

Chillventa Specialist Forums 2022

Chillventa Fachforen 2022

**CONNECTING
EXPERTS.**



NürnbergMesse, Eurammon Technical Committee Energy Efficiency, 12 October 2022



Eurammmon Technical Committee Energy Efficiency

Tommy Angback, Chairman

Technical Committee Energy Efficiency

eurammmon lecture event at Chillventa, 12 October 2022

Eurammon matches my own and my company objective

- **eurammon**

- Is an association of companies, institutions and individuals with one goal: to encourage a sustainable approach in refrigeration engineering. eurammon has therefore been advocating the use of natural refrigerants since its foundation in 1996. The initiative sees its mission in providing a platform for information and knowledge sharing – be it for scientists and researchers, politicians, as well as the public at large.

- **My company Alfa Laval**

- Has been a member from very early on. The motivation is higher then ever as we share the same ambition moving from imagining a more sustainable world to really building it. A world in which less is needed to produce even more. A world in which we efficiently meet our growing energy needs and at the same time reduce CO₂ emissions. A world where we can harness the power of natural resources while preserving them.

Technical Committee Energy Efficiency – started work in last year

Some Background input:

- IEA “The International Energy Agency” is stating that increasing energy efficiency is the most critical parameter to reduce global carbon dioxide emissions.
- The synthetic refrigerant industry has invested heavily in HFOs and is making arguments against natural refrigerants. One target of this group could be to rebut this standpoint and find valuable counterarguments
- The technical committee should aim at publishing energy efficiency facts about solutions with natural refrigerants to give the public the possibility to judge and assess for themselves.
- We could benchmark/collaborate with our international alliance organizations around the world - like for example IIAR in USA, who recently established an Energy and Sustainability Committee

Objective

This committee should collect, develop and publish information which demonstrates opportunities to increase Energy efficiency *in built and new construction of systems* by applying natural refrigerant systems

- Include the perspective of CO2 Emission reduction both direct (refrigerant) and indirect (power source) for highest Climate friendliness



Based on the objectives - a summary of possible deliverables

What

- Methodology for Energy performance measure
 - Define best way to measure
 - Define benchmark best practise targets
- Comparison Natural versus Synthetic refrigerant systems
- System considerations how to achieve better EE
 - General
 - In specific areas
 - Cold storage
 - Freezing
 - Food process, Dairies
 - Chillers
 - A/C and Heat Pumps
 - .. in Warm/Cold Ambient conditions
- Importance of the components for EE
 - Compressors, Pumps, Controls, Regulation, Heat Exchangers, Insulation, buildings etc..

How

- with TEWI (total equivalent warming impact).
 - Electricity consumed (GWP rated)
 - Refrigerant emission impact
 - Heat recovery
- ..and LCC (life cycle cost) perspective ie.
 - Investment cost
 - Maintenance and operating cost
 - Energy cost
 - Lifetime of installation
- Presenting
 - Best practice references, cases, papers, guidelines
 - Innovations, technical news
 - etc

What did we start to work with

- Benchmark tools
 - Collecting energy data from various installations – starting with cold storage data
- Selection of best energy efficiency guidelines to promote
- Case stories
 - Energy efficiency in Cold store - Case Malaysia (Chew Soon Jin) – posted
 - NH3 for Air conditioning – ready to be posted
 - Facts or Fiction– to be posted
 - Operating experience with an Ammonia Air condition
 - Upgrading Refrigeration Equipment in Ice hockey rinks –reducing dramatically the Energy costs! – ready
 - A cooler dairy with natural refrigerants – an energy efficient installation in Greece - ready
- ..and more

The committee members

We are a group of some 6-10 members from various companies and partner organisations meeting every month (virtually) to follow up and initiate various actions.

It is really interesting and fun 😊 but there is lot to do...and we are all doing this on "our spare time"

So:



- We invite more members to be active and help us to further proof that systems with natural refrigerants are more energy efficient and contribute to more sustainable refrigeration sector.
- All real case stories supporting our work are also most welcome !

eurammon e. V. is always available as a sparring partner for questions on refrigeration with natural refrigerants.

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Classified by Alfa Laval as: Business