



D.T2.1.1

REPORT ON MEASURES AND PROPOSALS FOR MICROGRIDS AND ENERGY COMMUNITIES

PP5 - 4ward Energy Research GmbH
&
PP3 - Weizer Energie- Innovations- Zentrum GmbH

ALPGRIDS Policy Document

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Short Description
<p>The document summarizes the specific measures proposed by 4ward Energy Research GmbH (PP5) & Weizer Energie- Innovations- Zentrum GmbH (PP3) to public authorities in charge of energy plans, both at local and regional level.</p> <p>The energy plans were previously selected and analysed by the partner.</p> <p>The measures reported can be already integrated in the energy plan or just proposed to the public decision maker in view of next coming plan updates.</p> <p>Measures are supported by a preliminary qualitative and quantitative analysis estimating their potential impacts, associated costs and recommendations for the implementation.</p>

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1 INTRODUCTION

This deliverable deals with the definition and introduction of measures to support microgrids in Austria. Local and regional energy plans have been analyzed and those which are most suitable for the introduction of the prepared ALPGRIDS measures have been selected. The measures have been formulated based on the gained knowledge from the transnational exchange as well as from the gained knowledge from the Austrian pilot sites.

The focus of the Austrian pilots is the exchange of electricity within a neighborhood of different consumers via direct lines. For the first pilot, the WEIZ Campus, it is the goal to implement an intelligent Energy Management System for the direct connection between the two buildings WEIZ I and WEIZ II as well as to implement a battery storage system with a capacity of approximately 200 kWh. At the building W.E.I.Z. II electricity is generated by a PV system and is primarily used for the general consumption (lighting, heating, etc.) within in the W.E.I.Z. II. The excess electricity is either used to charge the battery storage in the building or, as soon as it is fully charged, transferred via a direct electricity connection to the neighboring building W.E.I.Z. I. The second pilot is the direct connection between the PV generator of the municipality of Thannhausen with 7 of their neighbor buildings.

The expected pilot results will be (1) a functional demonstrator for a shared use of PV generation via point-to-point connections, (2) simulation models for dimensioning the system's components, (3) a validated measurement and control system, (4) business models and clearing system considering the needs of users and providers as well as insights on the economic feasibility of the approach, (5) insights on the reproducibility of the approach and finally (6) a technology-service-tender for shared use of local PV-generation via point-to-point connections.

In connection to the direct line systems, which are used in the Austrian pilots, the new possibilities of energy communities which enables the exchange of electricity by using the public grid are also considered within the proposed measures. Four measures have been defined, which should be integrated in the Social, Environmental and Climate Assessment Procedures (SECAP) and the Sustainable Urban Mobility Plan (SUMP) of the city of Weiz:

- Measure 1: Raising awareness for joint consumption of renewable energy through PR promotion and development measures
- Measure 2: Funding of start-up costs (legal, technical, economic consulting services) for the implementation of local and regional energy communities or direct line systems
- Measure 3: Funding of start-up costs (production and storage facilities for renewable energy sources) for the implementation of local and regional energy communities or direct line systems
- Measure 4: Implementation of a regional renewable energy community within the municipality of Weiz with different stakeholders

The measures have been defined in a close collaboration with the agencies in charge. By now all four proposed measures have already been integrated in the SECAP of the city of Weiz. Thereby microgrids will obtain a strong support within the next 10 years. The measures have also been introduced to the SUMP in context to the local mobility, but the plan has not yet been updated. However, the authorities in charge support the proposed measures and will consider them for the next update of the SUMP.

2 CONTEXT ANALYSIS: LOCAL, REGIONAL AND NATIONAL LEVEL

The context analysis aims to clarify which planning tools exist in Austria at the regional and/or local level and which of them contain or can incorporate elements of integration concerning microgrids and energy communities in the following aspects:

- strategy
- microgrids axes included in regional/local energy plans
- funds/incentives availability in supporting microgrids at regional and local level
- measure description;
- impact quantification;
- economic benefits;
- social benefits;
- environmental benefits.

In general, the following seven planning tools/energy plans could be identified. These plans have been analysed and two of them were chosen to suggest specific measures and strategies to support micro grids and energy communities.

Regional energy and climate plans:

- Klima- und Energiestrategie Steiermark 2030¹
- Klima- und Energiestrategie Steiermark 2030 Aktionsplan 2019 – 2021²

Local energy plans:

- Nachhaltiger Mobilitätsplan der funktionalen Stadtregion Weiz (SUMP Region of Weiz)³
- Energie Action Plan City of Weiz 2005⁴
- Mission statement and energy mission statement City of Weiz 2009⁵

SEAPs/SECAPs:

- SECAP der Stadtgemeinde Weiz - Sustainable Energy and Climate Action Plan (SECAP City of Weiz)⁶

Other plans:

- Stadtgemeinde Weiz Masterplan Grünraum (Greenspace Plan City of Weiz)⁷

¹ https://www.technik.steiermark.at/cms/dokumente/12449173_128523298/f9e55343/KESS2030_Web_Seiten.pdf

² <https://www.ich-tus.steiermark.at/cms/beitrag/12745272/72442079/>

³ <https://www.interreg-central.eu/Content.Node/SC-CE1161-D.T3.2.1-Joint-Elaboration-of-a-SUMP-at-FUA-lev-1.pdf>

⁴ <https://www.weiz.at/Gemeinde/Umwelt- Klimschutz/Projekte zum Umweltschutz>

⁵ [20191105 Auditbericht Weiz 2019.pdf](https://www.weiz.at/Gemeinde/Umwelt- Klimschutz/Auditbericht_Weiz_2019.pdf)

⁶ https://www.covenantofmayors.eu/about/covenant-community/signatories/action-plan.html?scity_id=18171

⁷ https://www.weiz.at/Gemeinde/Umwelt- Klimschutz/Gruenraumplan_2020

3 ENERGY PLAN(S) SELECTION AND ANALYSIS

In this chapter the analysis of the identified energy plans is described. A first review of the mentioned energy plans in chapter 2 has shown, that the

- Klima- und Energiestrategie Steiermark 2030,
- Klima- und Energiestrategie Steiermark 2030 Aktionsplan 2019 – 2021,
- SECAP City of Weiz and
- SUMP Region of Weiz

are the most interesting plans for addressing the measures worked out within the ALPGRIDS project. Therefore, these plans have been analyzed in detail as shown in Table 1 to Table 4:

Table 1: Analysis of the Sustainable Energy and Climate Action Plan – City of Weiz

Name of the plan	Sustainable Energy and Climate Action Plan (SECAP) – City of Weiz
Date of release / last update	March 2019
Authority responsible for the plan	City of Weiz
Strategic vision	In Weiz, an environmental, economic and social sustainability in all areas of life is to be systematically continued and developed in a future-oriented manner. Under the slogan "Energy meets city" Weiz will continue to perform its leadership position and will continue to underline it through ongoing measures, innovative projects and active awareness raising in the areas of energy, mobility, sustainability, climate and environmental protection.
Policy	Local SECAP
Number of short term actions	-
Number of long term actions	7
Incentives and funds for microgrids/REC	Weiz has its own eco-funding scheme in addition to those of the province and the country. Moreover, there is a separate energy agency for all citizens.
Participatory approach based actions	In the context of the establishment of energy communities or even in the use of direct lines, the early involvement of local stakeholders and community participants is essential.
Environmental impacts	Diversification, expansion and promotion of renewable and decentralized energy generation and feed-in for increased security of supply (such as communal district heating network and blackout protection in the sense of WeizConnected)

Economic impacts	With regard to the mitigation measures for local electricity, heating and cooling generation, as shown in Table 16 of the SECAP Weiz, there are two main measures: On the one hand, the doubling of the installed capacity of photovoltaic systems combined with the establishment of local energy communities (joint generation and consumption of different consumer groups or buildings of different addresses) and on the other hand the expansion of the local district heating network. In addition, the first micro-cooling networks are to be built in new or renovated districts by 2030.
Social impacts	The participants of the direct line microgrid or energy communities join together to form communities. Although the main reasons are related to the environmental and economic aspects, the social component is also relevant. Thus the goals in Weiz are that all participants of the community should benefit from the joint measure.
Other features	-

Table 2: Analysis of the Sustainable Urban Mobility Plan Region of Weiz

Name of the plan		Sustainable Urban Mobility Plan (SUMP) - Region of Weiz
Date of release / last update		March 2020
Authority responsible for the plan		City of Weiz
Strategic vision		By 2030, the share of people commuting to work by car is to be halved from an average of about 70% to 35%. At the same time, the share of people commuting on foot and by bicycle is to be doubled from the current 10% to 20%, and the share of public transport users is to be increased from 3% to 20%.
Policy		Local SUMP
Number of short term actions		At the moment, the integration of microgrids has not yet been considered.
Number of long term actions		At the moment, the integration of microgrids has not yet been considered.
Incentives and funds for microgrids/REC		Weiz has its own eco-funding scheme in addition to those of the province and the country. In addition, there is a separate energy agency for all citizens and for mobility there is a separate city department "office for environment and mobility".
Participatory approach based actions		The success of the SUMP or the implemented measures depends strongly on the communication with the population and the involved stakeholders. The key stakeholders were consulted and involved in the process even before the implementation of the measures. In order to capture the stakeholders' sentiment on the sustainable mobility plan, several interviews were conducted with stakeholder representatives from politics, administration and industry to reflect their assessment of the status quo in the FUA as well as future scenarios of mobility. The following chapters are brief summaries of the four interviews conducted.
Environmental impacts		The focus of the plan is on reducing environmental impacts from MIV and therefore prioritizing the protection of the environment.

Economic impacts	The plan includes a cost estimate for key measures. From an economic point of view, it is limited to this topic.
Social impacts	Is not part of the plan. However, Weiz particularly emphasizes the importance of the social impacts. Among other things, by offering free mobility (call collection cab, bicycle rental system, etc.).
Other features	-

Table 3: Analysis of the Klima- und Energiestrategie Steiermark 2030

Name of the plan		Klima- und Energiestrategie Steiermark 2030
Date of release / last update		November 2017
Authority responsible for the plan		Province of Styria
Strategic vision		<p>A climate neutral Styria means:</p> <ul style="list-style-type: none"> • That Styria follows the UN demand for decarbonization and consistently pushes the exit from fossil fuels • That sustainable solutions are strengthened so that the ecological footprint of our actions is reduced - more quality of life with less environmental consumption • That we actively assume responsibility today for future generations, because climate change is a long-term global issue that needs concrete local answers • That a sustainable lifestyle is forced, the more health, Well-being and living comfort means <p>An energy safe Styria means:</p> <ul style="list-style-type: none"> • That energy is produced in a sustainable way and efficiently used, because energy is a precious commodity • That the energy supply is more independent of global tensions because they are as regional and thus close to the consumer • That innovative, efficient solutions for energy supply and storage and -conversion of wired energy sources a stable supply and thus a guarantee a high quality of life • That the economy is supported by an active Climate and energy policy new impetus and an environment for innovation and creates new jobs in Green jobs are created • That the energy supply is affordable and thus socially balanced, because energy is part of a modern Company
Policy		Regional energy and climate plans
Number of short term actions		-
Number of long term actions		4
Incentives and funds for microgrids/REC		The province of Styria has its own eco-funding schemes and a network for energy agencies.
Participatory approach based actions		Together with students, the future picture of the next generation was created. Contents were subsequently incorporated into the Climate and Energy Strategy Styria 2030.

Environmental impacts	<p>Three of the four main goals of the Styrian climate and energy strategy 2030 concern the environment:</p> <ul style="list-style-type: none"> • The reduction of greenhouse gas emissions by 36 % • The increase in energy efficiency by 30 % • Increase the share of renewable energies to 40 %
Economic impacts	<p>Within the framework of the strategy, measures were defined for priority sectors. These priority sectors are aimed at the greening of these economic sectors. The aim is to ensure that the economic sectors can develop sustainably in accordance with the environment.</p>
Social impacts	<p>"Efficient energy and security of supply" is an integrated objective of the plan and is a cross-cutting issue across all priority sectors.</p>
Other features	-

Table 4: Analysis of the Klima- und Energiestrategie Steiermark 2030 - Aktionsplan 2019 - 2021

Name of the plan	Klima- und Energiestrategie Steiermark 2030 - Aktionsplan 2019 - 2021
Date of release / last update	August 2019
Authority responsible for the plan	Province of Styria
Strategic vision	<p>With the Styrian formula, the ambitious goals up to 2030 are concretized:</p> <ul style="list-style-type: none"> • The reduction of greenhouse gas emissions by 36 % • The increase in energy efficiency by 30 % • Increasing the share of renewables to 40 % • Efficient energy and security of supply
Policy	Regional energy and climate plans
Number of short term actions	5
Number of long term actions	-
Incentives and funds for microgrids/REC	The province of Styria has its own eco-funding schemes and a network for energy agencies.

Participatory approach based actions	<p>The quality of an action plan is reflected not only in the measures themselves, but also in their genesis. After all, the goal is to reduce greenhouse gas emissions by 36% and increase the share of renewable energy sources to 40% in just 12 years. This will only be possible if all stakeholders in Styria actively participate and make it their mission.</p> <p>Therefore, the following development path was chosen for the measures of the action plan:</p> <ul style="list-style-type: none"> • Collection of measures already adopted by other provinces in Austria and selected provinces in Germany. • Transmission of this list to more than 300 Styrian stakeholders, with the request to report back those measures they consider most relevant for Styria • Discussion of this condensed list in thematic expert workshops with more than 150 experts with the aim of deriving measures for Styria from it • Condensation of these results and creation of the possibility to introduce further concretizations bilaterally. • Coordination of this version with the responsible departments to ensure implementation • Political decision-making process of this technically coordinated version
Environmental impacts	<p>Three of the four main goals of the Styrian climate and energy strategy 2030 concern the environment:</p> <ul style="list-style-type: none"> • The reduction of greenhouse gas emissions by 36 % • The increase in energy efficiency by 30 % • Increase the share of renewable energies to 40 %
Economic impacts	<p>Due to the massive transition of the energy supply, the new technologies that are becoming increasingly available and the clear EU strategy of decarbonizing the economy, it is necessary to be able to respond very dynamically to changes in the markets. The Climate and Energy Strategy Styria 2030 is supported by its Vision 2050, the Key Objectives 2030 and the focal points and bundles of measures formulated therein along 8 thematic areas.</p>
Social impacts	<p>"Efficient energy and security of supply" is an integrated objective of the plan and is a cross-cutting issue across all priority sectors.</p>
Other features	-

Based on the analyses described in Table 1 to Table 4, the SECAP and the SUMP have been chosen for addressing the worked out measures and strategies to support micro grids and energy communities. The reason for choosing these two plans was because we have identified with them the greatest chance that the proposed measures will be implemented in a timely manner.

Following measures have been defined, which are described in detail in chapter 5:

- Measure 1: Raising awareness for joint consumption of renewable energy through PR promotion and development measures
- Measure 2: Funding of start-up costs (legal, technical, economic consulting services) for the implementation of local and regional energy communities or direct line systems

- Measure 3: Funding of start-up costs (production and storage facilities for renewable energy sources) for the implementation of local and regional energy communities or direct line systems
- Measure 4: Implementation of a regional renewable energy community within the municipality of Weiz with different stakeholders

3.1 Barriers for microgrids and energy communities

Currently there are quite substantial barriers for microgrids in Austria, as of lately the barriers for energy communities have been reduced, although certain barriers still exist to this day, which will be described in detail in this chapter.

- **Microgrids:**
Currently the Austrian energy laws (Elektrizitätswirtschafts- und Organisationsgesetz⁸) does not define microgrids at all. There is no legally binding ruleset regarding microgrids. As such there is also no right or no parameters that are to be considered when trying to implement a microgrid.
As per definition, anyone who wants to operate an electricity grid, regardless of whether it is isolated or interconnected needs to be an official grid operator and needs to fulfil all the requirements stated in the corresponding regulations, laws and guidelines.
Apart from that situation of a lacking legal framework there are also other conditions that need to be considered. Currently grid operators are technically not allowed to operate flexibility systems in interaction with grid users. This poses a challenge when trying to implement a microgrid from a grid operators' perspective.
Additionally, if the different components (consumer, producers, prosumers, flexibilities, etc.), in sum every component apart from the grid itself were to be operated by a legal entity that is not the grid operator, microgrid operation on an energy level could be possible. Generation and consumption would be matched and basically an independence from the public grid supply could be reached. If the members of the micro grid would request an operation in islanding mode, they would have to address the grid operator, who will very likely decline their request, as it is not in his interest to let parts of his grid work in islanding mode.
Currently the only applicable method of implementing a microgrid would be through the use of direct lines, which is legally and technically feasible but quite challenging.
- **Energy communities:**
Energy communities are as of this date (12.2021) already embedded in Austrian law. Founding energy communities regardless of whether they are citizen or renewable energy communities is possible from a legal point of view. But there are still some substantial barriers that need to be tackled before an energy communities will be a sensible option for the energy transition.
 - **Limits of the grid operators:**
The Austrian energy law states that the grid operators will be responsible for the distribution of energy within the energy community. Currently the Austrian grid operators are in the situation, that they need to adapt their measurement and billing systems to be able to fulfil that requirement. Currently it is only possible to add one generating capacity within an energy community, this should change by October 2022.

⁸ <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007045>

- Uncertainties regard taxes:
According to the Austrian energy laws, members of renewable energy communities will be excluded from certain taxes. It is as of this time not entirely certain how this will be applied. There are currently two options:
 - Direct reduction
 - Refund during tax adjustment
 Furthermore, there are questions regarding the VAT, that need to be addressed at this point, as it is not entirely certain how to treat it in energy communities with both private and commercial members.
- Lacking Templates for contracts:
The Austrian Energy Law states rather clearly what types of legal institution an energy community needs to be, but it does only very loosely describe how the inner workings of the energy community need to be set up. This poses a challenge, as there are currently no templates for these contracts available. This poses a barrier to the founding of new energy communities, as the rules need to be made up on the go during the founding phases. Also this most certainly requires legal support during the development phase of the energy community which will result in additional costs for the energy community.
- Financial situation:
While renewable (and only renewable) energy communities see certain benefits from exchanging renewable energy within the energy community, the financial benefits for the members are somewhat limited. The energy law states that energy community members will have to pay reduced grid fees and reduced taxes for the energy exchanges which should act as motivation for founding energy communities and investments in new generation capacities. These savings do not necessarily go directly to the community members as there are certain cost factors that need to be considered within an energy community. The whole administrative workload (member management, billing, etc.) will be substantial and most likely the energy communities will not be capable of solving all these administrative issues themselves and will most likely need external expertise (third party services), which will lead to additional costs. Additionally, the legal person of the energy community itself will need certain financial means to maintain operational.

3.2 Local/regional potentials for microgrids and energy communities

To better analyze the potentials for microgrids or energy communities, different aspects need to be considered:

- **Grid operation in a microgrid:**

Due to the legal and technical implications with regards to the implementation of a micro grid in the Austrian energy system and the corresponding legal framework, the potentials for microgrids are rather limited. There are certain (unfavorable) parameters that need to be fulfilled to operate a grid as a microgrid (from a technical perspective) in Austria. The biggest issue is that one would have to operate the grid as a direct line system which implies, that consumers have to be in a very close proximity to one another and each user has to be connected separately to a generation capacity. The potentials for such a construct are very limited. There are regional differences in the interpretation of the laws and rules for “direct lines”, but there are no local differentiations.

- **Flexibility operation in a microgrid:**

Another important ability of a microgrid is the use of flexibilities in consumption and generation to match generation and load profiles, thus reducing surpluses and shortages. This mode of operation can be applied regardless of whether the users are in a distinct “technical microgrid”. There are some substantial limits though as the financial benefits of such an operation are severely limited, unless being used within a direct line system, within one building or on the same premises or within an energy community setting. Otherwise, the matching of generation and consumption by multiple users does not receive any financial benefits.

This is likely to change once the Austrian energy laws are adapted to allow the trading of flexibility options. Matching consumption and generation in a geographically limited proportion of the grid can be considered as beneficial for the grid and thus as flexibility service.

Regardless of the situation there are substantial local and regional potentials for the option of flexibility operations in a microgrid setting, if financial benefits are met and the costs for the activation of these flexibilities are kept within sensible boundaries. There is no need to differentiate between local or regional potentials in this case.

- **Energy Communities:**

Renewable energy communities, much rather than citizen energy communities are currently very actively discussed in the Austrian energy eco-system. There are numerous initiatives which push forward to establish the first energy communities and start exchanging (renewable) energy or electricity. The success of these initiatives and the energy community movement in general will be visible once the first experiences are gathered and the first real issues occur (see barriers in the previous chapter). If energy communities prove to be a viable model for joint energy generation and consumption, the local potentials are substantial.

Currently the Austrian energy law differentiates between a local and a regional energy community. They are differentiated according to their expansion over different grid levels. From a geographic point of perspective both the local as well as the regional renewable energy community can be seen as “geographically local”. The local renewable energy community is limited to those users connected to one local transformer whereas the regional renewable energy community is limited to those users connected to the same transformer substation. The first connecting a very locally limited group of consumers, producers and prosumers and the latter connecting a variety of users within one municipality or sometimes even across municipalities, but not spanning across an entire region. Summing things up, the potentials for energy communities, once a viable implementation has been proven, will be substantial. But the implementations will only happen locally. But since the laws regarding energy communities are national laws, they can happen on local level throughout the entire region.

Lastly it needs to be said, that as mentioned in the barriers section above, there are certain costs that will occur while operating an energy community. Thus the energy community will need to have a certain size in order to be financially viable. This influences the potential of energy communities and set the focus on larger initiatives rather than small ones.

4 LOCAL/REGIONAL AUTHORITIES IN CHARGE OF THE PLAN

4.1 Strategic vision

The municipality of Weiz with an area of 17.5 km² and a population of 11,627 inhabitants as of 01.01.2018 has voluntarily signed up to comply with the Goals of the Covenant of Mayors committed. By 2030, the per capita CO₂ emissions in the municipality, excluding the secondary sector (industry), are to be reduced by at least 40 % compared to 1990 (according to the IPCC emission factor).

With regard to its existing energy policy orientation, activities and surveys, the municipality of Weiz can already rely on a broad database. The municipality of Weiz as a commuter community with 11,742 employees and around 8,300 community commuters, excluding the 2,900 schoolchildren, as well as the B64 / B72 interface, is an important traffic junction and business location in Eastern Styria. Mainly due to the above-average number of commuters, there is an enormous traffic load. With around 50.6 % of employees in the secondary sector and 48.7% in the tertiary sector, the municipality of Weiz has a high share in these sectors in relation to other Styrian municipalities.

The SECAP shows the strategy of the municipality of Weiz in relation to the challenges of climate change adaptation and mitigation, such as the defined voluntary obligations, organizational structures, personnel capacities, stakeholder groups, budgets, monitoring procedures, adaptation options and strategies in the case of an extreme weather event. Weiz' climate and energy policy vision is to consistently continue ecological, economic and social sustainability in all areas of life by 2030 and to further develop it in a future-oriented manner. Weiz is to continue to exercise its pioneering role under the slogan "Energie Find Stadt" and to underpin it with ongoing measures, innovative projects and active awareness-raising in the areas of energy, mobility, sustainability, climate and environmental protection.

With the SECAP the municipality of Weiz voluntarily commits to implement the following overarching measures:

- Energetic renovation of existing buildings and responsible use of thermal energy
- Reduction of power consumption and increase in energy efficiency
- Increasing the reliability of the electricity supply while focusing on decentralized, alternative / energy-efficient technologies
- Focusing the expansion of the municipal district heating network (Fernwärme)
- Reduction of (fossil-fuelled) motorized private transport/traffic
- Initiation and promotion of awareness-raising measures for a sustainable society and a sustainable lifestyle

The climate and energy policy vision of the municipality of Weiz for 2030 is derived from these measures:

- In Weiz, ecological, economic and social sustainability is to be continued in all areas of life and further continuously developed in a future-oriented manner.
- With the slogan „ Energie findet Stadt“ (Energy finds city), Weiz will continue in its pioneering role and consolidate it with ongoing measures, innovative projects and active awareness-raising in the fields of energy, mobility, sustainability, climate and environmental protection.

The vision and measures have been supplemented with the in course of the ALPGRIDS project defined measures to support microgrids (see chapter 5). Detailed information about the SECAP can be found on following website: https://www.covenantofmayors.eu/about/covenant-community/signatories/action-plan.html?scity_id=18171

Moreover, the emissions inventories for 1990 (BEI), 2005 (MEI1) and 2017 (MEI2) and their data collection provide an overview of temporal, sectoral and energy carrier-related changes in the municipality of Weiz for final energy consumption and CO₂ emissions. Based on these emission inventories and the analysis of changes in energy consumption and CO₂ emissions, it was found that the transport and industrial sectors in particular offer great potential for CO₂ reduction. While the industry is regulated by the European emissions trading system, the municipality of Weiz will continue to focus on the transport sector in the coming years. The climate change mitigation measures and climate change adaptation measures defined for this by the municipality of Weiz are to be implemented consistently by 2030, thereby maintaining and improving the global and local quality of life. These measures are defined in the SUMP, which is the second energy plan which was addressed by the ALPGRIDS project.

4.2 Contacts and meetings

Because of the close cooperation between the Austrian project team and the people in charge of the plans (SECAP and SUMP) a steady interchange via email, phone calls and short online meetings took place in the last months to define and implement the proposed measures. Moreover, two official meetings have been carried out:

4.2.1 First Meeting

The first official meeting took place on the 3rd of February 2021 in Weiz. The ALPGRIDS project has been presented and possibilities for the adaption and extension of the eco-support system in Weiz have been discussed. A special focus was on the SECAP and SUMP of the city of Weiz which have been identified as good possibilities for the introduction of Microgrid measures (see chapter 5)

Agenda:

This project is co-financed by the European Regional Development Fund through
the Interreg Alpine Space programme

AGENDA

Workshop: T2.2

Location, Date; Weiz 03.02.2021

Participants:

- Hierz, Kulmer, Keglevic (Stadtgemeinde Weiz)
- Heinrich (Referent für Energie - Weiz)
- Bramreiter (W.E.I.Z.)
- Messner (Energie Agentur Stmk gGmbH)
- Pratter (4ward Energy)

1. start of the meeting by W.E.I.Z. / Rafael Bramreiter

2. Presentation of first ALPGRIDS results / overview / planning

- W.E.I.Z./Bramreiter: Presentation of the ALPGRIDS project activities and first results and next steps

3. Possibilities for the adaption and extension of Weiz eco-support system



Figure 1: Pictures of the first meeting

4.2.2 Second Meeting

The second meeting was carried out as webinar together with the EU Horizon 2020 project CoME EASY. In course of this webinar the SECAP of the city of Weiz and the (at this stage of time pre-defined) measures for microgrids have been presented and discussed with the participants.

Invitation

Programm

Titel: T2-SECAP – Energiedaten für Gemeinden

Ort, Datum: ONLINE-Webinar-Teams, 20.05.2021 – 10:00 – 13:00

¶

09:50-Ankommen-(inkl.-Technik-Check)¶

10:00-Begrüßung¶

Key-Note: Auswirkungen des EAG auf Gemeinden¶

Benedikt Ennser | Leiter-Abteilung VI/4 – Energie-Rechtsangelegenheiten, Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie¶

Energiebilanz und Emissionsinventar auf Gemeindeebenen: Herausforderung und Lösungsansätze¶

Gregor Thinius | Leiter-Geschäftsstelle e5 Österreich, Österreichische Energieagentur¶

10:30-Erfahrungen und Best-Practice¶

Stadtgemeinde Weiz: (ALPGRIDS-SECAP – Introduction of new „Micro-Grid-Measures“)¶

Stadt Bregenz¶

Fragerunde & Zusammenfassung¶

11:20-10-min-Pause¶

11:30-Werkzeuge für Gemeinden¶

CoME-EASY, EM-Städte¶

Angela Holzmann | Projektleiterin CoME-EASY, Österreichische Energieagentur¶

Energiemosaik Austria¶

Lore Abart-Herzst | Projektleiterin Energiemosaik, Institut für Raumplanung, Umweltplanung und Bodenordnung, BOKU-Wien¶

Spatial Energy Planning¶

Alexander Rebogen | Projektleiter Spatial Energy Planning, Salzburger Institut für Raumordnung und Wohnen¶

12:45-Fragerunde & Zusammenfassung¶

13:00-Ende der Veranstaltung¶

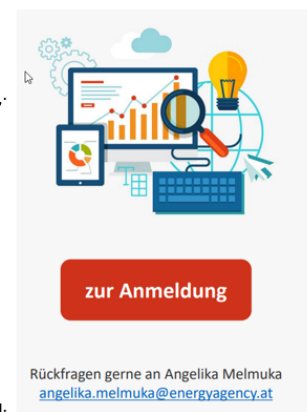


Figure 2: Pictures of the second meeting

5 DEFINITION OF THE MEASURES/Strategies SUPPORTING MICROGRIDS AND ENERGY COMMUNITIES

The municipality of Weiz has prepared a Sustainable Energy and Climate Action Plan (SECAP) and a Sustainable Urban Mobility Plan (SUMP) in 2019. In addition to these plans, it is the goal, that a monitoring is to be carried out every 2 years. This was submitted to the Covenant of Mayors in May 2021. Thereby, in this process, a new Monitoring Emission Inventory for 2019 (MEI 3/2019) was prepared in addition to the monitoring report. A total of 33 implementation measures for the area of climate change prevention and 28 for the area of climate change adaptation were also identified and developed. These measures also include 4 actions for the field of microgrids (local and regional renewable energy communities and direct line systems).

In particular, the following measures have been identified to be introduced in the SECAP right away and later in the SUMP. However, all these measures are already communicated to the regional administration for implementation and inclusion into regional plans.

Measure 1: Raising awareness for joint consumption of renewable energy through PR promotion and development measures

Due to the recently created legal basis for the founding of energy communities in Austria (EAG⁹, ElWOG)¹⁰, this measure aims communicating the possibilities provided by local and regional renewable energy communities as well as the potentials of direct line systems to different groups of users. This measure should thus create the knowledge which is needed to facilitate these approaches of joint energy consumption.

Measure 2: Funding of start-up costs (legal, technical, economic consulting services) for the implementation of local and regional energy communities or direct line systems

In order to increase the number of local and regional renewable energy communities and direct line systems in the city of Weiz, start-up costs such as legal, technical, economic consulting services are to be promoted in the future within the framework of the Weizer eco-funding-system. This measure will not provide funds for the costs of devices but rather funding for the costs related to the development of energy communities or direct line systems.

Measure 3: Funding of start-up costs (production and storage facilities for renewable energy sources) for the implementation of local and regional energy communities or direct line systems

This measure works in parallel to Measure 2, as it provides funding for the start-up costs related to investments such production and storage facilities for renewable energy sources. These actions are to be promoted in the future within the framework of the Weizer eco-funding-system.

Measure 4: Implementation of a regional renewable energy community within the municipality of Weiz with different stakeholders

With regard to knowledge building through practical implementation, a regional renewable energy community within the municipality of Weiz with different stakeholders, such as the municipality, SMEs and private households, should be implemented by 2025. The knowledge and

⁹ <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20011619>

¹⁰ <https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20007045>

know-how built up in this process should be used and contributed to the implementation of other (smaller) communities.

Table 5: Definition of Measure 1 - Raising awareness of joint consumption of renewable energy through PR promotion and development measures

Raising awareness of joint consumption of renewable energy through PR promotion and development measures					
Action n°	Measure 1				
Sector	Residential, Primary, Secondary, Tertiary				
Energy poverty related	<input type="checkbox"/>				
Action type	Sector: Local electricity production Tool/Area of Intervention: Smart grids Policy instrument: Awareness raising training				
Emission factor	IPCC				
Data source	MEI 3/2019 – Monitoring Emission Inventory (SECAP of Weiz)				
BASELINE YEAR: 2019			EXPECTED RESULTS		
Final energy consumption	102.780 ¹¹	MWh	Energy saved	0	MWh
Energy production	3.500 ¹²	MWh	Increased energy production ¹³	0	MWh
Estimated emissions	17.472,6 ¹⁴	tCO ₂	Emissions avoided ¹³	0	tCO ₂

INFORMATION				<input checked="" type="checkbox"/> Benchmark of excellence
Responsible	sector Municipality of Weiz (Office for City Communication)			
(Municipality/Region/other)				
Stakeholder(s) involved/engaged	Municipality of Weiz (Office for City Communication) / Innovation Center of Weiz			
Timeline	<input checked="" type="checkbox"/> Expected	<input type="checkbox"/> Ongoing	<input type="checkbox"/> Implemented	
Duration: 8 years	Expected start (year): 2022		Expected end (year): 2030	
Costs and financing	Costs: 20.000 €			
Financing according to the municipal budget	<input type="checkbox"/> Not financed	<input type="checkbox"/> Scheduled	<input checked="" type="checkbox"/> Foreseen in the budget	<input type="checkbox"/> Financed
	<input checked="" type="checkbox"/> Municipal funds	Amount: 20.000€		
	<input type="checkbox"/> External funds (third party financing)	Amount: €	Third party financing:	

¹¹ Electricity consumption in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

¹² Local PV plants energy production

¹³ Measure 1,2 and 3 are seen as couple and therefore their expected results are counted together (see Measure 3)

¹⁴ Electricity emissions in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

INDICATORS (KPIs)	
KPI (1)	Number of communication campaigns
KPI (2)	Number of households/companies reached
DESCRIPTION	
Action	<p><u>Groundwork:</u> The municipality of Weiz and its 100% subsidiary - the Innovation Centre W.E.I.Z. - have been working together with external stakeholders, such as 4ward Energy Research, since 2013 on the possibility of using electricity from local and renewable sources across buildings. Starting with the WeizConnected and the SoWeit-Connected project, and subsequently with the REC Business Park and the ALPGRIDS project, various approaches have been developed.</p> <p>The goal is to use as much locally produced electricity as possible.</p> <p>Thanks to the activities by the municipality of Weiz, the Innovation Centre W.E.I.Z. and 4ward Energy Research GmbH within the framework of the project "Interreg Alpine Space Alpgriids - Promotion of renewable sources in the Alps through energy microgrids", the path that has been started has been continued, goals defined, processes developed and measures put into practice.</p> <p>This measure is intended to achieve: Provide access to the technical-legal-economic information underlying the establishment of renewable energy communities (RECs) and the collective self-consumption groups for the entire territory in accordance with the legislation in force.</p> <p>In order to achieve the objectives, the municipality of Weiz, the Innovation Centre W.E.I.Z. and 4ward Energy Research GmbH, in cooperation with other stakeholders, defined the following planning steps in the area identified in the initial phase of the Alpgriids project:</p> <ul style="list-style-type: none"> • Identification of interested parties and initial contact (consumer, producer, prosumer, local experts and consultants); • Determination of forms/occasions for meetings; • Selection of content/information to be shared; • Methods of information transfer (especially whether online or face-to-face); • Identification of facilitators/speakers; • Preparation of information material; • Scheduling of meetings; • Implementation of periodic PR campaigns; • Holding regular information meetings; • Ongoing information of the population via the city newspaper "Weiz Präsent";
Expected results	<p>The present measure is focused on awareness raising and is intended to support the subsequent measures by means of awareness and information campaigns, with the aim (broken down to its key mission) of:</p> <ul style="list-style-type: none"> • Increase in installed photovoltaic power in kWp • Reduction of CO₂ emissions <p>In this context, the municipality of Weiz has set itself the goal of installing a total of 18 MWp of photovoltaics in Weiz by 2030, a large part of which is to be integrated into energy communities in order to use the locally produced electricity as completely locally as possible.</p>

In addition, there are already existing measures in the area of awareness and information campaigns in the field of climate and environmental protection, as well as for the existing eco-funding schemes, which are to be built upon.



Figure: Graphical representation in German language of the funding tree of the municipality of Weiz

Source: cardamom / Municipality of Weiz

It is expected that that this action will provide inhabitants and companies with the necessary knowledge to induce an investment in renewable energy sources and/or to develop and realise renewable energy communities. As such it is hard to quantify the resulting effects as they will result indirectly from this measure as it can be seen as groundwork for the next measures.

References

<https://www.weiz.at/Gemeinde/Umwelt-+Klimaschutz>
https://www.weiz.at/Aktuelles/Stadtzeitung_WEIZ_PRAeSENT/Unsere_Ausgaben
<https://www.weiz.at/Services/Foerderungen/Oekofoerderungen>

Action	Web	https://www.weiz.at/Gemeinde/Umwelt-Klimaschutz	
Page			
Cartography attached		<input type="checkbox"/> Cartography / supporting images	
Area where the action is located		City of Weiz	
Web references		Planed measure	

Table 6: Definition of Measure 2 - Funding of start-up costs (legal, technical, economic consulting services) for the implementation of local and regional energy communities or direct line systems

Funding of start-up costs (legal, technical, economic consulting services) for the implementation of local and regional energy communities or direct line systems					
Action n°	Measure 2				
Sector	Residential, Primary, Secondary, Tertiary				
Energy poverty related	<input type="checkbox"/>				
Action type	Sector: Local electricity production Tool/Area of Intervention: Smart grids Policy instrument: Grants and subsidies				
Emission factor	IPCC				
Data source	MEI 3/2019 – Monitoring Emission Inventory (SECAP of Weiz)				
BASELINE YEAR: 2019			EXPECTED RESULTS		
Final energy consumption	102.780 ¹⁵	MWh	Energy saved	0	MWh
Energy production	3.500 ¹⁶	MWh	Increased energy production ¹³	0	MWh
Estimated emissions	17.472,6 ¹⁷	tCO ₂	Emissions avoided ¹³	0	tCO ₂

INFORMATION				<input checked="" type="checkbox"/> Benchmark of excellence
Responsible (Municipality/Region/other)	sector Municipality of Weiz (Office for Environment and Mobility)			
Stakeholder(s) involved/engaged	Innovation Center W.E.I.Z.			
Timeline	<input checked="" type="checkbox"/> Expected	<input type="checkbox"/> Ongoing	<input type="checkbox"/> Implemented	
Duration: 8 years	Expected start (year): 2022		Expected end (year): 2030	
Costs and financing	Costs: 50.000 €			
Financing according to the municipal budget	<input type="checkbox"/> Not financed	<input checked="" type="checkbox"/> Scheduled	<input type="checkbox"/> Foreseen in the budget	<input type="checkbox"/> Financed
	<input checked="" type="checkbox"/> Municipal funds	Amount: 50.000€		
	<input type="checkbox"/> External funds (third party financing)	Amount: €	Third party financing:	

INDICATORS (KPIs)	
KPI 1	Number of Energy community consultancies funded (number)
KPI 2	Number of Energy community consultancies funded per year (number)
KPI 3	Amount of energy shared within the Energy communities (kWh)
KPI 4	Amount of energy shared within the Energy communities per year (kWh/year)
KPI 5	Number of participants in energy communities (number)
KPI 6	Number of new participants in energy communities (number/year)

DESCRIPTION

¹⁵ Electricity consumption in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

¹⁶ Local PV plants energy production

¹⁷ Electricity emissions in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

Action	<p><u>Groundwork:</u> The municipality of Weiz established its own eco-funding scheme more than 10 years ago. The focus is on the promotion of renewable energy sources, energy efficiency and comprehensive neutral energy consultations without the subsequent intention of selling products. The eco-funding scheme is open for one year at a time and is evaluated and adapted on an ongoing basis. In detail, it comprises the following sub-areas:</p> <ol style="list-style-type: none"> 1. Electric/hydro/gas vehicles 2. Electric bicycles 3. Nature in the garden advice 4. Biomass heating with automatic charging 5. Wood log boilers (wood gasifiers) and combi boilers 6. Heat pumps 7. Pump replacement - high-efficiency pumps 8. Solar thermal systems 9. District heating connection 10. Weizer energy certificate & consultation 11. Energy refurbishment 12. Passive house 13. Photovoltaics in combination with energy storage systems (KISS blackout protection) 14. Rainwater utilisation 15. Parking fee exemption for electric vehicles 16. Insulation of the top floor ceiling <p>The existing eco-funding scheme already provides subsidies for photovoltaic systems in combination with energy storage systems, but not with a focus on energy communities or other means of joint energy consumption. However, to specifically promote these approaches to joint energy consumption such as energy communities in the sense of the Austrian legislation (EAG/EIWOG) but also direct lines, <u>special eco-funding schemes are to be implemented that directly promote the establishment and implementation of energy communities</u>. Therefore, to increase the number of local and regional renewable energy communities and direct line systems in the city of Weiz, start-up costs such as legal, technical, economic consulting services are to be funded.</p> <p>For this reason, <u>consultancy costs (legal, technical and economic) for energy communities are to be funded in the next few years with up to 20% of the costs, but a maximum of €1,000 per energy community</u>, whereby the size of the energy community in terms of participants (number), electricity consumed in the energy community (kWh) or existing capacity of renewable electricity generation plants (kW) is not relevant for the funding.</p>
Expected results	<p>As shown, this measure includes the following KPIs:</p> <ol style="list-style-type: none"> 1. Number of Energy community consultancies funded (number) 2. Number of Energy community consultancies funded per year (number) 3. Number of energy communities (number) 4. Number of participants in energy communities (number) 5. Number of new energy communities per year (number/year) 6. Number of new participants in energy communities (number/year) <p>although the size (number of participants, output, consumption, etc.) is not relevant for receiving a grant, the aim is still to supply as many participants as possible, such as households, companies and municipal buildings, with sustainable local and renewable electricity through energy communities. In addition, as many citizens and businesses as possible, and thus local energy communities, should be informed and founded.</p>

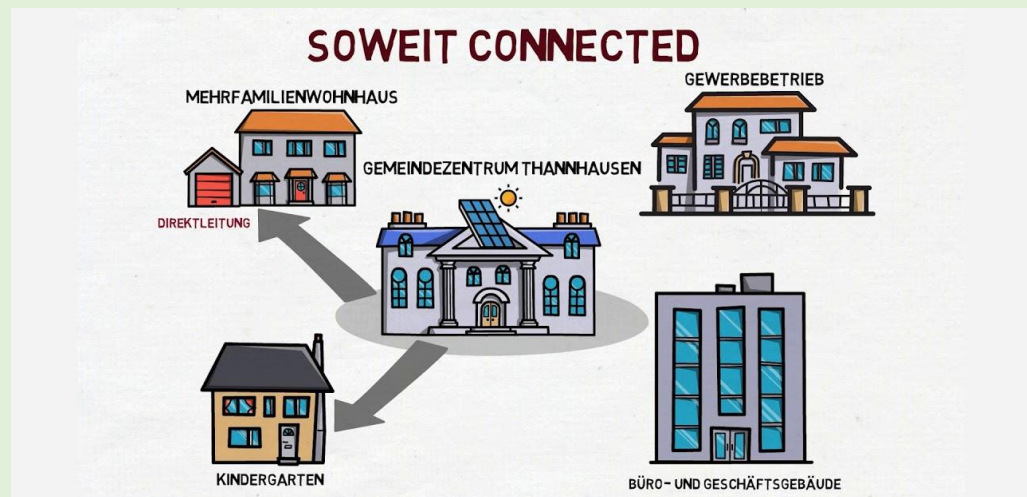


Figure: Illustration from the preliminary project SoWeiTconnected.
Source: Project consortium SoWeiTconnected / 4ward Energy Research GmbH

References	https://www.weiz.at/Services/Foerderungen/Oekofoerderungen
Action	Web https://www.weiz.at/Services/Foerderungen/Oekofoerderungen
Page	
Cartography attached	<input type="checkbox"/> Cartography / supporting images
Area where the action is located	City of Weiz
Web references	Planned measure

Table 7: Definition of Measure 3 - Funding of start-up costs (production and storage facilities for renewable energy sources) for the implementation of local and regional energy communities or direct line systems

Funding of start-up costs (production and storage facilities for renewable energy sources) for the implementation of local and regional energy communities or direct line systems					
Action n°	Measure 3				
Sector	Residential, Primary, Secondary, Tertiary				
Energy poverty related	<input type="checkbox"/>				
Action type	Sector: Local electricity production Tool/Area of Intervention: Smart grids Policy instrument: Grants and subsidies				
Emission factor	IPCC				
Data source	MEI 3/2019 – Monitoring Emission Inventory (SECAP of Weiz)				
BASELINE YEAR: 2019			EXPECTED RESULTS		
Final energy consumption	102.780 ¹⁸	MWh	Energy saved	0	MWh
Energy production	3.500 ¹⁹	MWh	Increased energy production ¹³	19.800	MWh
Estimated emissions	17.472,6 ²⁰	tCO ₂	Emissions avoided ¹³	3.366	tCO ₂

INFORMATION				<input checked="" type="checkbox"/> Benchmark of excellence	
Responsible	sector Municipality of Weiz (Office for Environment and Mobility)				
(Municipality/Region/other)					
Stakeholder(s) involved/engaged	Innovation Center W.E.I.Z.				
Timeline	<input type="checkbox"/> Expected	<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Implemented		
Duration: 10 years		Expected start (year): 2020		Expected end (year): 2030	
Costs and financing	Costs: 25.200.000 €				
Financing according to the municipal budget	<input type="checkbox"/> Not financed	<input type="checkbox"/> Scheduled	<input checked="" type="checkbox"/> Foreseen in the budget	<input type="checkbox"/> Financed	
	<input checked="" type="checkbox"/> Municipal funds	Amount: 50.000 p.a.€			
	<input checked="" type="checkbox"/> External funds (third party financing)	Amount: 24.000.000 €	Third party financing: 40% (Region and State)		

INDICATORS (KPIs)	
KPI 1	Number of PV systems included (number)
KPI 2	Total installed power of included systems (kWp)
KPI 3	Number of new PV systems included per year (number/year)
KPI 4	Total installed power of included systems per year (kWp/year)

DESCRIPTION	
Action	As already described in measure 2, the municipality of Weiz already established an existing eco-subsidy system years ago. This existing eco-subsidy system already provides subsidies for photovoltaic systems in combination with energy storage systems, but not with a focus on

¹⁸ Electricity consumption in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

¹⁹ Local PV plants energy production

²⁰ Electricity emissions in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

energy communities or direct line systems as means for joint energy consumption. For this reason, eco-subsidies for photovoltaics and energy storage systems which generate substantial surpluses will only be subsidized in specific cases in the future, unless they are integrated into a scheme of joint energy consumption.

In order to specifically promote these energy communities in the sense of the Austrian legislation (EAG/ElWOG) but also direct lines, special eco-subsidies are to be implemented that directly promote the establishment and implementation of energy communities. In order to increase the number of local and regional renewable energy communities and direct line systems in the city of Weiz, the start-up costs of such generation and storage facilities for renewable energy sources shall be promoted.

For this reason, subsidies for photovoltaic systems and storage systems that create substantial surpluses and that are not integrated in joint energy consumption schemes are to be awarded in the future only in exceptional cases (for example no local energy community available, in combination with heating systems, etc.).

The following draft is currently in discussion.

Target group: private persons and SMEs (only buildings and objects within the city of Weiz, which are integrated into a local or regional energy community or direct line system, are eligible).

Maximum subsidy: € 3.500,- incl. VAT (one-family house) or max. 30 % of costs

- single-family house (in the case of a two-family house, one application can be made per residential unit):
- Base amount: € 500
- PV system: € 300,-- per kWp max. 5 kWp
- Storage: € 200,-- per kWh max. 10 kWh
- Blackout: € 200,--

Payment:

- 50 % of the calculated subsidy after fulfilment of all subsidy requirements
- 50% upon proof of a self-consumption (renewable energy community) quota of at least 75% within one calendar year, whereby the period under consideration can be up to 3 calendar years after construction.

Submission: At the latest 6 months after invoicing and purchase.

Essential requirements:

- After construction of the renewable generation unit (incl. storage), the subsidy application must be submitted (no later than 6 months after completion).
- Installed capacity of at least kW(p), operation parallel to the grid and no full feed-in.
- Before implementation, an on-site energy consultation or an on-site building check by an officially recognized and neutral energy agency (Innovationszentrum Weiz (W.E.I.Z.)) must be carried out.
- New construction or expansion of existing facilities
- Integration of the new generation capacity into a local or regional energy community or a direct line system
- All relevant laws, regulations and standards are complied with

Funding requirements:

- Up to date and completely filled out subsidy application (basic submission form, submission form).
- Invoice and proof of payment of the generation capacity
- Confirmation, invoice and proof of payment of the on-site energy consultation or on-site building check
- Building permit from the city of Weiz (form)
- Photos of the entire facility
- The applicant must allow the representatives of the municipality of Weiz access to the system for inspection purposes upon request.

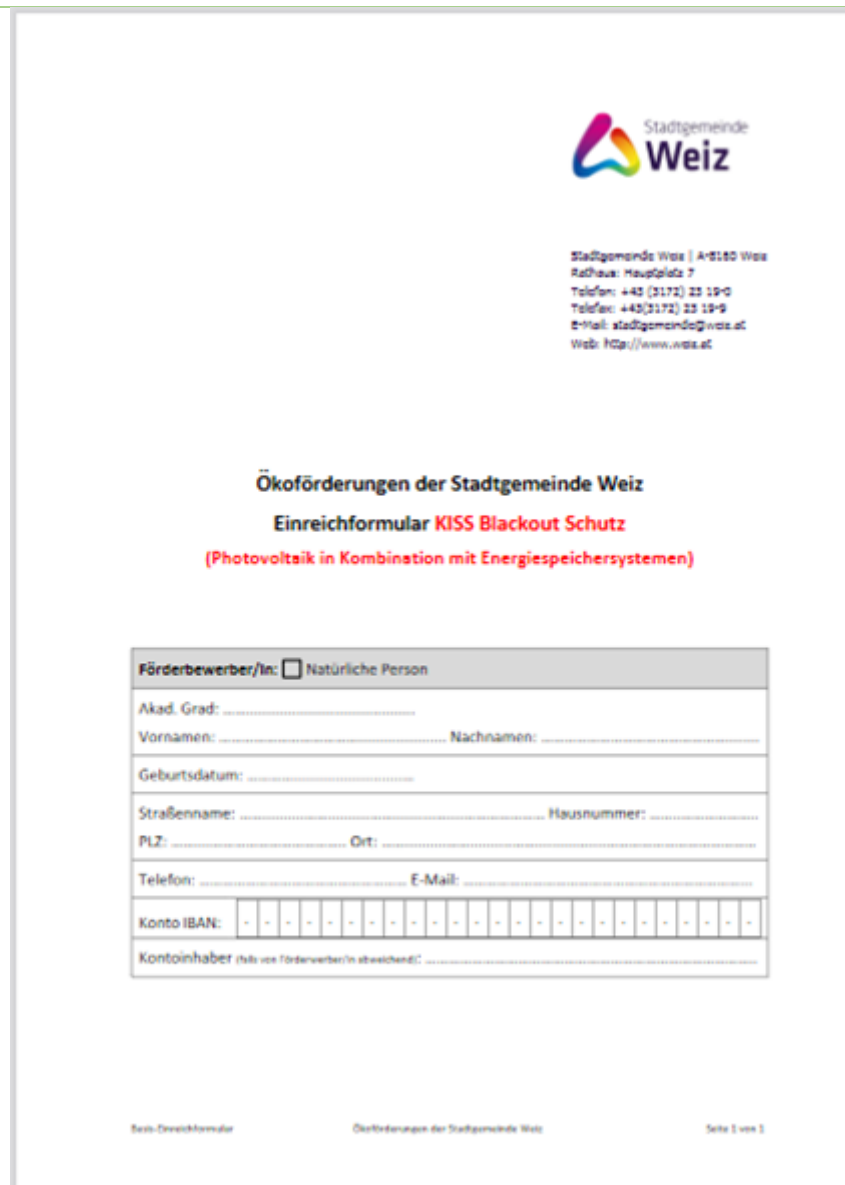
For PV systems:

- Metering point number in the case of grid feed-in (letter from the utility company).
- For load management systems and electrical energy storage systems:
- Confirmation of the peak power of the PV system by the company installing the system on the confirmation sheet.
- The load management system must have a suitable communication interface (inverter, charge controller, etc.) in order to be able to control at least 4 independent consumption devices (e.g. washing machine, heating rods) in a self-consumption-optimized manner depending on the PV yield.

For electrical energy storage devices:

- Time value replacement guarantee of the manufacturer

The municipality of Weiz is interested in citizens operating systems with blackout protection. In order to identify the ideal system for each recipient, the implementation of an energy or blackout protection consultation (photovoltaics in combination with energy storage systems) is recommended. This blackout protection consulting should be carried out by an officially recognized and neutral energy consulting agency. The Office for Environment & Mobility of the Municipality of Weiz considers among others the following agencies as officially recognized and neutral energy consulting agency: Innovation Center Weiz (W.E.I.Z.).



Stadtgemeinde Weiz
 Stadtgemeinde Weiz | A-8160 Weiz
 Rathaus: Hauptplatz 7
 Telefon: +43 (0)172 23 19-0
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 E-Mail: stadtgemeinde@weiz.at
 Web: <http://www.weiz.at>

Ökoförderungen der Stadtgemeinde Weiz
Einreichformular KISS Blackout Schutz
(Photovoltaik in Kombination mit Energiespeichersystemen)

Förderbewerber/in: ☐ Natürliche Person

Akad. Grad:
 Vorname: Nachname:
 Geburtsdatum:
 Straßenname: Hausnummer:
 PLZ: Ort:
 Telefon: E-Mail:
 Konto IBAN:
 Kontoinhaber (falls von Förderbewerber/in abweichend):

Seite 1 von 3

Illustration: Cover sheet of the eco-subsidy for photovoltaic systems and storage systems in the municipality of Weiz.

Source: Innovation Center W.E.I.Z. / Municipality of Weiz

Expected results

The municipality of Weiz has set itself the goal of installing a total of 18 MWp of photovoltaics in Weiz by 2030, a large part of which is to be integrated into energy communities in order to use the locally produced electricity as completely locally as possible.

In this context the following targets are set for the different sectors:

	INSTALLED POWER IN KWP	RENEWABLE ENERGY PRODUCTION	ANNUAL SAVINGS	CO2
COMMUNAL BUILDING	2.000	2.200	449	
TERTIARY BUILDING	3.500	3.850	655	
RESIDENTIAL BUILDING	5.500	6.050	1.029	
INDUSTRIAL BUILDING	7.000	7.700	1.309	

In this context, the goals of the municipality of Weiz are limited to the installed capacity of

photovoltaic systems. In addition, it is also a goal to increase the number of electric storage and e-charging stations, but there are no concrete goals.

The following chart shows an overview of the existing eco-funding system in the municipality of Weiz respectively the number of successful submissions per funding category for the years 2018, 2019, 2020 and 2021 (status 02/2021), whereas the municipality of Weiz has about 12.000 inhabitants. The explicit goal is to increase these numbers in the long term.

ECO-FUNDING SYSTEM CITY OF WEIZ NUMBER OF SUCCESSFUL SUBMISSIONS

■ 2018 ■ 2019 ■ 2020 ■ 2021

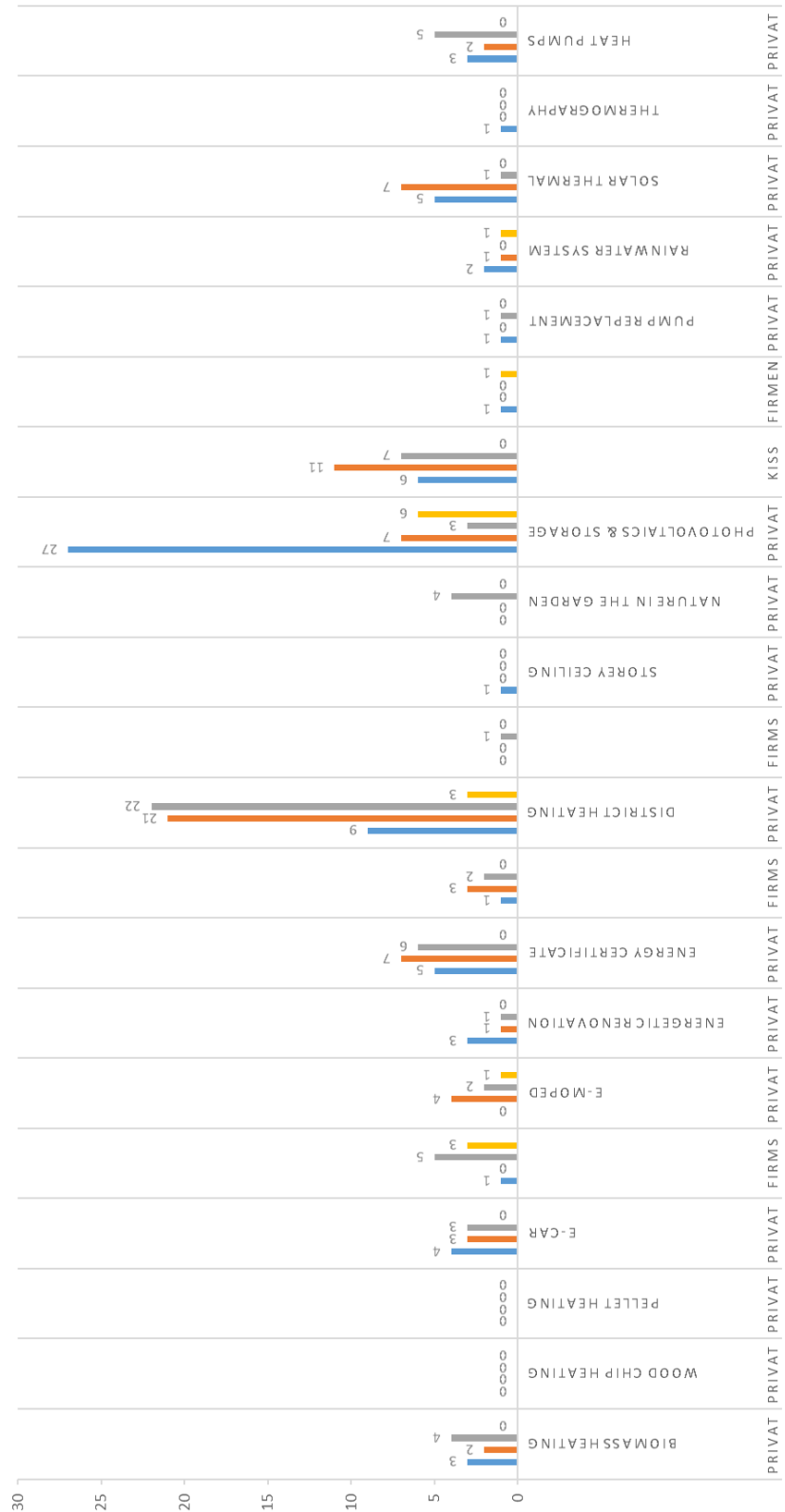


Illustration: Number of successful submissions within the eco-Funding System City of Weiz with status
 02/2021

Source: Innovation Center W.E.I.Z. / Municipality of Weiz

References

<https://www.weiz.at/Services/Foerderungen/Oekofoerderungen>

Action	Web	https://www.weiz.at/Photovoltaik
Page		
Cartography attached	<input type="checkbox"/> Cartography / supporting images	
Area where the action is located	City of Weiz	
Web references	https://www.weiz.at/Services/Foerderungen/Oekofoerderungen	

Table 8: Definition of Measure 4 - Implementation of a regional renewable energy community within the municipality of Weiz with different stakeholders

Implementation of a regional renewable energy community within the municipality of Weiz with different stakeholders					
Action n°	Measure 4				
Sector	Municipal, Residential, Primary, Secondary, Tertiary				
Energy poverty related	<input type="checkbox"/>				
Action type	Sector: Local electricity production Tool/Area of Intervention: Smart grids Policy instrument: Best Practice Implementation				
Emission factor	IPCC				
Data source	MEI 3/2019 – Monitoring Emission Inventory (SECAP of Weiz)				
BASELINE YEAR: 2019			EXPECTED RESULTS		
Final energy consumption	102.780 ²¹	MWh	Energy saved	0	MWh
Energy production	3.500 ²²	MWh	Increased energy production	440	MWh
Estimated emissions	17.472,6 ²³	tCO ₂	Emissions avoided	74,8	tCO ₂

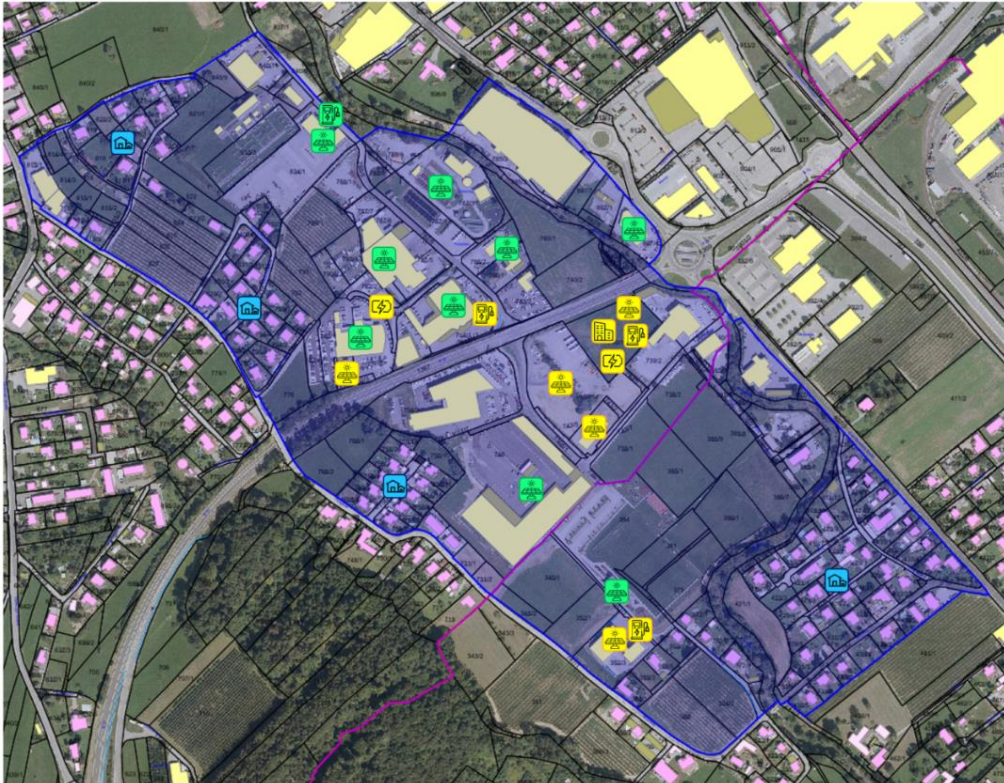
INFORMATION					<input checked="" type="checkbox"/> Benchmark of excellence
Responsible	sector Innovation Center W.E.I.Z.				
(Municipality/Region/other)					
Stakeholder(s) involved/engaged	Municipality of Weiz				
Timeline	<input checked="" type="checkbox"/> Expected		<input type="checkbox"/> Ongoing		<input type="checkbox"/> Implemented
Duration: 3 years		Expected start (year): 2022		Expected end (year): 2025	
Costs and financing	Costs: 1.500.000 €				
Financing according to the municipal budget	<input checked="" type="checkbox"/> Not financed		<input type="checkbox"/> Scheduled	<input type="checkbox"/> Foreseen in the budget	<input checked="" type="checkbox"/> Financed
	<input type="checkbox"/> Municipal funds		Amount: €		
	<input checked="" type="checkbox"/> External funds (third party financing)		Amount: 1.500.000€		Third party financing: 50 % (Region and State)

INDICATORS (KPIs)	
KPI 1	Number of participants in energy communities (number)
KPI 2	Total installed electrical storage capacity (kWh)
KPI 3	Total installed power / year (kWp/year)
KPI 4	Delta/Margin electricity price lower for the electricity share drawn from the EEG (cent/kWh)

²¹ Electricity consumption in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

²² Local PV plants energy production

²³ Electricity emissions in buildings, equipment/facilities and industries, and agriculture, forestry, fisheries (without mobility)

KPI 5	Delta/Margin feed-in tariff higher for the electricity fed into the EEG (cent/kWh)
KPI 6	Number of e-charging stations integrated into the energy communities (number)
DESCRIPTION	
Action	<p>In order to achieve the European climate targets, the increase of renewable energy sources is essential. A flexibilization and digital interconnection in the field of energy supply is necessary to make use of their potentials. Buildings and building compounds are suitable for stabilizing the energy supply and will act as active nodes in decentralized energy systems of the future. Building compounds, such as business parks and industrial parks, which usually have above-average energy requirements, will play an important role for this purpose.</p> <p>Based on the results and lessons learned of the explorative study REC-Business Park, a demonstrator for a “renewable energy community business park” will be established at the new location Energiestraße/Werksweg in Weiz. The renewable energy community business park will be equipped with a redox flow storage system. The resulting flexibility is used for both, to increase self-consumption and on the control energy market (Regelenergiemarkt).</p>  <p>Figure: Illustration of the project area Source: Innovation Centre of Weiz</p> <p>Energy exchange within energy communities will happen under preferable financial conditions as grid tariffs are reduced and some taxes and duties will be neglected. This will provide the possibility for members to have reduces consumption and increased generation tariffs. In that way, renewable energy communities are a valid instrument to increase the motivation for the installation of new/additional photovoltaic systems. The new focus area of the renewable energy community business park is defined in such a way that the surrounding private households can also participate in the renewable energy community. Moreover, a high degree of multiplication is an essential project goal. In addition, this flagship project serves as a best practice example for know-how and knowledge building in the implementation of energy communities and is intended to clarify open questions in relation to the new legal framework.</p>
Expected results	The overall goal is the implementation of a lighthouse project in Weiz. Within the framework of this project, a redox flow storage system will be installed and demonstrated in a future climate-neutral

	<p>neighbourhood for joint use within an EEG and for the provision of balancing energy.</p> <p>The project contributes significantly to the local use of locally generated renewable energy, offers EEG members advantages regarding electricity tariffs and increases the motivation to install additional PV systems. Innovative operating models increase the economic efficiency and provide a significant contribution on the way to a climate-neutral business park, which is characterised by a high multiplicativity.</p> <p>In addition, this implementation should serve to build up know-how and knowledge for the implementation of energy communities within the municipality and the region of Weiz, but also beyond, and to contribute to further follow-up projects. In addition, the elaboration and answering of legal, technical and economic questions is a central topic.</p> <p>The quantitative goals of the project are as follows:</p> <ul style="list-style-type: none"> • Establishment of an EEG with at least 15 members • Installation of a redox flow storage with at least 250 kWh/62.5 kW (C=0.25) and integration of the storage into a balancing energy pool • Additional installation of PV systems with a capacity of at least 400 kWp • Provision of an electricity price that is at least 1 cent/kWh lower for the electricity share drawn from the EEG • Provision of a feed-in tariff that is at least 0.5 cents/kWh higher for the electricity fed into the EEG • Installation of at least ten e-charging stations with 22 kW electrical charging capacity each in the focus area
References	Preliminary project: https://nachhaltigwirtschaften.at/de/sdz/projekte/rec-businesspark.php

Action	Web	https://www.innovationszentrum-weiz.at/
Page		https://nachhaltigwirtschaften.at
Cartography attached		<input type="checkbox"/> Cartography / supporting images
Area where the action is located		City of Weiz
Web references		https://www.innovationszentrum-weiz.at/foerderprojekte/aktuelle-projekte https://nachhaltigwirtschaften.at/de/sdz/projekte/

All four proposed measures have already been integrated in the SECAP and can be found on following website: <https://www.covenantofmayors.eu>. Thereby microgrids will obtain a strong support within the next 10 years.

The measures have also been introduced to the SUMP in context to the local mobility, but the plan has not yet been updated. However, the authorities in charge support the proposed measures and will consider them for the next update of the SUMP.