

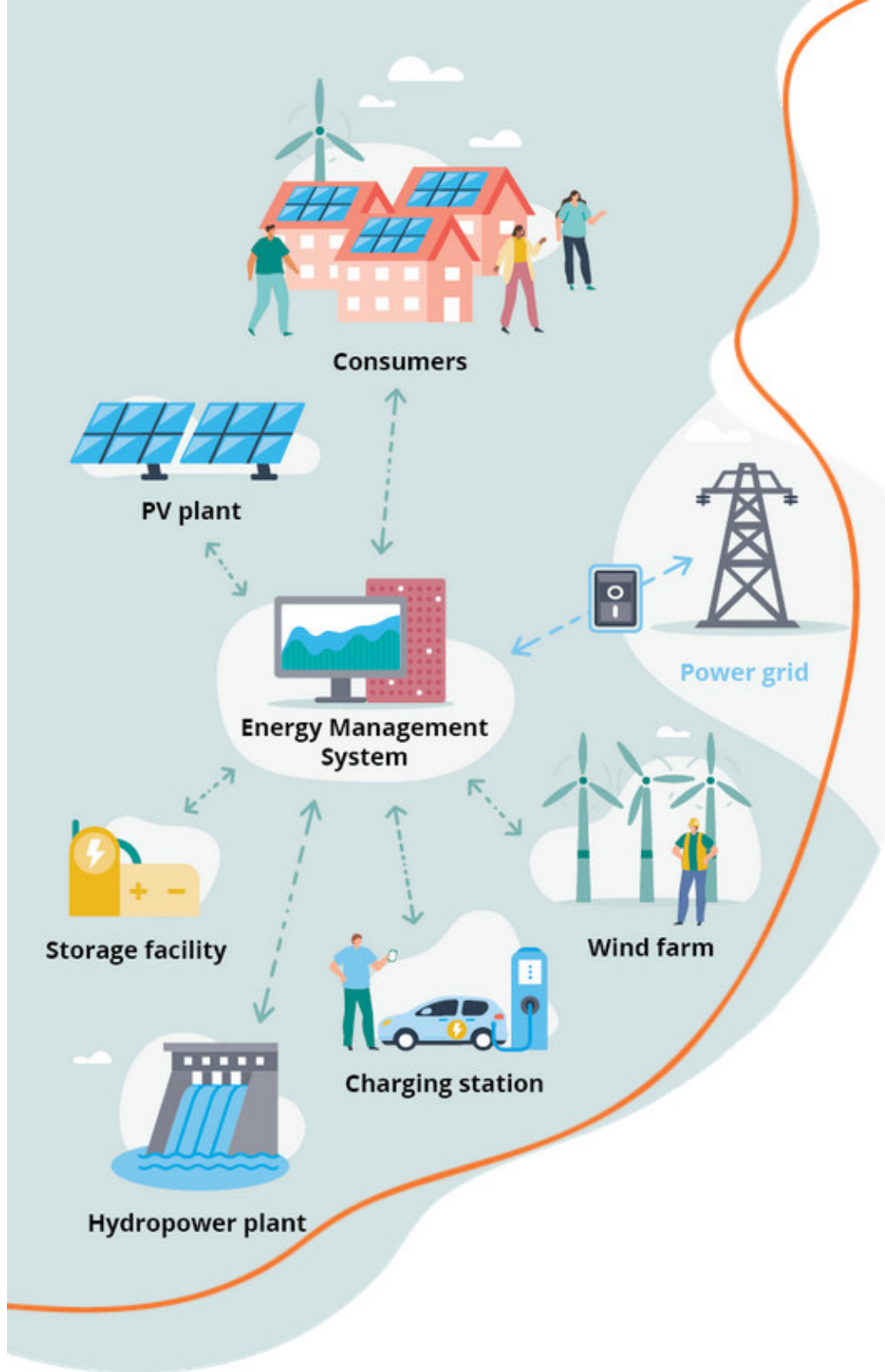
ALPGRIDS proposal for an Alpine Microgrid Model

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Michael Stöhr, B.A.U.M. Consult

What are we talking about ?

Microgrids in a first approach deal with:

- local energy
- grid-bound usable form of energy: electricity, heat, cold, fuels
- involving a range of local stakeholders
- might be connected to an upstream grid or not



Why talking about microgrids?

Potential benefits



Using locally available (renewable) energy sources, microgrids can improve the

- local energy self-sufficiency
- energy efficiency
- sustainability
- resilience
- cost-effectiveness

of energy supply for

- municipalities
- communities of citizens
- farmers
- small enterprises
- others

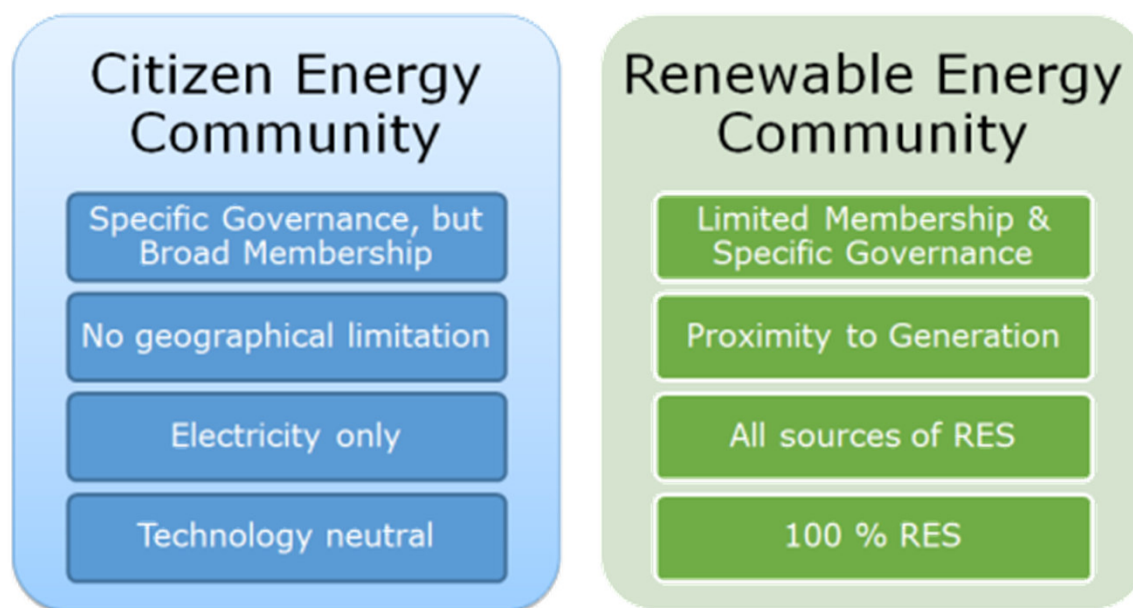
and the awareness of energy, its origin, use, and environmental and social implications.

What is specific for the Alpine Space?

Potential benefits of microgrids can be reaped especially in

- rural
- mountainous
- remote locations
- with missing or weak connections to upstream grids
- areas particularly vulnerable to natural hazards whose frequency and severity will increase as the anthropogenic climate change evolves
- **an even higher need for resilience**

Relevant EU framework: Energy communities



Art. 16 of the Directive on the Internal Market for Electricity Directive on “Citizen Energy Communities”

Art. 22 of the Directive on the promotion of the use of energy from renewable sources on “Renewable Energy Communities”

Definition of microgrids

(a) technical

(a) grids or interconnected combinations of grids with clearly defined local boundaries for the exchange and distribution of

- AC electricity
- DC electricity
- heat
- cold
- gases (e. g. hydrogen, methane)
- liquids (e. g. mixtures of higher hydrocarbons such as kerosine)

potentially including interconnecting devices, such as

- electric converters
- electric transformers
- heat pumps
- combined heat and power plants fuelled by grid-bound energy carriers

-> Multi-Vector Microgrids

and / or devices producing gaseous or liquid energy carriers, such as

- electrolyzers
- methane or ammonia synthesis plants
- Fischer-Tropsch plants

Definition of microgrids

(b) – (d) technical

- (b) which connect several devices generating, using or storing usable energy or energy carriers;
- (c) in which controllable devices (generation units, flexible loads and storages) can be controlled as a single entity whereby these controllable devices might comprise all or part of all generation units, flexible loads and storages in this territory;
- (d) which might be able to be operated temporarily or constantly disconnected from the respective upstream grids (islanding mode);

Definition of microgrids

(e) – (f) organisational

(e) in which the connected devices are operated by (legal) persons acting as producers, consumers, prosumers and optionally storage operators on the same territory whereby these (legal) persons might comprise all or a part of all producers, consumers, prosumers and storage operators in this territory;

(f) and which are organised by a single entity which might be (1) a local Energy Community complying partially or fully with the definition of Citizens Energy Communities (CEC) or Renewable Energy Communities (REC) given by (the relevant national transposition of) the EU directives on the internal market for electricity and on renewable energies or (2) an organisation such as a (municipal) electric utility which involves customers actively in the organisation of the Microgrid.



OUR PILOTS

In 5 pilot countries (Austria, France, Germany, Italy and Slovenia) ALPGRIDS will implement seven microgrid pilot projects

that will be built and run with the support of transnational exchanges of knowledge and experience involving local energy stakeholders and policy-makers



Online ALPGRIDS Final Conference
on 8th April 2022

Microgrid solutions: A Win for
Energy Communities in the Alps!

Interreg
Alpine Space



ALPGRIDS

**ALPINE
MICROGRID
MODEL
FINAL RELEASE**



Available online:

<https://www.alpine-space.org/projects/alpgrids/en/home>