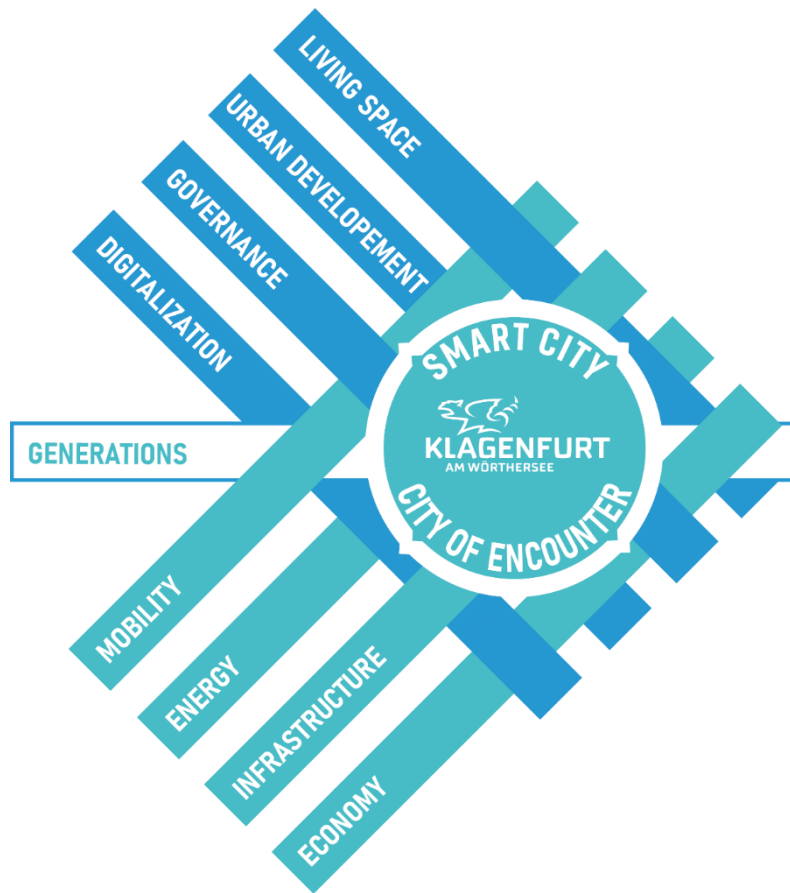


Smart City Climate Strategy

Klagenfurt am Wörthersee



Introduction

The Smart City climate strategy of the provincial capital of Klagenfurt am Wörthersee describes the city's ambitious goals as well as the measures and projects derived from them to ensure sustainable, socially and environmentally friendly development for current and future citizens of the city. The basic idea of a smart city was already anchored in the STEK 2020+ urban development concept and in the mission statement.

The municipal department for climate and environmental protection, together with the asset management department of Stadtwerke, was commissioned by the mayor and the Stadtwerke board to set up a working group to carry out preliminary work for a comprehensive Smart City climate strategy at the beginning of 2017. In a moderated workshop with scientific support in May 2017, a vision, strategic principles and eight fields of action were proposed by the core team, consisting of the responsible managers of the city and municipal utilities.

The preliminary reports were presented at the meeting of the Klagenfurt City Senate in September 2017. In the form of a resolution in principle, the City Senate commissioned eight working groups to develop the eight fields of action of the Smart City Climate Strategy in detail. This was followed, in individual working groups for each field of action, by the definition of strategic goals, main indicators with target values and recommendations for action in the form of a detailed list of measures and projects.

During the meetings of the City Senate (on 20 November 2018) and Municipal Council (on 27 November 2018) the Smart City Climate Strategy of the City of Klagenfurt was approved and added to the 2019, mission statement of the City of Klagenfurt a. Ws. The Climate and Environmental Protection Department was tasked with coordinating the implementation of the Smart City Climate Strategy in cooperation with the city's internal specialist departments and the Klagenfurt municipal utility company, as well as with preparing an annual monitoring report. In order to take account of current and future developments, the Smart City Climate Strategy is designed as a living paper.

In April and November 2019, two workshops were held with the core team to clarify the next steps. Simultaneously the content specific to each area of action was devised and optimised in recurring working group meetings.

The results of the workshops and working group meetings were used to create the first versions of the Smart City Climate Strategy, while version 5.0 was published in December 2019.

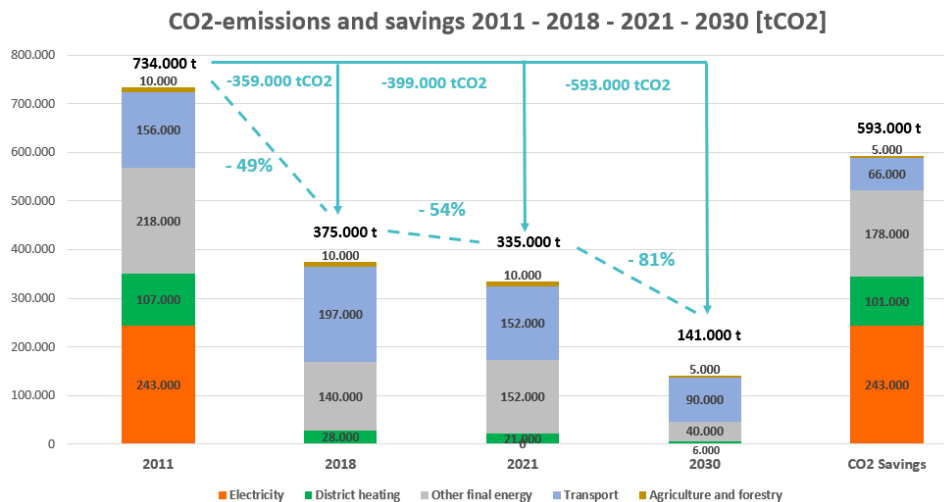
The 1st monitoring report was presented to the City Senate in December 2019, during which the synchronisation of the indicator system with the SDGs (Sustainable Development Goals) was proposed.

Due to the coronavirus pandemic, the core team was only able to hold one meeting in 2020, during which the course was set for three major changes to the Smart City Climate Strategy, which were subsequently finalised and presented in version 6.0. The changes adopted by the City Senate (20 April 2021) and the Municipal Council (25 May 2021) include the adaptation of the Smart City Climate Strategy to the United Nations' SDGs and, derived from this, the introduction of a ninth field of action - Generations - in order to take greater account of the social aspects and the adaptation of the strategy's objectives to the new national and international climate protection requirements. Due to successful emission reductions, the greenhouse gas reduction targets for 2030 were adjusted from 40 % to 70 %, and the overarching goal of a 90% reduction in emissions by 2050 was brought forward to 2040.

In autumn 2021, the provincial capital Klagenfurt a. Ws. decided to apply to participate in the EU Cities Mission for 100 climate-neutral and smart cities by 2030 and to set even more ambitious climate targets for the Smart City Climate Strategy. The European Commission's commitment in spring 2022 brought forward the achievement of climate neutrality to 2030. This makes Klagenfurt a. Ws. the only city in Austria to be part of the EU Cities Mission, making it an Austrian and international pioneer in climate and environmental protection. On 12 October 2023, as part of the EU Cities Mission and the development of the Climate City Contract (CCC) as a roadmap for achieving climate neutrality (based on the measures of the Smart City Climate Strategy), the city was one of only 10 cities in the EU Cities Mission to be awarded the EU Mission Label. The award of this label as certification and plausibility check of the climate protection targets was subsequently the reason for the application to become a European Green Capital for the year 2026. This application was officially submitted on 30 April 2024.

In order to be prepared for achieving the goals of the EU Cities Mission, the city of Klagenfurt a. Ws. has further optimised its strategy by participating in the funding programme "fit4urbanmission" with the project "Mission Klagenfurt climate-neutral and smart by 2030" (short: Mission KS30; project sponsor: IPAK GmbH; duration: 10/22 - 03/23). As part of the FFG-funded project, a model for quantifying urban CO₂ emissions, indicators based on the UN's Sustainable Development Goals (SDGs) and an impact monitoring model were developed. Furthermore, the first youth foresight process was initiated in order to offer young people participatory opportunities for co-design and to integrate their vision of a climate-neutral Klagenfurt a. Ws. by 2030. This groundwork laid the foundation for the participation in the EU Cities Mission described above and subsequently the Urban Transition Mission in the "Mission Innovation" initiative of the Global Covenant of Mayors and the Austrian Pioneer Cities Programme.

The goal of the current version 7.1 of the Smart City Climate Strategy is to achieve climate neutrality by 2030. This strategic orientation is now being followed by the operational implementation of central measures throughout the city and the implementation of various compensation measures beyond the city limits in the Carinthian central region. To this end, key projects have been identified and quantitative CO₂ savings potential estimated. The majority of the projects are dependent on funding from national and international funding programmes. The path to climate neutrality is illustrated in the diagram below.



In the initial situation based on 2011, greenhouse gas emissions of around 734,000 tonnes were calculated for the urban area. These emissions were already down 49% by 2018 and 54% by 2021. The remaining 335,000 tonnes are to be reduced to -81% (194,000 tonnes) by 2030 with the implementation of key measures and the remaining 19% (141,000 tonnes) offset with compensation measures.

In the current version of the strategy paper 7.1, the proposed measures and projects are listed in a separate annex. A total of 59 experts from the city, municipal utilities and external organisations have been involved in the creation of the Smart City Climate Strategy to date. The necessary adjustments and the implementation status of the measures and projects in the fields of action are recorded in the 5th monitoring report.

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Vision

Smart City Klagenfurt am Wörthersee is an emission-neutral, energy-efficient and resource-conserving living space with a high urban quality of life and responsible citizens, which is very well integrated with the Alps-Adriatic region.

Strategy

Smart City Klagenfurt am Wörthersee serves to solve complex technical, ecological, economic and social challenges in the growing urban agglomeration of the provincial capital of Klagenfurt am Wörthersee in the central Carinthian region.

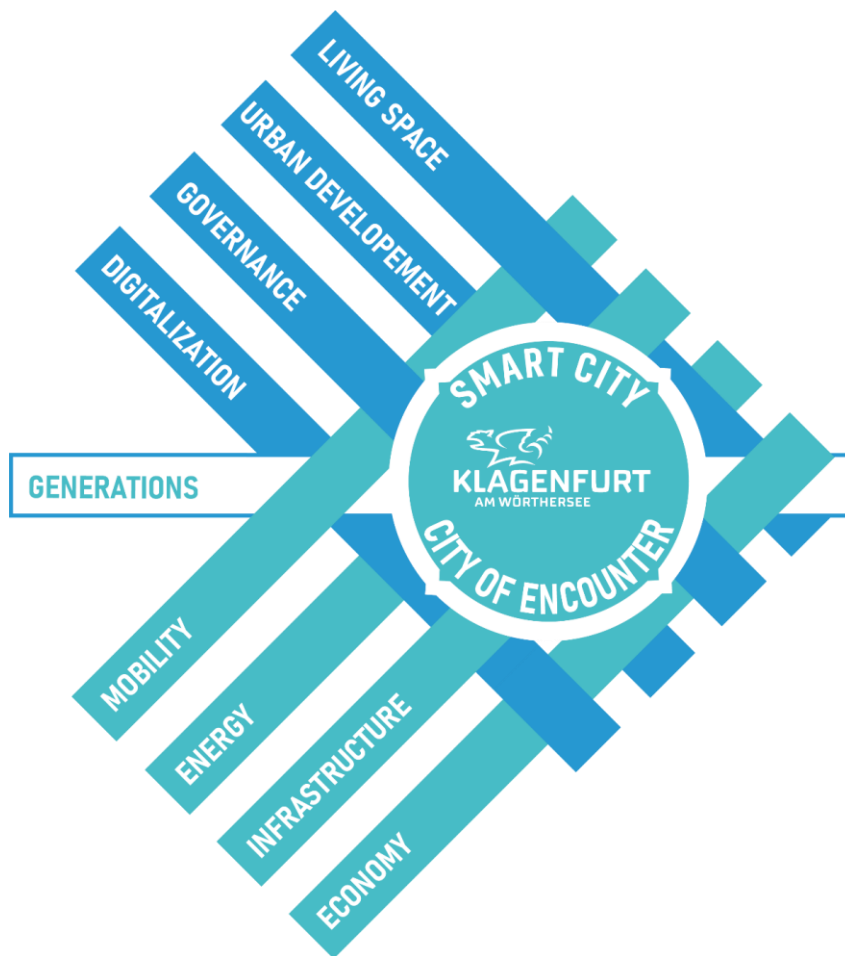
Klagenfurt am Wörthersee has decided to initiate a dynamic process as a smart city in order to competently meet the demands of the future. Klagenfurt am Wörthersee provides space for innovation and creates high-quality foundations for urban quality of life in a responsible, post-fossil, digitalised society. Active development takes place through a participatory process and in cooperation with cities and municipalities in the agglomeration area.

Goals

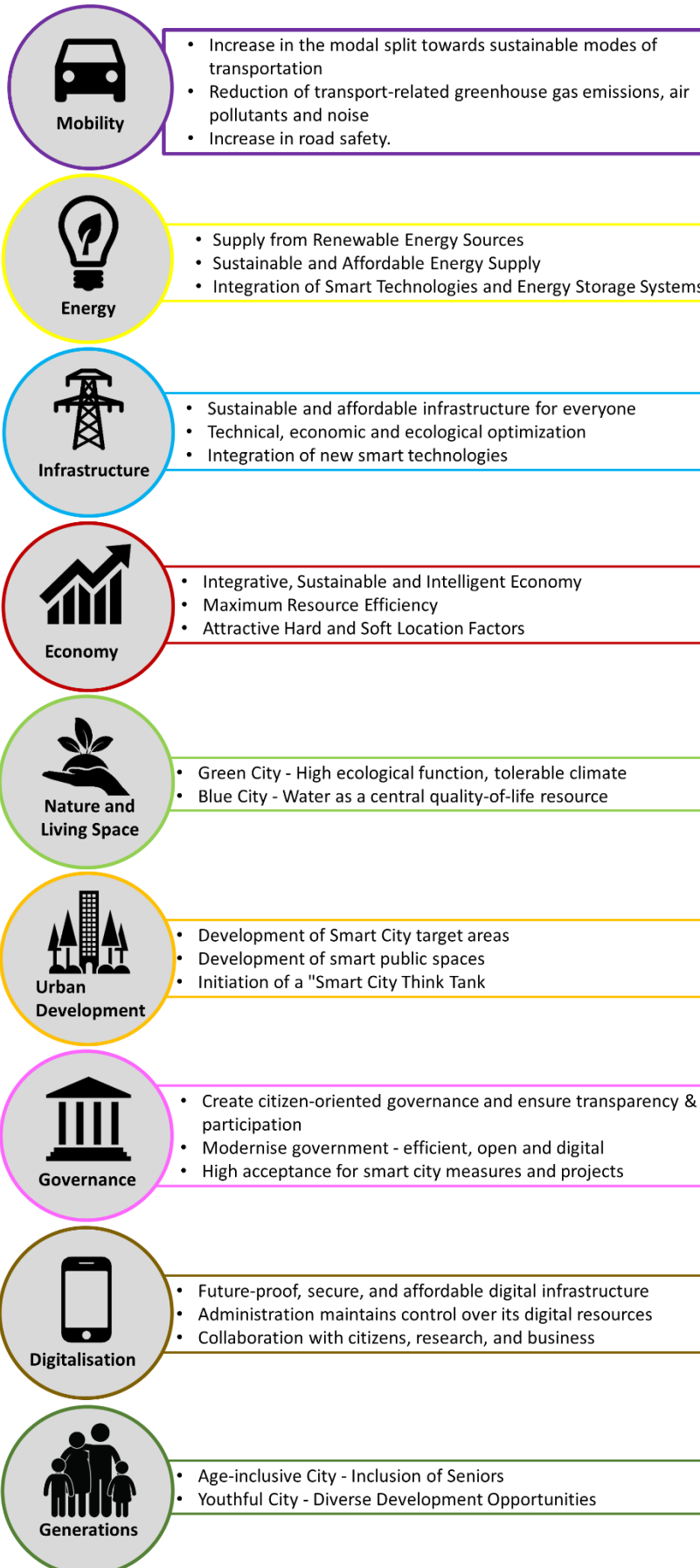
Based on the existing concepts and political decisions, the overarching goal is to reduce the greenhouse gas emissions, by 2030, of the city of Klagenfurt am Wörthersee by 81% compared to the base year 2011, through direct CO₂ savings, as well as to offset the remaining residual emissions of 19%. Klagenfurt am Wörthersee is therefore striving to achieve climate neutrality by 2030. By 2040, 90 % should be saved. At the same time, the good quality of life for the population and future generations is to be further improved and sustainably secured. Taking into account the 17 Sustainable Development Goals (SDGs) of the United Nations, the global sustainability goals of the UN Agenda 2030 are to be fulfilled.

Fields of Action

The fields of action developed cover existing concepts and initiatives of the city as well as requirements at national and international level. The Smart City Climate Strategy Klagenfurt a. Ws. thus combines decisive guidelines and ideas that serve to identify the city as a Smart City.



The strategic goals of the 9 fields of action



Smart City Klagenfurt a. Ws. – Fields of Action	
Fields of Action	Presence in existing concepts
1 - Mobility	A B C D E F G H
2 - Energy	A B C D E F G H
3 - Infrastructure	A B C D E F G H
4 - Economy	A C E F G H
5 - Nature and Living Spaces	A B C D F G H
6 - Urban Development	A B C D G
7 - Governance	B C D E G
8 - Digitalisation	A B C D E F G H
9 - Generations	A C E H

Comparison of the content of the fields of action with existing concepts and initiatives of the city of Klagenfurt a. Ws. as well as with Smart City-relevant guidelines at national and international level:

A Urban development concept Klagenfurt a. Ws. 2020+

The location and its surroundings - positioning in the Alp-Adria region, sustainable urban development - safeguarding the quality of the environment, maintaining and improving a high quality of life, strengthening the competitiveness of Klagenfurt a. Ws. as a business and employment location.

B SEAP - Sustainable Energy Action Plan

Mobility, electricity and heat generation, buildings, public relations, consumption incl. nutrition, disposal (waste, sewage)

C Mission statement of the city of Klagenfurt a. Ws.

Mobility, energy, infrastructure, economy and employment, quality of life, administration, population, information and communication technology, urban development, people

D e5 Gemeinden

Development planning and spatial planning, municipal buildings and facilities, supply and disposal, transport and mobility, communication and cooperation, internal organisation

E KLIEN - Climate and Energy Fund

Buildings and settlement structures, mobility, technical infrastructure, economy and population, politics and governance

F BMVIT - Federal Ministry for Transport, Innovation and Technology

Urban structure, water and sewage, products and waste, urban management, people and the environment, mobility, economy, energy

G Climate and energy strategy #mission2030

Austrian, European and global framework, climate-friendly economic system, sustainability, security of supply, energy as an overall system, decarbonisation, mobility of the future, research and innovation, digitalisation, sustainable finance, infrastructure, climate change adaptation

H German Institute for Standardisation

Buildings - infrastructure - urban processes, mobility and logistics, protection and security - quality of life, digital city (ICT), energy, production and economy

Measures and Projects

In nine working groups experts developed measures and projects for implementation for each individual field of action, which are listed in an annex. This annex is to be understood as a working aid and serves to support and guide the implementation of the Smart City Climate Strategy. Measures and projects with financial implications, after detailed planning and a financial feasibility check, must be submitted to the political bodies for approval.

1 Mobility



The Klagenfurt am Wörthersee 2035 mobility concept is guided by the 2014 Mobility Plan and is based on a mission statement, which forms the basis for the subsequent definition of objectives, measures and projects. At the heart of this mission statement is the aspiration to provide as many people as possible in the city and region with an efficient and attractive transport system for managing their daily journeys, while at the same time keeping an eye on the overall sustainable development of the city and region. Based on this, the mobility concept is orientated along the following guidelines:

- Compact and attractive
- High-performance and efficiently integrated
- Fair and social
- Safe
- Environmentally friendly and resource-saving
- Healthy

Strategic goals

Goal 1: Increase the modal split in favour of eco-mobility.

Goal 2: Reduction of transport-related greenhouse gas emissions, air pollutants and noise.

Assigned sustainability goals: **SDG11** - Sustainable cities and communities, **SDG13** - Climate action

Goal 3: Increase road safety.

Assigned sustainability goal: **SDG3** - Good health and well-being

In addition, **SDG9** - Industry Innovation and Infrastructure was added to field of action 1, which among other things makes a modern and sustainable infrastructure for all residents compulsory.

Goals	Indicators	Current value	Target value
Increasing the modal split in favour of eco-mobility	Modal split	32 %	In domestic transport to 50 % by 2030 and to 70 % by 2040 Outer city limit transport to 40 % by 2030 and 60 % by 2040
	Passenger kilometres	26 million	Doubling of passenger kilometres to 40 million per year by 2030, tripling in the long term
Reduction of traffic-related emissions, air pollutants and noise	GHG emissions	152.000 t	2030: 90.000 t 2040: 0 t
	Air measurements - PM ₁₀ - NO ₂	See diagrams (5.MB)	Compliance with the new EU Air Quality Policy
	Number of people exposed to noise (>55dB, DEN)	12.106	Compliance with the Environmental Noise Policy
Increasing road safety	Number of accidents: - With personal injuries - With traffic fatalities	624 2	Declining 0

Note: GHG emissions (2021); modal split, noise and accidents (2022); passenger kilometres, air measurements (2023)

2 Energy



In 2007, the EU member states launched the Strategic Energy Technology Plan (SET Plan) in response to the global shortage of oil and natural gas caused by rising energy consumption, falling production volumes and global warming in order to secure an affordable and future-proof energy supply in the long term. In the context of smart cities, the SET Plan follows the goal of developing low-carbon technologies, improving the competitiveness of innovative renewable energy technologies and realising targeted implementation projects. Within ambitious European and national smart city projects, the topic of post-fossil urban living is being increasingly addressed. Post-oil cities (POCs) aim to maintain modern and highly developed structures despite reduced fossil fuel resources without sacrificing comfort (smart cities).

A large number of funding programmes at national and European level are used to promote the development of strategies, technologies and implementation solutions that enable cities and their residents to transition to an energy-efficient and climate-friendly way of life. For example, the Smart Cities Initiative of the Climate and Energy Fund focuses on promoting urban demonstration and implementation projects, with research and technology programmes supporting the development of new technologies, technological (sub)systems and urban services for the city of the future. The overarching goal is to implement a smart city in which technical and social innovations are used and combined intelligently in order to maintain and optimise a high quality of life for current and future generations. The use of intelligent green technologies in combination with interconnected groups of social measures is intended to pave the way towards climate neutrality. The city of Klagenfurt a. Ws. is consistently implementing the gradual conversion of the urban energy system, not least with the help of the aforementioned funding programmes. In this way, further steps are being taken towards achieving the ambitious climate targets while maintaining the high quality of life for the citizens of Klagenfurt a. Ws.

Strategic Goals

The Smart City Climate Strategy Klagenfurt a. Ws. pursues three strategic goals in the field of energy:

Goal 1: Supply from renewable energy sources

Assigned sustainability goal: **SDG7** - affordable and clean energy

Goal 2: Sustainable and affordable energy supply

Assigned sustainability goals: **SDG4** - Quality education, **SDG7** - Affordable and clean energy, **SDG11** - Sustainable cities and communities, **SDG13** - Climate conserving action

Goal 3: Integration of smart technologies and energy storage systems

Assigned sustainability goal: **SDG7** - affordable and clean energy

Goals	Indicators	Current value	Target value
Supply by means of renewable energies	Installed capacity of photovoltaic systems in the urban area: - kWp - kWp per capita	66.172 0,63	Increasing
Sustainable and affordable energy supply	Share of heating cost subsidy recipients based on households per year [%]	7,7	Declining
Integration of smart technologies and energy storage systems	Capacity of installed Electricity storage in the urban area [kWh]	9.904	Increasing

Note: Dates 2023

3 Infrastructure



Technical infrastructure refers to all structural and technical elements below and above the ground that enable the city to function. Technical infrastructure does not include social infrastructure such as kindergartens, schools, universities, sports, cultural and health facilities (these are considered separately). The technical infrastructure as the basic infrastructural equipment of the provincial capital of Klagenfurt a. Ws. forms the basis for social and economic activity. These are water, sewage, gas, district heating, road and electricity networks as well as telecommunications facilities, i.e. long-lasting facilities and networks of all "material" types. They enable functioning accessibility, supply, business and communication within the city.

The focus is particularly on infrastructures that are under the direct influence of the city and other infrastructure operators, while strategic agreements need to be made with the latter. Due to technological, social, ecological and economic change, there is a constant need for action to modernise these networks.

Strategic goals

The Smart City Climate Strategy Klagenfurt a. Ws. pursues three strategic goals in the field of technical infrastructure:

- Goal 1:** Sustainable and affordable infrastructure
Assigned sustainability goal: **SDG6** - Clean water and sanitation
- Goal 2:** Technical, economic and ecological optimisation
Assigned sustainability goal: **SDG9** - Industry, innovation and infrastructure
- Goal 3:** Integration of new smart technologies
Assigned sustainability goal: **SDG7** - affordable and clean energy

Goals	Indicators	Current value	Target value
Sustainable and affordable infrastructure	System Average Interruption Duration Index (SAIDI): Average power outage duration due to unplanned power outages [minutes per customer per year]	3.20 minutes (E-Control average: 23 minutes)	Constant / Declining
Technical, economic and ecological optimisation	Amount of total investment for the expansion, improvement and renovation of the entire municipal utility infrastructure [€ per year]	36.24 million	-
Integration of new smart technologies	Number of installed and active bidirectional electricity meters or electricity prosumers (consumption and feed-in to the public electricity grid or an energy community) [Units e.g. household, business per year]	1,358 systems / metering points	Increasing

Note: Dates 2022

4 Economy



Strategic goals

The Smart City Climate Strategy Klagenfurt a. Ws. pursues three strategic goals in the field of action Economy:

Goal 1: Integrative, sustainable and intelligent economy: We are all part of the economy. The economy is therefore a cross-sectional issue with direct relevance to all fields of action. Business in Klagenfurt a. Ws. is integrative, sustainable and intelligent.

Assigned sustainability goals: **SDG4** - quality education, **SDG8** - humane work and economic growth

Goal 2: Highest possible resource efficiency: Klagenfurt a. Ws. strives for sustainable economic development characterised by the highest possible resource efficiency and the furthest reaching elimination of pollutant emissions and noise. With the consequent implementation of all the aspects of a green economy strategy, the state capital's quality of life and attractiveness for its residents and visitors as well as for businesses increases.

Assigned sustainability goals: **SDG9** - Industry, innovation and infrastructure, **SDG12** - Responsible consumption and production patterns

Goal 3: Attractive hard and soft locational factors: Klagenfurt a. Ws. has attractive hard and soft location factors. These play a central role in increasing the competitiveness of the business location. Embedded in relevant strategies of the province and the city, the innovation capacity is strengthened and thus sustainably strengthening the economy.

The very high importance of the tertiary sector as well as the central function for the federal state of Carinthia gives the city's Smart City activities a significant multiplier effect.

Due to the horizontal nature of the economy field of action in relation to all fields of action of the Smart City Climate Strategy, there are indicators that can be used to measure progress towards the Smart City. Economic incentives are of central importance in all green economy concepts.

Resource efficiency and locational factors are outstanding areas in this respect. These in turn can be broken down into the sub-areas of business promotion, tourism, trade fairs & congresses, markets, inner city regeneration, location marketing, leading companies, technology, innovations, start-ups, attracting businesses, the Alps-Adriatic region, science and research.

Goals	Indicators	Current value	Target value
Integrative, sustainable and intelligent economy	Number of start-ups	100	Increase by 20 p.a.
Highest possible resource efficiency	Vacancy rate [%]	9	Declining
Attractive hard and soft location factors	Economic promotion per year [€]	200.000	400.000

Note: Dates 2023

5 Nature and Living Spaces



The green spaces in the countryside and in the city as well as on the buildings enable a healthy urban climate despite climate change. The national and international environmental standards for air, water, soil and noise are complied with. Nature has sufficient retreat areas with high biodiversity.

The (temporary) use of residual urban areas such as wasteland, vacancies or demolition sites also contributes to greater resource efficiency. When developing measures and projects, know-how and experience from other projects and functioning initiatives should be used.

Strategic goals

The topics addressed in the nature and habitat field of action focus on the preservation or expansion of public green and water storage areas and the unlocking of the urban area of Klagenfurt a. Ws. in order to avoid an urban heat island (UHI) effect and increase the quality of life of residents in the long term, as well as to ensure ecological sustainability. Quality of life factors, such as recreation close to home, are not sufficiently institutionally mandated and available.

The aim of this field of action is therefore to develop strategies, measures and projects that lead to an improvement in the two areas described in more detail below.

Goal 1 Green city - high ecological function, tolerable climate: The countryside as a whole (forests, agricultural land, bodies of water) is secured for recreational use and equipped with good accessibility and pedestrian paths. At the same time, the countryside fulfills high ecological functions and contributes to climate change adaptation and the fulfillment of high ecological standards. As producers, farms play a central and formative role in safeguarding and preserving the countryside and its ecological function. In populated areas, trees and other vegetation measures and projects (e.g. green roofs and façades) create a tolerable microclimate.

Assigned sustainability goals: **SDG1** - No poverty, **SDG2** - No hunger, **SDG11** - Sustainable cities and communities

Green city strategy

Green City Klagenfurt am Wörthersee. Compilation and grouped processing of green issues (agriculture and forestry, ecology, open landscape), taking into account their interactions.

Goal 2 Blue city - water is a central aspect in quality of life: the topic of water in the city is dealt with comprehensively. Drinking water is secured. Surface waters and groundwater are of high quality, the groundwater balance is controlled to the necessary extent. Settlement areas are protected from flooding. In settlement areas, close attention is paid to the water storage function of the soil and this is used extensively.

Assigned sustainability goal: **SDG6** - clean water and sanitation

Blue city strategy

In future, the topic of water in the city will be dealt with in an integrated manner (across projects, across administrations). The water agendas - drinking water, running and standing water, groundwater, rainwater, daytime water and wastewater - are strategically organized and treated synergistically. The possibilities of retention and receiving water are used to deal with runoff.

Furthermore, assigned into, **SDG15 - Life on land**, due to the focus on the conservation, restoration and sustainable use of ecosystems, as well as **SDG13 - Climate action**, which focuses on reducing climate impact through climate action, among other things, and finally SDG10 - Reduced inequalities, with a focus on barrier-free use and equitable access to blue and green infrastructure for all residents, were assigned to field of action 5.

Goals	Indicators	Current value	Target value
Green city - high ecological function, compatible climate	Proportion of sealed surfaces in the total area of the urban area [%]	16,41	t.b.a
	Green space volume [m ³ /m ²]	4,58	t.b.a
Blue city - water is a key resource for quality of life	Average nitrate concentration in drinking water [mg/l] (limit value 50 mg/l)	12,8	Declining

Note: Sealed surfaces (2021); nitrate concentration (2022)

6 Urban Development

The foundation of sustainable Smart City development is a strategy that is harmonised with the spatial urban development concept. The provincial capital of Klagenfurt am Wörthersee is also pursuing this path as part of its Smart City climate strategy - the four overarching topics defined in the urban development concept are being continued in a focussed manner:

- The location of Klagenfurt a. Ws. and its surroundings - positioning in the Alpe Adria region
- Sustainable urban development - protecting environmental qualities
- Maintaining and further improving the quality of life
- Strengthening the competitiveness of Klagenfurt a. Ws. as an attractive business and labour location

Strategic goals

The Smart City Climate Strategy Klagenfurt a. Ws. pursues three strategic goals in the field of urban development:

Goal 1: Development of smart city target areas

Assigned sustainability goal: **SDG4** - Quality education

Goal 2: Development of smart public spaces

Goal 3: Initiation of a "Smart City Think Tank"

In addition, **SDG11 - Sustainable Cities and Communities** was assigned to field of action 6, as both pursue the common goal of participatory and sustainable urban planning and development.

Goals	Indicators	Current value	Target value
Development of smart city target areas	Number of Smart City target areas	8	Increasing
Development of smart public spaces	Number of urban development contracts	2	Increasing
Smart City Think Tank	Number of work meetings per year	2	1

Note: Dates 2023

7 Governance



Governance is a cross topical issue in the Smart City process in Klagenfurt a. Ws. In addition to traditional administration and corporate management, governance is understood as the implementation principle of the Smart City climate strategy: the governance field of action prepares the ground for the other fields of action and is in constant interaction with them. Digital processes for the efficient design of official channels are mapped in the digitalization field of action.

The governance field of action should contribute to this (guidelines):

- To improve cooperation between politics, administration, business, science and citizens.
- To make the organization of policy and change processes more cross-topical.
- To create awareness that the Smart City Klagenfurt a. Ws. affects all stakeholders and can only be successfully implemented together.

Strategic goals

For the field of action Governance three main goals for the implementation of the Smart City Climate Strategy have been defined. These are based on the aforementioned guidelines and are to be achieved by means of the measures and projects described below.

Goal 1: Citizen-oriented administration with transparency and participation

Assigned sustainability goals: SDG1 - No poverty, SDG10 - Reduced inequalities, SDG11 - Sustainable cities and communities, SDG16 - Peace, justice and strong institutions

Goal 2: Modernized administration - efficient, open and digital

Goal 3: High level of acceptance for smart city measures and projects

Also assigned to field of action 7 are, **SDG5 - Gender Equality**, due to the need to address gender-specific issues, and **SDG13 - Climate Action**, which aims to achieve adaptability to climate-related hazards with the help of policy.

Smart City Climate Strategy Klagenfurt a. Ws. - Version 7.1

Goals	Indicators	Current value	Target value
Citizen-oriented administration with transparency and participation	Number of district meetings Number of mayor's consultation hours Ratio of received/completed „Augen Auf!“ requests [%]	2 180 98,97	Increasing or stable
Modernized administration - efficient, open and digital	Usable range of electronic and pdf forms (www.klagenfurt.at)	70 e-forms, 142 pdf forms (including 57 information and leaflets)	Increasing
High level of acceptance for smart city measures and projects	Number of climate protection contracts	1	Increasing

Note: Dates 2023; Augen Auf! requests since start 2018 until May 2024

8 Digitalisation



The rapidly increasing digitalization of all areas of life is a very big topic in society in general and this is becoming increasingly noticeable in everyday life, especially in cities. The influence of digitalization on the economy and society poses challenges for cities and communities and calls on them to use digitalization to generate added value for both their citizens and the regional economy. Social networks, online shopping, e-government and apps with a wide range of functions, together with numerous mobile devices, enable new services and forms of communication between public administration and citizens. As a result of digitalization and the associated transformation of the urban stakeholder structure, cities must therefore address the question of who will control the fate of cities in the future and with what influence.

In the provincial capital of Klagenfurt a. Ws., digitalization has already been part of everyday practice for many years (in some areas for decades), but for a comprehensive Smart City implementation, there must be a clear quality offensive and a cross-departmental implementation of information pools that are continuously updated as part of well thought-out business processes.

In order to take a strategic and proactive approach, the city administration of Klagenfurt a. Ws. and its service provider Stadtwerke Klagenfurt a. Ws. are working together on the design and development of digital infrastructures.

The aim is to develop strategies and skills, to view data sovereignty (data > information > knowledge) as a location factor and to position the municipal companies and administration as digital competence providers.

Strategic goals

The Smart City Climate Strategy Klagenfurt a. Ws. pursues three general strategic goals in the field of smart digitalization:

Goal 1: Sustainable, secure and affordable digital infrastructure: Ensuring sustainable, secure and affordable digital infrastructures for all sections of the population and using the opportunities of digitalization for all urban infrastructures. Due to the great importance of such basic infrastructure, the city actively shapes the development and maintains competencies and ownership within its own sphere of influence.

Assigned sustainability goals: **SDG4** - Quality education, **SDG9** - Industry, innovation and infrastructure, **SDG11** - Sustainable cities and communities

Goal 2: Administration is keeping the digital resources within the control of the city of Klagenfurt: Positioning the administration and municipal companies to maintain control over their digital resources as innovation-oriented organizations that carry out their tasks with corresponding added value for their citizens and for the regional economy and thus have a role model effect in the regional environment. The digital skills of employees are to be consistently expanded on an ongoing basis.

Assigned sustainability goals: **SDG16** - Peace, justice and strong institutions, **SDG17** - Partnerships for the goals

Goal 3: Cooperation with citizens, research and business: Forcing cooperation with citizens, research and business in the field of digitalization (citizen services, eGovernment, online services of the City of Klagenfurt a. Ws. and citizen participation).

Assigned sustainability goal: **SDG16** - Peace, justice and strong institutions

Goals	Indicators	Current value	Target value
Sustainable, secure and affordable digital infrastructure	Broadband coverage in the urban area (fiber optic)	See graphic (5.MB)	Increasing
Administration is the authority for digital resources	Digitalization training and continuing education for municipal employees Municipal administration	239	Increasing
Cooperation with citizens, research and business	Number of KLARA requests	2758	Increasing

Note: Digitization training and further education (2023); KLARA requests (start April - May 2024)

9 Generations



An intact living space balances both people and nature. The Smart City Klagenfurt a. Ws. enables people to live in an open, socially balanced, child- and senior-friendly, collaborative society and to actively shape their living environment. The balance between developed and open space ensures a low potential for social conflict and a high level of satisfaction. There is a generally high awareness of resource conservation and sustainable lifestyles. Quality of life factors such as local supply of goods and services, affordable care (children, the elderly, people, nursing care, etc.) are not institutionally anchored.

Adequate and people-oriented solutions are made possible through the participation of those affected. Proactive and innovative development is promoted by focusing on potential. Sustainable spaces in the Smart City Klagenfurt a. Ws. should therefore be developed in a participatory manner. Not only investors but also creatives, start-ups, artists, young and old people are to be involved by means of various analogue and digital formats as well as blended participation. The focus is on process-oriented development.

Strategic goals

Goal 1 Age-inclusive city - inclusion of senior citizens: Older people are integrated into city life and can age independently and productively in an ecologically and economically pleasant environment. The inclusion of older people is promoted through intergenerational offers, smart technologies and support for engagement.

Assigned sustainability goal: **SDG11** - Sustainable cities and communities

Sustainable city strategy

Bringing together, integrating, bundling existing and developing new services. Development and adoption of age-appropriate digital offerings.

Goal 2 Young city - diverse development opportunities: There are many offers that motivate young people to stay and live in the provincial capital of Klagenfurt. There are numerous development opportunities for young people, differentiated by age group. There is also space for youth cultures.

Assigned sustainability goals: **SDG4** - Quality education, **SDG8** - Decent work and economic growth, **SDG11** - Sustainable cities and communities

Young city strategy

Live an expanded concept of education. Encourage young people to act proactively. Comprehensive participation of young people in the development of the city. Create more space and more places for young people.

In addition, **SDG3 – Good Health and Well-being**, which focuses on ensuring healthcare for all residents, **SDG5 - Gender Equality** and **SDG10 - Reduced Inequalities** were added to field of action 9 in order to focus more on the social aspect of the strategy and to address its problems more strongly.

Goals	Indicators	Current value	Target value
Age-inclusive city - inclusion of senior citizens	Number of full-time equivalent graduate nurses in relation to the population	2	10
Young city - diverse development opportunities	Net migration of people up to 29 years of age (U30): - Absolute persons - Per 1,000 p.e.	+ 652 + 6,23	Increasing

Note: Data 2023; population: 104,578

Realisation

The strategy paper is structured in such a way that it is easy and clear to work through the measures and projects proposed in the appendix and to plan and budget for them.

In order to achieve the objectives, it is of the utmost importance to implement demonstration projects that have a positive effect on the overall process due to their lighthouse effect. There is also the chance of attracting funding to Klagenfurt a. Ws. and gaining international and national attention.

As almost all specialist departments of the city and municipal utilities are affected by the implementation and the involvement of external organisations is also necessary for many measures and projects, a central coordination unit (Department of Climate and Environmental Protection) has been set up, which is responsible for managing the implementation process of the Smart City Climate Strategy. In addition to managing the implementation process, the primary tasks of this coordination unit include initiating Smart City lighthouse projects with the submission of concrete funding project applications, monitoring the target indicators, evaluating the measures and projects and reporting annually to the City Senate. The coordination office is supported in its decisions by the core team, which is called in at regular intervals.

The Smart City Climate Strategy Klagenfurt a. Ws. is to be understood as a working tool that is continuously adapted to take account of experience gained and future developments. Major changes and innovations require the approval of the City Senate.

Overview of working groups

Handlungsfeld	Leitung	Teammitglieder
Mobility	Dr. Wolfgang Hafner (Climate and environmental protection)	Dipl.-Ing. Robert Piechl (City planning) Dipl.-Ing. Daniel Sebö (Road construction and transport) Dipl.-Ing. Georg Hummitzsch (Road construction and transport)
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Urban Development	Dipl.-Ing. Robert Piechl (City planning)	Dr. Wolfgang Hafner (Climate and environmental protection) Dipl.-Ing. Bernhard Eder (STW Klagenfurt) Dipl.-Ing. Georg Wald (City planning)
Governance	Mag. Andreas Sourij (Magistratsdirektion)	Mag. ^a Karin Zarikian (Building law-trade) Mag. Wilfried Kammerer (Municipal Directorate) Mag. (FH) Alexander Lubas (Municipal Directorate)
Digitalisation	Dipl.-Ing. Günter Koren (Surveying and Geoinformation)	Ing. Peter Weratschnig (STW Klagenfurt) Ing. Peter Gilinger (STW Klagenfurt) Werner Koch (Municipal Directorate - Information Technology Unit) MMag. ^a Dr. ⁱⁿ Gabriele Stoiser (Demographics) Dr. Valentin Unterkircher (CityCommunication)
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List of abbreviations

App	Application
bmvit	Federal Ministry of Transport, Innovation and Technology
CO ₂	Carbon Dioxide
DIN	German Institute of Standardisation
EEffG	Energy Efficiency Law
e5	Program for Energy Efficient Communities
FH	University of Applied Sciences
R&D	Research and development
GIP	Graph Integration Platform
HF	Field of action
IARA	Institute for Applied Research on Ageing
ICT	Information and Communication Technology
IoT	Internet of Things
IT	Information Technology
KDZ	Centre for Administrative Research
KIHS	Carinthian Institute for Advanced Studies and Scientific Research
KLIEN	Climate and Energy Funds
MA	Municipal Department/Employees
STEM	Science, Technology, Engineering and Mathematics
MoMaK	Carinthia Mobility Masterplan
NO ₂	Nitrogen Dioxide
OC	Operational Charging
ÖDK	Austrian Drau Power Plants
ÖPNV	Transportation
ÖPUL	Austrian Program for Environmentally Friendly Agriculture
ÖV	Public Transport
PH	Pedagogical High-School
PM ₁₀	Particulate Matter
PR	Public Relations
PTI	Technical Infrastructure Platform
RL	Policy
SAKS	Smart Waste Heat Utilisation through Cooling and Storage in Klagenfurt
SC	Smart City
SEAP	Sustainable Energy Action Plan
SECAP	Sustainable Energy and Climate Action Plan
SET	Energy Technology Strategic Plan
SLiKH	Smart Living in Klagenfurt Harbach
STEK	Urban Development Concept
STW	Stadtwerke Klagenfurt
GHG	Greenhouse Gases
TU	Technical University
UHI	Urban Heat Islands
Uni	University
VAO	Traffic Information Austria
vgl.	Comparison
VO	Regulation
WE	Residential Unit

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