

PERSPECTIVES FOR THE ENERGY TRANSITION

***HOW TO REINFORCE COOPERATION AND INTEGRATED
ACTIONS FOR A GREENER FUTURE***

 ***IMEAS Final Event***
29 November 2019, Milano



WELCOME

The experience of IMEAS in fostering integration in low-carbon policy making and planning

R. Roberto, IMEAS Project Coordinator

ENEA (Italian National Agency for New Technologies, Energy and Sustainable Economic Development)





The Alpine Space Programme

Anne-Séverine Lay

Joint secretariat - Alpine Space programme



www.alpine-space.eu/imeas

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



12

Project
Partners

7

Alpine Space
Countries

18

Project
Observers

DURATION

Project start date: 01/11/2016

Project end date: 31/12/2019



IMEAS ambition: to contribute in overcoming difficulties in defining and implementing low-carbon strategies by supporting the development of trans-nationally integrated policy instruments

How did we support the territories in implementing successful low carbon energy transition strategies?



- **tools** and **guidelines** and a **web Platform** to cooperate and exchange knowledge, currently displaying more than 30 guidelines/tools and users from all AS Countries
- **joint actions** at local level, with actions focused on the territorial needs, connecting them in a comprehensive transnational perspective
- work with about 130 **Public Administrations** on more than 450 **territories** (municipalities, cities, communities), supporting them in the process of definition/implementation of energy roadmaps
- **roadmaps** involving about 2 million inhabitants and expected to lead (vs 2005):
30% CO₂ avoided, 30% and energy savings and 30% RE @2030;
from 50% to 80% CO₂ avoided and more than 50% RE in the lowest scenario @2050



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HOW TO REINFORCE COOPERATION AND INTEGRATED ACTIONS FOR A GREENER FUTURE

 **IMEAS Final Event**
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Workshop program - Key notes and moderated discussion

08:45 **Intro:** *The experience of IMEAS in fostering integration in low-carbon policy making and planning*

09:00 **Learning from integrated approaches in low-carbon energy planning**

Reinforcing the public administration to take action. How to transfer the experiences from the municipal and district levels in Upper Bavaria and the Land of Salzburg to the Alpine Space.

Quantitative and qualitative issues in energy system modelling for the design of a local public policy. Are multi-level approaches successful in tackling these complex problems?

09:25 **The contribution of players from different sectors and governance levels**

Sustainable energy transition in the mobility sector: how to engage actors on different levels and from different sectors into comprehensive planning of public transportation.

09:40 **Experiences from energy autonomy initiatives**

Local Energy Community in Siebratsgfall. What happens when a small community shares the individual energy production of households and public buildings before selling the overproduction to the energy provider?

Energy autonomy: how to bring together rural and urban territories to take advantage of each other's assets.

10:05 **Conclusions**

What key findings are there

How these could support
further actions

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10:05 **Conclusions**

SPEAKERS

- ✓ what did you do specifically
- ✓ what are the findings of your work
- ✓ what lessons learned are useful for the future

DISCUSSANTS

- ✓ what findings are most interesting from your point of view
- ✓ how these findings can be used practically and what for

ALL ☺

- ✓ what is interesting for you
 - ✓ what can this findings be used for
- ideas
- questions



Learning from integrated approaches in low-carbon energy planning



Reinforcing the public administration to take action

How to transfer the experiences from the municipal and district levels in Upper Bavaria and the Land of Salzburg to the Alpine Space

A. Aschenbrenner, WP T3 Leader

B.A.U.M. Consult GmbH München



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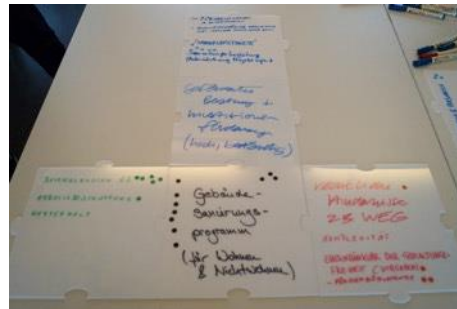


How can public programs and legal frameworks optimally **support regions and communities to take action?**

- Which **supporting programs** are needed to push the **implementation of specific climate protection measures** on a local and regional scale?
- How are **existing supporting programs** to be better aligned or revised to **facilitate regions and communities** to take action?

Approach:

- Involvement of stakeholders from Bavaria (Upper Bavaria and Swabia) and Austria (Salzburg)
- 4 hands-on workshop sessions + 1 feedback session



Specific supportive conditions may fundamentally reinforce the public administration at the local and regional level when implementing climate protection measures, in order

- to alleviate the impeding barriers and to realize the associated chances

Legal Framework:

- Climate protection as a statutory duty of communities and regions, institutionalized as a cross-sectional task across the individual departments of the public administration
- Installing missing or removing contradictory legislative regulations (e.g. adjust national regulations for building standards)

Coordinator (staff and local ambassadors):

- Sufficient financial and human resources, especially paying fair salaries
- Creating strong relationships with the political sphere
- Training of the climate protection managers in terms of administrative processes

Knowledge Transfer and Management:

- Creation of a central contact point: centralizing knowledge, provision of data, consultancy



The implementation of climate protection instruments **rather depends on the overall framing conditions** than on the provision of specific supporting activities.

Since some existing supporting programs are unknown, in some cases it may rather be a **matter of insufficient knowledge transfer** than a lack of supporting programs.

Aside from favorable framing conditions supporting the implementation of climate protection activities, **a binding framework regulating the monitoring of the activities' progress is needed as well**. This enables lessons learning from both successful and unsuccessful instruments.

Transnational joint activities facilitate the **identification and the transfer of best practice cases and the identification of supportive framing conditions**.

The **content-based overlapping of instruments** makes it more difficult to identify and implement the most suitable climate protection measures.



Quantitative and qualitative issues in energy system modelling for the design of a local public policy.

Are multi-level approaches successful in tackling these complex problems?

R. Brunelli and S. Verones

Autonomous Province of Trento



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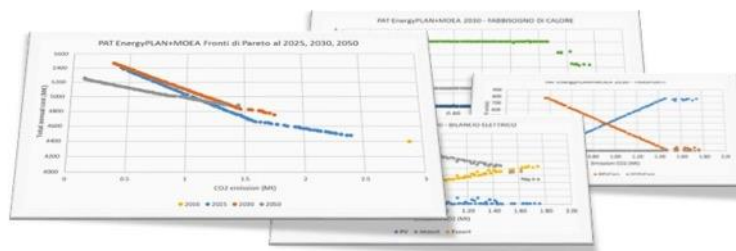
Developing the provincial environment and energy plan for the next decade

- involvement of **key target groups** and **stakeholders** at **different levels** (MoU)
- **multilevel energy flow characterization** albeit with **sectorial detail** dependencies
- adoption of an **energy modelling tool** (SW tool with high detailed temporal resolution – EnergyPlan - integrated with a multi-objective evolutionary optimization algorithm)
- specification of **technological constraints and energy demands** of the possible future provincial energy systems
- identification of the **most cost efficient energy systems** for each given emission constraint in the range foreseen by EU, national and provincial regulations (Pareto set)
- development of **refined sectorial scenarios**



Developing the provincial environment and energy plan for the next decade

METHODOLOGICAL APPROACH



ENERGYPLAN+MOEA



NATIONAL & LOCAL TRENDS

PEAP SCENARIOS
LC e LC+



... description of PEAP SCENARIOS >>



Two possible emissive scenario have been considered:

LC (40% and 80% CO₂ emissions reduction with respect to 1990 at 2030 and 2050 respectively) ,
LC+ (50% and 90% reduction) and compared to a REF-erence one.

1. REF, LC and LC+ scenarios have similar “total costs”, close to the Baseline 2016. By 2030 the increase in “total costs” is limited to +4% in REF and LC, to +7% in LC+. At 2050 the deviation from Baseline 2016 slightly increases up to +5% in REF, +11% in LC and +14% in LC+.
2. in the LC and LC+ scenarios, investments in building efficiency and renewable technologies are increasing, while the cost of importing energy sources (oil, gas, electricity imports) is decreasing: Trentino economy is strongly strengthened.
3. from the analysis of investment costs an annual Δ of LC and LC+ scenarios emerges compared to the REF, of 97/174 M€ in 2016-2030, 425/574 M€ in 2030-2050:
the energy transition requires increasing public incentives and private investments which are offset by lower costs for imported energy carriers and benefits for the local economy and workforce.



Delivering but ... not yet the perfect toolkit

- technology modelling:
the tool does not lend itself too well to model in a detailed way the specificities of a single technology at different scales (prices, efficiencies);
- multilevel insights:
computational issues, besides data availability, make it hard if not impossible to pursue really integrated multi-level modelling;
- modelling policies
it is difficult to model in a consistent way different intervention strategies and it is even more difficult to make it in an exploratory fashion due to the time required for the analyses

... no 'one size fits all' seems to be available

**Can multi-level approaches be successful
in tackling these complex problems?**



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Discussion



The contribution of players from different sectors and governance levels



Sustainable energy transition in the mobility sector

How to engage actors on different levels and from different sectors into comprehensive planning of public transportation

N. Jurko, WP C Leader

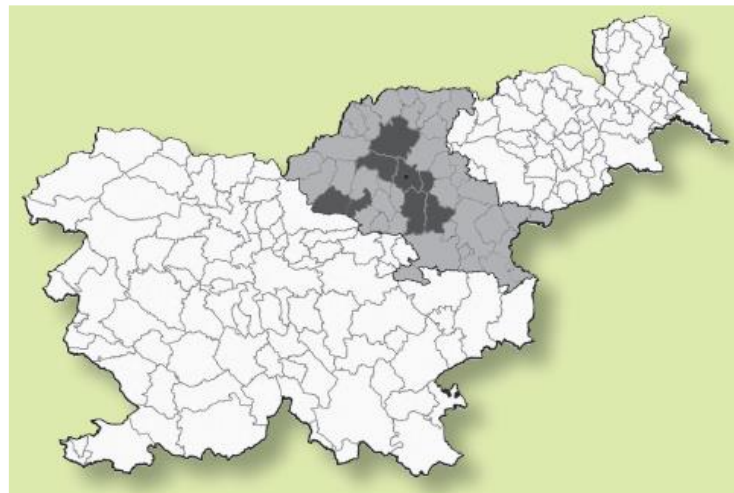
Energy Agency of Savinjska, Šaleška and Koroška Region



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Sustainable mobility in Šaleška Valley



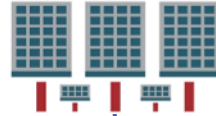
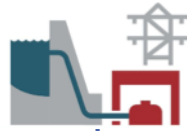
How to engage actors on different levels and from different sectors into comprehensive planning of public transportation



SYSTEM OPERATORS

MARKET

AGREGATORS

activitiesH2 USE – TEŠ
GENERATOR
COOLINGPRODUCTION OF CLEAN
ELECTRICAL ENERGY**ENERGY TRANSITION**

- high share of renewable energy
- stable and robust transmission grid
- development of local and regional economy
- reduced energy dependence
- environmental protection
- ...

Research and
developmentKnowledge
transfer, skill
development

Green tourism

PRODUCTION OF GREEN
HYDROGEN FROM EXCESS
RENEWABLE POWER

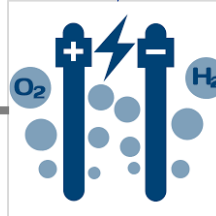
Sustainable mobility

H2 USE – ZERO
EMISSION
TRANSPORT

€

H2

O2



FUEL CELLS AND HYDROGEN JOINT UNDERTAKING

Fuel Cell and Hydrogen Observatory (Hydrogen Europe)

Energy Producers

hse
Holding Slovenske elektrarne d.o.o.

TES
TERMoelektrarna
SOŠTANJ

Municipalities



MESTNA OBČINA
VELENJE

EKO SKLAD
SLOVENSKI OKOLJSKI
JAVNI SKLAD

Financing

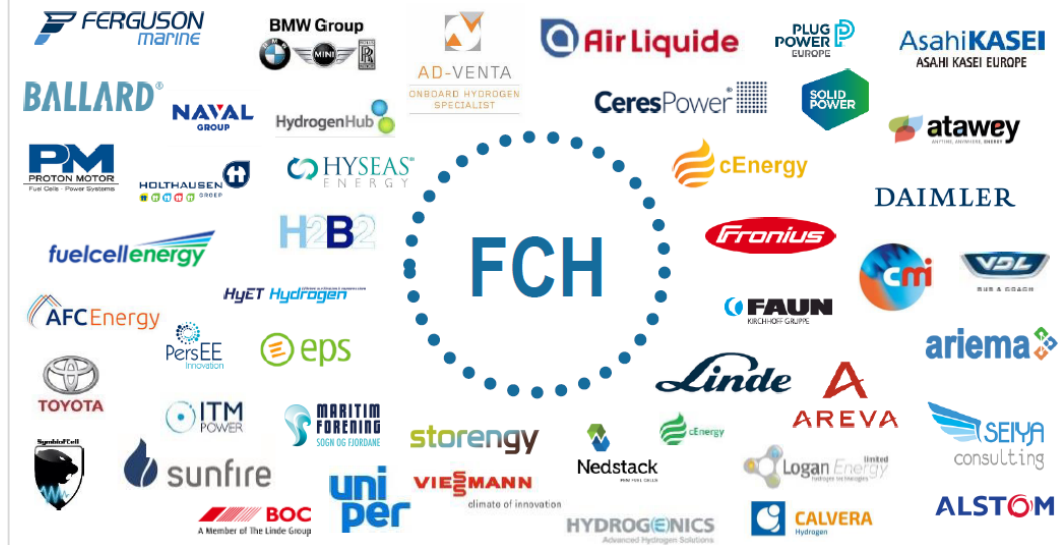
PETROL

Transport companies

NOMAGO



Current FCH industry participants



National level



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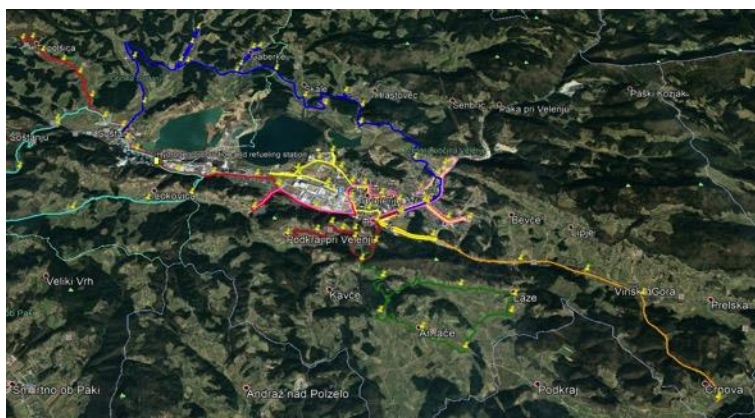
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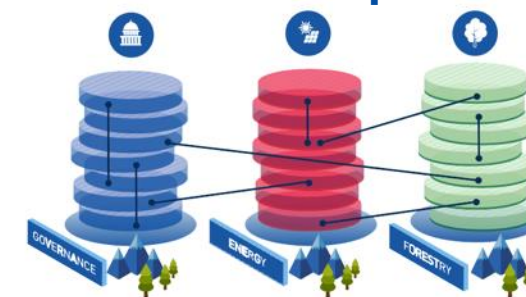
activities

Multilevel cross-sectoral cooperation

Mobility:
EU- Trans-European Transport Network (TEN-T) SI - Third development axes
VE - Green local public transport



Governance:
EU
National
Municipal



Energy (H₂):
FHJ (EU)
RCVT (SI)
HSE-MOV (Local)



Planning of public transport routes

Obtaining national co-financing



Application of an investment project for participation in jive 2



Project Development Assistance PDA

Proposal Submission Form

Please send this [link](#) to help in completing the form.

Horizon 2020

Call: H2020-LC-SC3-2018-2019-2020
(BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE:
SECURE, CLEAN AND EFFICIENT ENERGY)

Topic: LC-SC3-EE-11-2018-2019-2020

Type of action: CSA

Proposal number: 894467

Proposal acronym: HERO

Deadline for H2020-LC-SC3-EE-2019

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How to fill in the form:

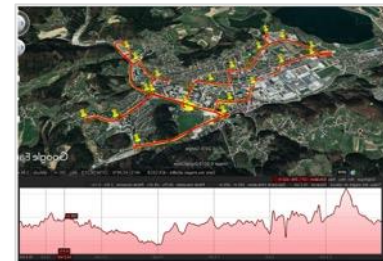
The administrative form must be filled in by each participant using the template available in the submission section. Some data like the ID of the participating firms are pre-filled based on the data in the submission request.

Submitted 2018-07-06 10:28:00

Page 1 of 2

10/07/2018 10:12:10

Preparation and publication of a public tender for the purchase of vehicles

[illegible][illegible][illegible]

Consumption analysis and design of hydrogen production capacities



Energypolitical Roadmap for Allgäu Region, Germany

Baseline Emission Inventory, Benchmarks, Scenarios, Quantified Climate Protection Targets and Energypolitical Activity Programme

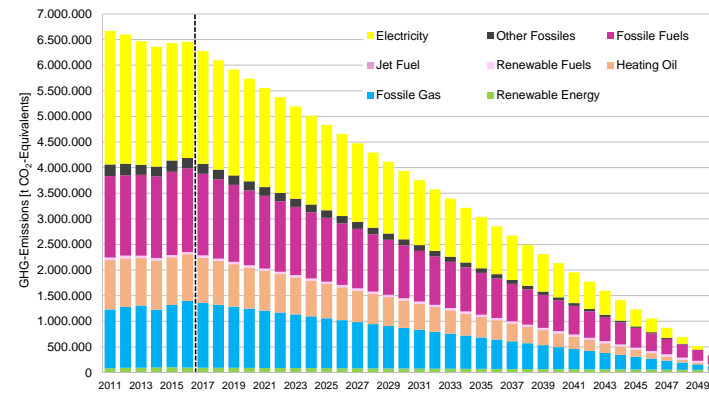
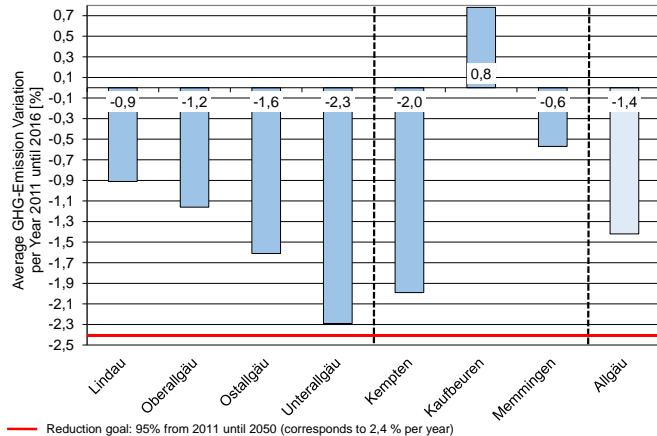


T. Böhm

Eza!, Energie- und Umweltzentrum Allgäu



- Elaboration of a Baseline Emission Inventory (BEI) using the BSKO-Standard for four counties, three county-free cities and for the Region Allgäu itself (eight individual BEIs)
- Evaluation of results, e.g. by benchmarks for all eight BEIs on energy- and GHG-parameters
- Deduction of energy consumption, energy production and GHG emission scenarios until 2050
- Agreement on quantified climate protection targets for the Allgäu region: Reduction of CO₂- emissions by 95%, 100% renewable electricity, 95% renewable heat and transport until 2050
- Elaboration of an energy political activity programme on regional level



Alliance Climate-Neutral
Allgäu 2030



- In all four counties and all three county-free cities the average GHG-reduction since 2011 is not sufficient to meet international and national goals, though the region is energypolitical active in many fields since more than 20 years and exceeds the national status quo in many average climate protection parameters
→ even more activities necessary
- In order to support faster decarbonisation of human activities, set targets should be reviewed and adapted within the next five years. Regular monitoring and evaluation of the implemented activities are essential for the successful implementation of the roadmap
- In the absence of a common political administrative unit in the region, EU funding would be desirable to support regional energy planning
- Local monitoring of the activities must primarily take place in the counties and county-free cities with their own public administrations. The participation at the European Energy Award is strongly recommended for local monitoring



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Experiences from energy autonomy initiatives

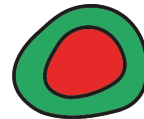


Local Energy Community in Siebratsgfall

What happens when a small community shares the individual energy production of households and public buildings before selling the overproduction to the energy provider?

S. Erber, WP T1 Leader

Energy Institute of Vorarlberg



Energieinstitut Vorarlberg

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Local Energy Community



What happens when a small community shares the individual energy production of households and public buildings before selling the overproduction to the energy provider?
activities

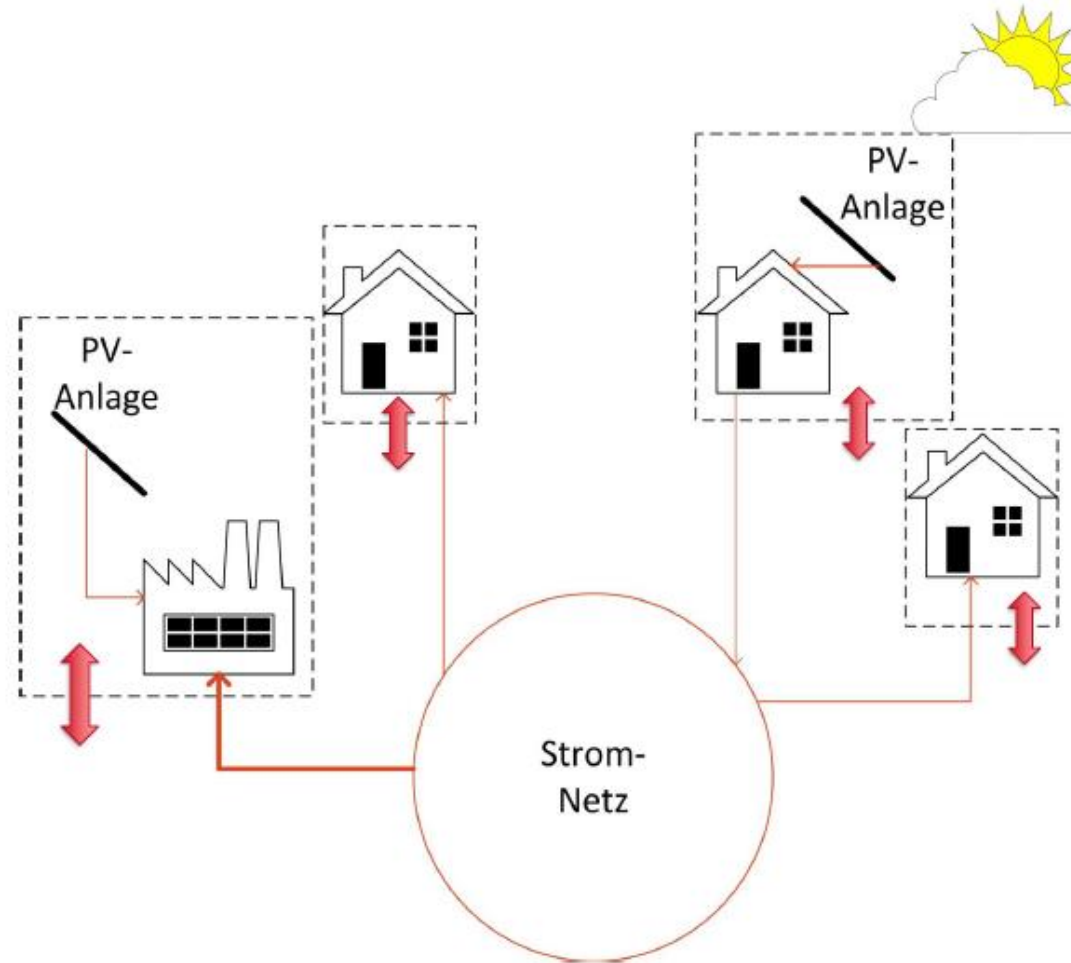
Calculation and simulation
done by FH Vorarlberg
University of Applied Science
Dornbirn



Status Quo

Participants:

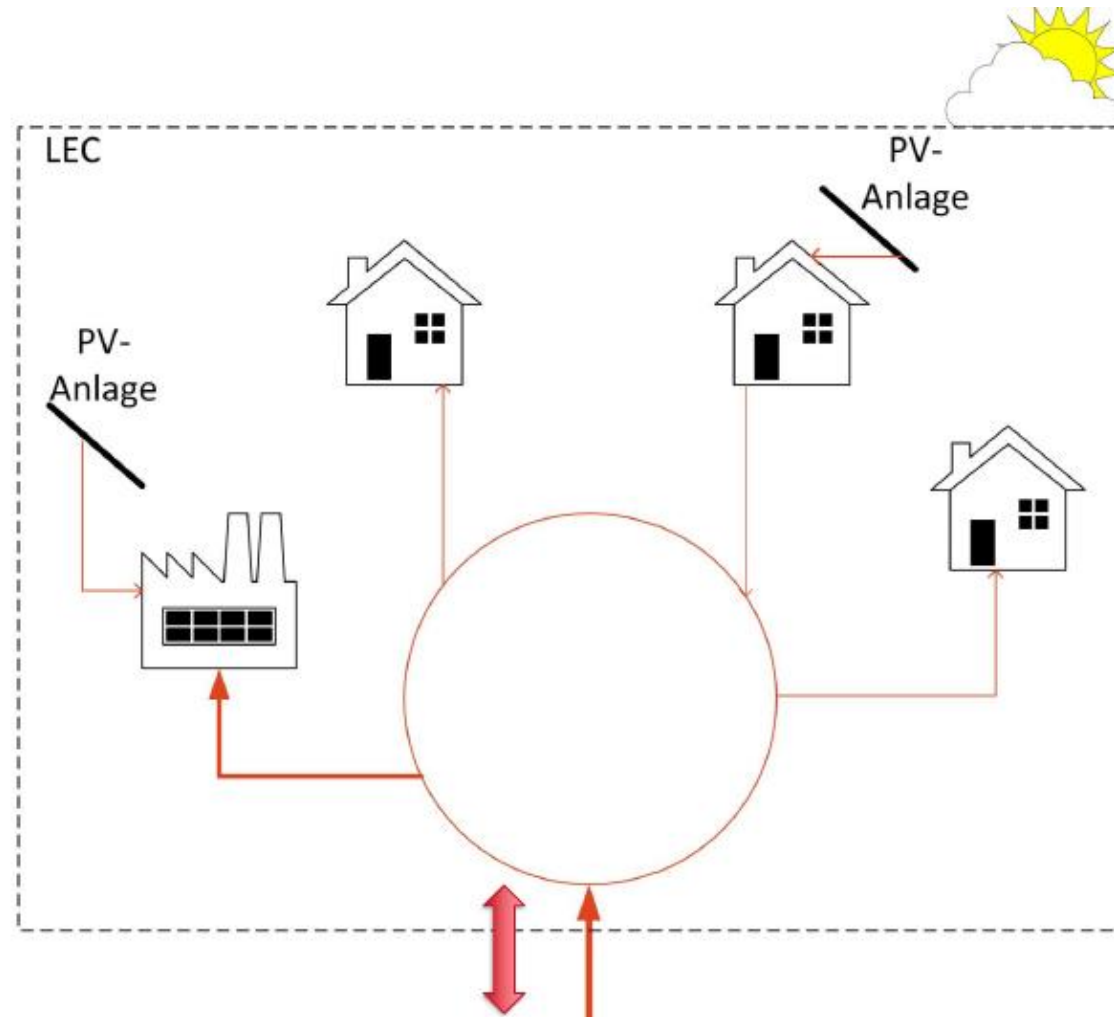
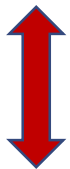
- Sewage treatment
- Baker's
- Agriculture with flats
- Fire brigade
- Community office
- Heating Plant
- EFH with large PV
- Post Office Branch
- Milk Processing Plant
- Elementary School
- Water Supply
- Ten households without PV



Law for the establishment of LECs
"Renewable Expansion Law 2020" is
only in preparation.

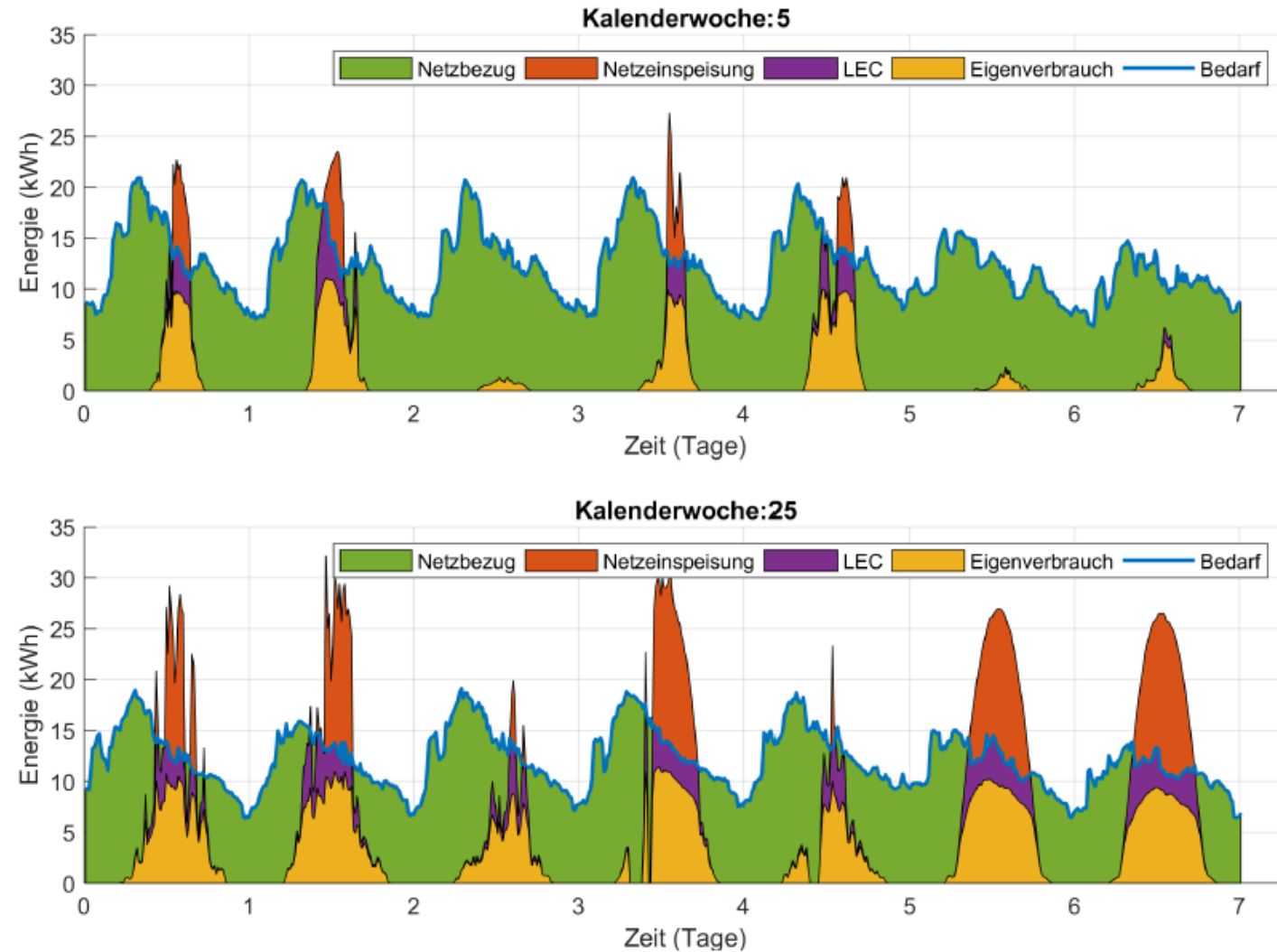
Framework conditions are not yet
foreseeable and have been estimated.

Balance limit and balancing for
profitability analysis



**Results for one week in
Winter and Summer**
Green: Network Reference
Red: Grid Feed
Violet: LEC
Yellow: Personal
Consumption
Blue: Need

Calculation in 15 min steps
for the whole year



Conclusions

The rationale for establishing an LEC should be economic, as the LEC does not entail any technical change.

From today's point of view, an LEC is not profitable in this example, because only 1,600€ will be available for 22 participants.

This is because of the low costs for electricity and net in Vorarlberg.



Energy autonomy

How to bring together rural and urban territories to take advantage of each other's assets

C. Premat, WP T4 Leader

Auvergne-Rhône-Alpes Energy Environment Agency



**Auvergne
Rhône-Alpes**
Énergie Environnement

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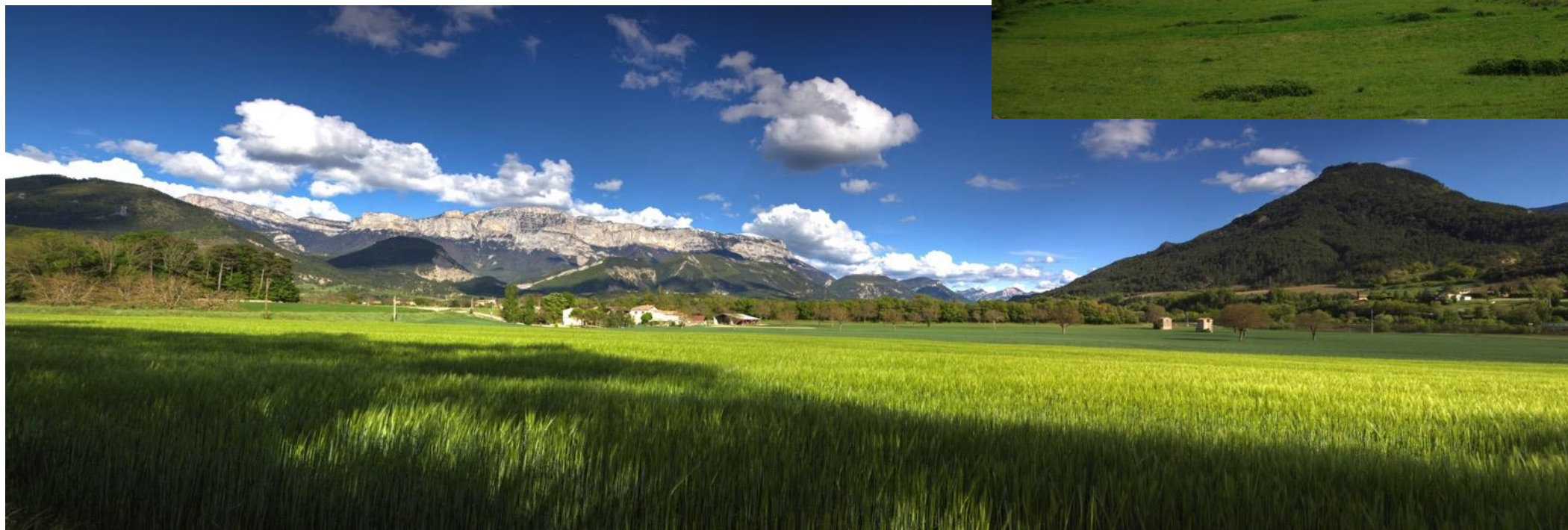
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Energy autonomy and rural-urban cooperation



Rural-Urban cooperation between a metropolitan area and a regional natural park



Grenoble-Alpes Metropole /
Vercors regional natural park



What happens when a small community shares the individual energy production of households and public buildings before selling the overproduction to the energy provider?

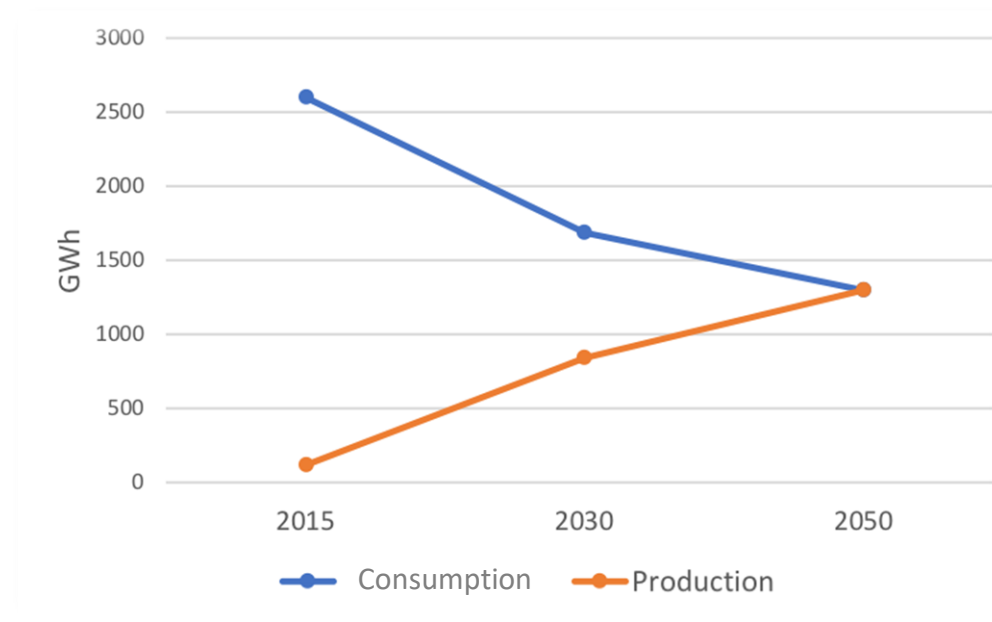
activities

Context

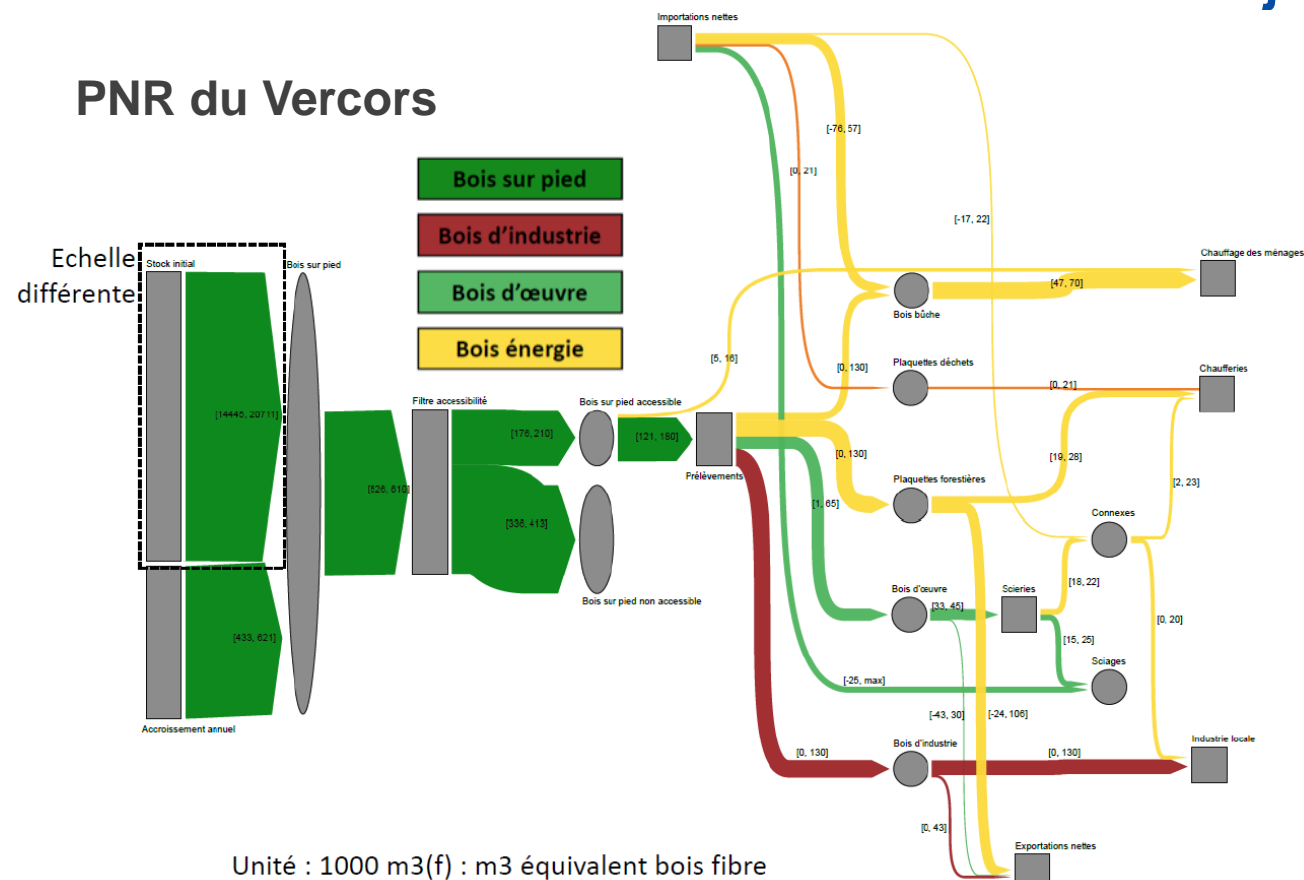
The 2 local public authorities are cooperating with the objective to become a Positive Energy Territory (TEPOS) by 2050

4 main topics:

- Mobility
- Wood management (including wood energy)
- Business-related links
- Inter-territorial governance



- Analyze the flow of local wood energy for the 2 territories
- INRIA and AURA-EE developed a Sankey diagram to help visualize wood flows and facilitate the decision making process of supplying low-carbon wood energy



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Thank you for your attention!

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IMEAS web site: www.alpine-space.eu/imeas



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