The CoolST Project - Adapting to Climate Change Impact: Crafting South Tyrol's Cooling Future for Energy Resilience

Simon Pezzutto [(1)] - Fabio Giussani [(1)] - Eric Wilczynski [(1)] - Giovanni Pernigotto [(2)] - Angelo Zanella [(3)] - Dietmar Siegele [(4)]

[(1)] Eurac Research, Institute For Renewable Energy, Bolzano, Italy - [(2)] Libera Universitá Di Bolzano, Facoltá Di Ingegneria, Bolzano, Italy - [(3)] Laimburg Research Centre, Institute For Mountain Agriculture And Food Technology, Vadena (bz), Italy - [(4)] Fraunhofer Italia, Innovation Engineering Center, Bolzano, Italy

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Abstract CoolST aims to shed light into the cooling market of South Tyrol (ST), providing evidence on the amount of cooling units installed, per type, per sector (residential, tertiary, industry, and transportation) - quantifying actual energy consumptions, being able to generate projections for upcoming years (2040), so to clarify future energy needs and set ground on how to face them best. CoolST will provide a Knowledge Hub, an online open-source repository of assembled and quality-controlled data and information about ST's cooling market, and a Tool transforming this data/information into knowledge easily understandable (i.e. graphs). Since households will play a more and more crucial role in this context, CoolST will focus on the residential sector. The focus will be on generating missing primary data by a number of bottom-up approaches. A detailed market analysis will identify the supply chain structure, assessing market shares of manufacturers, sellers, and resellers at the provincial level for direct data retrieval. Moreover, parametric simulations will be carried out, based on local climatic datasets, social clusters, and archetypes etc. Outcomes will be compared, evaluated by experts, and counterposed to the few available results of reliable/scientific sources. CoolST will adopt an interdisciplinary approach, intersecting the areas of engineering, architecture, economics, user-behaviour, ecology, health, and policies. We will gather data/information about the cooling market in ST, providing a comprehensive investigation on the status quo and future developments.