

Creating and enabling environments for microgrids supporting collective energy actions

from status quo to micro grid friendly policy environment

Austria

Andrea Dornhofer - Energy and Innovation Centre of Weiz

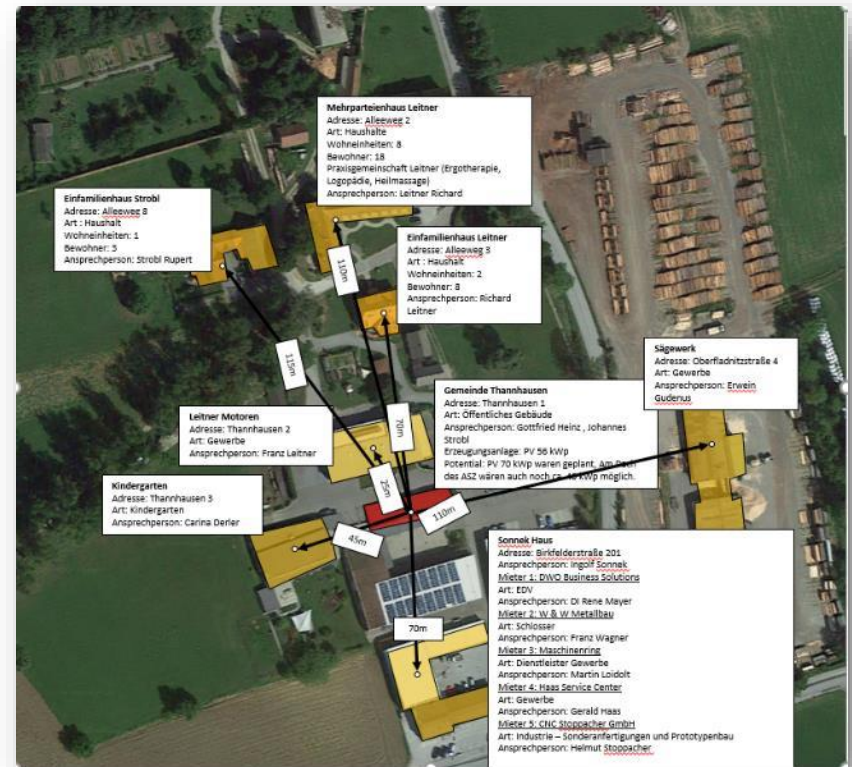
WEIZ & Thannhausen Pilots

WEIZ and Thannhausen sells their own PV energy to the direct line users



Direct electricity connection 1 PV plant 29 kWp to 8 User

Direct electricity connection between WEIZ 2 to WEIZ 1 – 60 kWp PV



ADVANTAGES DIRECT GRIDS

WEIZ Campus & THANNHAUSEN municipality

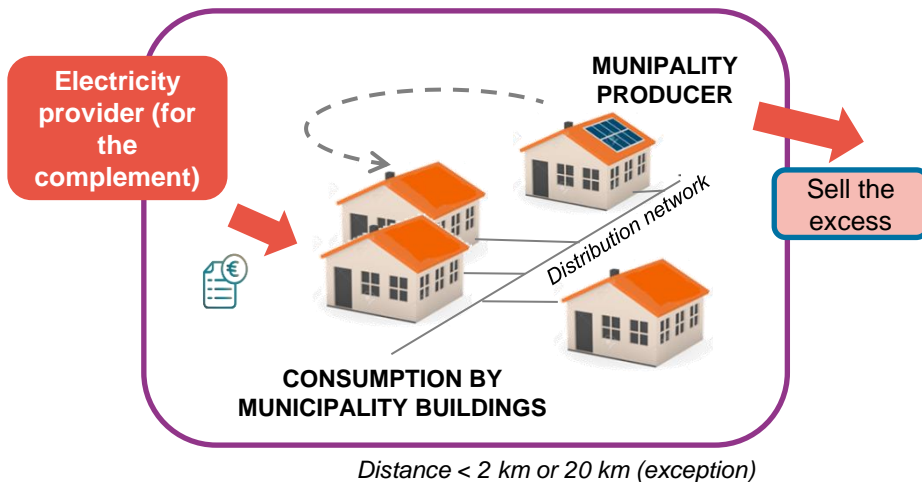
- 1) local and cheap energy to energy users of the direct grid system
- 2) Energy supply in case of a black out
- 3) reduce the generation peaks caused the PV
- 4) implementation of a battery storage for further increase of the own consumption
- 5) Data access for each user to the EMS System for their own consumption

France

Guillaume Bontron - CNR
Noémie Poize – AURA-EE

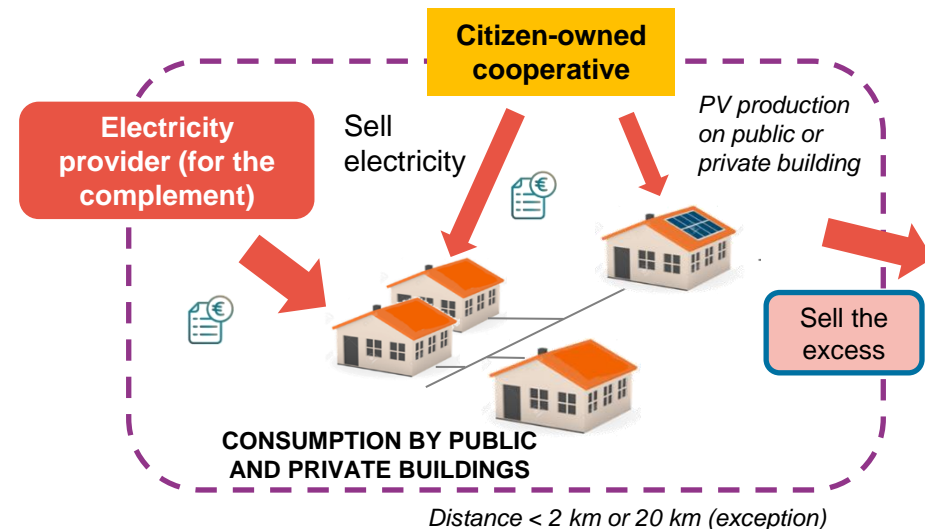
French pilot site schemes

1) Collective self – consumption for a single municipality



Sites : Montélier, St Marcel-les-Valence, Eurre

2) Collective self – consumption between a municipality and an energy community



Sites : La Chapelle-en-Vercors, Die, Saint-Julien-en-Quint

3) One other case : public municipality selling electricity to other consumers

Sites : La Roche-de-Glun

Proposals for an enabling environment

- **ORGANIZATION AND SUPPORT OF ENERGY COMMUNITIES**
 - Local public entities shareholders of renewable energy communities
 - Technical training for the public entity on collective self-consumption
 - Local networking to disseminate other initiatives
- **LEGAL ARRANGEMENTS**
 - Simplification of public procurement rules for collective self-consumption
 - Standardization of contracts (1 contract for 2 providers)
- **DATA ACCESS**
 - Simplification and support to municipalities for them to have a better access to their consumption load curves (link with DSO)

Germany

Michael Stöhr, B.A.U.M. Consult GmbH
Florian Rothmoser, Rothmoser GmbH & Co. KG

Restricting Microgrids to single buildings

Aus: **Bundesgesetzblatt Jahrgang 2017 Teil I Nr. 49, S. 2532. 2017.** Gesetz zur Förderung von Mieterstrom und zur Änderung weiterer Vorschriften des Erneuerbare-Energien-Gesetzes. 17. Juli 2017.

„§ 21

Einspeisevergütung und Mieterstromzuschlag“.

b) Folgender Absatz 3 wird angefügt:

„(3) Der Anspruch auf die Zahlung des Mieterstromzuschlags nach § 19 Absatz 1 Nummer 3 besteht für Strom aus Solaranlagen mit einer installierten Leistung von insgesamt bis zu 100 Kilowatt, die auf, an oder in einem Wohngebäude installiert sind, soweit er an einen Letztverbraucher geliefert und verbraucht worden ist

1. innerhalb dieses Gebäudes oder in Wohngebäuden oder Nebenanlagen im unmittelbaren räumlichen Zusammenhang mit diesem Gebäude und
2. ohne Durchleitung durch ein Netz.

**„Without passing by
the public grid.“**

**This sentence at least
makes the
implementation of
tenant electricity
models across
buildings impossible.!**

Spongy territorial extension of the applicability of microgrid concepts

Aus: **Bundesgesetzblatt Jahrgang 2020 Teil I Nr. 65, S. 3138 ff. 2020.** Gesetz zur Änderung des Erneuerbare-Energien-Gesetzes und weiterer energierechtlicher Vorschriften. 21. Dezember 2020.

b) Absatz 3 Satz 1 wird wie folgt geändert:

aa) In dem Satzteil vor Nummer 1 werden nach den Wörtern „soweit er“ die Wörter „von dem Anlagenbetreiber oder einem Dritten“ eingefügt.

bb) In Nummer 1 werden die Wörter „im unmittelbaren räumlichen Zusammenhang mit diesem Gebäude“ durch die Wörter „in demselben Quartier, in dem auch dieses Gebäude liegt,“ ersetzt.

The term "neighbourhood" is inserted here, but nowhere defined.
-> The definition is ultimately left to the courts. There is legal uncertainty until they have ruled.

Possible adaptation of the EEG to EU directives

- In §21b Absatz 3 (included since 2017, not changed 2020) Satz 1, Nummer 2, „ohne Durchleitung durch ein Netz“ (means: without using the public grid), should be deleted. In fact, these five words imply in the majority of cases that all parties of a tenant electricity model must be located within the same building. This restricts the implementation of tenant electricity models to single buildings and prevents effectively, that they involve participants from different buildings within the same urban district - contrary to the intention of the EU Renewable Energy Directive.
- In addition, the legal term “Quartier” (quarter) which is introduced in 2020 in §21b Absatz 3 Satz 1, needs to be defined appropriately within the German Renewable Energy Act. As a general rule, legal terms need to be defined in a legal act in order to be effective. Otherwise, the task of interpreting is left to the judicial authorities, thus effectively preventing application of the model offered by the law on the part of those who do not go to court in the hope of obtaining permission.

See Deliverable D.T1.3.2: <https://www.alpine-space.org/projects/alpgrids/en/project-results/wp-t1-creating-a-common-and-shared-understanding-of-microgrids/dt1.3.2---pilot-report>

Draft amendment of EEG 2023



- The Federal Ministry for Economic Affairs and Climate Action (Bundesministerium für Wirtschaft und Klimaschutz, BMWK) has presented a draft amendment of the EEG on 5 April 2022. The law is scheduled to be passed by the federal parliament in summer 2022, followed by a check done by the EU in Q4/2022. Entry into force is foreseen for 1 January 2023.
- It central goal is to make sure that the climate goals for 2030 and 2035 are met:
 - 2030: 80% of electricity from renewables
 - 2035: almost 100% of electricity from renewables

Analysis of draft amendment of EEG 2023

An analysis of the rules relevant for tenant electricity (Mieterstrom) and Energy Communities shows:

Energy communities:

- Energy communities are exempted from the obligation to tender for PV power plants which fall under the EEG (present rule: no fixed feed-in tariffs, but obligation for tender for PV plants larger than 750 kW and for wind power plants).
- This reduces complexity of small and medium-size projects and increases the profit that energy communities can make with such projects.

Mieterstrom (tenant electricity):

- Apparently, it is not foreseen to change §21 Abs 3 Satz 2 (interdiction to use the public grid for exchange of electricity among participants of a tenant electricity model which falls under the EEG).

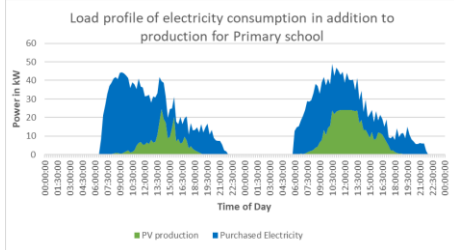
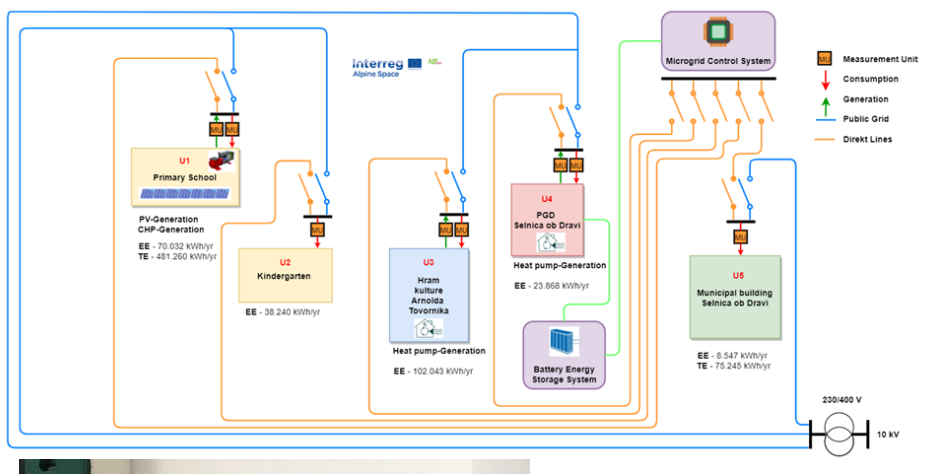
Conclusion:

- The draft amendment of the EEG 2023 does not indicate that energy sharing beyond the existing tenant electricity model will be enabled for models which fall under the EEG.

Slovenia

Tomaz Robic – ENERGAP - Pilot support expert

Microgrid Pilot 6: Selnica (SL)



Proposals for an enabling environment

Barrier(s)	Recommendation(s)
<ul style="list-style-type: none">• Complexity of administrative procedures (for the regulation of self-sufficient community the investor needs almost three times more documentation than in the case of individual self-sufficiency).• Long waiting periods for obtaining consent for the connection of power plants by electricity distributors and in many cases refusing consents due to network incapacity• Old and inefficient electricity networks with not enough capacity, no intelligent networks with new technologies that take into account the dynamic demands of consumption and planned diversified production;• Low knowledge about electricity and grid operation;• Historical background and not enough knowledge about company management, especially in the field of energy	<ul style="list-style-type: none">• Increased investments in strengthening already built networks and investments in intelligent networks with new technologies that take into account the dynamic demands of consumption and planned diversified production• Eliminate administrative requirements and barriers for customers that prevent them from choosing to participate in collective self-sufficiency or Energy communities• Guidelines for the integration of electricity storage facilities• Energy poverty (Through energy communities also this topic could be tackled.)

Proposals for an enabling environment



Topic of microgrids and energy communities is presented in NECAP (National energy and climate action plan)

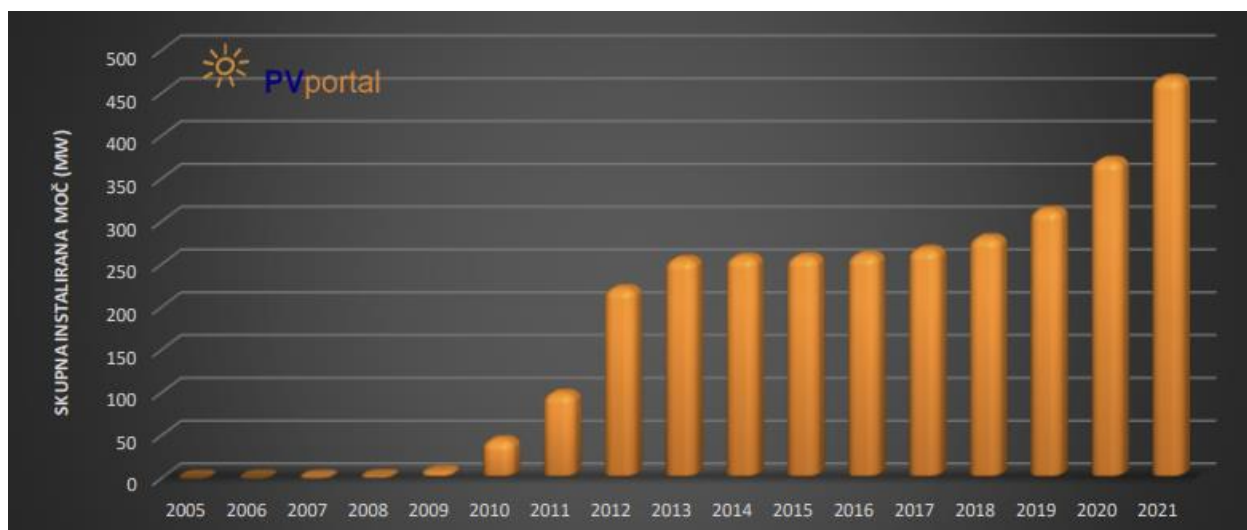
- Slovenia will provide better conditions for accelerated development of the electricity distribution network for its greater strength, resistance to disturbances, for progress and exploitation of resource and burden flexibility
- The current development plan does not meet the expected increased needs in the field of electricity distribution, so Slovenia will introduce more development-oriented financing of future development of the distribution network for greater capacity, resilience,
- This will also be achieved by better connectivity of the elements behind the metering point with the elements in front of the metering.
- As part of the planned legislative measures, promote the flexibility of consumption and all active customer roles (encourage the introduction of battery storage, distributed generation, community aggregation, energy communities, simultaneous contracts with several suppliers and independent aggregators, the possibility of supply at dynamic prices, etc.).

Main current rules on REC in Slovenia

	Citizen Energy Community – (CEC)	Renewable Energy Community - REC
Membership	The partners are physical persons, local authorities, including municipalities, or small companies.	The partners or members are physical persons, SMEs or local authorities, including municipalities.
Geographical limits	There are no geographical restrictions for members who are connected to the distribution system within Slovenia. Citizenship of the Republic of Slovenia is not a condition for membership.	Legal entity based on open and voluntary participation, is independent and supervised by partners or members located nearby RES plants hold, owned and developed by the REC.
Allowed activities	Limited to the electricity sector area, cooperates in the production of electricity from RES, electricity supply, consumption, aggregation, energy storage, energy efficiency services or providing e-vehicle charging services and other energy services for members.	It can operate in all energy sectors, the main objective is to provide environmental, economic and social community benefits for their own partners or members or local areas where it works.
Technologies	Technologically neutral.	Limited to RES technologies.
Legal basis	Electricity Supply Act (ZOEE) <u>transposing Directive (EU) 2019/944</u> Date of entry into force 13/11/2021	Renewable Energy Act energy (ZSROVE) <u>transposing Directive (EU) 2018/2001,</u> <u>Directive (EU) 2019/944</u> Date of entry into force 08/07/2021

Self-supply legislation

- On 10th of December 2015 **Slovenia** adopted **Decree on self-supply of electricity from renewable energy sources** that regulates a net-metering programme. Accounting period is occurring at the end of each calendar year.
- All those who will connect PV plant by **31 December 2023** will have their annual bill remaining after 2024.
- "Decree on the self-supply of electricity from renewable energy sources,"
Date of entry into force **09/04/2022**



Total installed solar capacity (MW)

Italy

Emanuele Cosenza – SOGESCA
Pasquale Motta - DeMEPA

Introducing LECs/RECs in Municipal Energy Plans (SECAP)

- Udine Municipality is a CoM signatory since 2009 (2020 targets)
- Consistently with the commitments signed, Udine presented the biennial monitoring of the SEAP
- In 2017 Udine joined the EU H2020 Compete4SECAP (C4S) Project
 - C4S activities: SECAP development, ISO 50001 certification, Competition about final energy uses in LA's buildings.
- In 2017 Udine signed the "new CoM initiative" (2030 targets)
- In 2021 Udine finalized and approved its SECAP



Udine

Paese
Italy

Numero di abitanti
99.071

Tipo di adesione
Individuale

Data di adesione
2009-11-30

Icons: Mitigation, Adaptation, Energy



Badge



MITIGAZIONE

Phases: 5 completed out of 6



ADATTAMENTO



► Note on badges

Introducing LECs/RECs in Municipal Energy Plans (SECAP)



Introducing LECs/RECs in Municipal Energy Plans (SECAP)

CITY OF UDINE SECAP TARGETS



2006: 624.574
tCO₂e



2019: 481.901
tCO₂e



2030: 355.720
tCO₂e



2050: Carbon
neutral



Reduction of emissions
from transport

Increased production of
renewable energy



Reduction of emissions in
buildings (Municipal,
Residential, Tertiary and
Industrial)

Reduction of risks
deriving from climate
change



Development of Energy
Communities

Fight against energy
poverty



Financing and funds for
sustainability and
resilience

Introducing LECs/RECs in Municipal Energy Plans (SECAP)

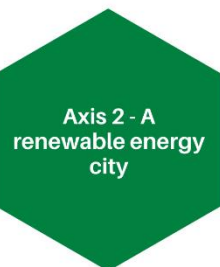


Actions by Axis

Axis 1 - A more efficient City: 16 Actions
Axis 2 - A renewable energy city: 5 Actions
Axis 3 - A City that Moves Better: 10 Actions
Axis 4 - A Resilient City: 23 Actions
Axis 5 - A Safe City: 7 Actions
Axis 6 - A City that informs: 4 Actions



Introducing LECs/RECs in Municipal Energy Plans (SECAP)



- Measures planned to stimulate investments in renewable energy and LECs for public and private sectors



Action N.	SECAP AXIS	Title	Avoided emissions (tCO2)	Energy saving (MWh)	Energy production (MWh)
A2-1	2 - A renewable energy city	Investments for the production of energy from municipal photovoltaic systems	78	360	360
A2-2	2 - A renewable energy city	Promotion of the use of energy from photovoltaic systems in private sectors	6.802		37.914
A2-3	2 - A renewable energy city	Promotion and development of Renewable Energy Communities	1.570		
A2-4	2 - A renewable energy city	Alpgrids Renewable Energy Communities Pilot Project	28	69	-

Introducing LECs/RECs in Municipal Energy Plans (SECAP)



- Measures planned for support and coordination of the investments in renewable energy and LECs for public and private sectors

Avoided emissions (tCO2)	Energy saving (MWh)	Energy production (MWh)	Avoided emissions (tCO2)	Energy saving (MWh)	Energy production (MWh)
A6-3	6 - A city that informs	Strengthening of the Energy Desk	-	-	-
A6-4	6 - A city that informs	Creation of a One Stop Shop	-	-	-

Introducing LECs/RECs in Municipal Energy Plans (SECAP)



Next steps

- Improve and enhance SECAP communication
- Coordinate policies for sustainable development and resilience with SECAP objectives
- Strengthen and expand the work group by including the identified stakeholders
- Search for national, European and regional funds to finance the actions
- Strengthen existing resources (Energy Desk) and create new tools (One-Stop-Shop) in collaboration with the Regional Agency and the Friuli Venezia Giulia Region
- Implement the Plan together with the local actors and according to the identified energy and climate vulnerabilities

Italian regulation on energy communities

Law No. 8 - 2020 (art. 42)

- partially transposing EU Directive 2018/2001
- establishing collective self-consumption schemes for Renewable Energy Communities

Law No. 53-2021 (art. 5, 12)

- fully transposing EU Directive 2018/2001
- establishing Citizen Energy Community

DL No. 199 – Nov. 2021

fully applying to Renewable Energy Communities the rules of EU Directive 2018/2001

Main current rules on REC in Italy

- REC can be participated by any end user: citizens, shops, municipalities, local authorities, enterprises; for the latter, participation in the REC cannot be the main commercial or industrial activity
- REC members organize themselves as a private legal entity and may withdraw at any time from the collective configuration, without prejudice to any agreed fees in the event of early withdrawal for the participation in the investments incurred
- all members of the community must be supplied by the same electrical primary substation; to this purposes DSOs have to make public the electrical boundaries of their primary substations
- each REC's member maintains his electricity supplier and pays the same bill for the consumed electricity (all levies, charges and taxes) as before,
- renewable plants up to 1 MW in power can be installed in areas owned by the members of the community

Main current rules on REC in Italy

- generated electricity exceeding the REC consumption can be sold, either directly or through an aggregator,
- REC may offer ancillary and flexibility services to the grid and can promote to its member: integrated home automation, energy efficiency measures, electric vehicle charging services
- REC is entitled to receive:
 - ✓ incentives, provided by GSE (national company appointed to promote the renewables) and related to the 'shared energy' that is defined for each hourly period as the energy jointly consumed by its member or the energy generated by the renewable sources, whichever is less;
 - ✓ a compensation related to the avoided loss in transmission and distribution network due to the 'shared energy'
- the incentives received by REC are distributed among its members according to predefined rules.