

CORNET Call for Proposals: International Collective Research
--- Project idea ---

Subject:	Cooling
Coordinator: Other applicant(s):	Thomas More Kempen vzw – Research group KCE (Knowledge Centre For Energy)
Sector:	<input type="checkbox"/> Materials <input checked="" type="checkbox"/> Process Engineering, Energy Technology and Environment <input type="checkbox"/> Business Management and Organisation <input type="checkbox"/> Construction and Production <input type="checkbox"/> Chemistry, Textile, Food, Health and Medical <input type="checkbox"/> Measurement and Information
Target group:	Sector Organizations Installer companies Distributors of refrigerants Refrigeration companies End-users (objective info) Governments
Proposal summary:	<p>Objective: Draw up clear practice-oriented recommendations for the alternatives to synthetic gases, focusing on systems using natural refrigerants on the one hand and indirect cooling on the other.</p> <p>Because conventional refrigerants contain harmful substances that cause global warming, the European government has provided for a phase-out of synthetic refrigerant gases. Companies have to switch to more environmentally friendly refrigeration systems, which poses many challenges for the sector.</p> <p>Despite the advantages of sustainable (passive) systems, they cannot meet the needs for cooling in all applications, and there is still a need for systems with a (synthetic or natural) refrigerant.</p> <p>One of the problems the sector encounters with natural refrigerants is that they are flammable and/or toxic, and the aspect of safety therefore becomes a major concern. In addition, it is not always clear at the moment which technique, e.g. with CO₂, NH₃ or synthetic gas, is the most suitable for a certain application in the longer term.</p> <p>At the same time, taking into account safety and costs, the benefits of indirect cooling are increasing. This becomes even more pronounced when the possible combination with renewable energy and storage is considered. For an improved implementation of this technique in practice, there is however a need for insights into strategies like smarter use of the installation to reduce energy consumption.</p>

<p>Advantages for trade and industry:</p>	<p>Overview of alternatives for different applications Improvement of energetic performance Benefits and disadvantages of different systems, including:</p> <ul style="list-style-type: none"> - Peak consumption - Own energy production - Fixed and variable costs
<p>Dissemination concepts:</p>	<p>To be defined</p>
<p>Profile of additional partners:</p>	<p>Partners that can give an answer to additional questions and challenges the sector is facing when addressing cooling needs, eg:</p> <p>Experts in other cooling techniques, eg:</p> <ul style="list-style-type: none"> - Thermoacoustic cooling - Vortex Tube cooling - Magnetic cooling - Pumpable Ice Technology - ... <p>Experts in alternative/other refrigerants Experts in choosing refrigerant types</p>
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