



**EUSALP** EU STRATEGY FOR THE ALPINE REGION

[www.alpine-region.eu](http://www.alpine-region.eu)

## **Cross-Sectoral Workshop** **“Alpine forests seen from a multi-disciplinary perspective”**

Elevator pitch EUSALP Action Group 9  
«Energy Efficiency and Renewable Energy»

2nd EUSALP Annual Forum, 21 November 2018, Innsbruck

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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

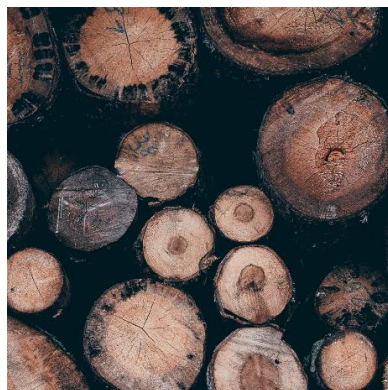
## Forests/timber and the energy sector in South Tyrol

### Construction: timber as CO2 storage

- ✓ increase in the medium and long-term CO2 storage through increased use of wood as construction and product material (Wood product storage) +
- ✓ Optimization of the stored amount of CO2 in the local forest resources with active sustainable management and soil conservation

#### Measures package

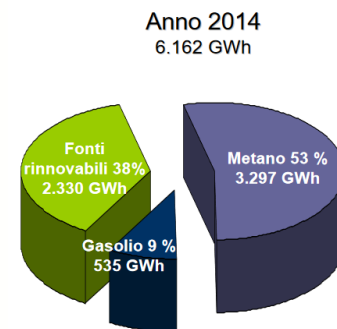
- Strategic integration of the issue “Forest-Timber-CO2 Storage” into the Regional Energy Plan “Klimaland”
- Role model: public construction projects to be realized as timber constructions
- Creation of an incentive system for private builders (new construction and renovation projects) to construct with timber



**50%**  
of South Tyrol's  
surface are  
forests

### Construction: timber as an energy supplier

- District heating supply 2014: 719,308,447 kWh or approx. 144,000t of timber
- Energy consumption 2014 (heating sector)

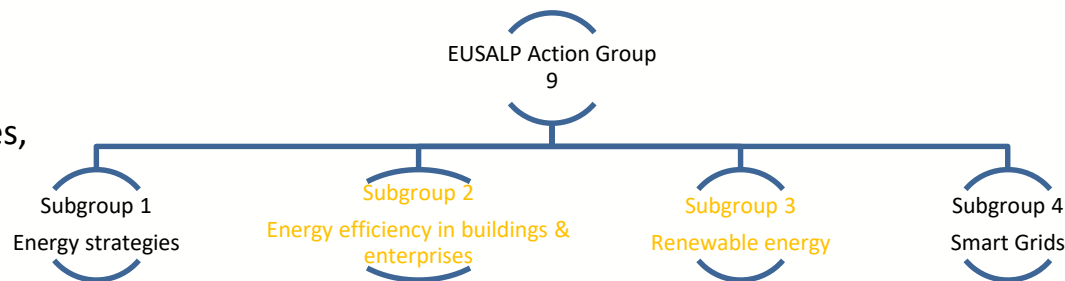


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## EUSALP Action Group 9

- 17 members from Alpine Regions and States, Academia and research



## Projects of EUSALP AG9 connected to the Alpine forest/timber, EUSALP Action Plan, COM(2015) 366final, p. 43

- ‘Greening the Alpine infrastructure’: focusing on energy efficiency in the **building sector** and promote (...) assessment tools to be used by **public authorities** in order to **boost sustainable** and **low-carbon buildings** in the Alpine Region.
- Promotion of projects that support a **better use of local resources** to increase **energy self-sufficiency** and **reduce climate and environmental impacts**
  - A) Setting-up bio-energy supply chains based on sustainable woody biomass
  - B) Develop an integrated territorial approach to waste management

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## EUSALP Action Group 9: Actions 2017-2018

### 2017 Study “Life cycle analysis of residential buildings”

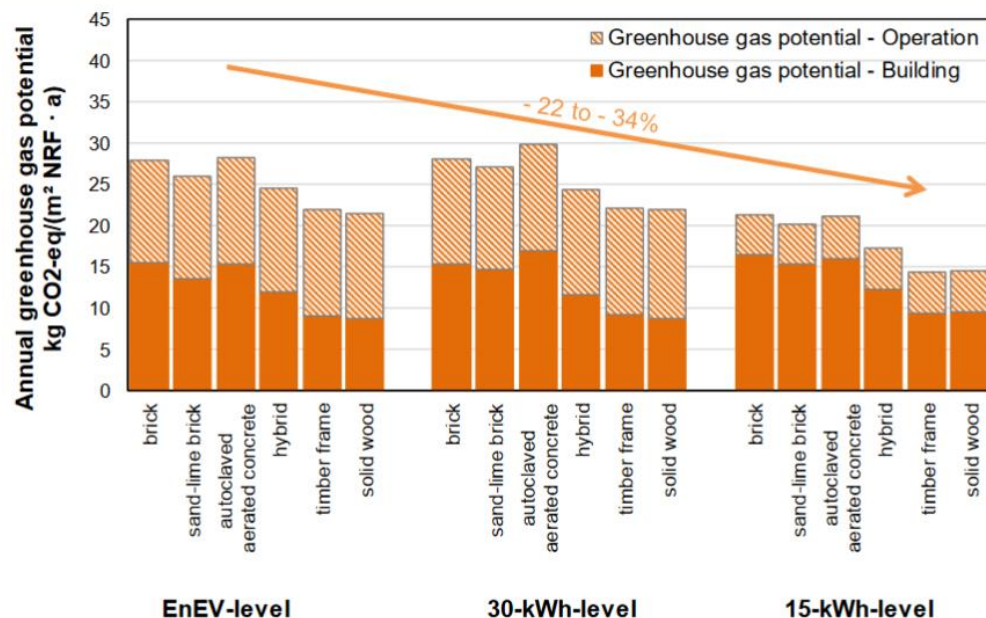


Image 5: Greenhouse gas potentials of the different construction methods and energy levels using gas-fired condensing heating with solar thermal energy as an example

### Subgroup 2 Energy efficiency in buildings & enterprises



Source: Bayerisches Landesamt für Umwelt, 2017, Life cycle analysis of residential buildings, commissioned under Bavarian EUSALP Presidency, at [https://www.alpine-region.eu/sites/default/files/uploads/activity/452/attachments/abstract\\_life\\_cycle\\_analysis\\_en\\_tu.pdf](https://www.alpine-region.eu/sites/default/files/uploads/activity/452/attachments/abstract_life_cycle_analysis_en_tu.pdf)

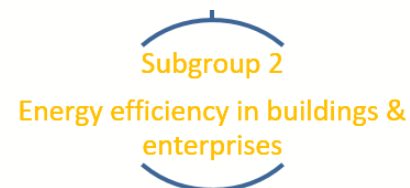
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## EUSALP Action Group 9: Actions 2017-2018

### 2017 Study “Life cycle analysis of residential buildings”



#### Advantages of wood construction methods

- ✓ energy savings for the production and construction of the building (grey energy)
- ✓ lower emissions in terms of GHG emissions, acidification, eutrophication and causing of photochemical smog

#### Advantages of heavy solid structures

- ✓ Achievement of high heat buffering effects,
- ✓ they can thus reduce the heat energy requirement by around 10% and thus significantly reduce overheating of the building in the summer.
- ✓ high level of sound insulation and good fire resistance

#### Advantages of hybrid construction methods

- ✓ each of the construction methods has both strengths and weaknesses, so that neither solid nor lightweight constructions can be exclusively favoured.
- ✓ The results show a promising potential of the hybrid construction method which combines many advantages of both variants. For example, during the production process, the energy consumption and thus the impact on the environment and also the heat energy requirement during operation can be reduced.

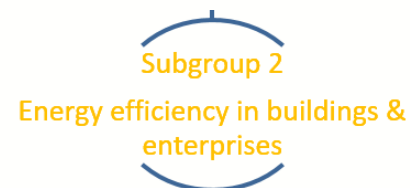
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## EUSALP Action Group 9: Actions 2017-2018

### 2017 Experts' workshop: Key Performance Indicators for Greening the Alpine Infrastructure EUSALP



#### Mandatory KPIs:

- Primary energy demand
- Delivered energy demand
- Renewable energy in primary energy consumptions
- Renewable energy in final thermal energy consumptions
- Renewable energy in final electric energy consumptions
- Global Warming Potential
- Quality of air - Ventilation
- Quality of air – CO<sub>2</sub> concentration
- TVOC from construction materials
- Formaldehyde from construction materials

#### Recommended KPIs:

- Embodied non-renewable primary energy (product stage)
- Materials from renewable sources
- Recycled materials
- Construction and demolition waste
- Water consumption
- Net potable water consumption
- Thermal Comfort
- Life cycle cost in the operational stage

Source: Moro, A., Vienot, E., Berchtold-Domig, M.: EUSALP Performance Indicators for buildings, EUSALP Action Group 9, 2018.

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## EUSALP Action Group 9: Actions 2017-2018

### 2017/2018: First EUSALP Energy Survey

### Thermal energy needs in the EUSALP

- Thermal energy needs account for about 43% of the overall final energy consumption in the EUSALP area.



Heat production	From RES	From fossil fuels	From direct electricity	Heath production			
				Solar thermal energy	Geothermal energy and ambient heat	Biofuels and biomass	Waste
987 TWh	203 TWh	777 TWh	7 TWh	7 TWh	12 TWh	154 TWh	17 TWh
	21%	79 %	1%	4%	6%	81%	9%

Wood burning  
Negative impacts on  
air quality due to  
PM10, NO2 and  
B(a)P

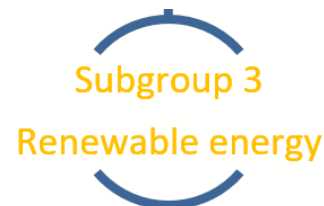
Source: Adriano Bisello, Silvia Tomasi, Giulia Garegnani, Chiara Scaramuzzino, Amy Segata, Daniele Vettorato, Wolfram Sparber, 2018, EUSALP Energy Survey Report, at [https://www.alpine-region.eu/sites/default/files/uploads/activity/449/attachments/eusalp\\_energy\\_survey\\_report\\_final\\_reviewed.pdf](https://www.alpine-region.eu/sites/default/files/uploads/activity/449/attachments/eusalp_energy_survey_report_final_reviewed.pdf).

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## EUSALP Action Group 9: Actions 2017-2018

### 2017/2018: First EUSALP Energy Survey



#### Estimation of regional experts concerning remaining potential of biomass for heat production:

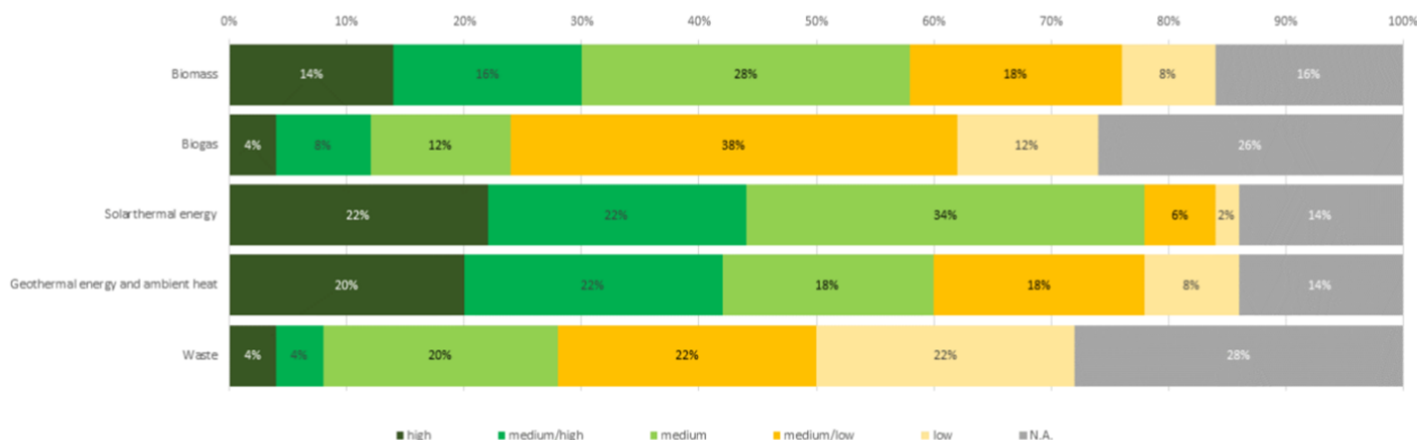
14%: high potential

28%: medium potential

8%: low potential

16%: medium high potential

18%: medium/low potential



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Source: Adriano Bisello, Silvia Tomasi, Giulia Garegnani, Chiara Scaramuzzino, Amy Segata, Daniele Vettorato, Wolfram Sparber, 2018, EUSALP Energy Survey Report, at [https://www.alpine-region.eu/sites/default/files/uploads/activity/449/attachments/eusalp\\_energy\\_survey\\_report\\_final\\_reviewed.pdf](https://www.alpine-region.eu/sites/default/files/uploads/activity/449/attachments/eusalp_energy_survey_report_final_reviewed.pdf).

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**Thank you for the attention!**

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