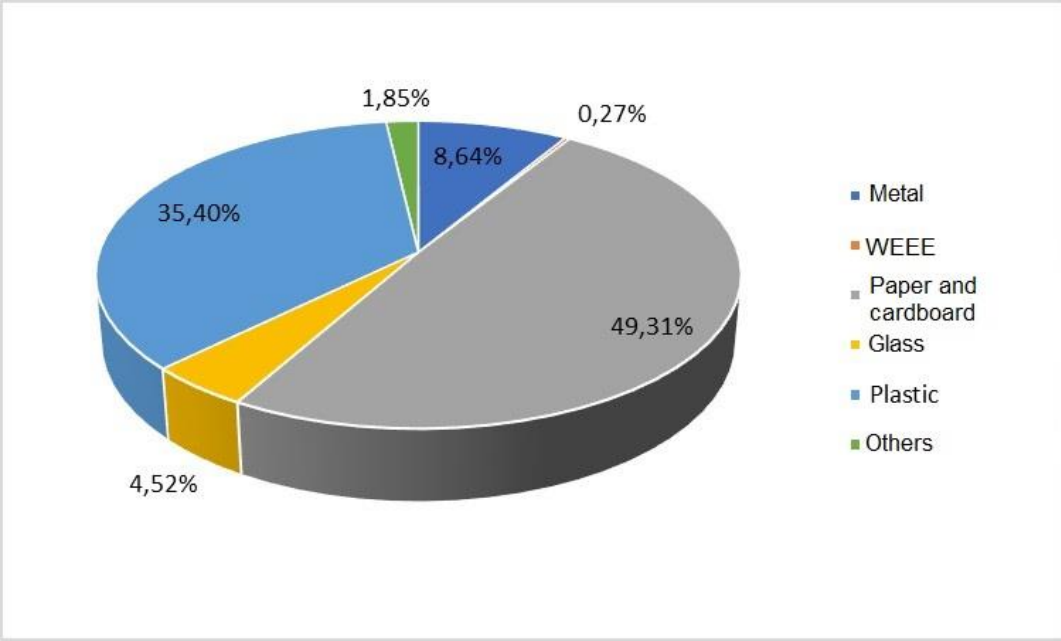


Fig. 27. Share of waste collected separately in Suceava Municipality in 2019

From the analysis of the information presented, it is observed that the largest share is paper and cardboard in the total waste collected selectively, with a percentage of about 50%, while WEEE (waste electrical and electronic equipment) has the lowest share .

Waste is also collected selectively according to a number of criteria::

- the recyclable waste collected in the yellow containers is the following: plastics, paper / cardboard, metal waste packaging,
- waste collected in green containers / bins is glass packaging,
- the mixed recyclabel waste collected in the yellow bag is the following: plastics, paper / cardboard, metal waste packaging, tetrapack,
- waste collected in black containers / bins - household waste,
- waste collected in brown containers / bins - vegetable waste,,
- bulky waste,
- waste from electrical and electronic equipment (WEEE)
- construction and demolition waste (CDW).

2.16. Housing

The housing stock is characterized by statistical indicators such as: existing housing, majority state-owned housing, majority privately owned housing, majority state-owned residential areas and majority privately owned residential areas.

In 2019, in the municipality of Suceava were registered:

- 984 blocks of flats (mostly privately owned housing),
- 37 461 apartments in blocks of flats (mostly privately owned housing),
- 1,705,363.90 m^2 total area of apartments in blocks of flats.

The figures below show the evolution of the number of blocks of flats (mostly privately owned homes), of apartments in blocks of flats (mostly privately owned homes) and of the total areas of apartments in blocks of flats from 2017 to 2019, in Suceava Municipality.

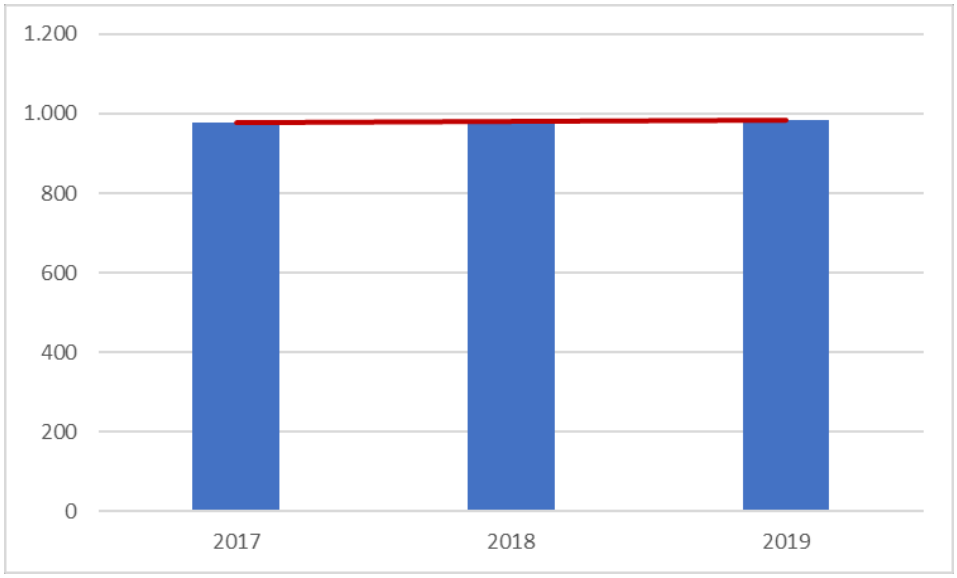


Fig. 28. Evolution of the number of blocks of flats (mostly privately owned homes) In Suceava Municipality

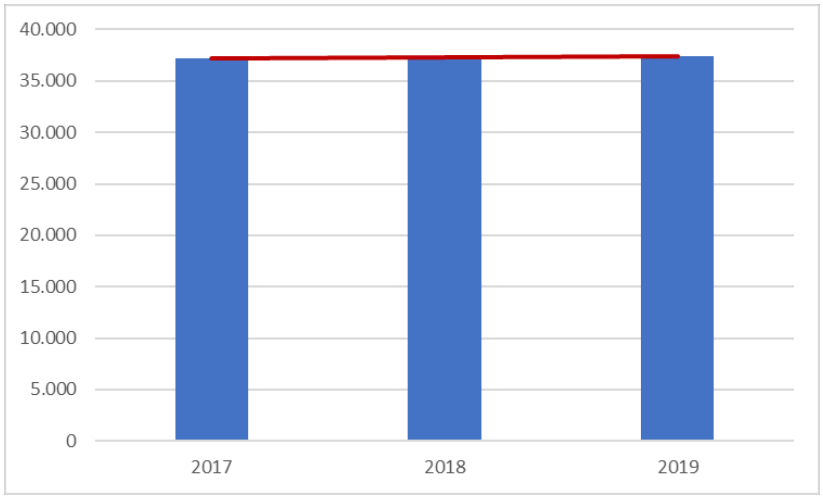


Fig. 29. Evolution of the number of apartments in blocks of flats (mostly privately owned homes) in Suceava Municipality

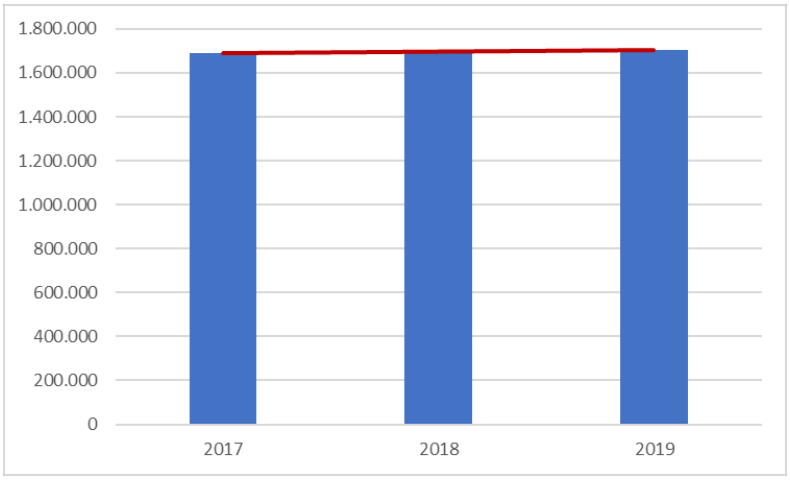


Fig. 30 Evolution of the size of apartments in blocks of flats (mostly privately owned homes) in Suceava Municipality

The following table shows the housing stock in Suceava Municipality between 2017 and 2019.

Indicator	Unit	2017	2018	2019
Total number of blocks of flats (mostly privately owned housing)	-	978	980	984
Total number of apartments in blocks of flats (mostly privately owned housing)	-	37 206	37 270	37 461
The total area of the apartments in blocks of flats	m^2	1,688,368.67	1,695,442.67	1,705,363.90
Number of thermally rehabilitated blocks of flats	-	54	56	60

Indicator	Unit	2017	2018	2019
Number of thermally rehabilitated apartments	-	1 664	1 727	1 920
Thermally rehabilitated total area	m^2	102,870.22	104,086.11	119,897.45

Table 2.22. Housing stock in Suceava Municipality in the period 2017-2019[26]

From the information presented, it is observed that at the level of 2019, only 6% of the total blocks of flats were thermally rehabilitated. The figure below shows the evolution of the thermal rehabilitation of the blocks of flats in the period 2017 - 2019 at the level of Suceava municipality.

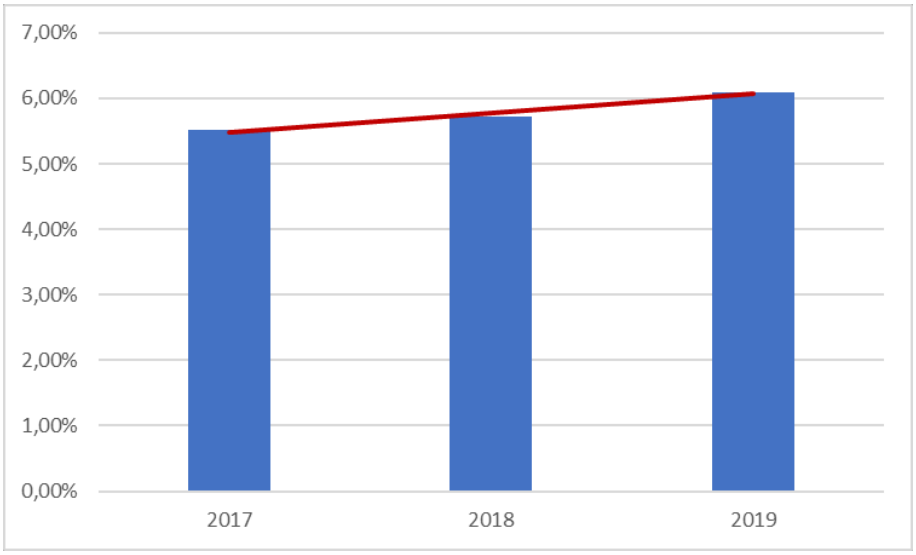


Fig. 31. Evolution of the thermal rehabilitation of blocks of flats (mostly privately owned homes) in Suceava Municipality

From the analysis of the information received, regarding the residential buildings, at the level of Suceava municipality, the following conclusions can be deduced:

- the high share of homes connected to the centralized heat supply system,
- commissioning in 2014 of the high efficiency cogeneration plant, built in public-private partnership between Termica Suceava and Adrem Invest SRL,
- modernization of 35% of the infrastructure related to the centralized thermal energy distribution system (modernization of 18 thermal substations and of the connection and distribution networks of 16 thermal substations as well as approx. 6.3 km of primary network, within the project

[26] *Source: National Institute of Statistics*

"Modernization of the district heating system in Suceava Municipality", implemented in the period 2006-2013),

- rehabilitation of blocks of flats through the National Program on increasing the energy performance blocks of flats, according to GEO 19/2009.

2.17. Economic profile [27]

The development of Suceava municipality has seen a constant increase over time, it being closely linked to the evolution of demographic phenomena.

Through the status obtained in 1968, following the administrative-territorial reorganization of the country, the Suceava Municipality became a polarizing center of the area, developing at an accelerated pace, thanks to the policy of forced industrialization. The domestic and international economic and political situation after 1989 adversely affected the Suceava industry, causing the loss of markets, increasing competition through the penetration of imported products in traditional markets.

In the current economic context that the Suceava Municipality is going through, there is a tendency of dissolution of the industrial area in the Suceava river meadow, an area that is rapidly transforming into a commercial one and probably in the future a mixed residential-commercial area.

With the "invasion" of hypermarkets since 2003, the city of Suceava is gradually transformed into a polarizing shopping center for the entire northern part of Moldova.

On 31.12.2011, the total number of existing merchants on the territory of Suceava was 8 318, structured as follows:

- 2 251 - natural person merchants,
- 6 057 – legal person merchants,
- 10 - co-operative society merchants.

According to the form of organization, the structure of merchants with headquarters in Suceava, on 31.12.2011 is as follows:

- 129 – joint stock companies,
- 5 890 - limited liability companies,
- 33 - general partnerships,
- 1 – limited partnerships,

[27] Sustainable Energy and Climate Action Plan of Suceava Municipality

- 2 - autonomous administrations,
- 1 – credit union organization,
- 1 – agricultural cooperative,
- 2 251 - natural persons, family businesses or individuals.

The current economy of the municipality is based on trade, service activities, industry, agricultural activities, transport, tourism, construction.

The most important companies in terms of the number of employees as well as the turnover in 2007, in Suceava Municipality, are the following:

- SC AMBRO – GRUP HOFFMAN SA – manufacture of cardboard and paper,
- SC BETTY ICE SRL – food industry,
- SC CONSUC SA – food industry,
- SC EUROSPEED SRL – road transport of goods,
- SC ACI – AG SRL – construction,
- SC GENERAL CONSTRUCT SRL – construction,
- SC FONTUR SRL – industrial products,
- SC MONDECO SRL – waste processing,
- IULIUS MALL – SHOPPING CITY SUCEAVA – commerce,
- REAL HIPERMARKET – commerce,
- SC MUSATINII SA – printing,
- SC BERMAS SA – beer production,
- SC DENIS SRL – footwear / leather production,
- SC MOPAN SA – panification,
- SC MUHA SRL – construction,
- COMPLEX HOTELIER ZAMCA – tourism.

In 2007, the share of the number of companies active in economic activities is presented in the table below.

Activity sector	Share(%)
Agriculture, forestry and related services	1.42
Commerce	38.10
Construction	7.78
Heavy industry (metallurgical industry, chemical industry, metal construction industry, etc.)	0.34
Light industry (food, textile, furniture and woodworking, etc.)	0.19
Education, health and social work	3.52
Production and supply of electricity and heat,	2.75

Activity sector	Share(%)
gas and water, water capture, treatment and distribution	
Recovery and disposal of waste and sewage	5.37
Services	38.90
Tourism services	1.64

Table 2.23. Share of the number of active companies by economic activity in Suceava Municipality

The largest number of active companies in Suceava Municipality, at the level of 2007, carried out activities in services (38.90%) and commerce (38.10%).

Regarding the industrial field, the following conclusions can be drawn at the level of Suceava municipality:

- developing entrepreneurial culture, due to the existence of experts in the field of industrial activities,
- the emergence in a fairly large number of SMEs with specific activities in the field of industrial activities,
- high adaptability and flexibility of SMEs in this field to the new conditions and opportunities,
- intensive development of the construction and commercial sectors, these areas being represented in a fairly high percentage of SMEs,
- making large investments in the field of trade, due to the high potential of this field,
- the paper and paper products manufacturing sector is developed at the city level.

2.18. Climate change

Climate change is leading to an increase in the frequency of extreme weather events such as floods, droughts, rising global average temperatures, rising sea levels and shrinking ice caps. The main cause of climate change is the increase in greenhouse gas emissions, reducing this phenomenon is a priority for all countries of the world.

To this end, our country has developed the **National Climate Change Strategy 2013 - 2020**, which:

- aims to minimize the effects through actions of adaptation and mitigation to climate change;
- explains and illustrates the two key components of the climate effort: that of preventing and combating the effects of climate change (through actions

aimed at reducing greenhouse gas emissions - GHG emissions) and that of adequate adaptation with minimal damage in the context created by climate change already underway;

- provides essential data and information on climate changes that have affected and will affect Romania;
- presents data and information relevant at a general level regarding the contribution of each sector to GHG emissions and the way in which human activity (through production or consumption / use processes), together with natural processes lead to these emissions;
- proposes types of key measures to be implemented in each sector to reduce GHG emissions and to adapt to the effects of climate change;
- briefly describes the global situation, which calls for consistent policies to prevent and combat climate change and its effects;
- provides guidance on the measures and policies to be adopted, using the European Structural and Investment Funds for the financial years 2014-2020. The European Commission has considered this document mandatory in the preparation of the Partnership Agreement for the absorption of EU funds 2014-2020;
- reviews the main action programs at national level with impact in the field of climate change in different sectors: industry, transport, forestry, agriculture, urban, etc.;
- substantiates the principles that will be the basis for the elaboration of action plans and programs at a sectoral level, establishes the general and specific objectives that will have to be achieved through future measures and actions, established according to the concrete specifics of each sector.

Conceived as a dynamic document, reflecting a constantly changing reality, the *Climate Change Strategy* will be developed and completed along the way, with the support and experience of a group of World Bank experts. Thus, in the autumn of 2015, the ***National Strategy on Climate Change*** **was extended, so that, until 2050, it will cover a wider horizon, but keeping two major benchmarks: 2020 and 2030**.

This strategy will become a benchmark for **Romania's "green growth",** i.e. economic development based on low greenhouse gas emissions.

The strategy will be strengthened on the basis of a macroeconomic assessment, based on sectoral and cross-sectoral impact modeling. It will assess in detail the prospects, options, costs and benefits of the measures to be applied for Romania to ensure a solid and sustainable development in the medium and long term, in the conditions of major obligations to prevent and combat climate change.

Also, the Strategy will be implemented on the basis of a concrete plan, which will include actions, deadlines, specific responsibilities for each sector and institution, but also criteria and indicators for assessing how the objectives have been met.[28]

Regional and local climate change will affect ecosystems, human settlements and infrastructure. Changes in temperature and forecast rainfall can lead to changes in vegetation periods and changes in the boundaries between forests and pastures. Some extreme weather events such as heat waves, droughts, floods and the like will be more frequent, with increased intensity and consequently higher risks for significant associated damage.

For international decision-makers, **global warming raises two major concerns:**

- *the need to significantly reduce greenhouse gas emissions, in order to reduce the anthropogenic influence on the natural climate system;*
- *the need to promote policies and measures to adapt to the foreseeable effects of climate change, mainly due to the inertia of the climate system.*

During the first decade of this century, Romania faced a series of extreme meteorological phenomena, which determined both the production of floods and the appearance of dry areas:

- ✓ in 2005 - the historical floods produced on the inland rivers, caused both the loss of 76 human lives and great material damage;
- ✓ in 2006 - the historical floods that took place on the Romanian sector of the Danube as well as the floods produced on the inland rivers caused, again, important material damages;;
- ✓ in 2007 - the worst drought in the last 60 years.

The areas affected by the drought have expanded in recent decades and the most affected areas are those located in southern and southeastern Romania. Over the last 30 years, the effects of droughts have become more and more frequent and extended in time and space throughout the country. Extreme weather, floods and droughts result in both loss of life and significant economic losses in all sectors of activity, such as agriculture, transportation, energy supply, water management and the like, and global climate patterns indicate that that the frequency and intensity of these events will increase.[29]

[28] *Source: http://www.mmediu.ro/categorie/schimbari-climatice/*
[29] *Source: Strategia Națională privind Schimbările Climatice 2013 – 2020*

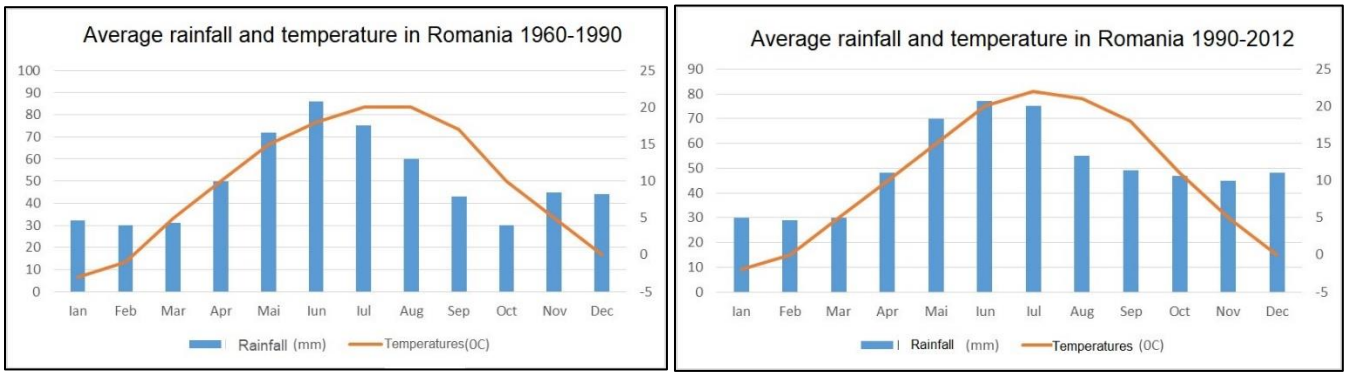


Fig. 32. Comparison of monthly average temperatures and rainfall between 1990 - 2012 compared to 1960 - 1990 in Romania

(Source:http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisRegion=Europe&ThisCcode=ROU)

In Romania, an average annual heating of the same magnitude as the one projected at European level is estimated, between 0.5 ºC and 1.5 ºC, for the period 2020 - 2029 and between 2.0 ºC and 5.0 ºC for 2090 - 2099, depending on the scenario approached. From the point of view of precipitation, over 90% of the models used, project in Romania, for the period 2090 - 2099, the production of severe droughts in summer.

These medium- and long-term weather forecasts justify the call for immediate action by decision-makers involving:

- monitoring the impact of climate change as well as the associated social and economic vulnerability;
- integrating measures to adapt to the effects of climate change into development strategies and policies at sectoral level, as well as harmonizing these measures with each other;
- identifying urgent measures to adapt to the effects of climate change in critical socio-economic sectors.

In the field of energy, due to the effect of climate change, the demand for energy for winter heating is expected to decrease as a result of the increase in the global average temperature, which will not compensate, however, for the increase in energy consumption required for the operation of air conditioners and coolers on hot days.

One of the most urgent directions of action in the context of climate change is the adaptation of the built-up living space. Given the growing number of people living in cities affected by climate change, urban planning and development must be a priority. A measure of adaptation to climate change for the built space is to correct

existing construction standards and norms so that they correspond to future climatic conditions and extreme weather events. Another measure to adapt to the effects of climate change is to introduce more efficient heating and cooling systems and to inform the urban population about the risks of climate change.

In the transport sector, in addition to sustainable transport infrastructure, means of transport must also be adapted or designed to be resilient to the effects of climate change. The promotion of alternative transport such as walking or cycling, adaptable to existing infrastructure can be achieved by reorganizing the urban space.

The climatic scenarios for the period 2080 - 2099, compared to 1980 - 1999, indicate a considerable warming, and in the period 2080 - 2099 no temperatures of 0ºC will be reached. The highlighted climate models indicate a high degree of aridity, and for August, in the period 2020 - 2039, this index even reaches values characteristic of the type of arid climates.

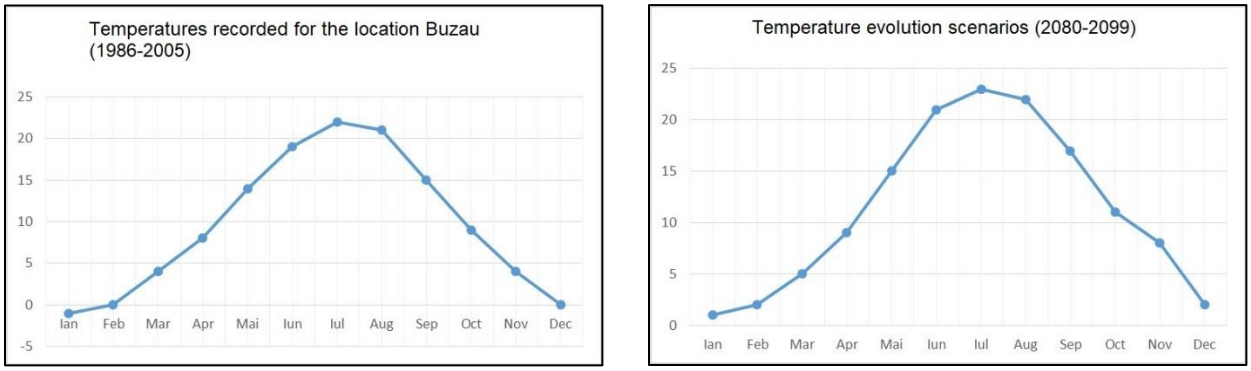


Fig. 33. Comparison of the temperatures recorded in the period 1986 - 2005 with the temperature scenarios in the period 2080 - 2099

(Source:http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_future_climate&ThisRegion=Europe&ThisCcode=ROU)

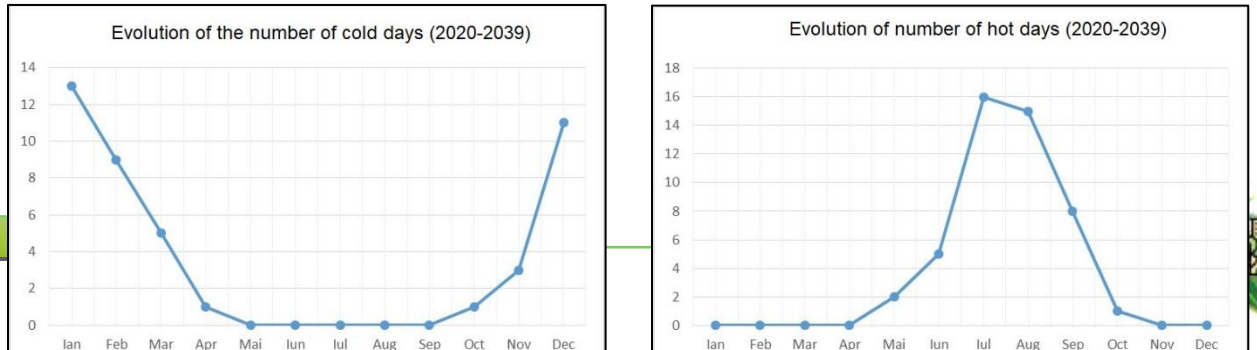


Fig. 34. Estimate of the total number of very cold and hot days in Romania for the period 2020-2039

(Source: http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_future_climate&ThisRegion=Europe&ThisCcode=ROU)

Equally important is monitoring the impact of climate change in priority sectors, namely:

- Industry
- Agriculture and Fisheries
- Tourism
- Public health
- Constructions and Infrastructure
- Transportation
- Water resources and flood protection
- Forests
- Energy
- Biodiversity
- Insurance
- Recreational activities
- Education.

The main effects and threats posed by climate change — including extreme events — heat waves, droughts, floods, and the like — must be identified and quantified for each of these priority sectors, and at the same time opportunities must be identified to adapt these sectors to the effects of climate change which can be significant and which are often overlooked by decision makers.

Annex 2 – Results of public survey (CCC)

ANNEX 3
PUBLIC CONSULTATIONS

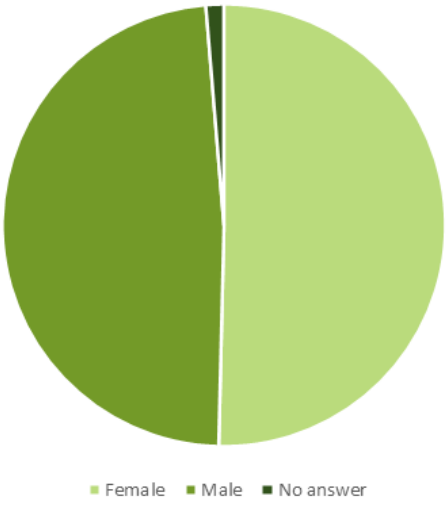
3.1. Online questionnaire administered between January and February 2023

The online questionnaire is a practical and effective method of obtaining feedback from a large number of respondents in a structured way that can be easily interpreted in analysis.

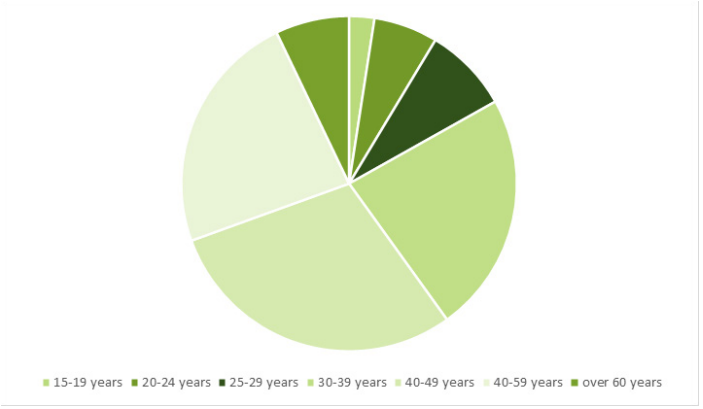
The present questionnaire was completed by 534 inhabitants of Suceava Municipality and aimed to understand the existing situation in the field of climate impact as seen by citizens. The instrument applied determines an overview of the perception and behavior of citizens regarding climate impact, which contributes to the decision maker regarding future actions to protect the environment.

The questionnaire was published exclusively online and promoted via social media every 2 weeks from January to February 2023. The target group of this consultation phase is the entire population of the Municipality of Suceava, the aim being to identify the needs, the level of concern of the population about climate change and the level of awareness about its causes and consequences. The questionnaire had an

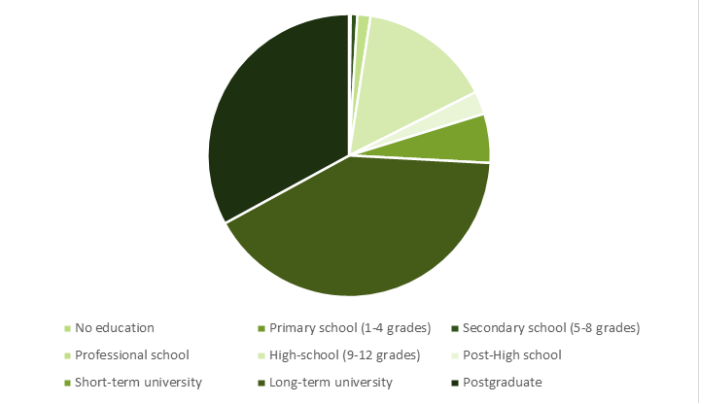
1 Gender



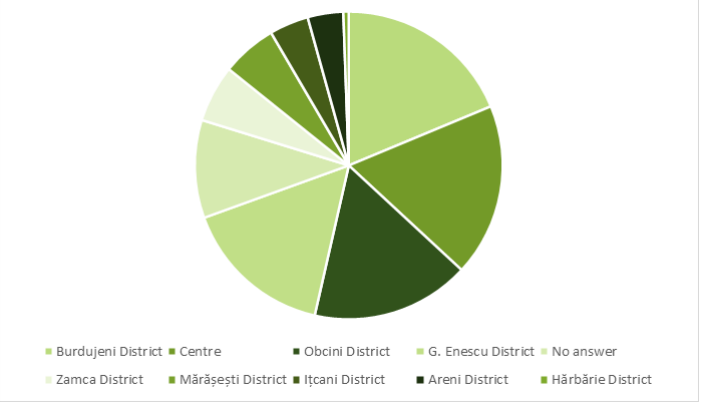
2 Age



3 Last school they graduated from

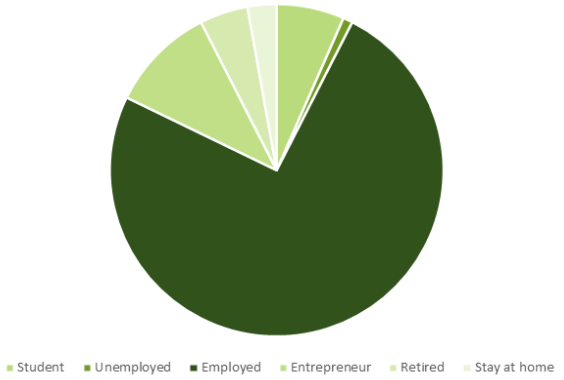


4 Residence



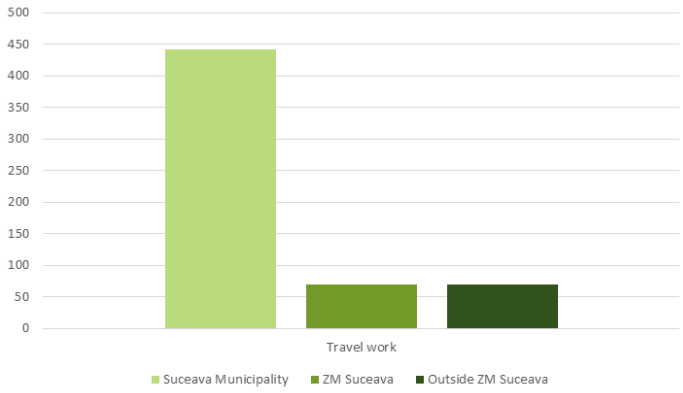
5

Professional status



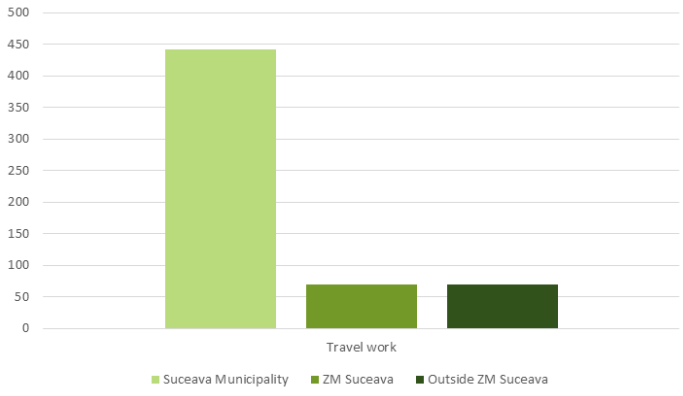
6

You work in:



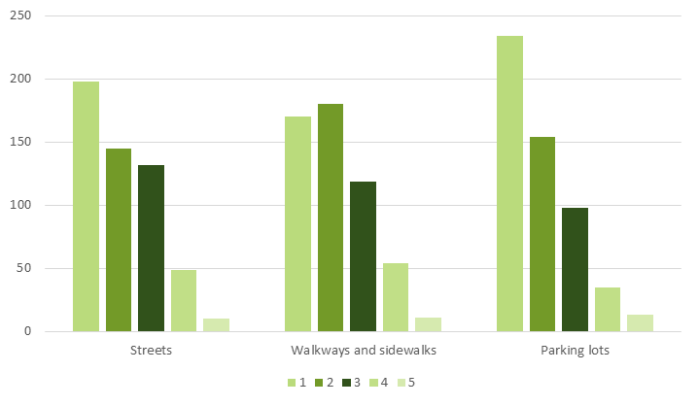
7

Do you frequently travel to:



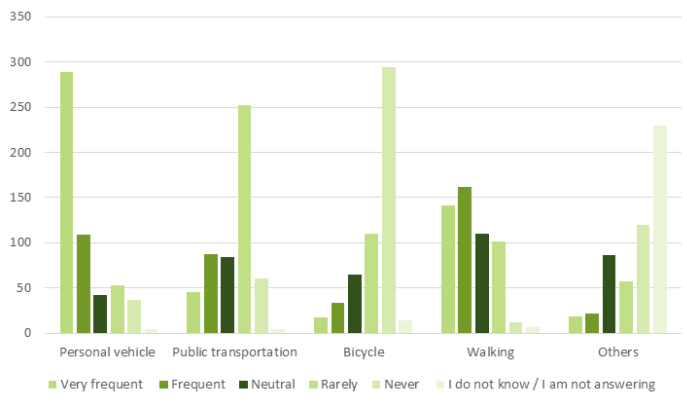
8

How satisfied are you with the quality of the following categories of public mobility infrastructure?



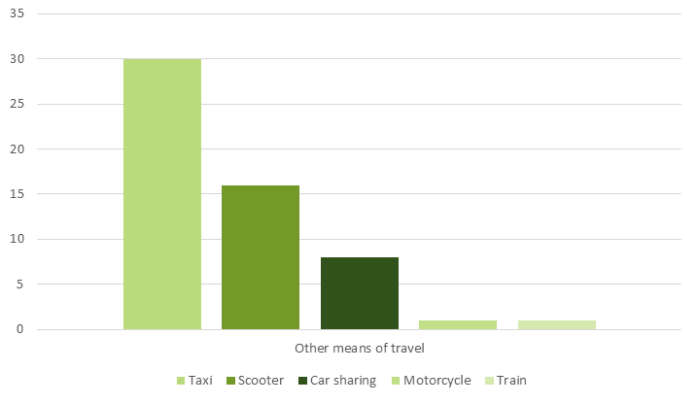
9

How often do you use the following means of transport for your current (daily, weekly) journeys:



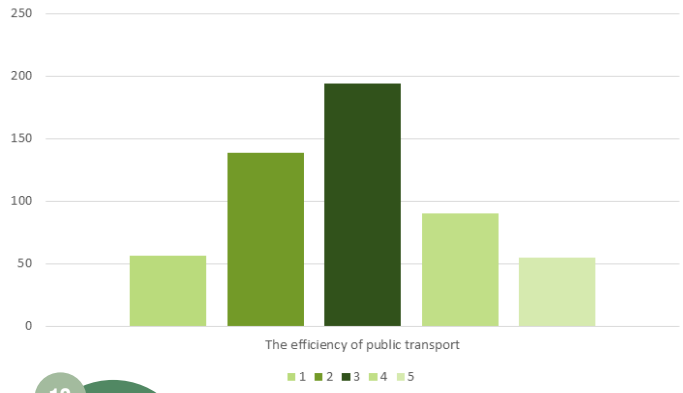
10

If you use other means of transport for your current journeys, please mention them:



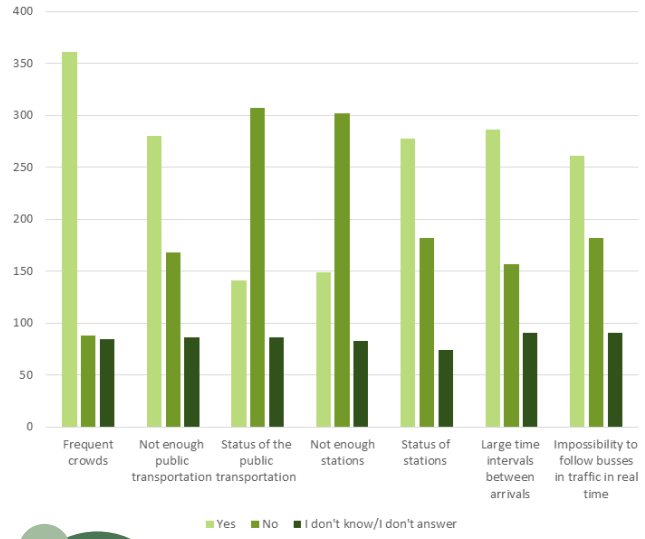
11

In your opinion, how efficient is the public transport system in Suceava?



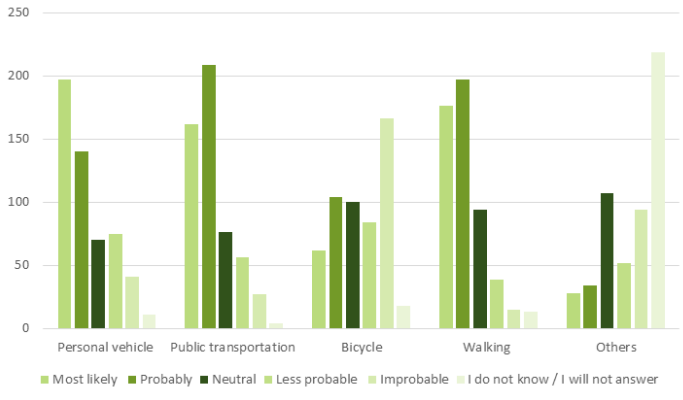
12

What issues have you identified using the public transport system:



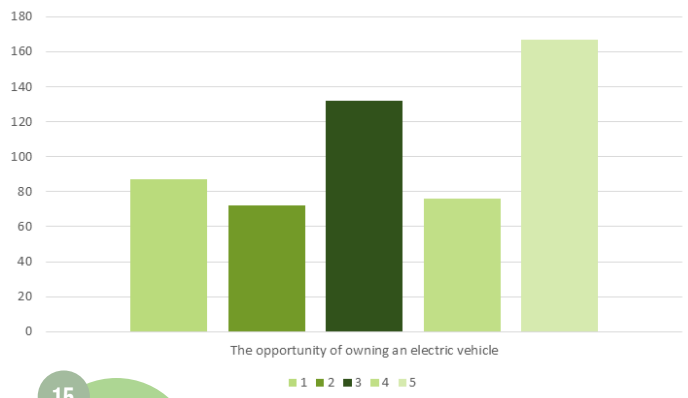
13

Assuming that the transport infrastructure would allow efficient use of any of the means of transport listed below, would you prefer to use for your daily commute:



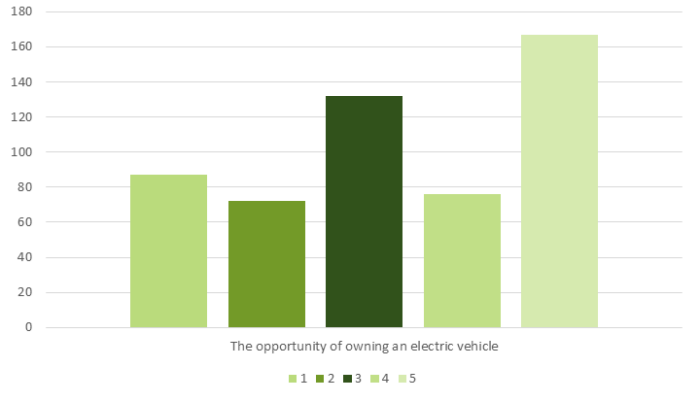
14

How appropriate is it from your point of view to own a personal electric vehicle (given their current power infrastructure):



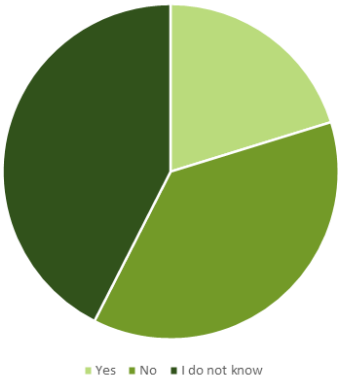
15

Do you own an electric vehicle?



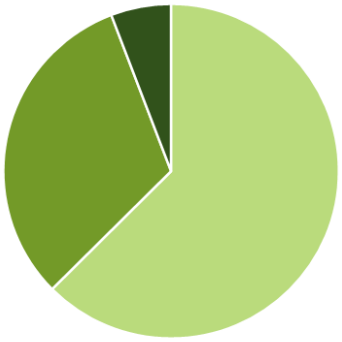
16

Have awareness/education actions been undertaken so far at local level in the field of sustainable energy (energy efficiency and renewable energy)?



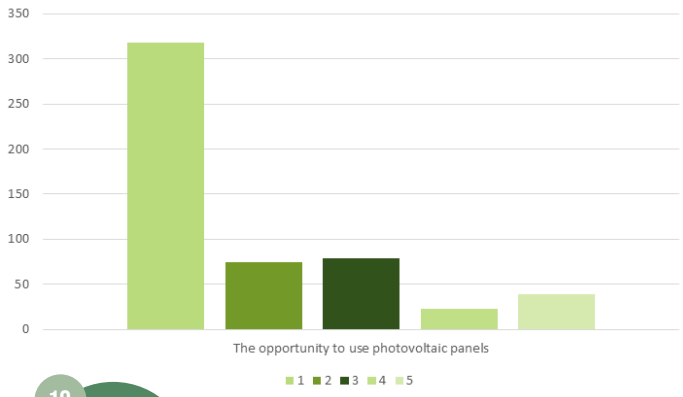
17

How useful do you think it would be to showcase energy-efficient technologies and renewable energy systems applicable to your locality?



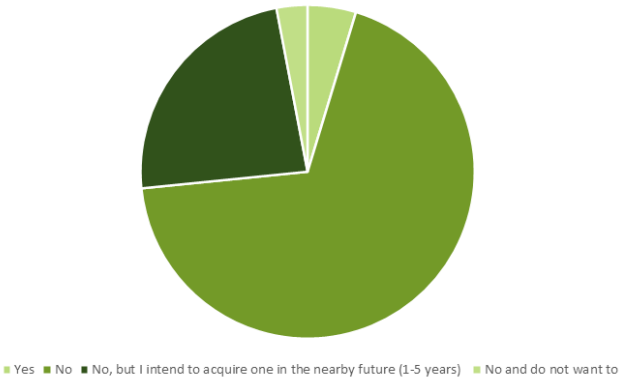
18

In your opinion, how appropriate is the use of photovoltaic panels for your own household?



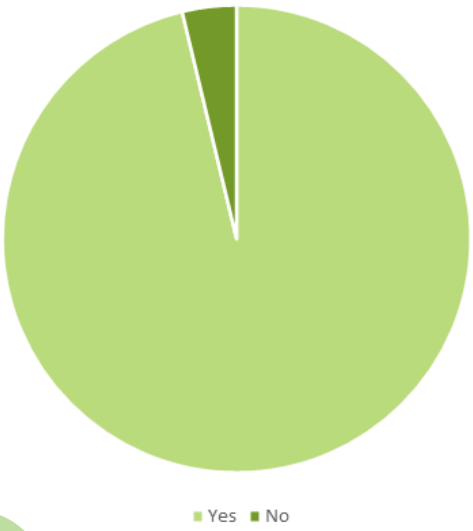
19

Do you have your own renewable energy system?



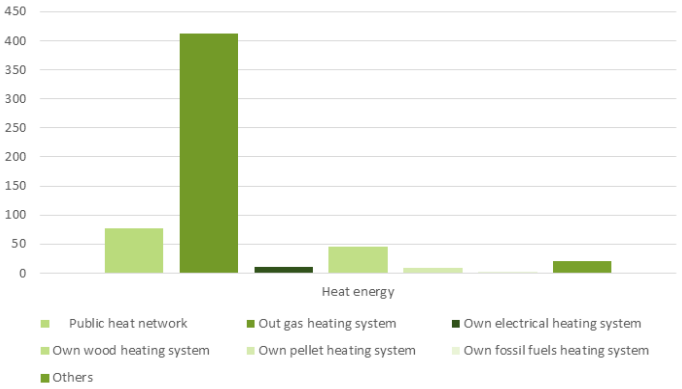
20

Do you pay attention to its energy efficiency class when buying an appliance?



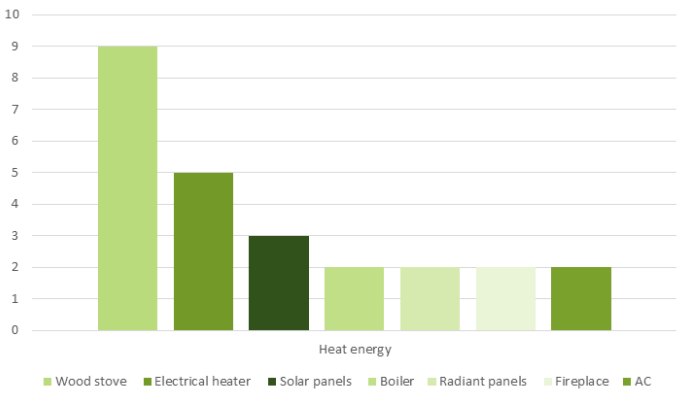
21

What heat source do you use?

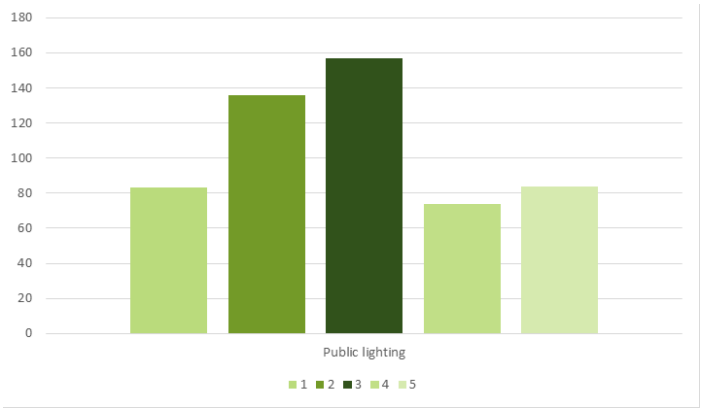


22

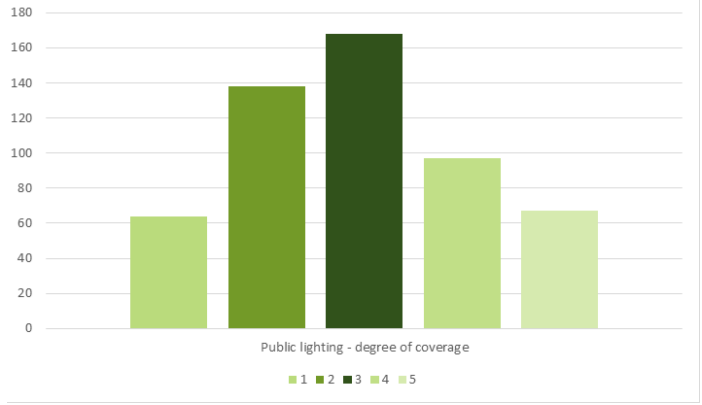
If you use other sources of heat than those mentioned please list them:



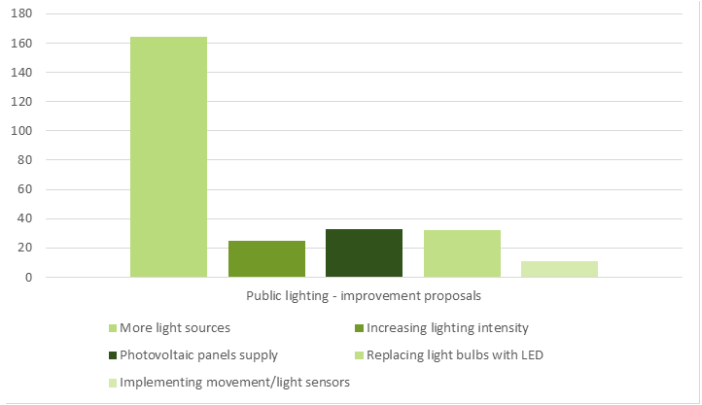
23 How do you rate the street lighting in your area in terms of safety?



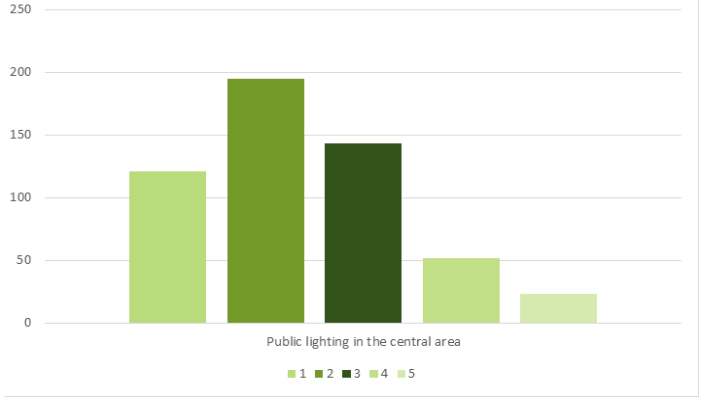
24 What do you think is the coverage of street lighting in your area?



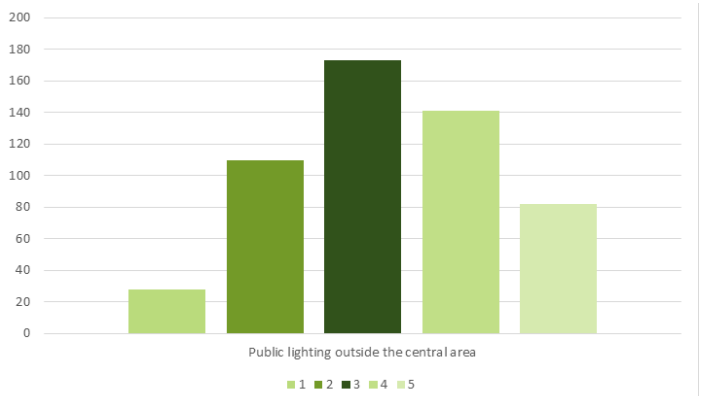
25 How do you think the street lighting in your area could be improved?



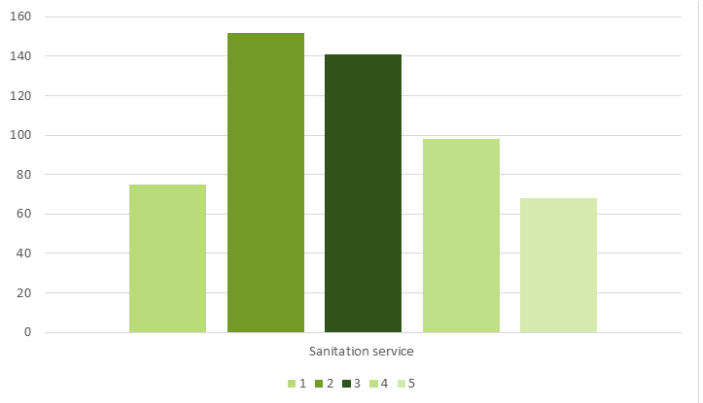
26 How do you rate the street lighting in the central area?



27 How do you rate street lighting outside the central area?

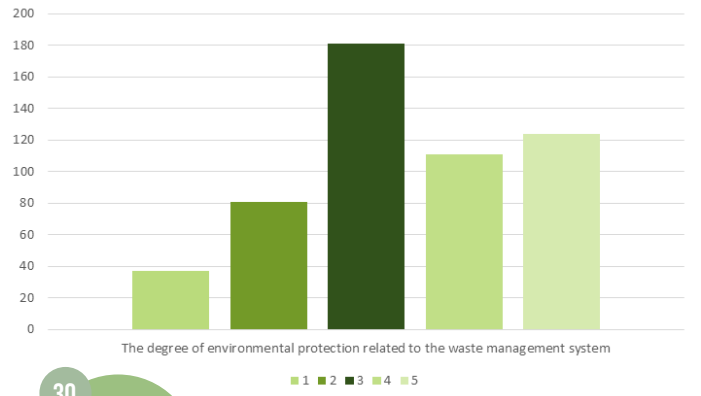


28 How do you rate the sanitation service in your area?



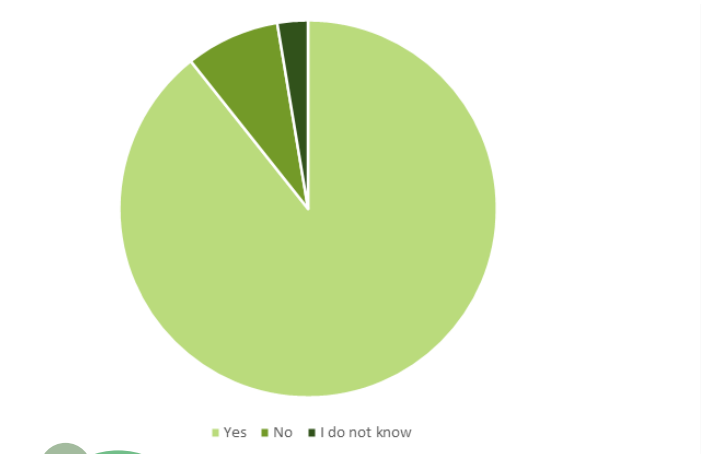
29

What do you think is the extent to which the current waste management system at local level provides adequate environmental protection?



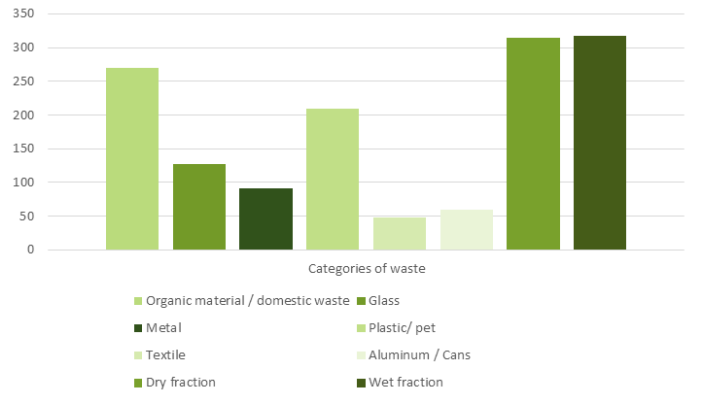
30

Has a separate waste collection system been introduced on your street?



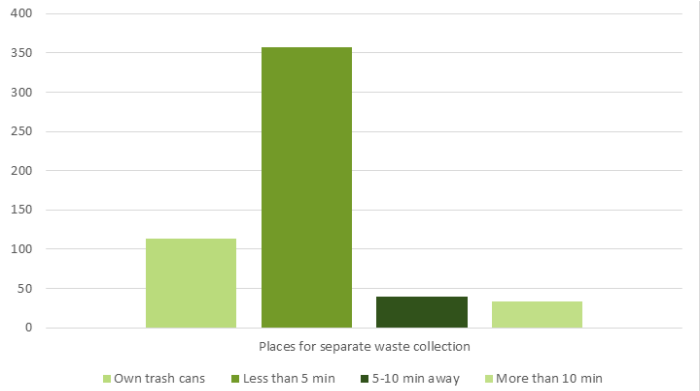
31

Which of the following categories of waste are sorted in the area where you live?



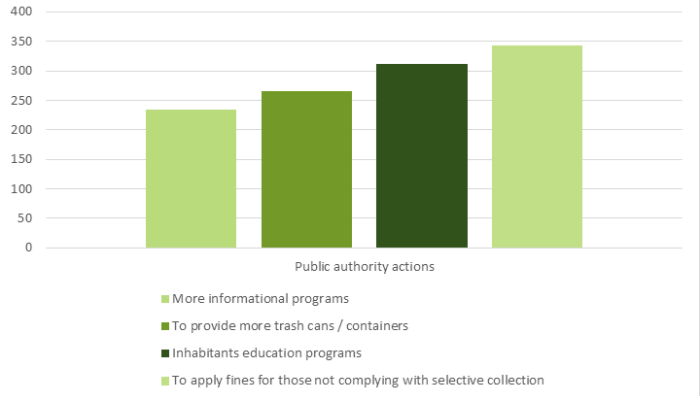
32

Within walking distance of your home are there places for separate waste collection?



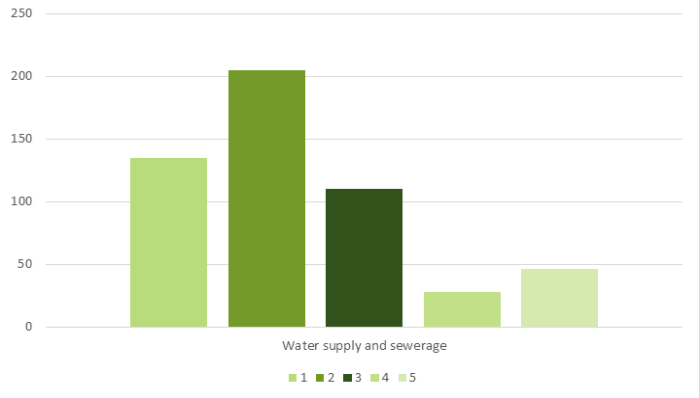
33

What do you think the local authority should do to encourage residents to collect waste separately?



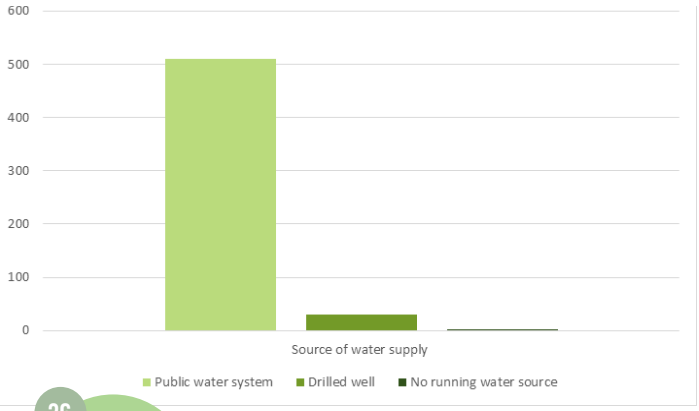
34

How do you rate the water and sanitation service in your area?



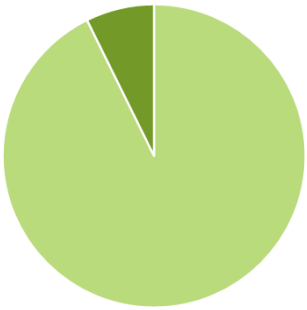
35

Source of water supply for the household where you live?



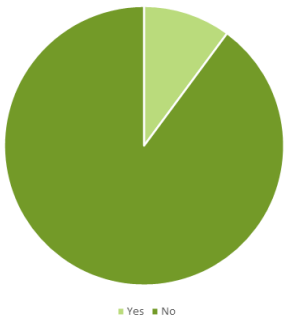
36

The disposal of waste/household wastewater from your household is done in:



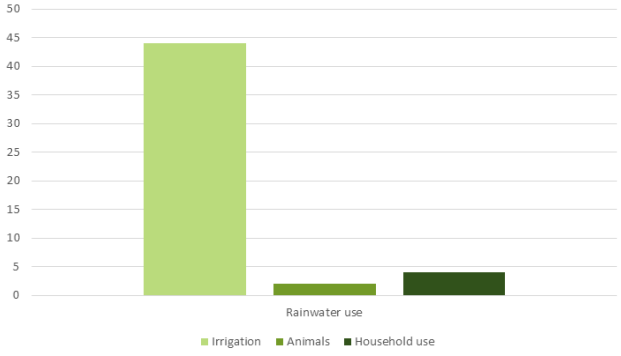
37

Do you collect rainwater?



38

If you collect rainwater, for what purposes do you use it:

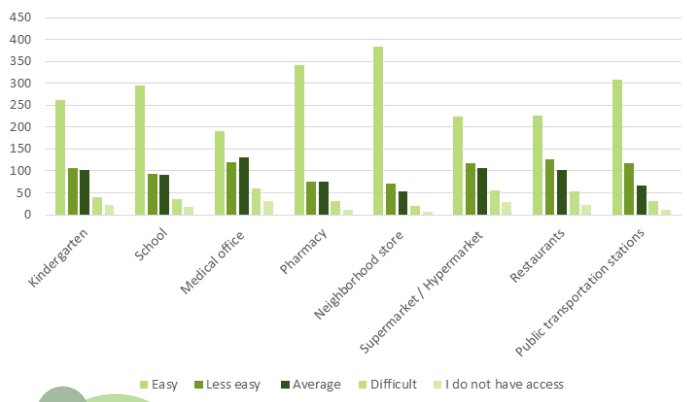


39

Are you aware of ways in which the local authority collects/uses rainwater for irrigation of green spaces, street washing, etc.?

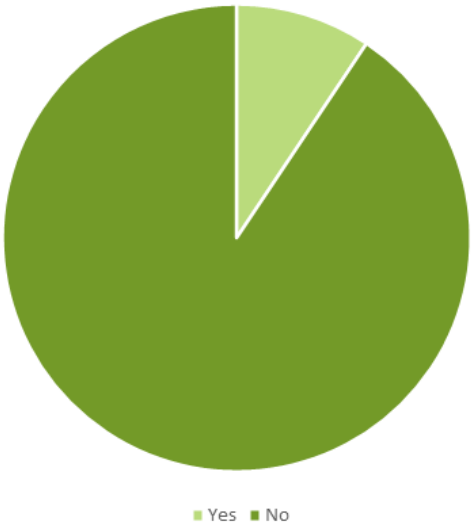
40

Do you have easy access to the following categories of proximity facilities in your neighborhood?



41

Are you aware of any awareness/ education campaigns on carbon reduction?



42

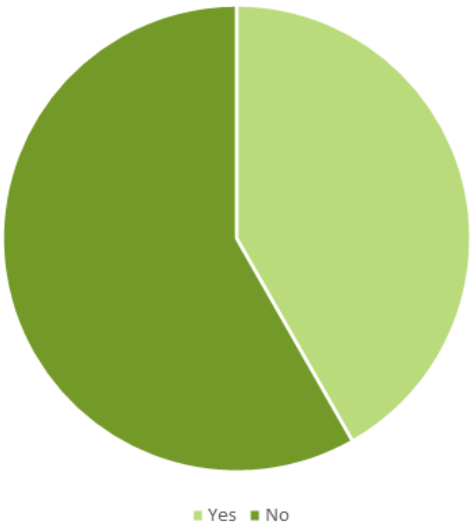
If you know of any awareness/ education campaigns on carbon reduction please name them:

Citizens mentioned the following:

- Electric transportation (green);
- Restricted traffic during the weekend in the area of Parcul Copilului - Burdujeni, Cuza Voda I neighborhood;
- Reorganization of the collection areas for household and recyclable waste;
- Use of alternative means of transport instead of own cars to improve traffic flow and reduce noxious emissions;
- Maintain (improve, restore) the centralized heating and hot water system to reduce noxious emissions;
- Promoting environmentally friendly transport - encouraging the purchase of electric vehicles - instead of those with thermal engines - there are campaigns called RABLA;
- Campaigns run by AFM - RABLA for household appliances
- Selective collection of waste (cans, aluminum cans) - implemented in hypermarkets;
- Public waste collection system - use of LED systems for domestic/public lighting;
- Disposal of incandescent light bulbs;
- E-ON: together we put good into light;
- Nestele: Zero environmental impact;
- Reveal Marketing Research and Romania Eficienteă: Healthier buildings, healthier Romanians;
- Orange: Green Report;
- MaiMultVerde Association and Carbon Solutions Global;
- Green Friday campaign at national level.

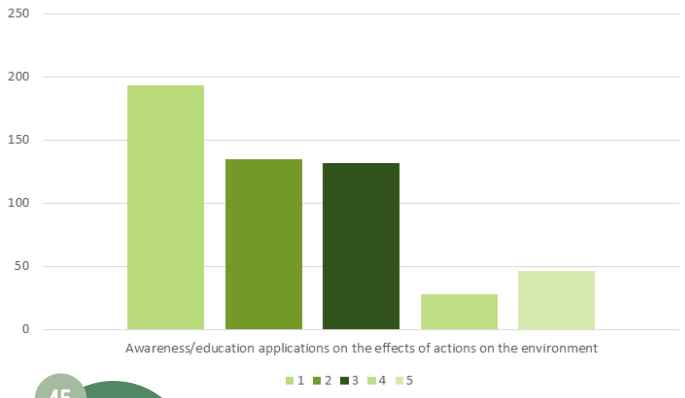
43

Would you like to participate in workshops/working groups/ debates on carbon footprint reduction?



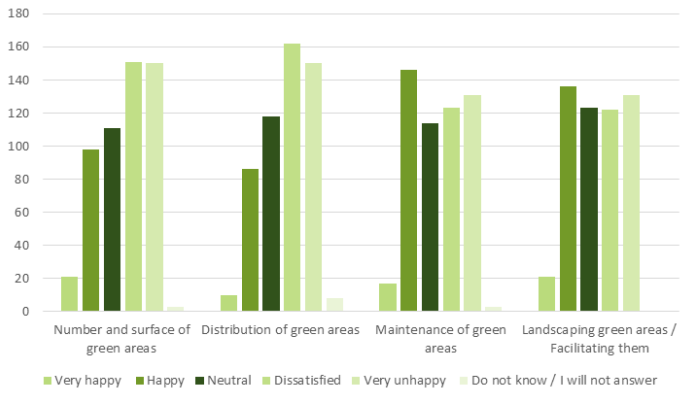
44

Do you consider effective the implementation of applications aimed at educating/awareness of the effects of actions on the environment and their reduction?



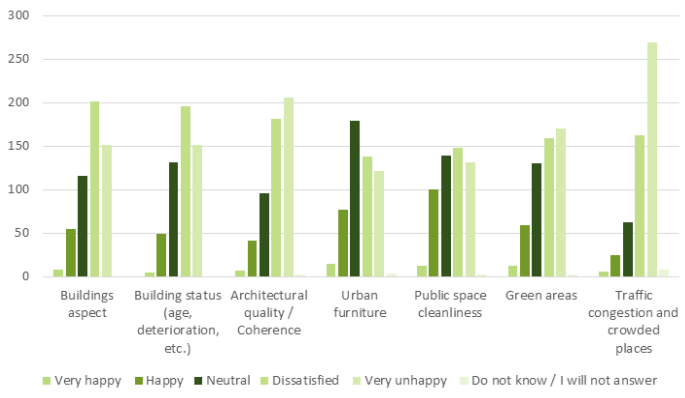
45

How satisfied are you with the situation of green spaces in Suceava Municipality?



46

How satisfied are you with the urban environment in Suceava:



3.2. Organizing thematic working group meetings

A LOCATION OF INITIAL WORKING MEETINGS

Suceava Municipality City Hall
Address: Bulevardul 1 Mai nr. 5A, county of Suceava, Suceava Municipality
Postal code: 720224
Phone: 0230 212 696
E-mail: primaria@primariasv.ro

B ACTUAL ORGANIZATION OF WORKING MEETINGS

On 28.04.2022, the list of the 100 cities selected following the completion of the selection process under the Horizon Europe Program, Smart and Climate Neutral Cities Mission - 100 Climate Neutral Cities by 2030 was announced. Thus, Suceava was selected as one of the 100 cities that will become climate neutral by 2030 out of 377 cities from all EU Member States and nine associated countries and negotiating associations that submitted applications.

The next step is for each participating city to draw up, sign and implement the Climate City Contract. The contracts will set out plans for the city to achieve climate neutrality by 2030 and will include an investment plan. These will be created together with local stakeholders (consulting firms, private sector, academic sector, civil society) and citizens, with the help of a Mission Platform (which is led in the first phase of the Mission by the NetZeroCities project).

By joining the EU Mission, the municipality of Suceava aims to reduce greenhouse gas emissions, increase local energy efficiency and improve the quality of life in Suceava.

In the framework of the consultancy services contract for the implementation of the "100 Climate Neutral Cities by 2030" mission of the Horizon Europe program, the consultant SC URBAN SCOPE SRL moderated and prepared the working meetings with the members of the Local Group, together with the project team of the Municipality of Suceava.

The reason for the involvement of the consultancy team in the organization of these initial meetings is to facilitate in a more efficient way the transfer of knowledge and experience in the field of implementation of the favorable actions. The delegated consultant team has extensive experience in strategic planning documents and consultations on different themes, so the involvement from the organizational phase has added to the quality of the proposed activities.

Following discussions between the project team from Suceava City Hall and the consultants from SC URBAN SCOPE SRL, a clear schedule for the working groups was established. These meetings were held over two days and each meeting lasted approximately one hour and thirty minutes. Each working group was based on the themes agreed between the contracting authority and the consultants, and the order of the working groups was set so that each day touched on all the pillars being considered to bring the Municipality of Suceava closer to fulfilling its mission.

The working groups have been named according to the theme as follows: Energy efficiency in public and residential buildings; Alternative energy; Public lighting; Public transport and traffic; Waste management; Water management; Public spaces; Cultural/social/financial/institutional systems.

The initial meetings were held at the Suceava City Hall, where the relevant local actors were previously invited by official addresses to outline the vision that the Municipality of Suceava must address in order to achieve the objectives assumed in the Mission. The meetings took place between 02-03.11.2022, and in order to efficiently summarize the way the initial Working Groups' activity was carried out, we present the following centralizing table:

Group name	Group type	Starting date TIME:
02.11.2022		
1. Energy efficiency in public and residential buildings	Initial group	10.00 – 11.30
5. Alternative energy	Initial group	11.30 – 13.00
2. Public lighting	Initial group	13.00 – 14.30
3. Public transport and traffic	Initial group	14.30 – 16.00
03.11.2022		
4. Waste management	Initial group	09.30 - 11.00
6. Water management	New group	11.00 - 12.30
7. Public areas	New group	12.30 – 14.00
8. Cultural / social / financial / institutional systems	New group	14.00– 15.30

These initial working groups were attended by representatives of:

1. Work group- Energy efficiency in public and residential buildings
- Suceava Chamber of Commerce and Industry
- University "Ștefan cel Mare" Suceava
- Faculty of Electrical Engineering and Computer Science
- National College "Petru Rareș" Suceava
- S.C. Bioenergy Suceava S.A.
- Owners Association no. 5 - G. Enescu
- Local counsellor - Nechiforel Dan
- Local counsellor - Păstrăv Bogdan George
- Suceava City Hall

2. Work group – Public lighting
- University "Stefan cel Mare" Suceava
- Faculty of Electrical Engineering and Computer Science
- S.C. Bioenergy Suceava S.A.
- S.C. Atom Consulting S.R.L.
- Owners Association no. 5 - G. Enescu
- Local counsellor - Cușnir Ioan Dan
- Local counsellor - Păstrăv Bogdan George
- Suceava City Hall

3. Work group - Public transport and traffic
- University "Stefan cel Mare" Suceava
- S.C. Darex Auto S.R.L. authorized representative for Dacia, Renault and Nissan
- S.C. Transport Public Local S.A.
- Local Police
- Local counsellor - Cușnir Ioan Dan
- Local counsellor - Munteanu Teodora
- Local counsellor - Nechiforel Dan
- Local counsellor - Păstrăv Bogdan George
- Suceava City Hall

4. Work group – Waste management
- S.C. Bioenergy Suceava S.A.
- Areni Observator Owners Association - Marasesti
- Local counsellor - Cușnir Ioan Dan
- Local counsellor - Nechiforel Dan
- Local counsellor - Păstrăv Bogdan George
- Suceava City Hall

5. Working Group - Alternative Energy
- Suceava Chamber of Commerce and Industry
- University "Ștefan cel Mare" Suceava
- Faculty of Electrical Engineering and Computer Science
- S.C. Bioenergy Suceava S.A.
- Areni Observator - Mărășești Owners Association
- Local counsellor - Alexandroaie Eugen Cătălin
- Local counsellor - Ardeleanu Sanda Maria
- Local counsellor - Munteanu Teodora
- Local counsellor - Nechiforel Dan
- Local counsellor - Păstrăv Bogdan George
- Suceava City Hall

6. Working Group - Water Management
- S.C. Acet S.A.
- Water management system
- Suceava City Hall

7. Work group - Public Areas - were cumulated with group 8

8. Cultural / social / financial / institutional systems
- Matei Visniec Municipal Theatre
- Directorate of Social Assistance
- County Library
- Access Travel
- Suceava City Hall

Following initial discussions with the working groups (areas: Energy efficiency in public and residential buildings; Alternative energy; Public lighting; Public transport and traffic; Waste management; Water management; Public spaces; Cultural/social/financial/institutional systems), the first draft of the Climate City Contract was developed. This was made available to the initial participants in the working groups together with the priority project sheets.

The interim meeting was organized at the Suceava City Hall on 27.07.2023, where relevant local stakeholders were previously invited by formal letters to comment on the Climate City Contract Interim Draft.

This interim meeting was attended by representatives of:
- Owners association no. 5 - G. Enescu
- Owners association no. 3 - Centru
- Owners association no. 17 – Zamca
- Owners association no Areni Observator - Mărășești
- S.C. Acet S.A.
- National Museum of Bucovina
- Suceava Chamber of Commerce and Industry
- Matei Visniec Municipal Theatre
- County Library
- Local Counsellor - Nechiforel Dan
- North - East Territorial Branch of the Romanian Order of Architects
- S.C. Local Public Transport S.A.
- National College "Petru Rareș" Suceava
- University "Ștefan cel Mare" Suceava
- Owners Association no. 50 - Burdujeni
- Water management system
- Suceava City Hall

After handing over the finalization of the CCC, a final series of working group meetings will be held to finalize the provisions according to the opinion of the participants in the field.

NET ZERO CITIES

EU MISSION PLATFORM | CLIMATE NEUTRAL AND SMART CITIES

Climate City Contract

2030 Climate Neutrality Commitments

Climate Neutrality Commitments of

Suceava City

NetZeroCities has received funding from the H2020 Research and Innovation Programme under the grant agreement n°101036519.

Disclaimer

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1 Introduction

Suceava Municipality recognizes the urgent need to address the global climate changes/challenges and minimize its impact on communities, the economy and the environment. It is recognized that the local community is currently contributing to this crisis through greenhouse gas emissions from transport, buildings, waste and other sources.

As a signatory of the Covenant of Mayors, Suceava municipality has developed a strategy to reach climate neutrality in the shape of a strategical document entitled "Sustainable energy and climate action plan of Suceava municipality 2021-2030". The SECAP is a programmatic and strategic document that defines the actions and measures that will be taken at local level, in order to achieve the overall goal of reducing CO2 emissions by 55% by 2030, compared to the reference year chosen (2015).

Suceava Municipality is a public administration institution responsible for local infrastructure, heating, public lighting, public transport, culture, public spaces, green areas, social activities, education, utilities and has a budget of 203.229.064 Euro/year (related to 2023).

In the past 15 years there were many investment projects in the field of energy efficiency (public and private buildings), alternative heating production (biomass), rehabilitation of public lighting (LED systems), education buildings, public transport (100 % electric fleet), alternative vehicles (electric municipal fleet, charging stations for EV's – with incentives for charging also for private owners), traffic management, cycling lanes, electric bicycles and scooters, rehabilitation of central heating system, separate waste collection and recycling system, rehabilitation of the water and sewage system, green areas, rehabilitation of pedestrian (low emission zone), road infrastructure, city ring. Suceava Municipality recognizes the urgent need to address the global climate crisis and minimize its impact on communities, the economy and the environment. It is recognized that the local community is currently contributing to this crisis through greenhouse gas emissions from transport, buildings, waste and other sources. The municipality's commitment to its responsibility to mitigate climate change is to achieve climate neutrality in terms of climate impact by 2030, and to meet this goal reduction in local greenhouse gas emissions is required.

On its pathway to became a "green city", with previous achievements like being the first Romanian city with a municipal electric fleet, charging facilities and incentives for electric vehicles, first and only (so far) Romanian city with 100% electric public transport, Suceava City sees the Climate City Contract and Net Zero Cities Mission as the perfect opportunity to continue its efforts and accelerate the implementation of specific actions that will create the local conditions to reach the climate neutrality goals.

City vision: **A Resilient Future for Suceava: Embracing Sustainability**

Suceava City envisions itself as a thriving green metropolis by 2030, as being a city where:

- **Clean air and vibrant green spaces** replace the haze of pollution, fostering a healthy environment for generations to come.
- **Renewable energy** powers the city, minimizing its carbon footprint and displaying its commitment to a sustainable future.
- **Efficient transportation systems**, with robust public options and emphasis on walking and cycling, create a more liveable and connected city.
- **Sustainable practices** become the norm, embedded in everyday life from waste management to energy consumption.

Suceava City Challenges and the Stakes: However, the path to this vision is not without its challenges. Climate change poses a real threat, affecting Suceava's environment, economy, and overall well-being. Rising temperatures, increased air pollution, and extreme weather events are all potential consequences if action is not taken. Beyond the environmental concerns, the people of Suceava worry about the city's long-term prosperity and its ability to attract future generations. They aspire for a city that offers a high quality of life, economic opportunities, and a sense of connection to its rich cultural heritage.

The Climate City Contract (CCC): A Catalyst for Change: The Climate City Contract (CCC) serves as a powerful catalyst for Suceava's ambitions, both climate-centric and beyond. It provides a framework for collaboration and resource mobilization, accelerating the city's existing commitments to sustainability. Suceava

already boasts a significant foundation of successful sustainability initiatives, including its 100% electric public transport fleet.

The CCC builds upon these achievements by:

- **Amplifying Suceava's City voice on the global stage:** The city gains access to a network of like-minded communities, fostering knowledge sharing and best practice exchange.
- **Attracting resources and investment:** Participation in the CCC opens doors to funding and partnerships, accelerating the implementation of Suceava's ambitious goals.
- **Boosting innovation and collaboration:** The CCC fosters collaboration between public and private stakeholders, encouraging the development of innovative solutions for a sustainable future.

The CCC goes beyond just climate change, contributing to Suceava's broader vision for the future. By promoting sustainable practices and resource efficiency, the city can:

- **Reduce its dependence on external energy sources**, making it more resilient and economically secure.
- **Position itself as a leader in sustainability**, attracting investment and talent, particularly within the green economy sector.
- **Enhance the overall quality of life for residents**, creating a healthier and more vibrant city.

Suceava's City story is one of resilience, community spirit and a commitment to shaping a brighter future. By embracing sustainability as a core value and leveraging the opportunities offered by the CCC, Suceava City can ensure a thriving green metropolis for generations to come.

This vision, born from a collective desire for a cleaner, healthier future, ignited a spark within the community. It fuelled the creation of Suceava's Climate Action Plan, a roadmap towards becoming a **Net Zero City**. This plan, far from being a mere document, is a testament to the city's commitment, a story of collective action, innovation, and the unwavering belief in a brighter tomorrow.

Recognizing their contribution to the global climate challenge, the people of Suceava, along with their dedicated municipality, embarked on a journey of transformation. They acknowledged the reality – greenhouse gas emissions from various sources, including transportation, buildings, and waste, were contributing to the environmental crisis.

Fuelled by the success of previous initiatives, like becoming the first Romanian city with a 100% electric public transport fleet, Suceava saw the **Climate City Contract and Net Zero Cities Mission** as the perfect opportunity to accelerate their progress. The municipality, acting as a facilitator and coordinator, embarked on a collaborative journey, bringing together diverse stakeholders - residents, businesses, experts, and public officials - to co-create the action plan.

This collaborative spirit permeated every step of the process. Public consultations and workshops ensured that the plan addressed the community's needs and concerns directly. The voices and suggestions of citizens became the foundation for identifying and designing projects, ensuring the plan was not just top-down, but truly representative of the collective vision.

The resulting action plan lays out a clear roadmap towards achieving climate neutrality by 2030. It outlines ambitious yet achievable goals, like reducing CO2 emissions by 80,66% compared to the 2021 baseline. This ambitious target is not an unreachable obstacle but a call to action, a shared responsibility embraced by the entire community. Suceava’s story is not just about numbers and targets; it is about the unwavering spirit of a community united in pursuit of a shared vision. It's a testament to the power of collective action and the belief that even the most challenging goals can be achieved when a community comes together, united by hope and a desire to create a better future for generations to come.

The CCC has opened a door to a multitude of opportunities for Suceava:

- **Accelerating Existing Sustainability Initiatives:** The CCC provides a platform for amplifying Suceava's existing efforts in areas like clean energy, sustainable transportation and waste management. The city can leverage the CCC framework to attract resources, expertise and partnerships, accelerating the implementation of its vision.

- **Boosting Innovation and Green Technologies:** The collaborative spirit of the CCC fosters an environment for knowledge sharing and innovation. Suceava can learn from other cities and adapt successful green technologies to its specific context. This collaborative approach accelerates the development and implementation of innovative solutions, pushing the boundaries of what is possible.
- **Enhancing the City's Profile and Attracting Investment:** By actively participating in the CCC, Suceava positions itself as a global leader in sustainability. This enhanced reputation attracts investment and talent, particularly within the green economy sector, further fuelling the city's sustainable transformation.

Building a Strong Foundation for Collaboration: Suceava already boasts a strong foundation for climate action, built upon the collaborative efforts of various stakeholders:

- **Municipal Leadership:** The city's leadership has demonstrated a strong commitment to sustainability, actively spearheading initiatives and fostering collaboration among stakeholders.
- **Engaged Citizens:** Suceava residents are passionate about the environment and actively participate in public consultations and workshops, shaping the city's sustainability agenda.
- **Local Businesses and Organizations:** Businesses and organizations in Suceava are increasingly integrating sustainability practices into their operations, contributing to the city's overall progress.

This collaborative ecosystem, nurtured by the CCC, empowers Suceava City to effectively address climate challenges and work collectively towards a greener future. Through this united effort, Suceava aims to become a shining example of a city that prioritizes both environmental stewardship and community well-being.

The Climate City Contract's preparation was based on adapting EU trends, strategic directions and policies to the specific local context, the whole process being a co-participatory one: although the Municipality coordinated the implementation of the Action Plan, the document was developed by constantly consulting the local stakeholders, because they are the NZC Coalition's pillars. During the design phase for Action Plan leading staff and public servant from Suceava Municipality had several technical meetings with experts that are part of the project team in order to establish and define the future common actions to be implemented by Suceava Municipality on the road to climate neutrality. Following discussions between the project team from Suceava City Hall and the consultants, a clear schedule for the working groups was established. Each working group was based on its themes agreed between the contracting authority and the consultants, and the order of the working groups was set so that each day touched on all the pillars being considered to bring the Municipality of Suceava closer to fulfilling its mission. The results from the public survey were presented during each workshop, were discussed with the stakeholders and consist the baseline for identification and design of the projects proposed to be included in the Action Plan. The projects/actions were defined in accordance with citizens' needs/comments/suggestions and the actions are directly linked with the problems identified directly by citizens. Thus, all stakeholders will be called upon to support and work together to achieve climate neutrality by 2030.

The municipality has an important role to play in leading the local climate transition towards the goal set by joining the 100 Smart and Climate Neutral Cities Mission by 2030. The role that Suceava will play in the coming period is to become the initiator of the decarbonisation process at local level by providing a concrete example of best practice, thus being the first city to commit to involving most of the local stakeholders in the climate transition process. The actual organization and management of this ambitious process will follow an open approach towards the general public and all stakeholders, so that the focus is on dialogue and collaboration between stakeholders, both through public consultation and information gathering from all sectors of interest, providing opportunities for involvement in an equitable and participatory governance.

VISION: Suceava City in 2030 is a metropolis running largely on renewable energy sources, with a fully decarbonized transport infrastructure, efficient and environmentally friendly public transport, occupied by buildings built to high-energy efficiency standards, quality green spaces, a local circular economy focused on sustainable goods and services and an integrated and efficient waste management system.

Overall, it is important that all stakeholders work together to achieve the greenhouse gas emission reduction targets. Taking an integrated approach, combining policies, clean technologies and innovations as well as individual actions, can lead to significant emission reductions.

Within the framework of existing local strategic documents and their integration and further development to a raised ambition towards the Mission in the CCC process, the Municipality of Suceava acts as a, light house, city with innovative, ambitious and integrated initiatives that approach reduction of energy consumption and GHG emissions.

Achieving climate neutrality in a city requires a commitment to reduce GHG emissions as much as possible, for example through the use of renewable energy resources to replace fossil fuels, while offsetting those residual emissions which are too hard to eradicate.

To become a climate neutral city, the following steps are planned:

- Carrying out a greenhouse gas inventory to establish where emissions and their values come from;
- Developing a climate action plan setting out the strategies and actions needed to reduce emissions; the plan must be aligned with the objectives of the Paris Climate Agreement and the 2030 Agenda for Sustainable Development;
- Reducing energy consumption - increasing the energy efficiency of buildings, implementing smart grids and promoting alternative means of travel (electric public transport, walking, cycling, etc.);
- Increase production and promotion of renewable energy and clean vehicles;
- Offsetting carbon emissions - any remaining carbon emissions should be offset by investing in green projects (reforestation, carbon capture and storage, etc.);
- Involving stakeholders (residents, businesses, public administration, etc.) collaborating on the implementation of initiatives and promoting a culture of sustainability and sustainable development.

Suceava's city story is not just about numbers and targets but it is about the unwavering spirit of a community united in pursuit of a shared vision. It's a testament to the power of collective action and the belief that even the most challenging goals can be achieved when a community comes together, united by hope and a desire to create a better future for generations to come.

According to the actions included in the Action Plan the overall goal is the reducing CO2 emissions with 80,66% by 2030, compared to the reference year chosen (2021).

2 Goal: Climate neutrality by 2030

In 2018 the city of Suceava committed to implementing EU climate and energy objectives by joining The EU Covenant of Mayors for Climate & Energy. As part of this commitment, Suceava Municipality has developed a Sustainable Energy and Climate Action Plan in order to meet until 2030 the targets proposed by the European Union for the reduction of greenhouse gas emissions by more than 55% compared to the emissions generated in the administrative territory, taking into account the reference year 2015. According to the actions included in the Action Plan the overall goal is the reducing CO2 emissions with 80,66 % by 2030, compared to the reference year chosen (2021).

According to the Climate Action Plan Suceava Municipality`s general objective is to reduce greenhouse gas emissions in order to improve existing energy performance or to develop buildings, utilities, equipment and technologies with high energy efficiency, including renewable sources. Suceava Municipality has as strategic objective the approach of social and economic performances achieved by other municipalities within the European Union, by implementing policies that contribute to raising the standard of living and the level of civilization of the local community. This is also the main purpose of the European Union's non-reimbursable financial support for improving energy efficiency.

Based on measured included, the targets assumed and the integrated approach the specific objectives/goals of the Climate City Contract for Suceava Municipality are the following:

- Increasing the energy performance of public and residential buildings in order to improve thermal comfort, reduce greenhouse gas emissions and energy consumption;
- Increasing the energy efficiency of the public district heating system in order to comply with environmental standards on atmospheric emissions;
- Sustainable energy development of Suceava City in order to increase energy efficiency, efficient use of resources, increase the share of renewable resources, increase the production of energy from alternative sources and environment protection specific issues.

-Increasing the energy efficiency of the public lighting system in order to reduce GHG emissions, increase traffic safety, reduce costs and increase the quality of the system;
-Improving public transport and smart mobility in order to ensure a safer and more efficient urban transport and reduce traffic GHG emissions;
- Sustainable urban development of Suceava City (with specific and integrated approach on green areas, waste recycling and management, circular economy) in order to increase the quality of life at local level;

- Increase, develop and extend the partnership between local administration, academic and private sectors and increase the engagement of local stakeholder for local climate neutral actions, encourage changing behaviour and increase the acceptance for public administration investment projects;

According to the Integrated Urban Development Strategy of Suceava Functional Urban Area 2021-2030(who's objected were included in the City Climate Contract and aligned with Mission goals), a wide range of objectives and associated measures were identified, which were adapted to the local context and development priorities of Suceava and its functional urban area.
Strategic objectives related to the specific objectives are as follows:
A. Green and resilient city: Sustainable Urban Mobility/ Energy Neutrality /Reducing Air Pollution and Climate Risk
B. Competitive and productive city: Quality public infrastructure**,** Capitalization of land and buildings for strategic investments**,** Encouraging innovation, start-ups and skilled labour
C. Well-governed city: Digitization of Public Administration**.** Reducing bureaucracy and adapting services to the needs of the citizen
D. A fair and inclusive city: Easy access for all to public services, Involvement of civil society and citizens in urban development
Another important aspect regarding the city`s overall vision that should be mentioned is that our municipality takes into account combating energy poverty and the impact of greenhouse gas emissions upon different neighbourhoods and social groups.
These targets, included into the Climate City Contract, were approved with Local Council Decision no. **309/31.08.2023.**
Targets assumed by Suceava Municipality, in accordance and aligned with the Mission goals are:
Transport: Reduce greenhouse gas emissions from road transport in Suceava by increasing the use of public transport and alternative means of transport.
Buildings: Reduce greenhouse gas emissions from private and public buildings by increasing the use of energy efficient technologies and encouraging building owners to install solar panels or use other renewable sources.
Industry: Reduction of greenhouse gas emissions from industrial processes, services, trade by 2030 by encouraging companies to adopt more energy efficient technologies and use renewable energy sources.
Waste management: Reduce greenhouse gas emissions from waste management by 2030 by increasing recycling rates and implementing sustainable practices and promoting the circular economy at local level.
2030 – SUCEAVA" GREEN" CITY
Suceava is to become a green city in 2030 with full electric public transport (including metropolitan area), sustainable and efficient public transport (separate lanes for PT , priority in intersection, incentives for PT passengers), alternative mobility (with facilities for electric vehicles), entire municipal (public buildings, electric public transport, public lighting, educational units) electric energy consumption provided from renewable sources (solar), recycling facilities for municipal waste, circular economy, energy efficiency in all municipal buildings and at least 50 % of residential ones, green areas and SMART innovative technologies for a better quality of life into the city.
In order to achieve the targets listed in this document, the Municipality of Suceava commits to undertake the following actions:

- **Reduction of greenhouse emissions** - emissions levels in Suceava will be reduced through various methods such as: increasing energy efficiency and use of renewable energy, promoting sustainable transport options, increasing the area of green spaces in the city, increasing the use of alternative transport;

- **Offsetting carbon emissions** - the remaining greenhouse gas emissions will be offset by investing in projects such as: renewable energy installations, reforestation;

- **Encouraging public involvement and community action** - so the community will actively participate and take collective responsibility in reducing the locality's greenhouse gas emissions;

- **Annual progress reports** - this will track and report annually on progress at the local level in order to have control over achieving the climate neutrality target;

- **Conduct community awareness and education campaigns** to understand that achieving climate neutrality will require sustained effort and significant investment.

3 Key priorities and strategic interventions

Areas of intervention proposed by thematic working group and included in the Climate City Contract are covering the entire territory of Suceava city and could be define as following:

Urban mobility - tackling climate change by promoting more energy efficient, ,,green'' transport, sustainable public transport, alternative transport and other sustainable mobility options.

Energy Efficiency - promoting more efficient energy consumption and reducing greenhouse gas emissions by improving the energy efficiency of public and residential buildings, public lighting systems and heating transport and distribution network

Renewable Energy - promoting renewable energy sources, especially solar, to reduce dependence on fossil fuels and reduce greenhouse gas emissions.

Public Lighting - improving the energy efficiency of public lighting systems and promoting energy efficient lighting technologies.

Waste Management - addressing waste management and reducing its environmental impact by promoting recycling, separate waste collection and other sustainable waste management methods.

Urban Regeneration and Revitalization of Public Spaces - improving the quality of the urban environment through the development of more environmentally friendly green spaces and other public areas and promoting more sustainable practices in urban construction and development.

Smart citizens and 'open' government - promoting citizen participation in decision-making and developing smart government solutions that support the overall objectives of the Climate City Contract and facilitate better community engagement in climate change efforts.

Some examples of key priorities that are considered for the achievement of the objectives assumed in the Climate Mission Action Plan:

1. Carbon offset programs: implementing a carbon offset program within the supply chain or operations of companies operating in the Municipality of Suceava to reduce carbon emissions. This will include investments in renewable energy projects, reforestation efforts or carbon capture technology;
2. Sustainable transport initiatives: encouraging behavioural changes for entire population, such as telecommuting, car sharing, carpooling, alternative transport or the use of public transport for commuting;
3. Green building certification: implementing energy efficient equipment and systems, renewable energy generation, rainwater harvesting and green roofs;
4. Addressing sustainable production techniques: Improving production processes by reducing waste, energy consumption and the use of recyclable materials and implementing more environmentally friendly materials;
5. Launch green procurement initiatives: implementing policies that prioritize the purchase of sustainable energy efficient products and services over conventional items, may include partnership with suppliers that have strict environmental certification standards;
6. Employee education programs: creating training courses and workshops to raise awareness among staff about the importance of environmental challenges;
7. Water and natural resource efficiency programs: Implementation of water saving technologies or techniques to reduce water consumption (including renewable resources)

The general targets proposed for achieving climate neutrality by 2030 for the Municipality of Suceava are:

1. **Strategic Objective (SO) 1** – By 2030, Suceava will have an urban mobility based predominantly on alternative, clean urban mobility.
2. **Strategic Objective (SO) 2** – The economic environment in all sectors (energy, transport, agriculture, industry, etc.) in Suceava will implement innovative measures to reduce greenhouse gas emissions that will contribute to reducing CO2 emissions.
3. **Strategic Objective (SO) 3** – The Suceava community will adopt practices to reduce energy consumption, increase energy efficiency and increase individual carbon footprints that will contribute to reduction in electricity and heat consumption
4. **Strategic Objective (SO) 4** – Suceava public administration will be a national model and a local leader in promoting sustainable urban development
5. **Strategic Objective (SO) 5** – Circular economy will be a basic practice for both the development of the city through projects implemented by the municipality, the private sector and for each inhabitant of Suceava that will lead to a decrease of greenhouse gas emissions
6. **Strategic Objective (SO) 6** – Suceava academic environment will be a source of inspiration for the community in terms of innovation and technology in addressing measures and projects to reduce CO2 emissions.

The goals included in the Climate City Contract are covering (in an integrated vision and overall approach) the entire goals and ideas included in the already local approved strategic documents (local development strategy, sustainable urban mobility plan, sustainable energy action plan) as the Action Plan is acting like an ”umbrella strategic document”, for the entire city territory with a strategic, sustainable approach aimed at achieving objectives that determine the reduction of greenhouse gas emissions mainly (and as a tangible result from implementation of the actions) but more important with a direct effect on local economic development, improving the quality of life, creating strategic partnerships between local stakeholders and local administration and direct benefits for each single citizen (with connections to public transport, smart mobility, energy efficiency, heating, alternative energy and waste recycling), for public administration in relationship with common initiatives with academic and private sector for research, innovation and sustainable projects/actions and for any other local stakeholder included in the local Net Zero Coalition.

Local stakeholders (especially citizens) have been approach and included into the development phase of projects concerning for example residential buildings rehabilitation, green areas that are included in the Action Plan. These working groups (based on local city decision) will also work together with the municipality’s’ transition team in the implementation and evaluation phases of each specific project.

Within its efforts to engage stakeholders and citizens to local actions related to climate neutrality another initiative (linked with city hall website) was launched in the second half of 2023, called Centre for Innovation and Civic Imagination (CIIC) with the main objective as increasing the degree of citizen involvement in the process of adopting and applying decisions of public interest, but also increasing citizens' trust in local administration. Thus, the framework is created for defining the active role of the citizen, respectively the transmission of ideas, proposals and suggestions in the development and implementation of public projects especially the ones included in the Action Plan. Each single action/project progress, direct results and achievements will be transmitted, analysed and evaluate together with local stakeholders (especially citizens) in order to ensure a better, real and accurate understanding and finally acceptance for proposed measures and for the impact against economic, social and ecological co-benefits both for the quality of life into the city and for each individual benefit. Public debates will be held on various topics of interest, in which representatives from various fields of activity will participate, such as: education, health, social assistance, infrastructure, environmental protection, public administration, culture, local councillors of Suceava City Council, employees from Suceava City Hall, representatives of civil society and the business environment and other interested factors.

At the same time, CIIC plays an essential role in reinvigorating the civic and initiative spirit of citizens, increase transparency and long-term strategic local planning with results on improving the performance of local public administration. The Centre is a permanent laboratory in which various forms of collaboration between relevant

local actors in the municipality are developed. It will also test new ideas and innovative projects, aiming to use the creative potential of the Suceava community to develop urban innovation policies and implement the measure that conduct to climate neutrality.
The internal Municipality's transition team includes public servants with experience in management, finance, technical, evaluation, publicity and dissemination. There are regular meetings with all involved persons: once per week in the presence of leading staff, at least twice per month with representatives from construction companies and private operators (if necessarily) and also anytime when it is required for the smooth implementation of the projects.
All these ambitions mentioned above are expected to generate real, significant, measurable changes /improvement of the life quality in Suceava city and radically reduce GHG emissions. **On the roadmap for transformation of these priorities from strategy to reality, all the local stakeholders will be involved actively and responsible for achieving the climate neutrality efforts.** Thus, depending on their individual expertise, all the signatory stakeholders will contribute to fulfilling the strategic interventions mentioned above. They will provide expertise to the municipality and will be co-involved in various local projects (together with specific stakeholders and Municipality) that will lead to achieving the assumed climate neutrality.

4 Principles and process

The municipality has an important role to play in leading the local climate transition towards the goal set by joining the 100 Smart and Climate Neutral Cities Mission by 2030.
The role that Suceava will play in the coming period is to become the initiator of the decarbonisation process at local level by providing a concrete example of best practice, thus being the first city to commit to involving most of the local stakeholders in the climate transition process.
The actual organization and management of this ambitious process will follow an open approach towards the general public and all stakeholders, so the focus is on dialogue and collaboration between stakeholders, both through public consultation and information gathering from all sectors of interest, providing opportunities for involvement in an equitable and participatory governance.
As part of the implementation process, at least the following aspects need to be considered:
1**. Integrated Communication Strategy**
2. Create the appropriate local conditions for implementation of the Action Plan
3. Early start for projects implementation and permanent innovation
4. Increase the National level of cooperation
5. Working together at European level
6. Monitoring the implementation of the Action Plan

Suceava Municipality and the other two municipalities that are part of the mission in Romania will benefit from the implementation of the project „**NetZeRoCities – National Centre** for **Competencue and solutions for developing climatic neutral smart cities**" that started in 2023. The consortium coordinating NetZero Cities is composed of universities, public institutions, independent experts, private companies with the main objective: providing a sustainable, predictable and streamlined environment for the development of research, development and innovation activities with a focus on contributing to climate change and the digital transition.
The aim is to support access to funding, increase the innovation capacity of the RDI system to create synergies between research and business, and create the critical mass of interdisciplinary skills needed to address the societal challenges associated with the EU Climate Change Mission and it is a networking tool of excellence to increase the chances of success in the EU Climate Change Mission and the Carbon Neutrality objective.
The process of developing and monitoring a portfolio of climate neutrality projects (included into the Action Plan) can be divided into several steps:

1. Identify the current situation: The first step is to identify the current situation of the city's carbon footprint and energy consumption. This may involve analysing existing data or conducting research studies. This step can provide an overview of the city's environmental impact and help identify areas for improvement/intervention.

2. Setting targets: Once the current situation is known, the next step is to set targets for reducing carbon emissions. These targets should be ambitious but realistic and aligned with global or national climate change commitments.
3. Determine the key actions that need to be taken: Once targets are set, it is important to determine the key actions that need to be taken to achieve the targets. These actions can be soft (e.g. awareness and education campaigns), medium (e.g. energy efficiency projects) or hard (e.g. investment in renewable energy or electric transport projects). This stage should include an analysis of the costs and benefits of each action and an assessment of the impact on the objectives set.
4. Prioritize projects: Once key actions have been identified, it is important to prioritize them according to their impact, feasibility and cost. This can help to identify the actions with the greatest potential to contribute to the achievement of the objectives without exceeding the allocated budget.
5. Measuring and monitoring progress: Once projects are implemented, it is important to monitor and measure progress. This can be done through relevant performance indicators such as carbon emissions or energy consumption. It is also important to monitor the budget and time allocated to each project.
6. How to involve stakeholders: During the process of developing and monitoring a portfolio of climate neutrality projects, it is important to involve stakeholders such as the local community, the private sector, local government and non-governmental organizations. This helps to create a framework for collaboration and to increase the involvement of all stakeholders in making decisions that lead to the achievement of the agreed objectives.

The main purpose of participating in this project is to benefit from the knowhow of the team members, to transfer the best practice example (already implemented by some of the project members), to identify, adapt and implement pilot projects in Suceava, replicate the existing ones from other Romanian cities. Suceava city will to benefit from academic and technic knowledge of the project team members and more than this the issue of transferring the best practical solution for increasing the citizen's/stakeholders involvement into the implementation of Action Plan will be approach.

In the framework of the consultancy services contract for the implementation of the "100 Climate Neutral Cities by 2030" mission of the Horizon Europe program, the consultant moderated and prepared the working meetings with the members of the Local Group, together with the project team of the Municipality of Suceava.

The main reason for involvement of the stakeholders is to facilitate in a more efficient way the transfer of knowledge and experience in the field of implementation of the favourable actions. Both Suceava Municipality's team and consultant team have extensive experience in strategic planning documents and consultations on different themes, so the involvement and cooperation from the implementation phase will add value.

Following discussions between the project team from Suceava Municipality and the consultants, a clear schedule for the working groups was established.

These meetings were held over two days and each meeting lasted approximately one hour and thirty minutes. Each working group was based on the themes agreed between the contracting authority and the consultants, and the order of the working groups was set so that each day touched on all the pillars being considered to bring the Municipality of Suceava closer to fulfilling its mission.

The working groups have been named according to the theme as follows: Energy efficiency in public and residential buildings; Alternative energy; Public lighting; Public transport and traffic; Waste management; Water management; Public spaces; Cultural / social / financial / institutional systems.

Public consultation: The online questionnaire is a practical and effective method of obtaining feedback from a large number of respondents in a structured way that can be easily interpreted in analysis. The present questionnaire was completed by 534 inhabitants of Suceava Municipality and aimed to understand the existing situation in the field of climate impact as seen by citizens. The instrument applied determines an overview of the perception and behaviour of citizens regarding climate impact, which contributes to the decision maker regarding future actions to protect the environment.

Apart of the public consultation process from the design phase for the climate contract more public surveys are planned to be done in implementation phase for most relevant and with major impact actions (like the already organised ones concerning energy efficiency in public and residential buildings, smart & sustainable mobility,

electric public transport for metropolitan area) and more important during evaluation phase of the projects. This is meant to continue the process of local stakeholders (citizens also) involvement in the mission process having as a direct result the feedback regarding the results, the achievements and also regarding the suggestion for improvements/upgrade of the proposed actions.

Local stakeholders (especialy citizens) have been approach and included into the design phase of projects concerning for example residential buildings rehabilitation, green areas that are included in the Action Plan. Designated work groups have been established (with representatives from civil society, public institutions, university, architects, local experts), public surveys and public consultation (including meetings with residents from the buildings that are subject of future interventions) with a specif objective of increase the acceptance of citizens in the actions that the city is taking for its pathway to climate neutrality. These working groups (based on local city mayor decission) will also work together with the municipality's transition team in the implementation and evaluation phases of each specific project.

Within its efforts to engage stakeholders and citizens to local actions related to climate neutrality another initiative (linked with city hall website) was launched in the second half of 2023, called Centre for Innovation and Civic Imagination with the main objective as increasing the degree of citizen involvement in the process of adopting and applying decisions of public interest, but also increasing citizens' trust in local administration. Thus, the framework is created for defining the active role of the citizen, respectively the transmission of ideas, proposals and suggestions in the development and implementation of public projects especially the ones included in the Action Plan.

The internal management teams (for each project) includes public servants with experience in management, finance, technical, evaluation, publicity and dissemination. There are regular meetings with all involved persons once per week in the presence of leading staff, at least twice per month with representatives from construction companies and private operators (if necessarily) and also anytime when it is required for the smooth implementation of the projects. Apart of this for the final evaluation for each project a service contract is required with an external expert that has to evaluate and certify the project impact. Additional to these aspects in order to ensure a good control in the implementation and to ensure the monitoring and reporting of activities assumed by the Action Plan, specialized structure composed of members with experience in energy efficiency, key people from various departments of the local authority, interested local actors, stakeholders are organized and will be active in the implementation phase for projects included in Action Plan.

Suceava Municipality has a special designated **transition team that** is responsible for managing the entire process of Climate City Contract implementation, monitoring, evaluation and review. The team is composed of experts from different complementary departments within Suceava City Hall: Financial Department, Investment Department, European Projects Department, Legal Department, Urban Strategies Service, Public Procurement Service, Green Areas Directorate, Energy and local utilities Office, Owner Association and Residential Buildings Service, IT Department, Waste Management Department (Urban Energy Manager is it expected to join the team from 2024). The team is open for new members that will be able to join anytime in the next 7 years and it is coordinated by is under the coordination of the **European Projects, Investment, Strategy and Local Development Department.**

However, since the transition towards climate neutrality is not an individual responsibility, but rather a collective effort, Suceava Municipality, related to the experience in ongoing projects implementation, will launched an invitation to the entire local ecosystem to engage all the key local actors, stakeholders, private and public sector as a local **Net Zero City Coalition**, with the scope of serving the local climate-neutrality pursuits, it is expected to be created in the first half of 2024 **.** The first step was the agreement signed in 2023 between Suceava Municipality and Suceava "Stefan cel Mare" University from which at least one application for European funding was sent already (pilot project for implementation of LI FI principle).

Net Zero City Coalition's work will focus on using already-existing local strategic documents (eg., SUMP, SECAP, IUDS), out of the willingness to ensure the continuity and sustainability of priorities that were established through previously-approved framework papers but especially on **the Action Plan implementation, monitoring, reiteration and evaluation in direct correlation with the Mission's requirements** and local objectives & commitments. Maximizing the resulting effects and the impact of actions will be achieved through

efficient communication, local commitment of the all involved stakeholders, common actions seen as a complementary component to the implementation and monitoring processes.

The Climate City Contract will go through an annual review and update process, based on iteration sessions organized by the Net Zero City Coalition. Thus, based on the learning gained through the daily implementation of the Action Plan, the Municipality and its transition team will intervene with improvements in the content of the CCC related documents. As we stated, we will use a model of reflexive governance, in which participation and deliberation across the Net Zero City Coalition will help us implement an intervention system based on common commitment, by taking into account the perspectives of all the actors involved. During the annual iteration sessions for CCC review, all the knowledge systems provided by the Net Zero City Coalition members will be activated, and the results of the consultations with them will be recorded in the updated version of the documentation. Citizens' involvement will play an important role in this regard. Thus, both the elaboration of the Action Plan and its implementation, respectively its update, will allow us to implement an innovative governance model, which will be reflected in the future iterations for the CCC review.

The Climate City Contract's implementation will be monitored by Suceava Municipality, through its transition team, but will also require the involvement of the Net Zero City Coalition's members.

The key principles that will guide the Municipality of Suceava in the process of its Climate City Contract implementation in order to reach the objectives assumed until 2030 are: Accountability, Transparency, Open attitude to new approaches, Common initiatives for general benefits, Smart and sustainable Innovation, Multi-sector and citizen engagement**.**

As a conclusion, the roadmap from a project idea to a successful implementation for all the actions included in the Action Plan and not only these ones need to include a specific approach that need to include at least the following milestones:

- SMART objectives and goals;
- A continue activity for monitoring, evaluation and, if necessarily, adjustment of technical solution and investment plan;
- Real and permanent communication with all local stakeholders, collaboration with the other Romanian cities engaged in NZC programme, with experts from European Commission and other European city partners;
- Sustained support and engagement from local decision makers;
- Adaptation of the investment approach for each single action/policy;
- Dissemination, communication and best practice transfer;
- Adaptable, flexible and ”cost effeteness” financing scheme.

5 Signatories

Each of the signatories were part of local working groups in the CCC preparation process, they are partners with municipality in common investment projects from some of these are included in the Action Plan. In some specific actions we have already started the cooperation in the preparation phase for specific projects from different sector (for example for the electric busses with local public transport operator, for rehabilitation of heating transport and distribution network with local private operator) and we will continue working for implementation and evaluation phase, as these projects are into the implementation phase already with the grant contracts signed in 2023 or 2024. Suceava Municipality sees the Climate City Contract as a living document, that will be updated and upgraded, as for implementation monitoring sessions will be organized, along with annual re-iteration sessions, in order to fix the necessary updates, depending on the evolution of the local / regional / national / European context and the new European and national directives to be set with regards to climate neutrality and also to get engagement from a local / regional mix of private and public actors.

Name of the institution	Sector/Area	Legal form	Name of the responsible person	Position of the responsible person
Suceava Municipality	Public Administration	Legal person under public law	Ec. Ion Lungu	Mayor
”Stefan cel Mare” University of Suceava	Education & RDI	University	Prof. Dr. Eng. Mihai Dimian	Rector
S.C. TPL S.A.	Public transport operator	Joint-stock company	Eng. Gabriel Petruc	General Manager
S.C. ACET S.A.	Regional water and sewage operator	Joint-stock company	Eng. Ștefan Groza	General Manager
S.C. THERMONET S.A.	Local heating transport and distribution operator	Joint-stock company	Eng. Mugurel Corlatan	General Manager
Local Council of Suceava City	Public Administration	Legal person under public law	Eng. Lucian Harșovschi	Councillor – Deputy Mayor
Centre for Innovation and Civic Imagination (CIIC)	Local civil initiative	Legal person under public law	Architect Ioan Lungu	Councillor – Manager
Suceava “Centru”owners' association	Administration	Owners' association	Cătălin Alexandroaie	President