



EUSALP EU STRATEGY FOR THE ALPINE REGION

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EUSALP Energy Survey 2017

Report

First EUSALP experts' workshop "EUSALP Energy Observatory"

Bolzano/Bozen, 20.03.2018

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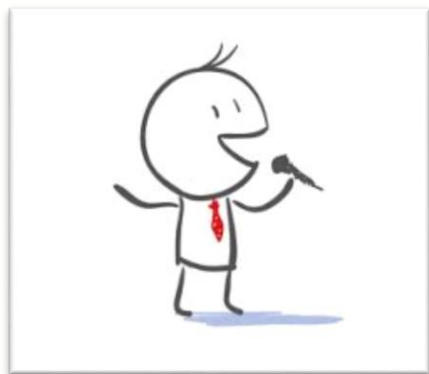
eurac
research



80 million people, 7 countries, 48 regions,
mountains and plains addressing together
common challenges and opportunities



This project is co-financed by the European Union via Interreg Alpine Space



Who is
speaking?

Adriano Bisello **eurac** research

Role:

Senior Researcher – Urban and Regional Energy Systems
Eurac Research (EURAC)

Background:

MSc in Urban, Regional and Environmental Planning
PhD in Management Engineering & Real Estate Economics

Research interests:

Co-benefits of energy transition
Smart energy projects
Energy communities
Energy strategies

EUSALP - EU STRATEGY FOR THE ALPINE REGION

What is a Macroregional strategy?

Macro regional strategies provide **a framework for cooperation, coordination and consultation** between and within regions and states. This way, common challenges can be addressed and solved together.

Why a Macroregional Strategy for the Alpine area? What is EUSALP?

The Alpine area is composed of territories with contrasted demographic, social and economic trends and a great cultural and linguistic diversity. **The EU Strategy for the Alpine Region is the fourth macro strategy in the European Union and was adopted by the European Council in 2015.**

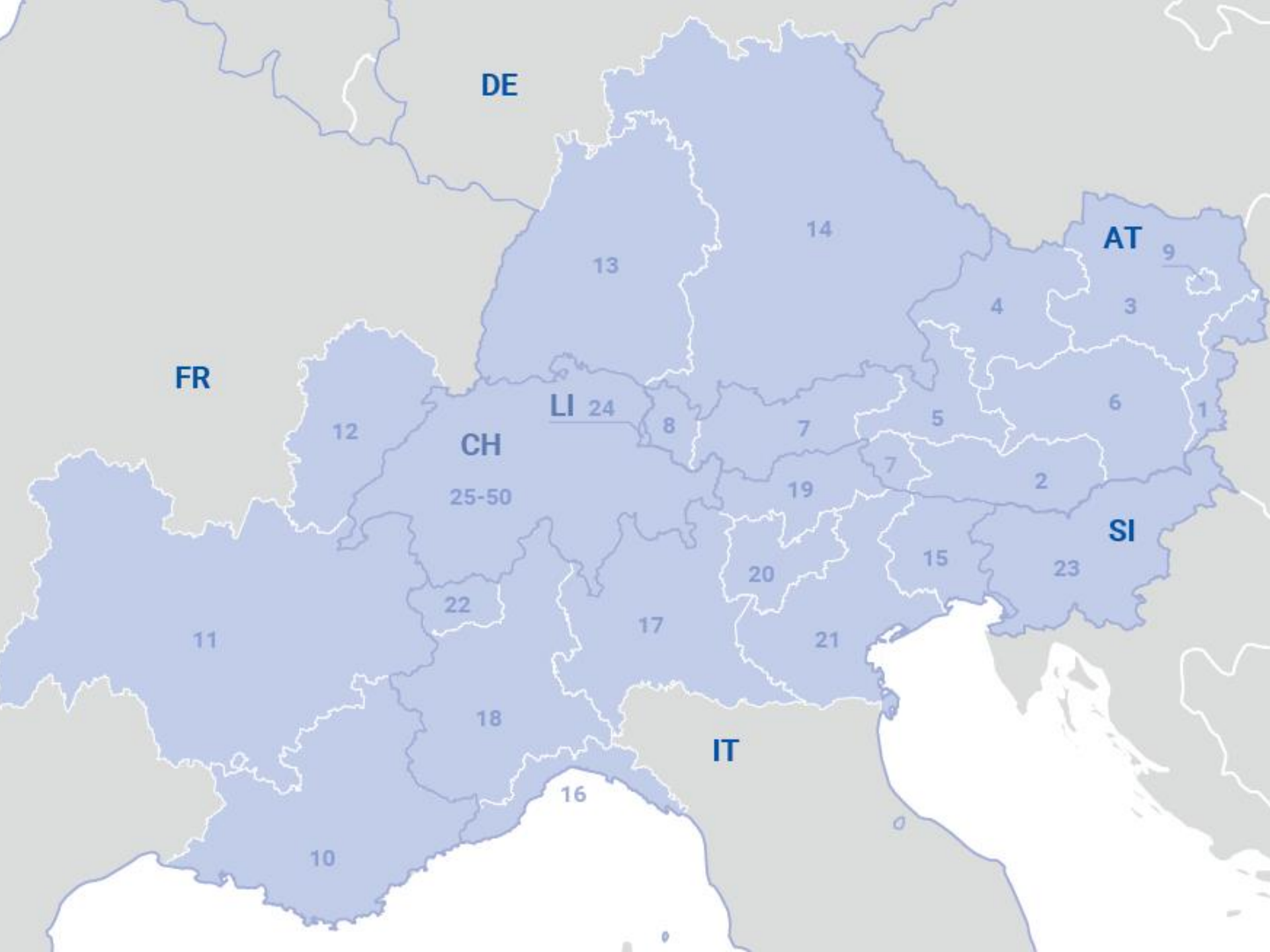
EUSALP covers a territory inhabited by 80 million people and includes 48 regions from seven countries of which five countries are EU member states: Italy, Austria, Germany, France, Slovenia, Switzerland and Liechtenstein. The strategy involves policymakers, civil society, economic stakeholders, science and, above all, citizens. It is **implemented by 9 Action Groups.**

EUSALP ACTION GROUP 9

EUSALP Action Group 9 has the mission to ***"make the territory a model region for energy efficiency and renewable energy"***. The geographic and structural characteristics of the Alps provide good potentials for renewable energies and enhanced energy efficiency to make the Alpine region a European *"Model region for renewable energies and energy efficiency"*. Macro regional policy planning helps the Alpine region to tackle the challenge to meet energy demand sustainably, securely and affordably.

EUSALP Action Group 9 focuses on

- ✓ Making the Alpine building sector and its economy more energy efficient and sustainable
- ✓ Supporting the expansion of local renewable energy sources in line with environmental and landscape protection standards
- ✓ Promotion of smart grids towards an intelligent energy system in the Alps
- ✓ Fostering the exchange of good policy and monitoring tools in the field of energy



EUSALP ENERGY SURVEY 2017

Why a EUSALP Energy Survey?

The Energy Survey 2017, commissioned by the Action Group 9, had the aim **to depict the “state of the art” of energy policy targets, and energy consumption and production in the EUSALP area.**

The Survey consisted of **29 open questions** organized in **7 sections**. Starting from March 2016, the English version of the Survey was made accessible online, by using the tool “Survey Monkey”, and an invitation to fill it in was sent all EUSALP territories representatives. In April 2017, Eurac Research (EURAC) has been commissioned to finalize and assess the collected energy data, presenting the main findings in this “EUSALP Energy Report”. The collection of energy data lasted until September 2017.

The **EUSALP Energy Survey 2017 Report was published in January 2018.**

THE ALPINE MACRO-REGION IN NUMBERS

■ EU 28 ■ EUSALP

Population



16%

Final energy consumption



11%

GDP



20%

Size



10%

THE ALPINE MACRO-REGION IN NUMBERS

■ EU 28
 ■ EUSALP

Per capita energy consumption



Share of RES in electricity production



Energy intensity of GDP



Share of RES in heat production





EUSALP MAIN ENERGY DATA

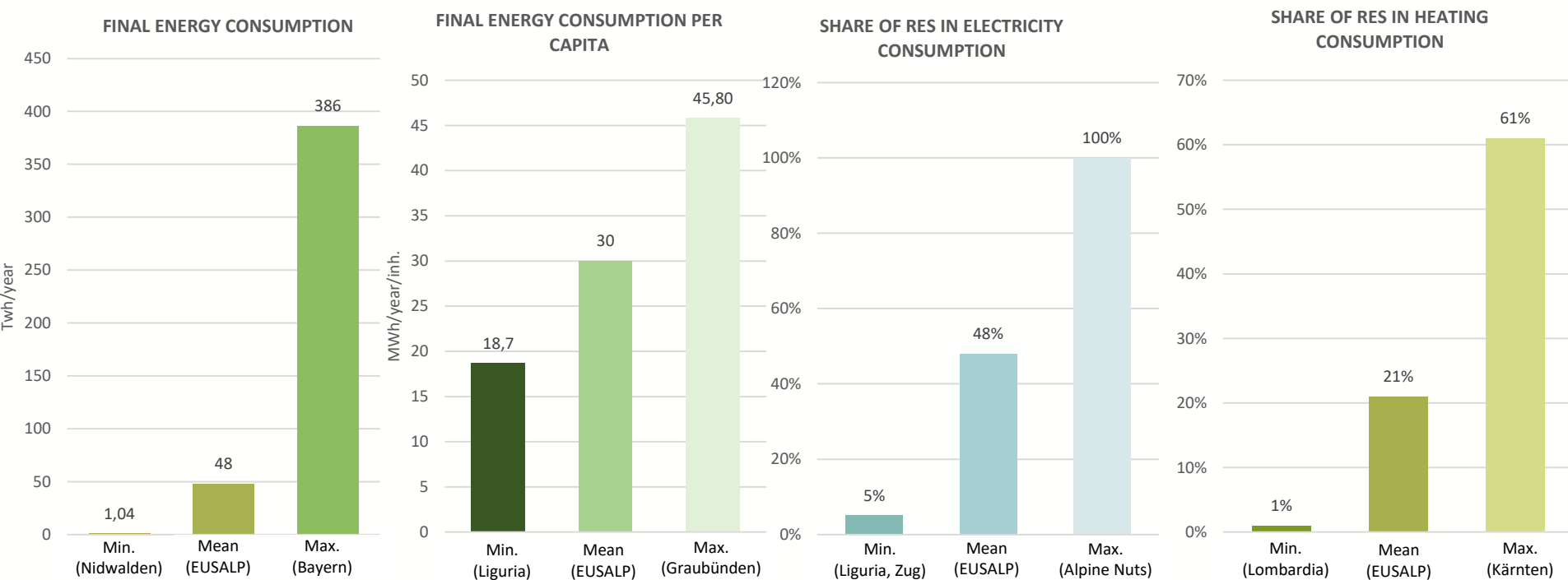
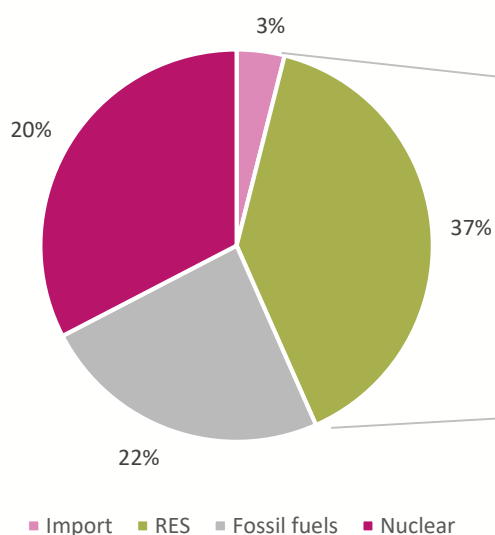


Figure 3. EUSALP main energy data. Source: EUSALP Energy Survey 2017 and EUROSTAT (demo_r_gind3)

ELECTRICITY IN EUSALP

Electricity consumption in EUSALP



Electricity production by RES in EUSALP

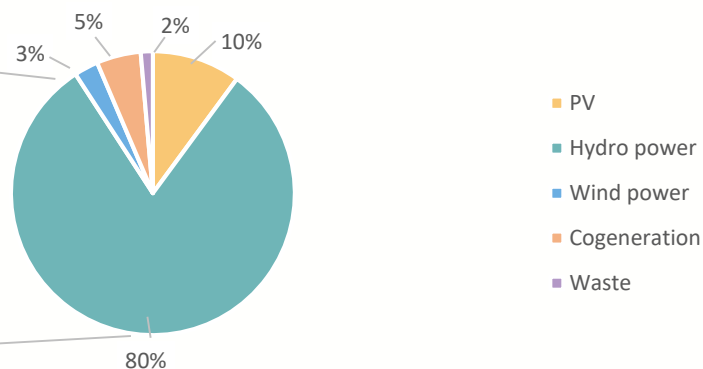


Figure 4. Electricity balance and RES production mix. Data source: EUSALP Energy Survey 2017

LOCAL ELECTRICITY MIX IN EUSALP

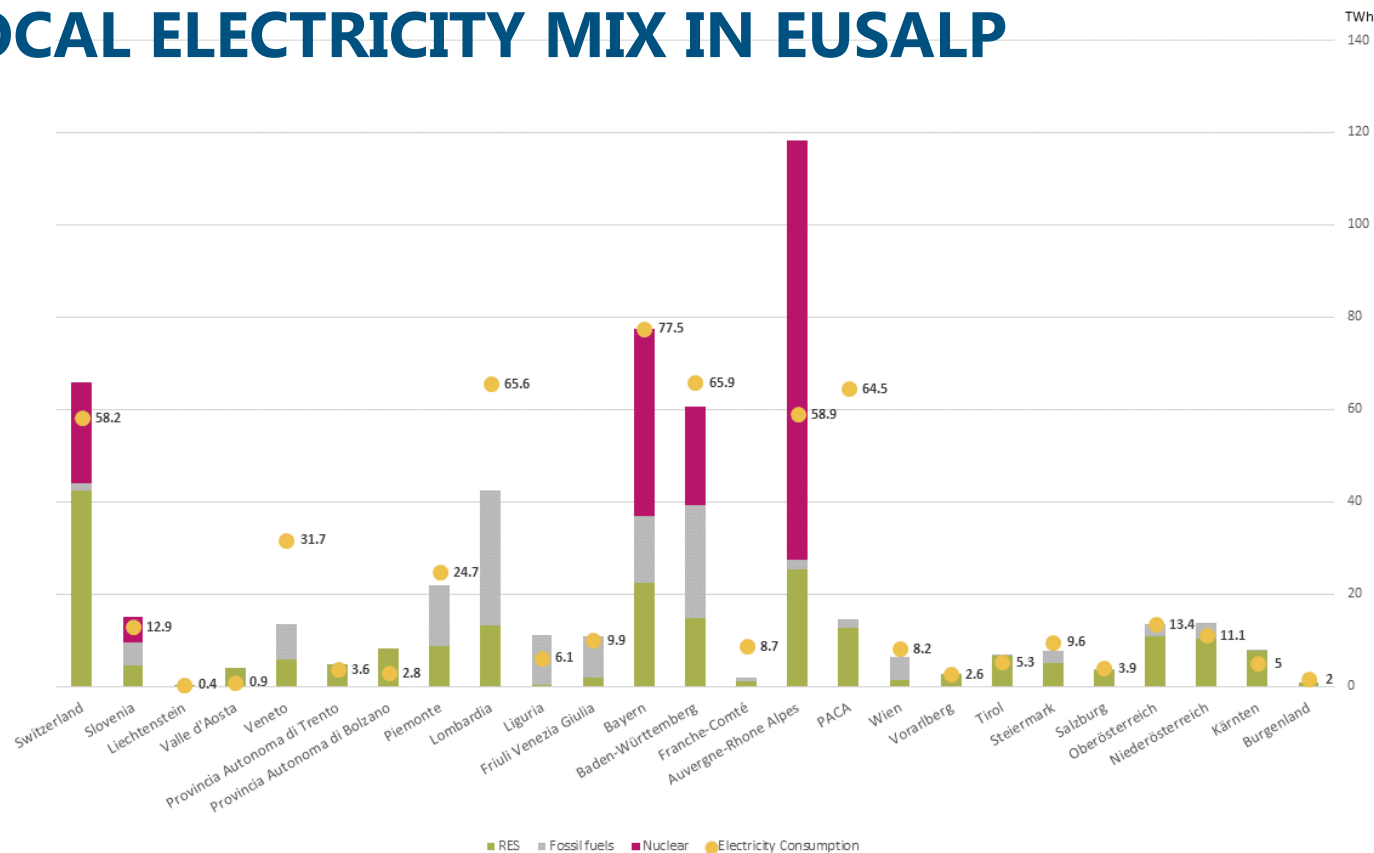


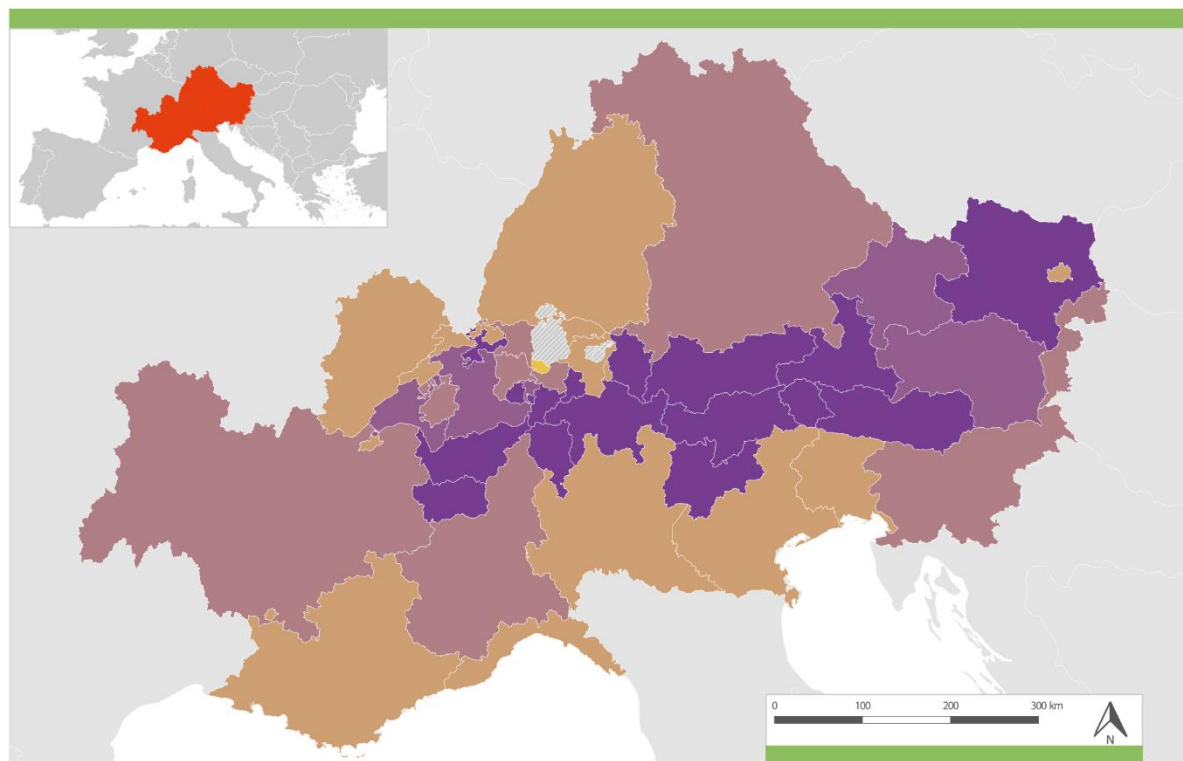
Figure 5. Electricity production by source and local consumption. Data source: EUSALP Energy Survey 2017 and Eurac Research elaborations

SHARE OF RES IN ELECTRICITY PRODUCTION

Legend

Share of electricity from RES [%]

-  no data
-  0 - 5
-  5 - 26
-  26 - 49
-  49 - 87
-  87 - 100



Source: Eurac Research

Figure 6. Share of electricity from renewable sources. Data source: EUSALP Energy Survey 2017

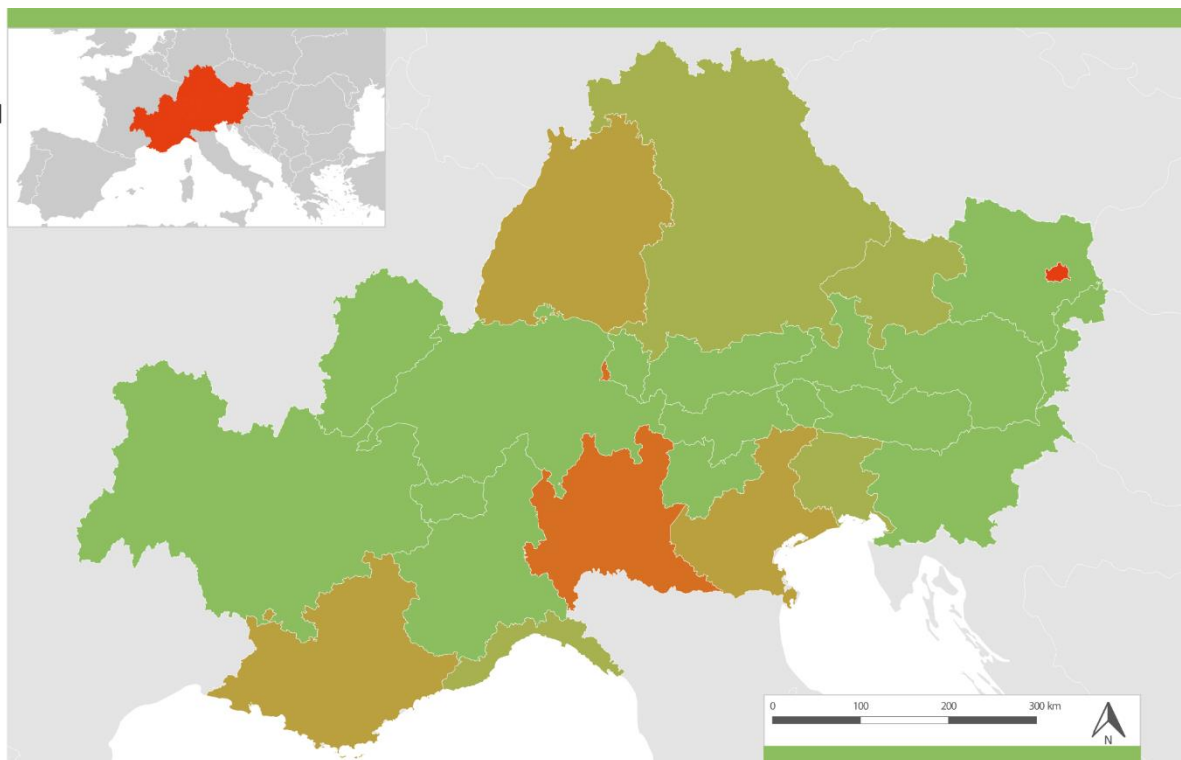


ELECTRICITY CONSUMPTION PER AREA

Legend

Annual electricity
consumption [GWh/km²]

- 0 - 1
- 1 - 1.5
- 1.5 - 2.2
- 2.2 - 3
- 3 - 19.9



Source: Eurac Research

Figure 7. Yearly electricity consumption per area. Data source: EUSALP Energy Survey 2017

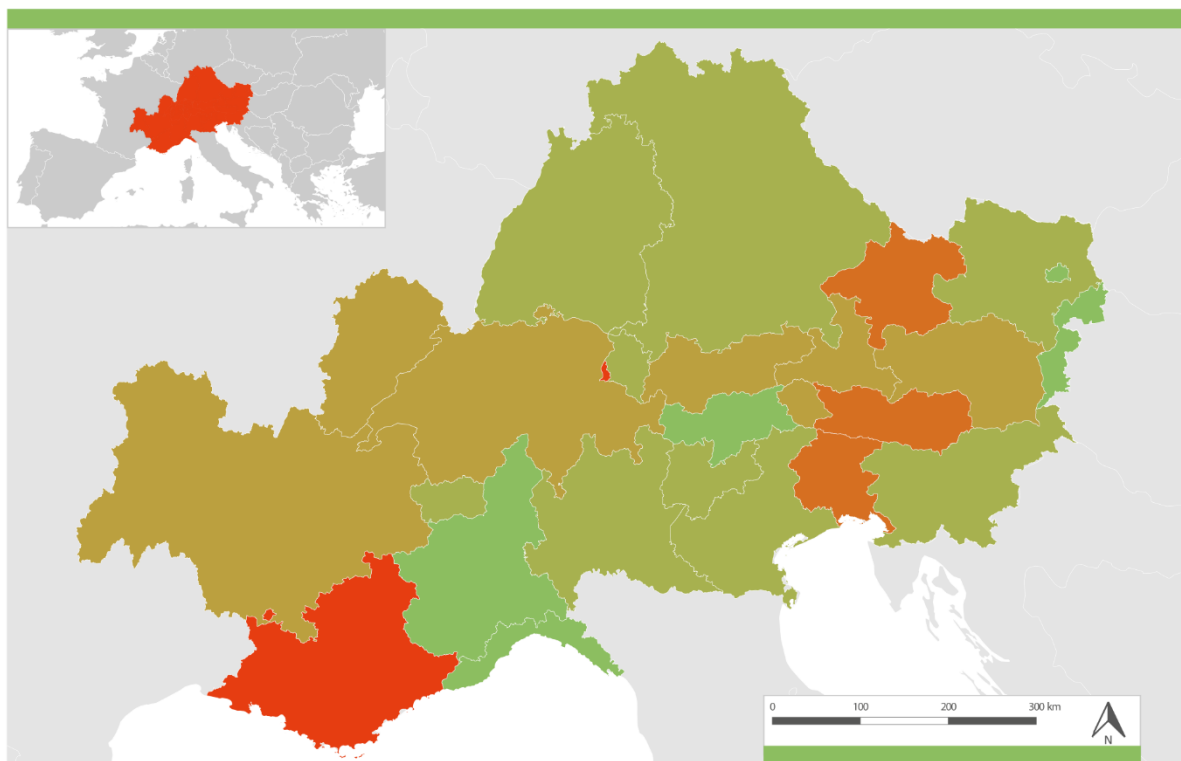


ELECTRICITY CONSUMPTION PER CAPITA

Legend

Annual electricity
consumption
per capita [MWh]

- 0 - 6
- 6 - 7
- 7 - 8
- 8 - 10
- 10 - 12.9

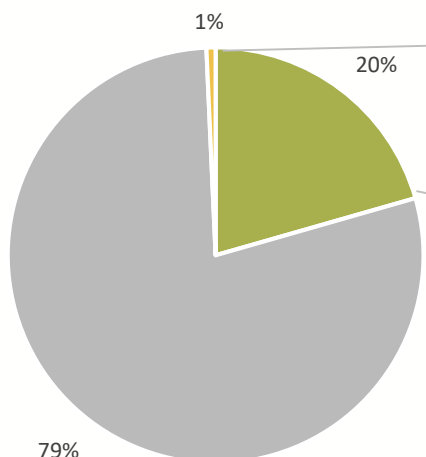


Source: Eurac Research

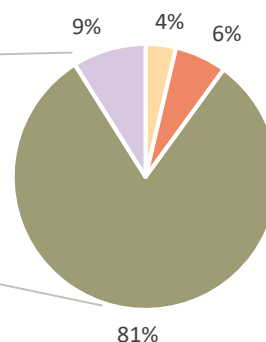
Figure 8. Yearly electricity consumption per capita. Data source: EUSALP Energy Survey 2017

THERMAL ENERGY IN EUSALP

Heat consumption in EUSALP



Heat production by RES



- Solar thermal energy
- Geothermal energy and ambient heat
- Biofuels and biomass
- Waste

■ RES ■ Fossil fuels ■ Direct electricity

Figure 9. Thermal energy needs and RES production mix. Data source: EUSALP Energy Survey 2017 and Eurac research data elaboration

LOCAL THERMAL ENERGY CONSUMPTION BY SOURCE

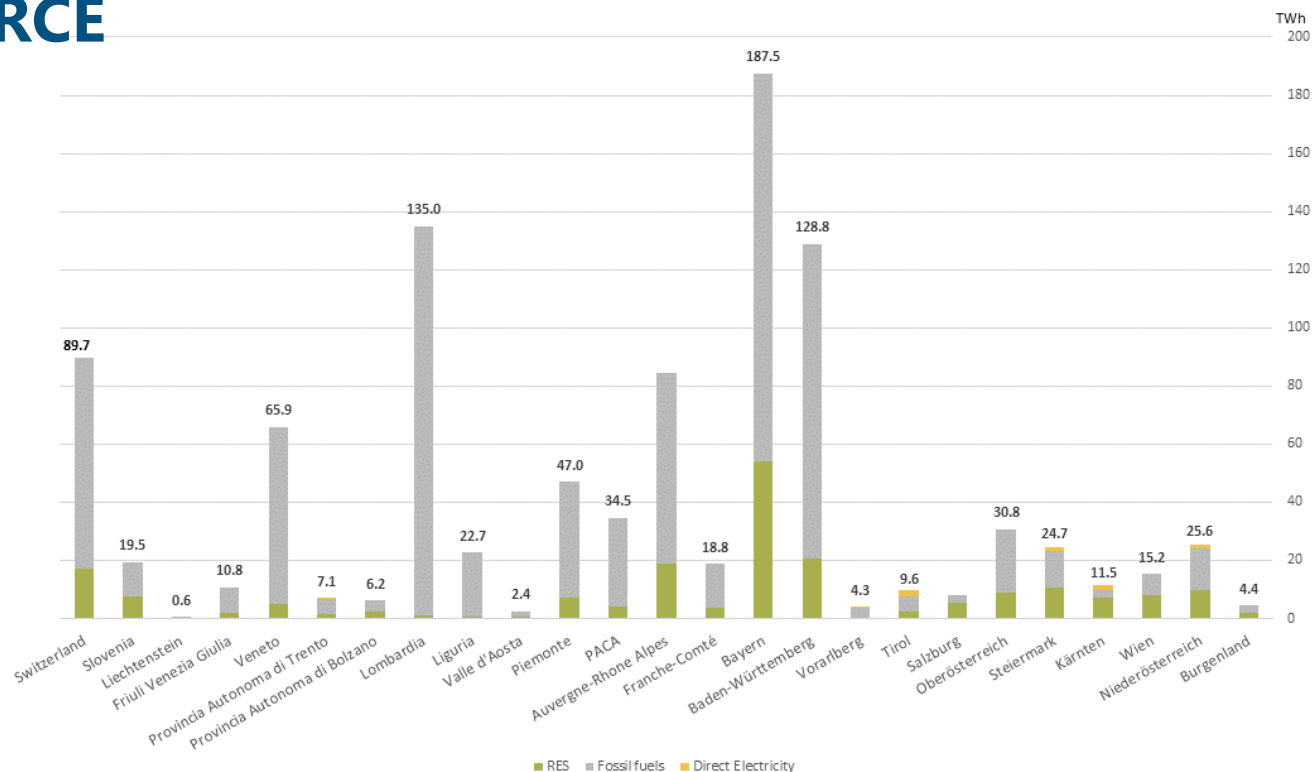


Figure 10. Thermal energy consumption by energy source. Data source: EUSALP Energy Survey 2017 and Eurac research elaborations

SHARE OF RES IN HEAT

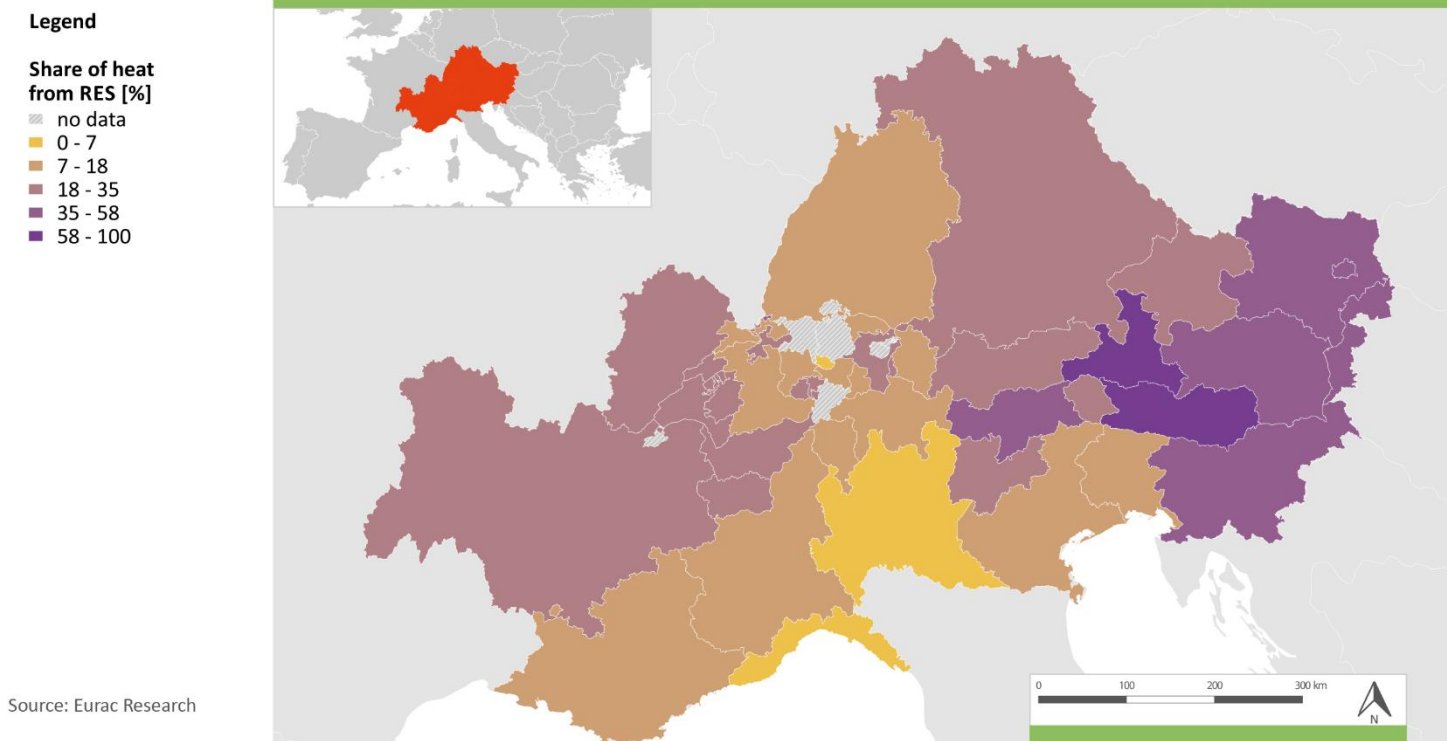


Figure 11. Share of heat from renewable energy sources. Data source: EUSALP Energy Survey 2017 and Eurac research elaborations

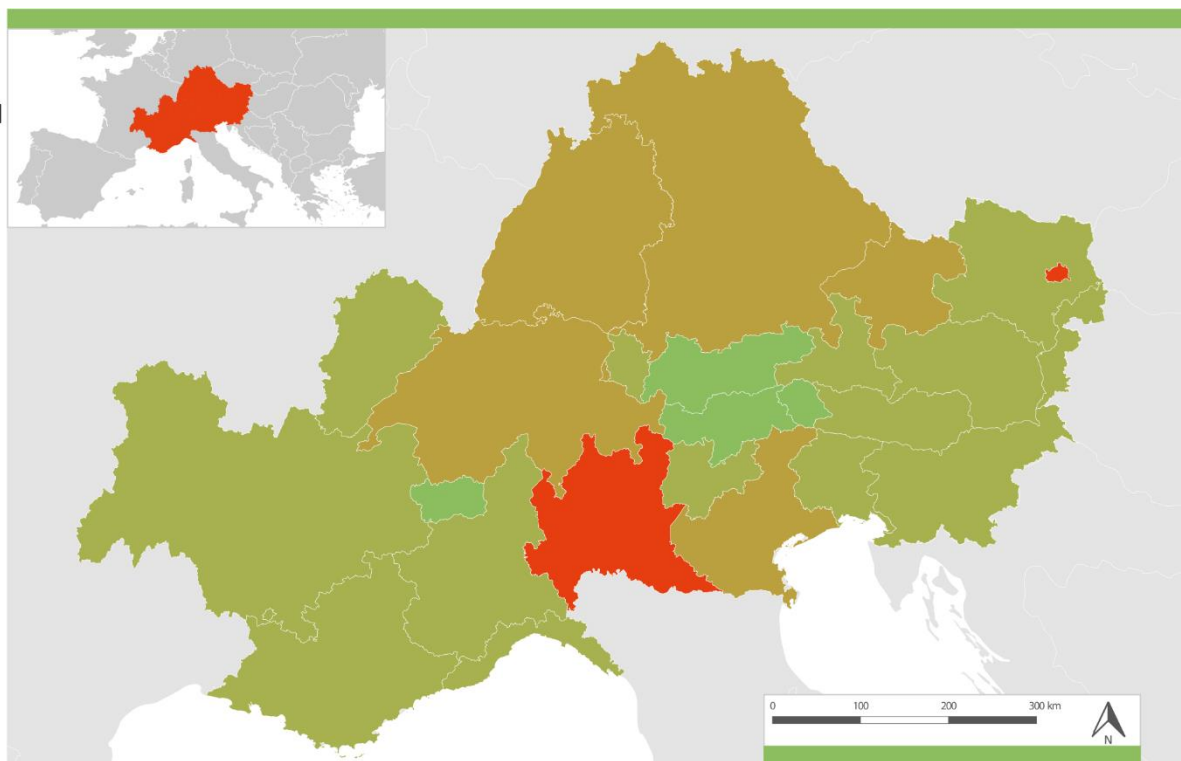


HEAT CONSUMPTION PER AREA

Legend

Annual heat consumption [GWh/km²]

- 0 - 1
- 1 - 2
- 2 - 4
- 4 - 5
- 5 - 37.0



Source: Eurac Research

Figure 12. Yearly heat consumption per area. Data source: EUSALP Energy Survey 2017

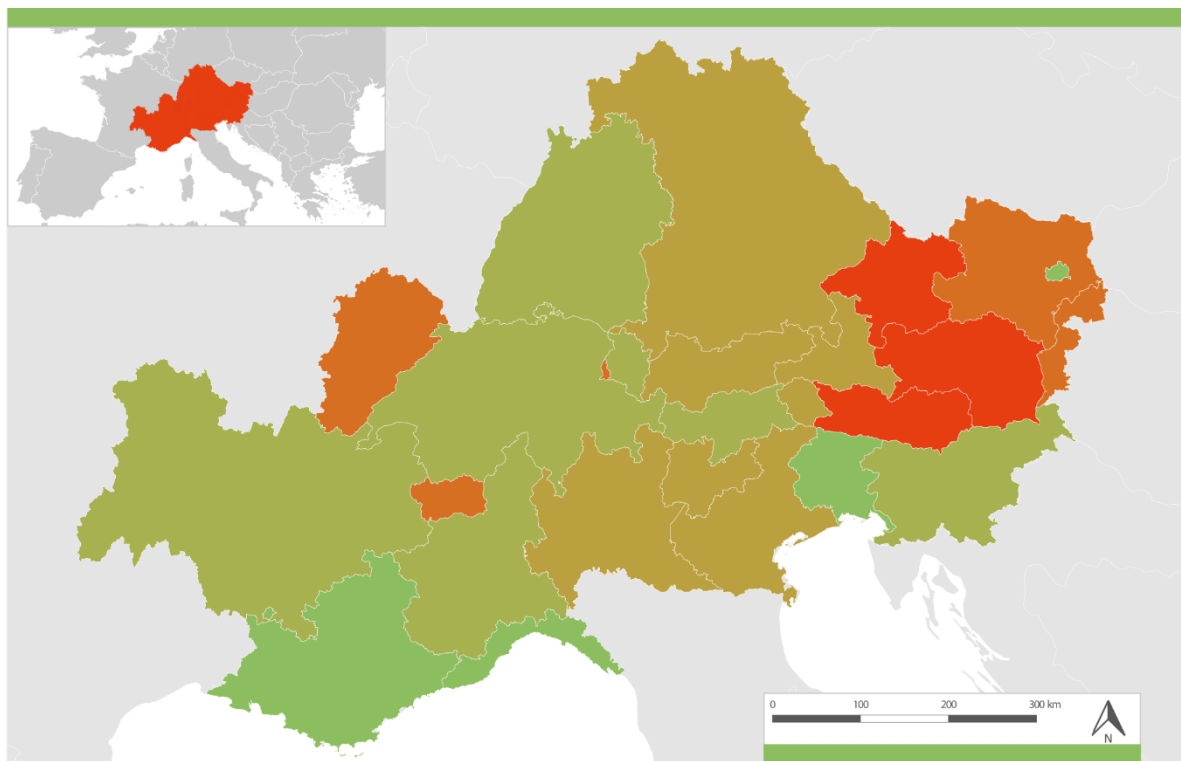


HEAT CONSUMPTION PER CAPITA

Legend

Annual heat consumption per capita [MWh]

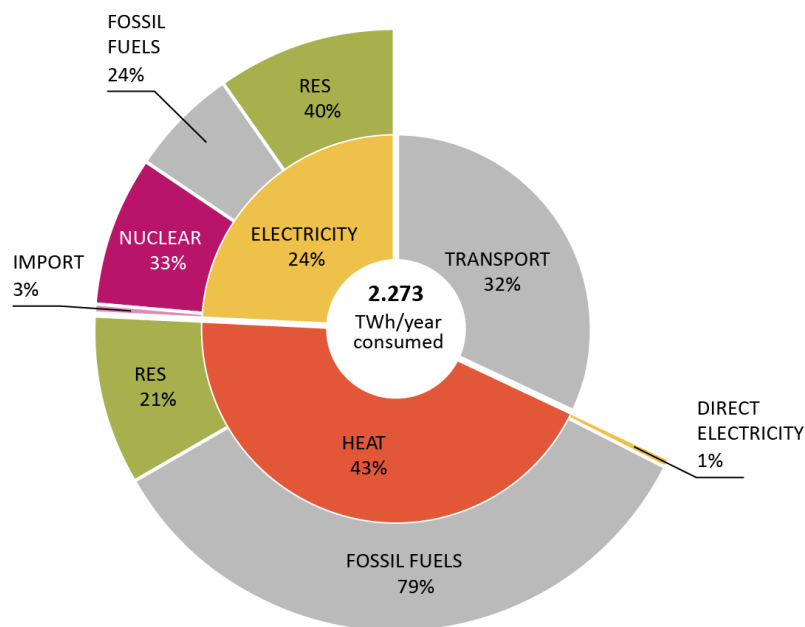
- 0 - 10
- 10 - 12.5
- 12.5 - 15
- 15 - 20
- 20 - 21.5



Source: Eurac Research

Figure 13. Yearly heat consumption per capita. Data source: EUSALP Energy Survey 2017

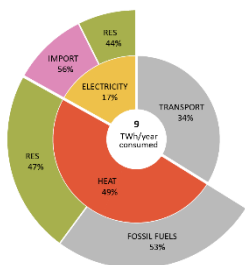
EUSALP ENERGY CONSUMPTION



Source: Eurac Research

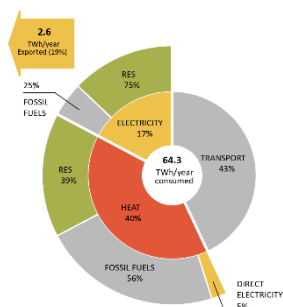
Figure 14. EUSALP energy consumption and share of RES. Data source: EUSALP Energy Survey 2017 and Eurac Research elaborations

ANNEX 1. AUSTRIA



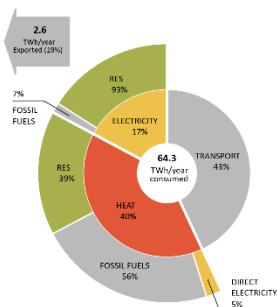
Source: Eurac Research

Figure 27. Burgenland



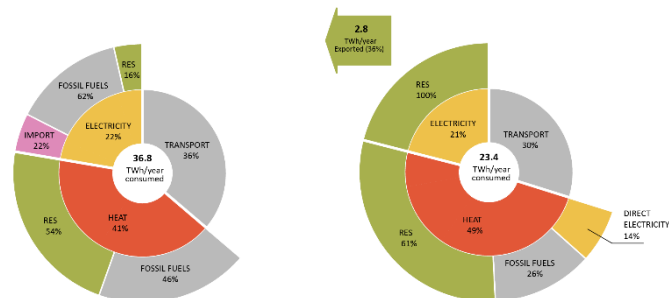
Source: Eurac Research

Figure 28. Niederösterreich



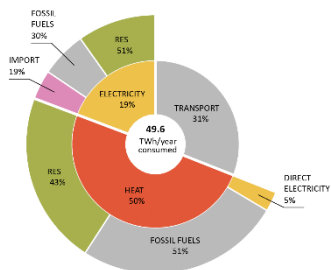
Source: Eurac Research

Figure 29. Wien



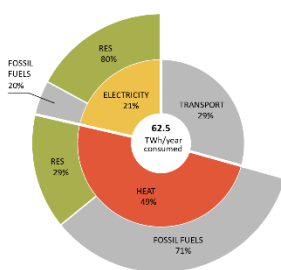
Source: Eurac Research

Figure 30. Kärnten



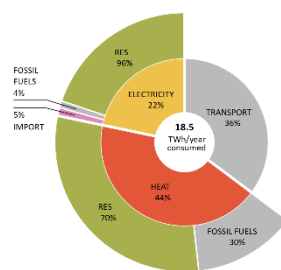
Source: Eurac Research

Figure 31. Steiermark



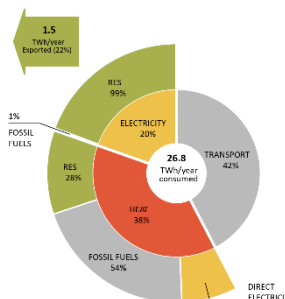
Source: Eurac Research

Figure 32. Oberösterreich



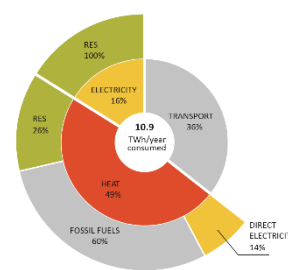
Source: Eurac Research

Figure 33. Salzburg



Source: Eurac Research

Figure 34. Tirol



Source: Eurac Research

Figure 35. Vorarlberg

DATA DISPERSION

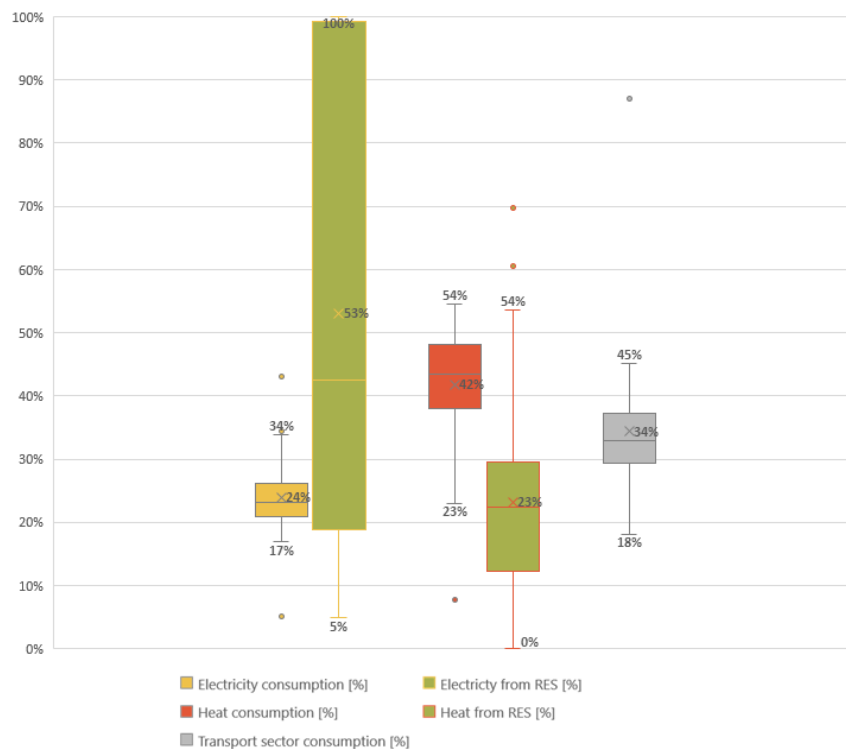


Figure 15. Statistic distribution of energy consumptions in the EUSALP. Data source: EUSALP Energy Survey 2017 and Eurac Research elaborations

PERCEPTION OF REMAINING POTENTIAL OF RES

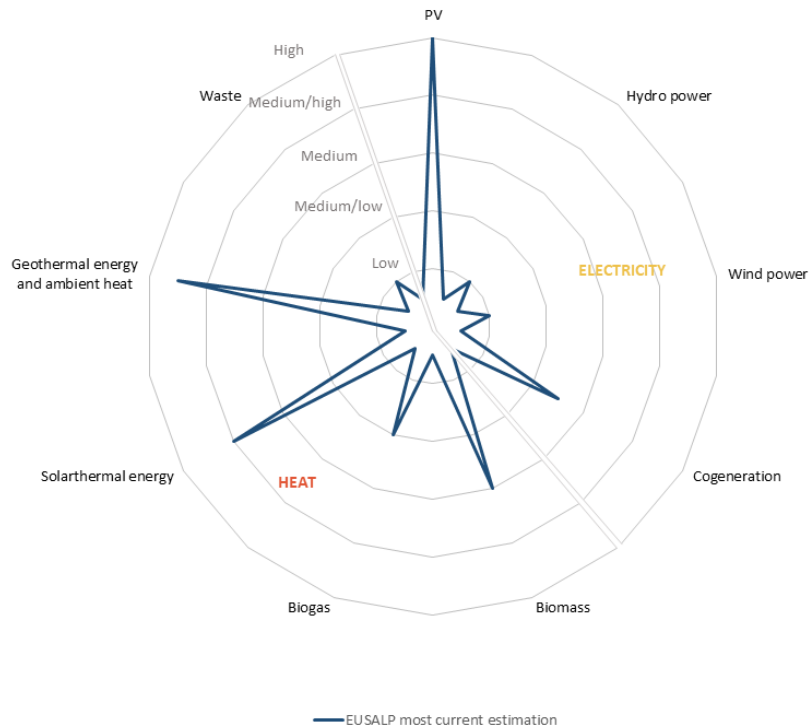


Figure 16. Self assessed remaining potentials of RES (most recurrent judgements). Data source: EUSALP Energy Survey 2017

PERCEPTION OF REMAINING POTENTIAL OF RES IN ELECTRICITY

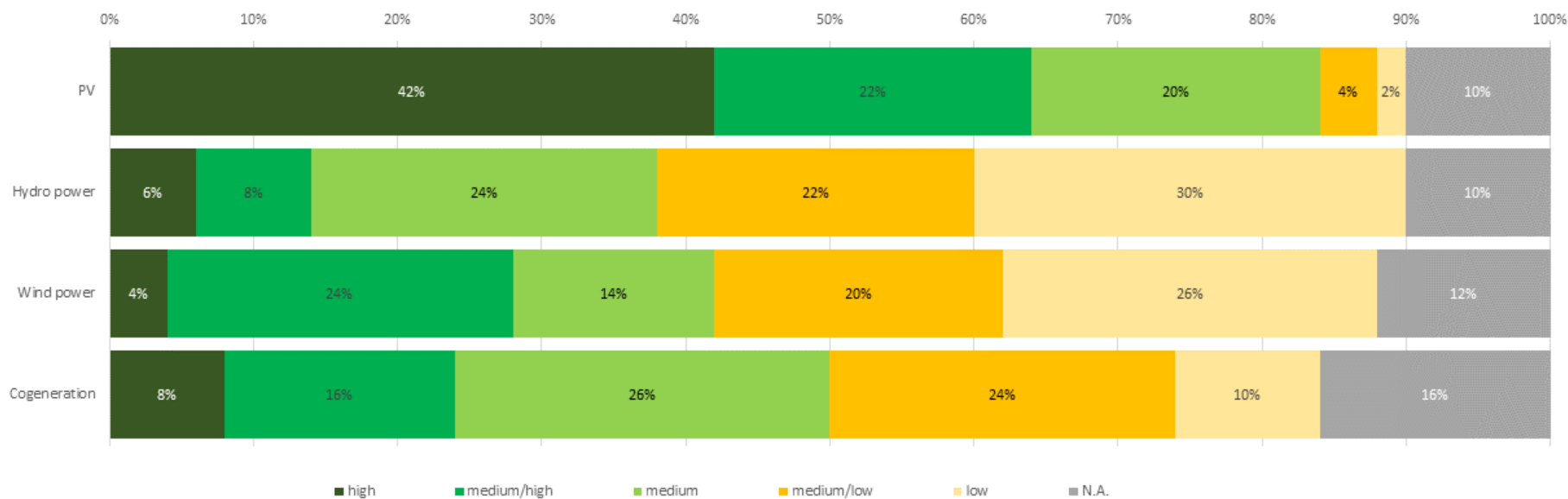


Figure 17. Self assessed remaining potentials of RES in electricity production. Data source: EUSALP Energy Survey 2017

PERCEPTION OF REMAINING POTENTIAL OF RES IN HEATING

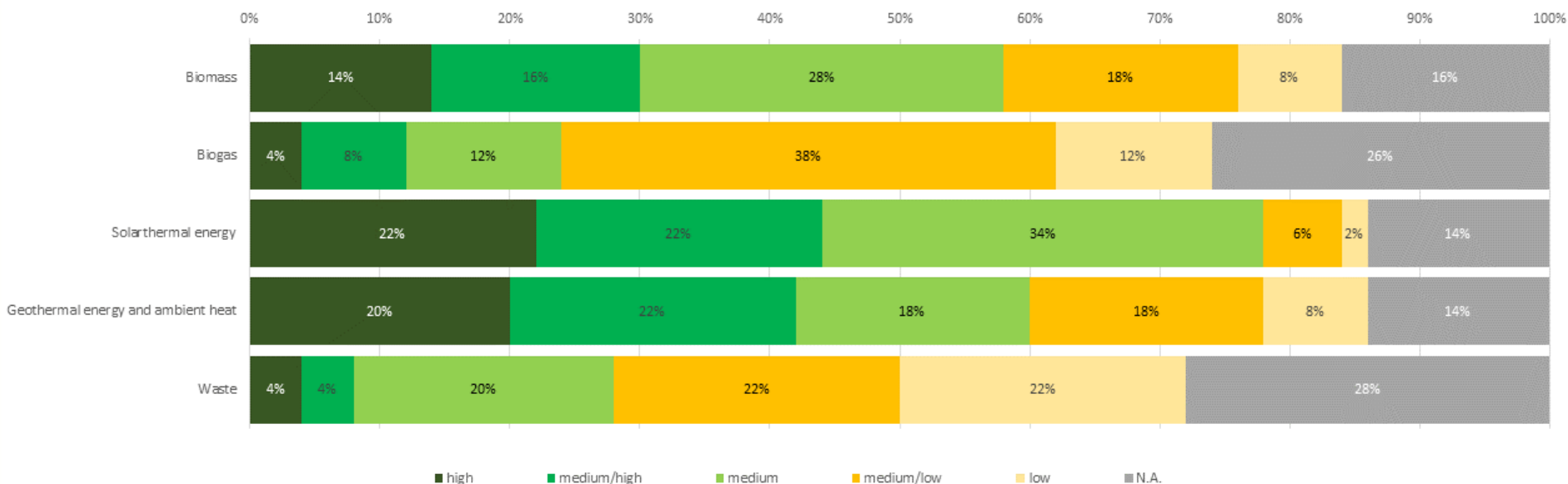


Figure 18. Self assessed remaining potentials of RES in heat production. Data source: EUSALP Energy Survey 2017

FOCUS AREAS OF ENERGY STRATEGIES

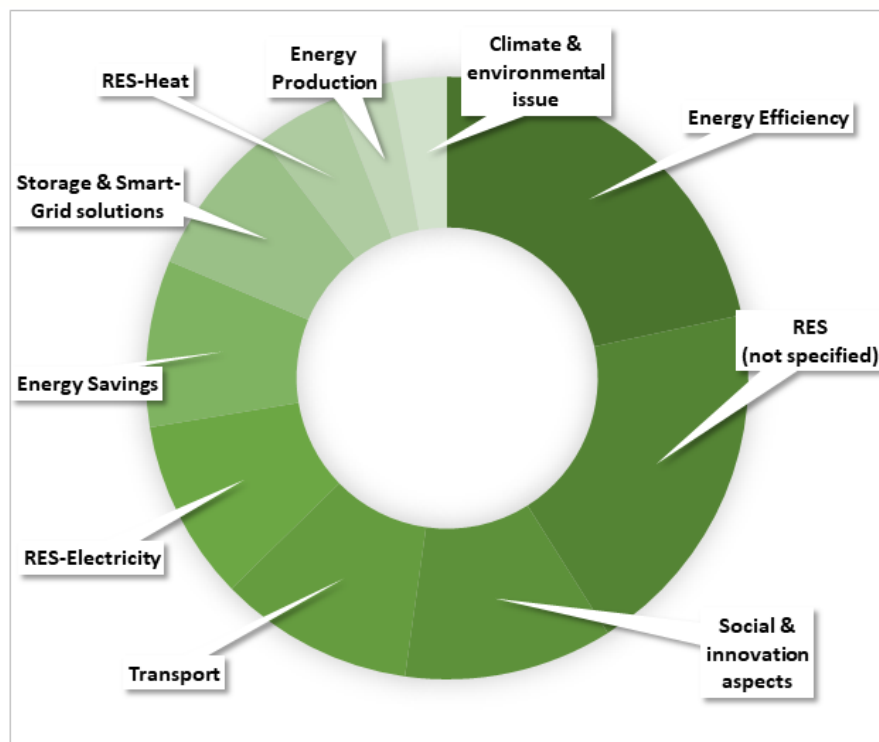


Figure 19. Focus areas of energy strategies in the EUSALP area. Data source: EUSALP Energy Survey 2017

MEASURES OF ENERGY STRATEGIES

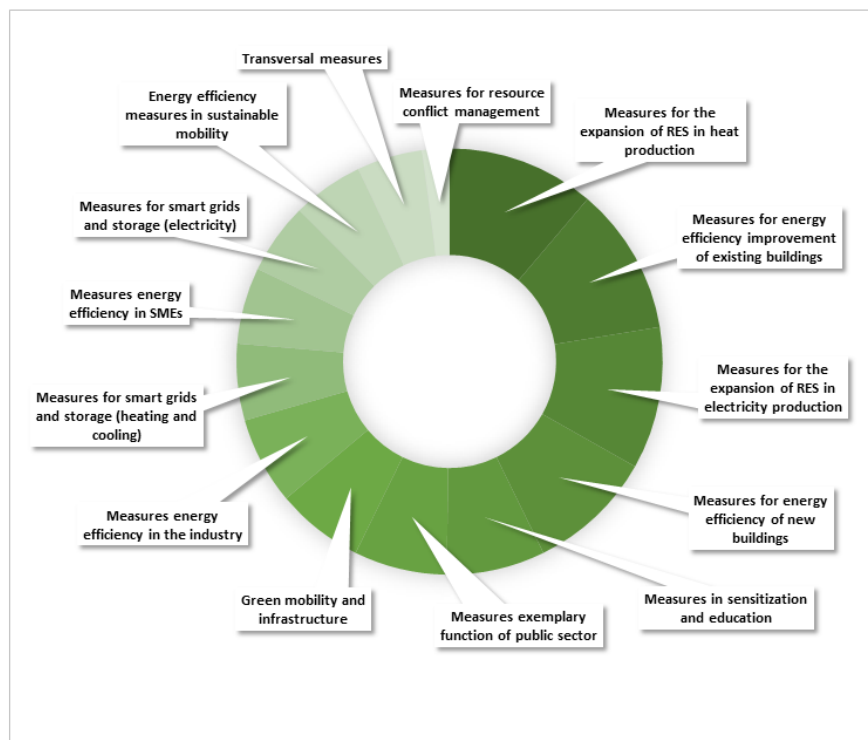
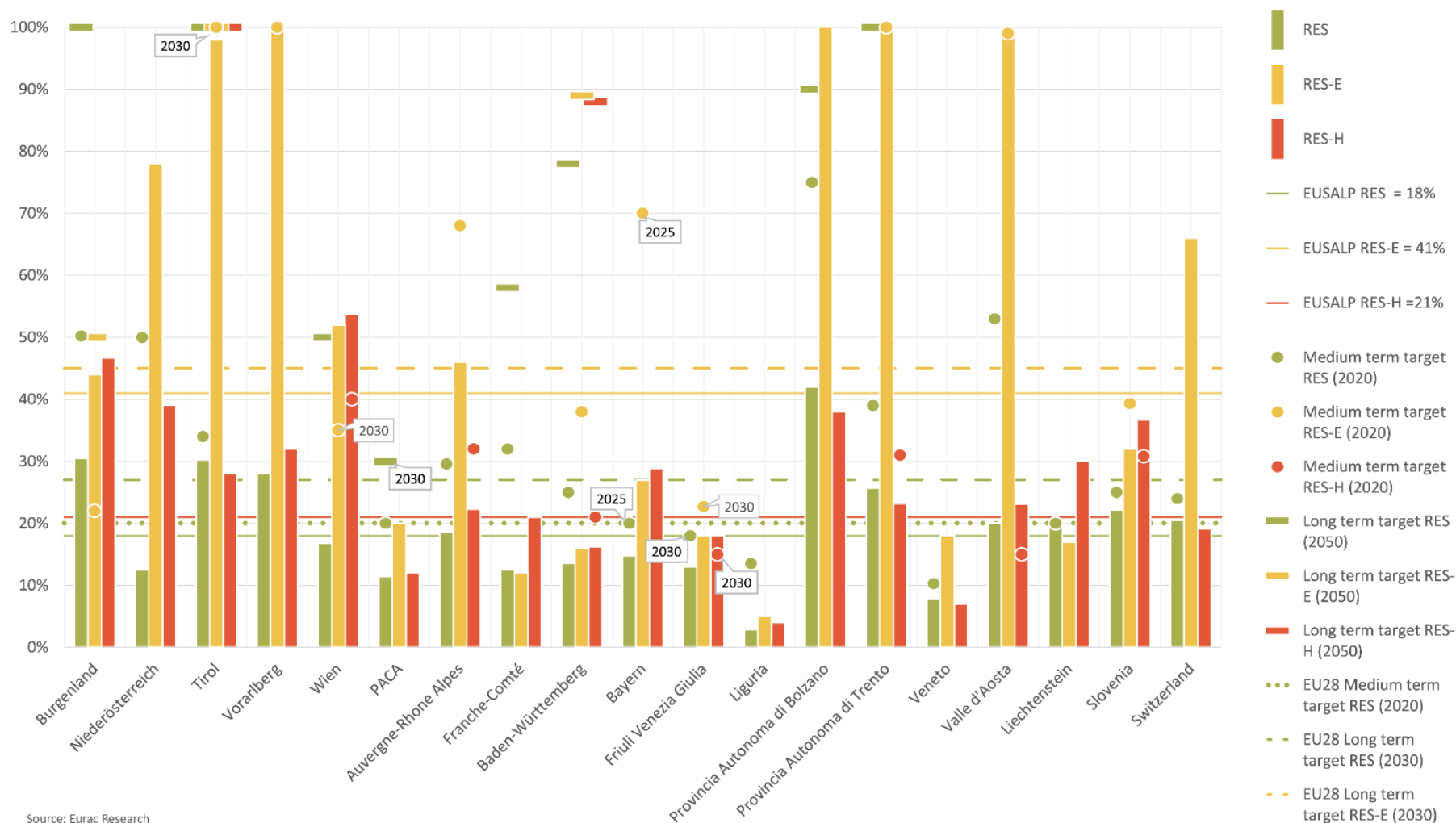


Figure 20. Measures in place to achieve the local energy targets. Data source: EUSALP Energy Survey 2017

Figure 21. Status quo and future targets of RES penetration in the EUSALP area. Data source: EUSALP Energy Survey 2017

MEDIUM AND LONG TERM SHARE OF RES IN EUSALP



Source: Eurac Research

Figure 21. Status quo and future targets of RES penetration in the EUSALP area. Data source: EUSALP Energy Survey 2017

MEDIUM AND LONG TERM SHARE OF RES IN SWISS CANTONS

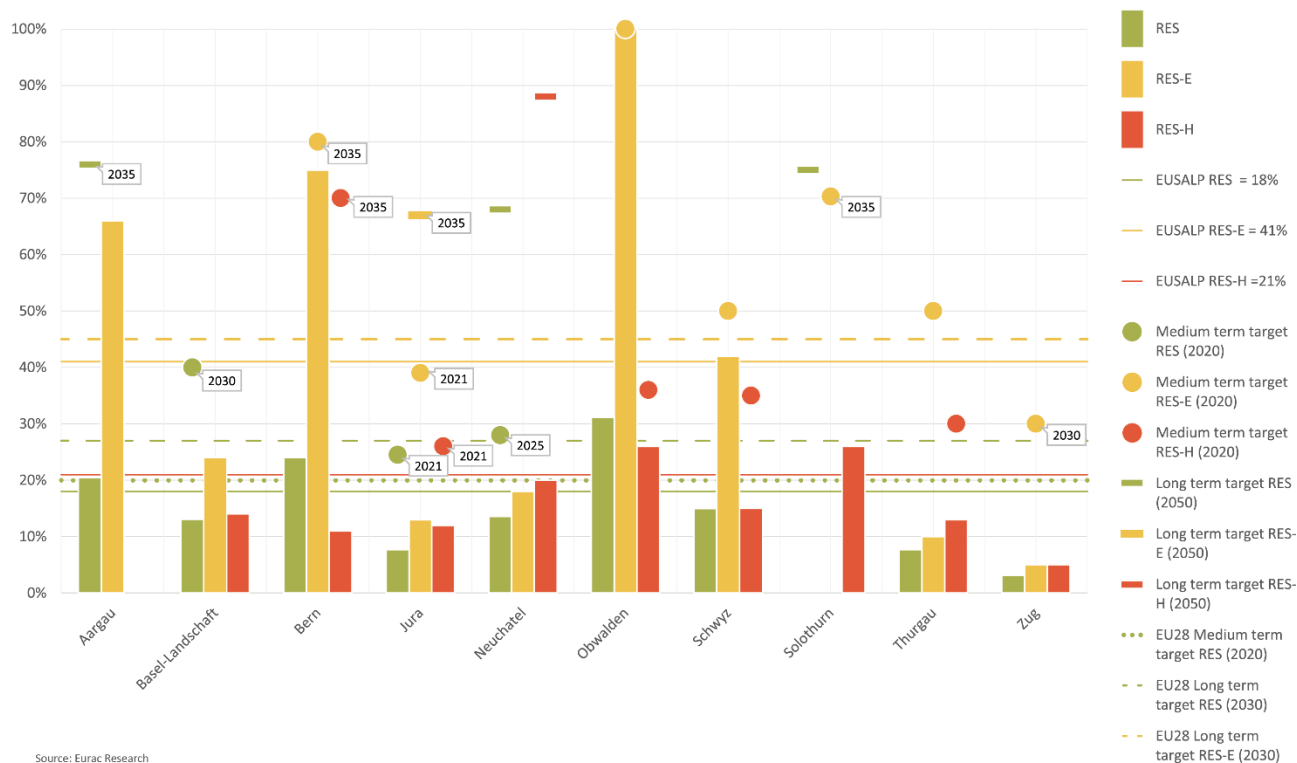


Figure 21. Status quo and future targets of RES penetration in the Swiss cantons. Data source: EUSALP Energy Survey 2017

MEDIUM AND LONG TERM ENERGY SAVINGS EUSALP

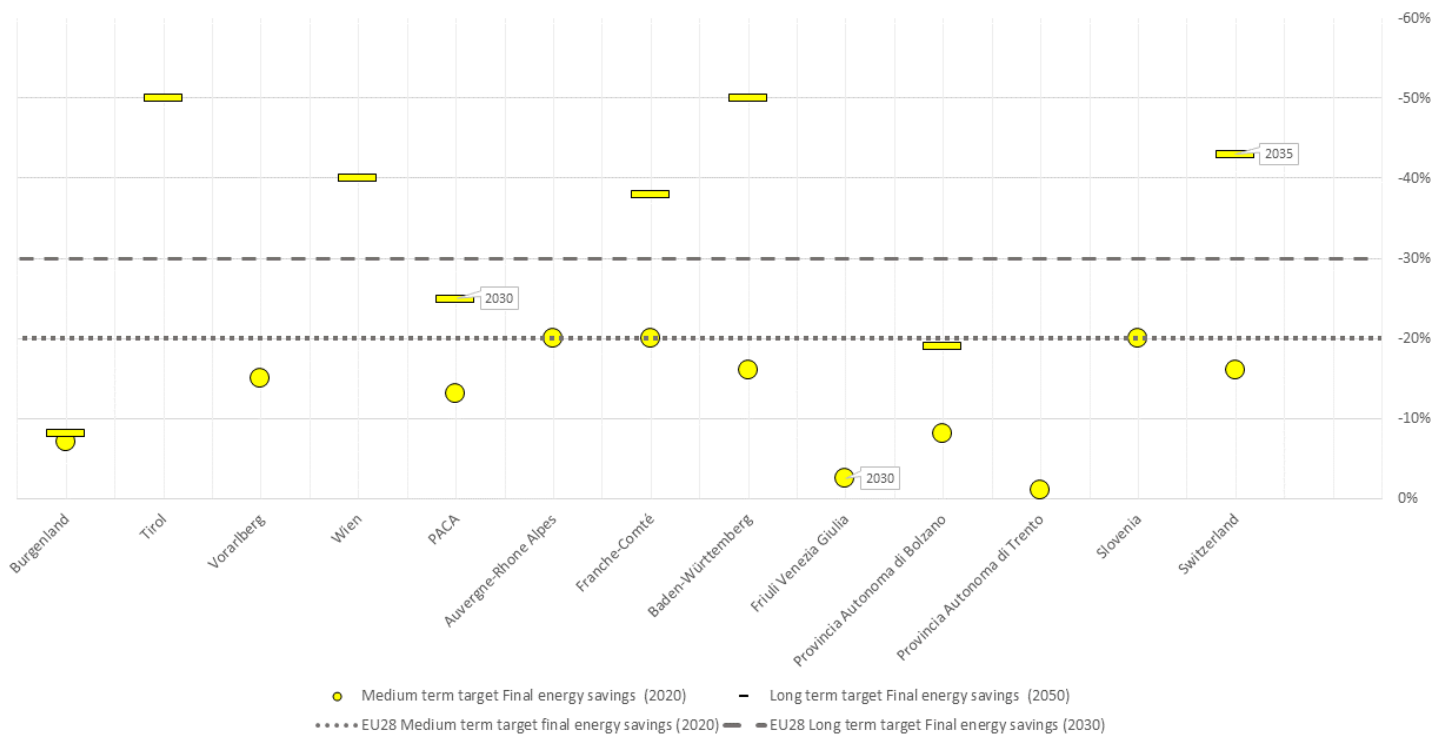


Figure 23. Energy savings targets in the EUSALP area. Data source: EUSALP Energy Survey 2017

MEDIUM AND LONG TERM ENERGY SAVINGS IN SWISS CANTONS

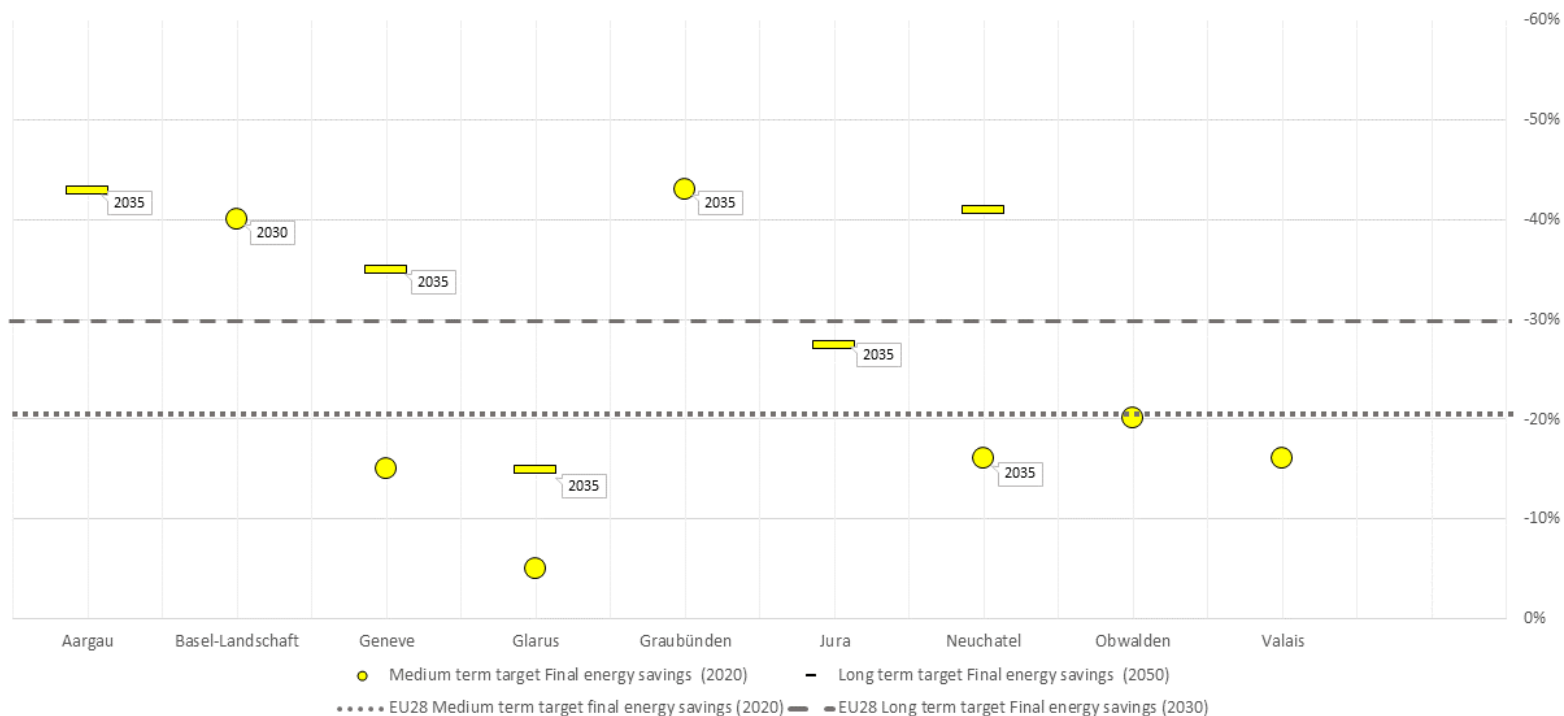


Figure 24. Energy savings targets in the Swiss cantons. Data source: EUSALP Energy Survey 2017

MONITORING SYSTEMS IN EUSALP

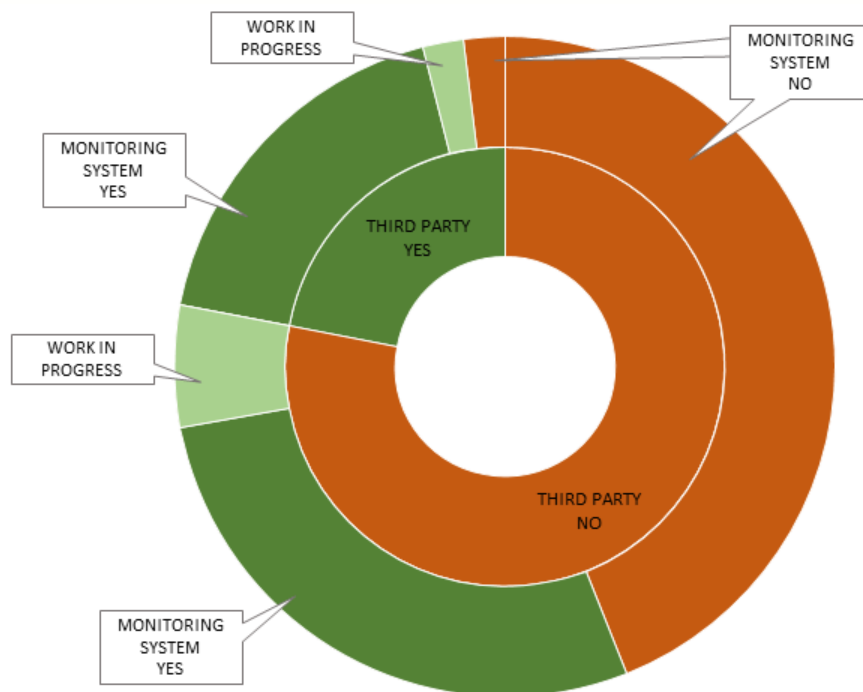


Figure 25. Monitoring systems and third parties involvement. Data source: EUSALP Energy Survey 2017

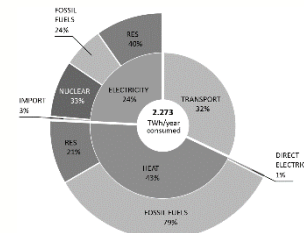


CONCLUSIONS

Activating a
bottom-up process



Providing an overall energy figure
and detailed data



EUSALP AG9 ENERGY SURVEY ADDED VALUES



Increasing local
commitment



Understanding of expectations
for cooperation

FURTHER DEVELOPMENTS

Recommendations from the EUSALP Energy Survey 2017 Report

1. Regular update of the EUSALP Energy Report

- ✓ Standardization of energy data collection to permit a comparison among reliable figures
- ✓ Understanding of trends to support energy policy recommendations

2. Deeper investigation of EUSALP Energy Strategies

- ✓ Identification of possible homogeneous clusters to enhance effective cooperation among territories
- ✓ Understanding of local strengths and opportunities to maximize public investment through funding schemes & business models

CONTACTS

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