The Sustainable Tourism Observatory of South Tyrol (STOST)

Anna Scuttari, Felix Windegger
Center for Advanced Studies, Eurac Research
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SOUTH TYROL (ITALY)

- Autonomous province in the Italian Alps (about 500.000 inhabitants)
- Three official languages: German (69%), Italian (26%), Ladin (5%)
- Dolomites UNESCO WHS and Transhumance as immaterial UNESCO WHS
- Tourism sector directly accounts for 11.4% of total GDP (2019)
- Main tourist markets: Germany, Italy, Austria, Switzerland
- Around 10,000 accommodation facilities (of which 4,000 hotels and similar)

THE SUSTAINABLE TOURISM OBSERVATORY OF SOUTH TYROL (STOST) – LAUNCHED IN 2018

MAIN OBJECTIVES

- Support local DMOs and the regional government in developing policies, strategies and management processes for sustainable tourism (e.g. evidence-based policy-making)
- Offer a theoretical contribution to the conceptualisation and measurement of sustainable tourism

MAIN ACTIVITIES

- Systematic, timely and regular monitoring of tourism performance and impact (31 indicators, 14 issue areas, 3 dimensions)
- Reporting: annual report; (scientific and transfer-oriented) publications; website (https://sustainabletourism.eurac.edu/)
- Networking: stakeholder meetings; exchange with international observatories; presentations at international conferences; supporting local projects

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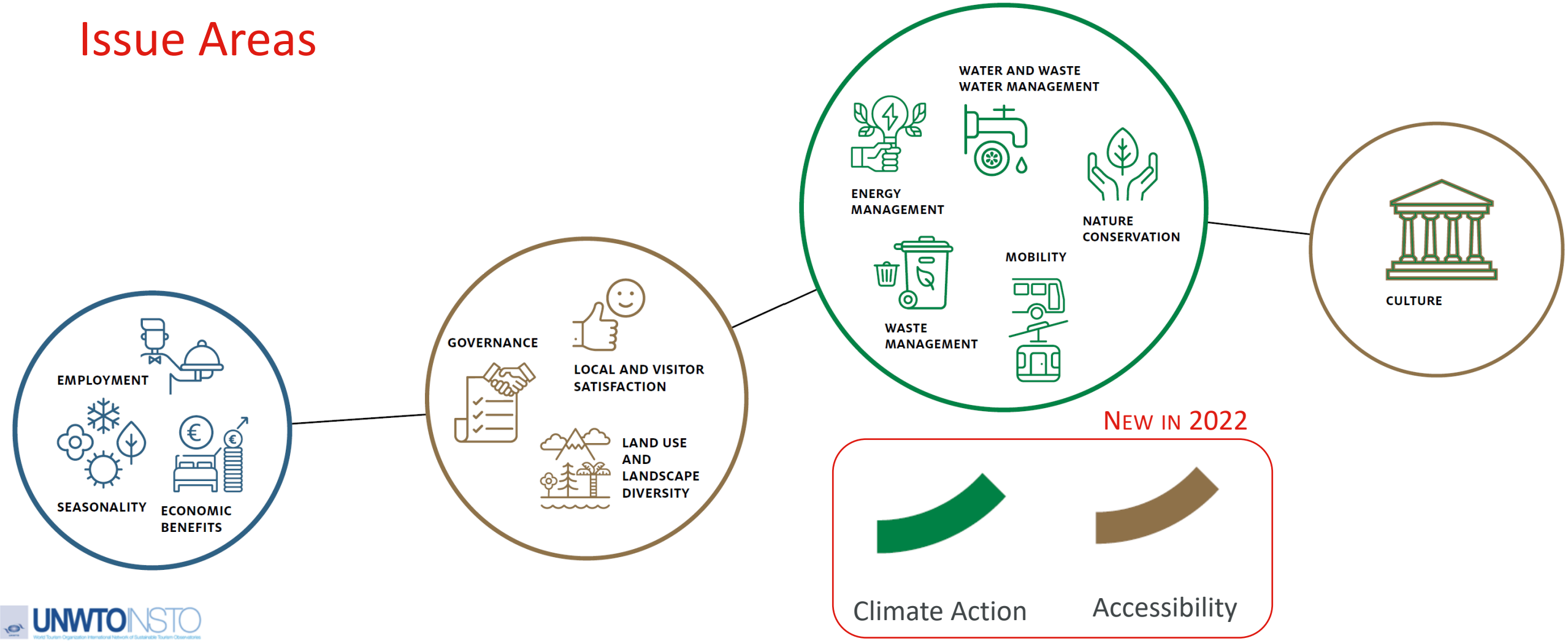
Stakeholder Meeting in July 2020

THE SUSTAINABLE TOURISM OBSERVATORY OF SOUTH TYROL (STOST)

Issue Areas



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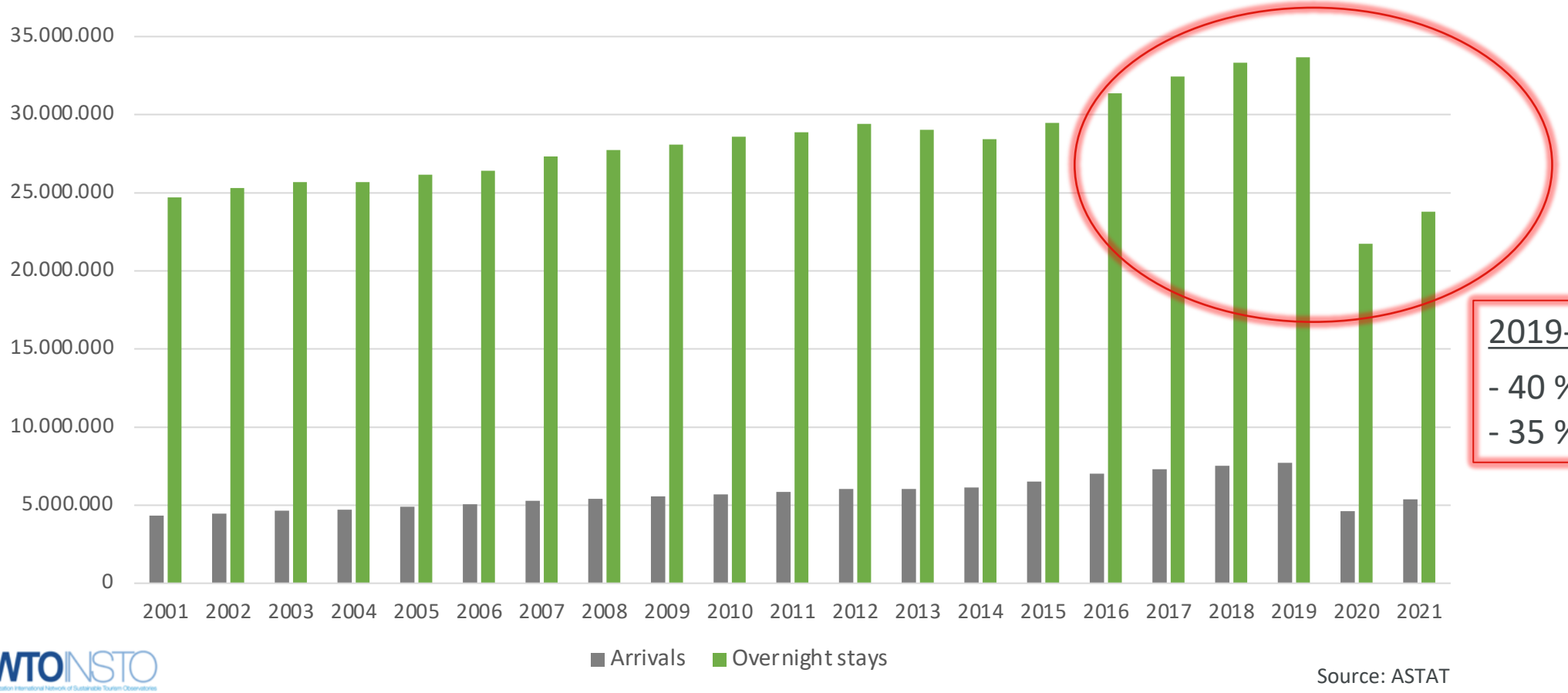
Effects of the Covid-19 pandemic on tourism in South Tyrol

Arrivals and overnight stays in all accommodation facilities, South Tyrol (2001-2021)



2019-2020:

- 40 % arrivals
- 35 % overnight stays

Source: ASTAT

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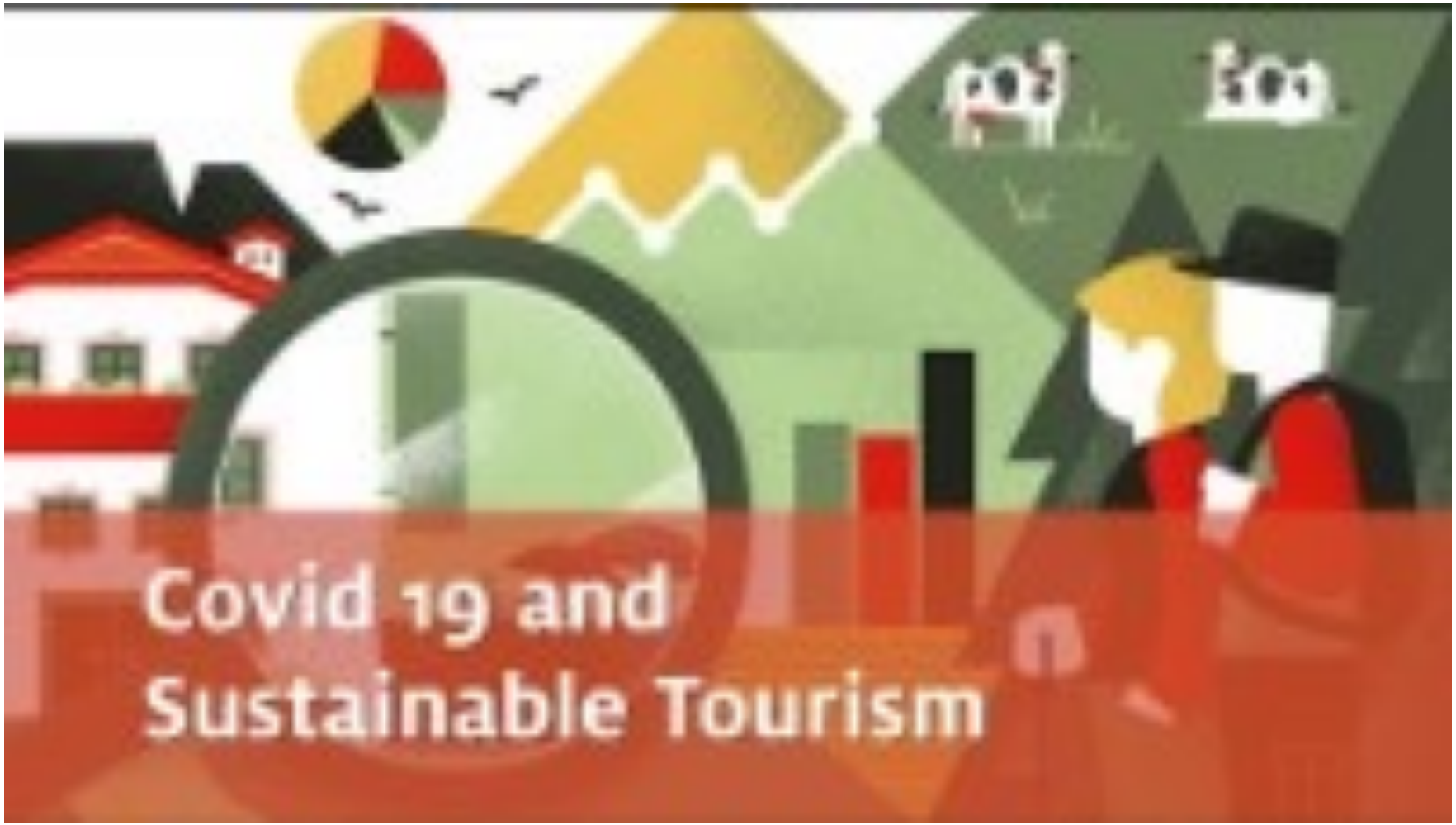
Effects of the Covid-19 pandemic on tourism in South Tyrol



Source: STOST

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“Energy management”: The approach

WHAT TO MEASURE?

- Energy vs **electricity**?
- **Consumption** vs management plans?

HOW TO MEASURE?

- Two approaches applicable in tourism (Becken and Patterson, 2006)
  - top-down (environmental accounting)
  - bottom-up (volumes of tourism activities and coefficients) ➔ STOST

Becken, S. & Patterson, M. (2006) Measuring National Carbon Dioxide Emissions from Tourism as a Key Step Towards Achieving Sustainable Tourism, Journal of Sustainable Tourism, 14:4, 323-338, DOI: 10.2167/jost547.0

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“Energy management”: The approach

WHAT DID WE DO?

- Identification of core activities at destination level that imply electricity consumption
  - Accommodation
  - Sports (skiing)
  - Mobility
- Assessment of possible data providers that could deliver timely and accurate data on electricity consumption volumes
  - Statistical offices ➔ data for skiing sector, no data for accommodation
  - Energy companies ➔ data on e-mobility, no data for accommodation
  - Chamber of commerce and industry ➔ incomplete data for accommodation
  - Accommodation facilities (sample survey) ➔ complex and expensive data collection

  - ➔ STOST SOLUTION: estimation using existing parameters from Austria (see below)

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Indicators “Energy management”

6 **Energy management** 	**6.1**	Estimated minimum electricity consumption in accommodation facilities	Environ-mental	Pressure (P)	
	6.2	Electricity consumption by ski lifts and snow cannons	Environ-mental	Pressure (P)	
	6.3	Number of charging stations offered for e-mobility in hotels and public spaces	Environ-mental	Responses (R)	

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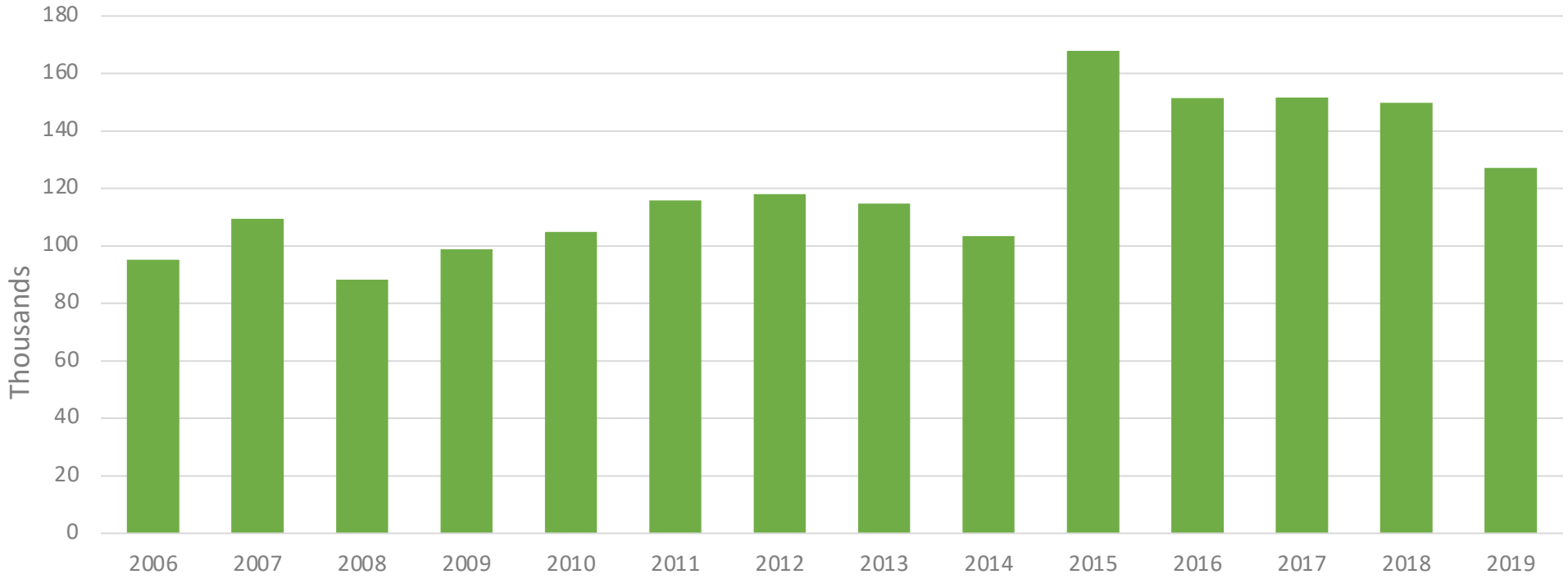
Indicators “Energy management”

6

Energy management

Electricity consumption by ski lifts and snow cannons (in kWh)



Based on data from: ASTAT

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Indicators “Energy management”

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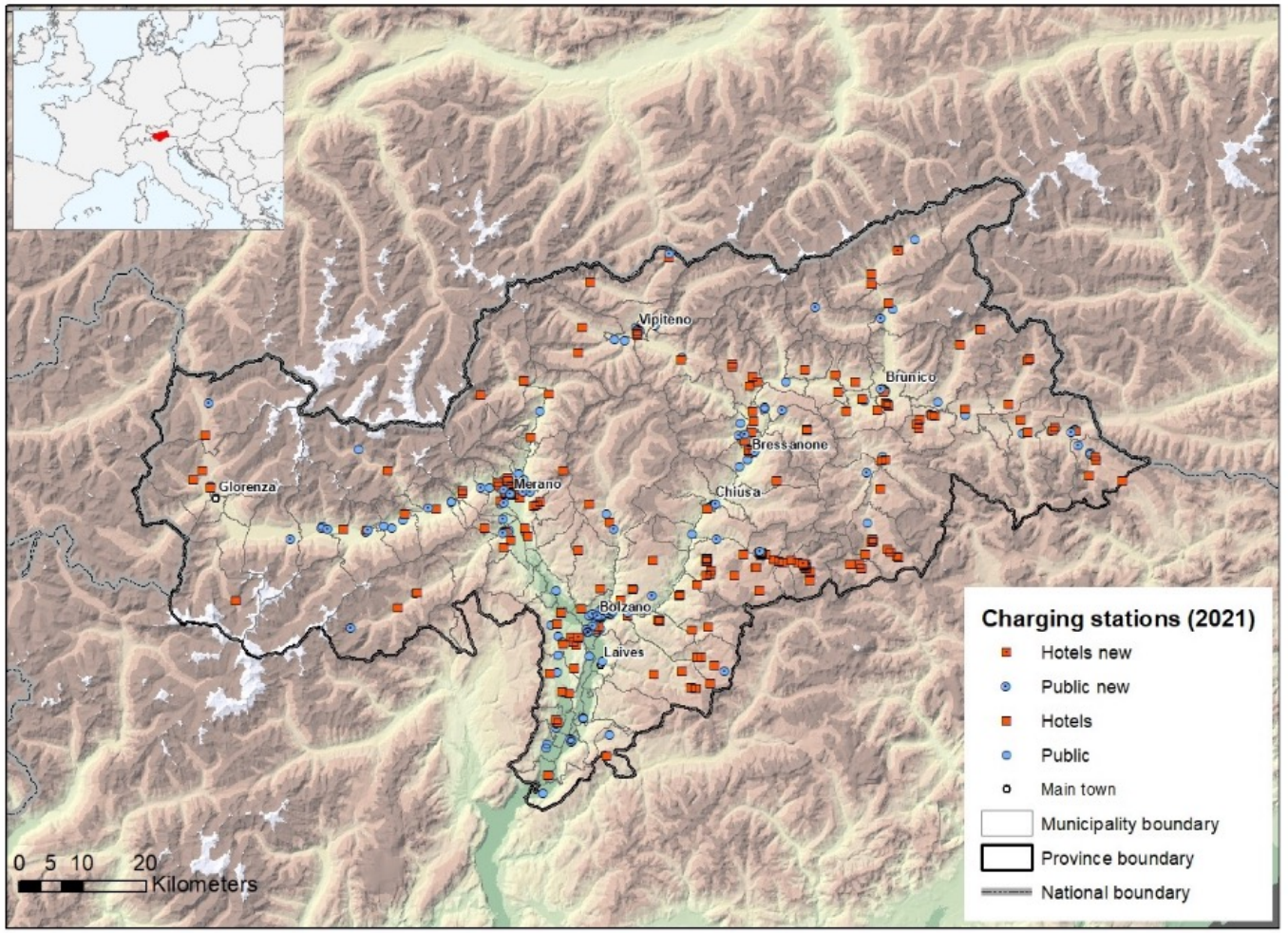
Energy management

Charging stations for e-mobility in accommodation facilities and public spaces (2021)



Based on data from: Neogy and Tesla

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Indicators “Energy management”

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Energy management

6.1 Estimated minimum electricity consumption in accommodation facilities

“Estimated minimum electricity consumption in accommodation facilities” stands for an estimation of the minimum energy consumption in accommodation facilities using coefficients from existing literature (Bundesministerium für Wirtschaft, Familie und Jugend Wirtschaftskammer Österreich, Fachverband Hotellerie, Fachverband Gastronomie, Österreichische Hoteliervereinigung, 2011). Coefficients for electric energy are different according to accommodation category and performance conditions of the facilities. We chose to use those expressed in units per overnight stay. Given that data provided by ASTAT on overnight stays were available on a monthly basis, the resulting indicator is on a monthly basis as well. Therefore, we estimated the minimum energy consumption in accommodation facilities based on the following formula:

$$minimum\ electric\ energy\ consumption_t = \sum_{i=1}^{n} o_i * \alpha_i$$

Equation 7: Minimum electric energy consumption calculation

Where i = type of accommodation categories, o = overnight stays, α = electric energy consumption coefficient under optimal performance conditions and t = month.

Bundesministerium für Wirtschaft, Familie und Jugend Wirtschaftskammer Österreich, Fachverband Hotellerie, Fachverband Gastronomie, Österreichis- che Hoteliervereinigung (2011). Energie-Management in der Hotellerie und Gastronomie: ein Leitfaden (2. Auflage)

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Indicators “Energy management”

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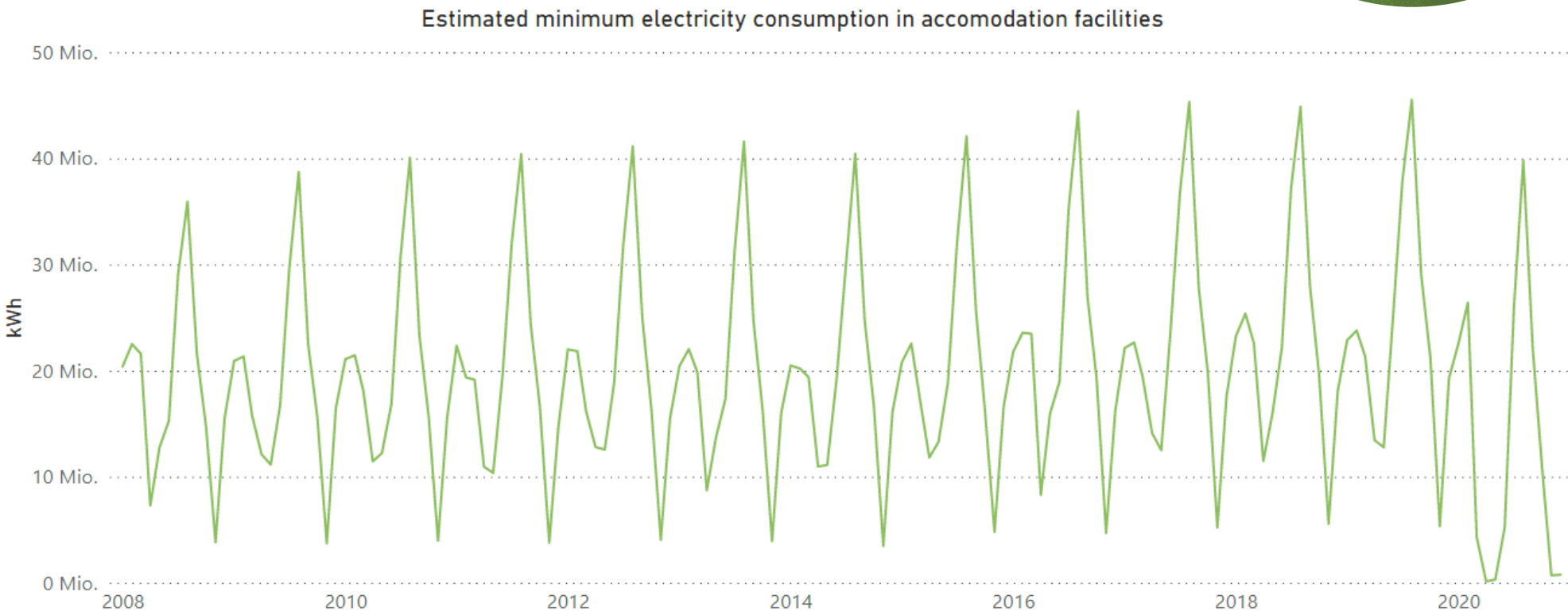
Energy management



Based on energy consumption coefficients estimated by BMWFJ &
WKO Österreich (2011) & data from ASTA
(for details on the estimation procedure see: The Sustainable Tourism
Observatory of South Tyrol (STOST). Annual Progress Report [2020]

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Indicators “Energy management”

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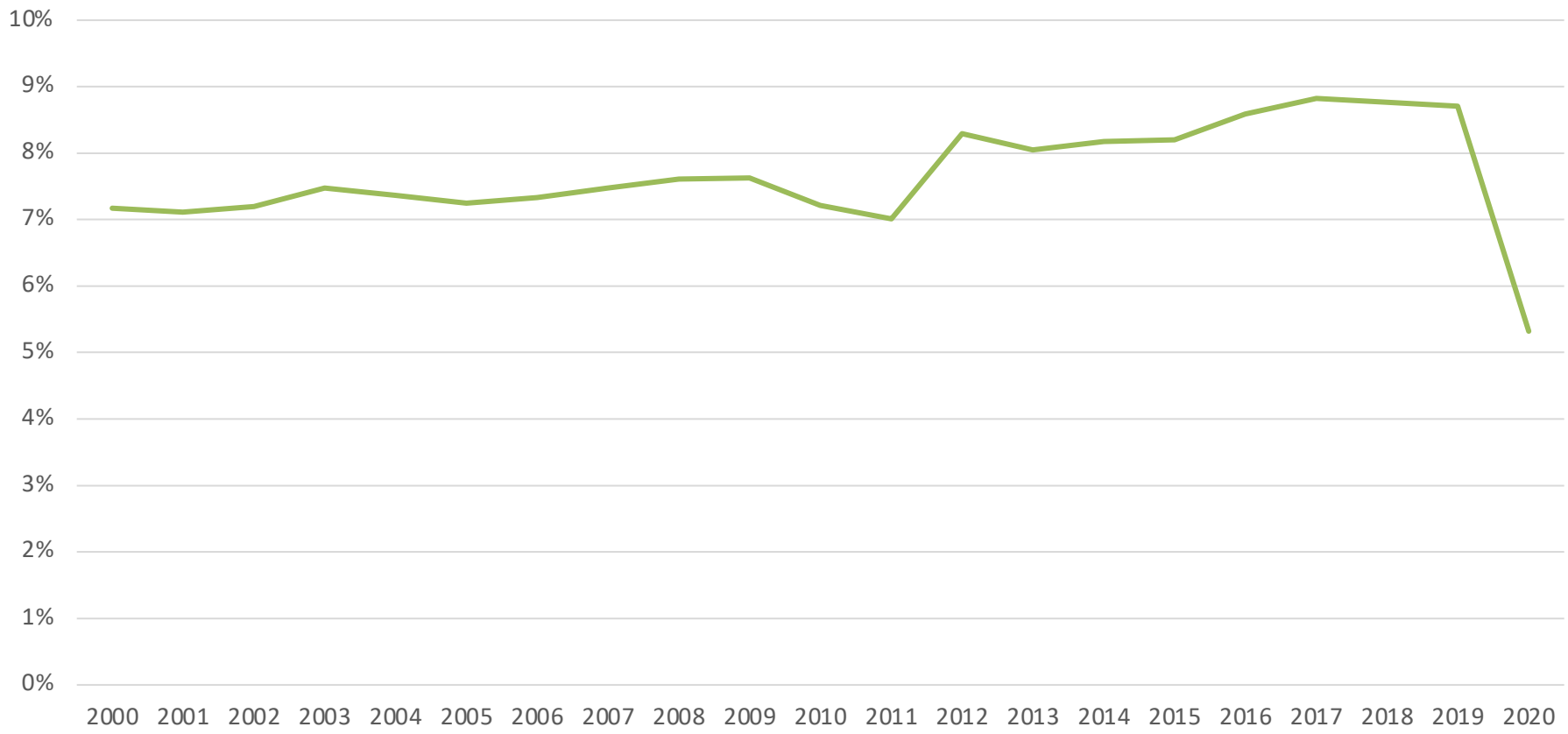
Energy management

Total consumption values (all sectors): ASTAT

Estimated minimum electricity consumption in accommodation facilities (% of total consumption) – 2000-2020 – South Tyrol



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Indicators “Energy management”

Table 4: Indicators for energy management. Sources: own calculation based on data from ASTAT (6.1), Agenzia del Territorio and ASTAT (6.2), Neogy and Tesla (6.3).

Indicator		Absolute numbers		Percentage change	
6.1	Estimated minimum electricity consumption in accommodation facilities	2011	2020	2011-2019	2019-2020
		234 million kWh	159 million kWh	+18.7%	-42.7%
6.2	Electricity consumption by ski lifts and snow cannons	2011	2018	2011-2018	2017-2018
		116 million kWh	150 million kWh	+29.2%	-1.2%
6.3	Number of charging stations offered for e-mobility in accommodation facilities and public spaces	2019	2021	2019-2021	
		300	366	+22.0%	

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“Energy management”: Conclusion

CHALLENGES

- Lack of measurements of energy consumption as a whole (heating systems, fuels, etc.)
- Interdisciplinarity and difficult interpretation of data
  - need for expertise in environmental engineering and management
- Limited and indirect influence on policy-making
  - ongoing pilot projects on the future of ski tourism (IDM)

POSSIBLE SOLUTIONS

- Measurement through pilot project with pioneers (accommodation facilities with certification schemes)
- Regular assessment of environmental performance by economic sector in the official statistics
- Possibility to look at trends in consumption (increase – decrease – stability) and contribution of tourism to total consumption (%)
- Creation of a local platform of stakeholders around the indicators (think tank)

THANK YOU FOR YOUR ATTENTION!

Center for Advanced Studies - Eurac Research
Drususallee/Viale Druso 1
39100 Bozen/Bolzano
advanced.studies@eurac.edu
www.eurac.edu