



life front



LIFE FRONT: FLAMMABLE REFRIGERANT OPTIONS FOR NATURAL TECHNOLOGIES

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Klára Skačanová

Market Development Manager

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PROJECT OVERVIEW



Full Title:

Flammable Refrigerant Options for Natural Technologies – Improved standards & product design for their safe use (FRONT)

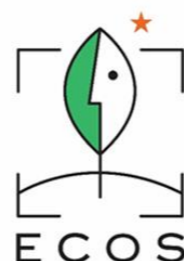
- Funded under LIFE, the EU's financial instrument supporting environmental, nature conservation and climate action projects throughout the bloc.
- Submitted under **LIFE Climate Action** - Climate Change Mitigation 2016 call
- Structured in 7 Actions (**6 Work Packages (WP)**) that run in parallel and build on each other



DURATION:

- Start: 15/06/2017 - End: 31/07/2020

Project Partners:



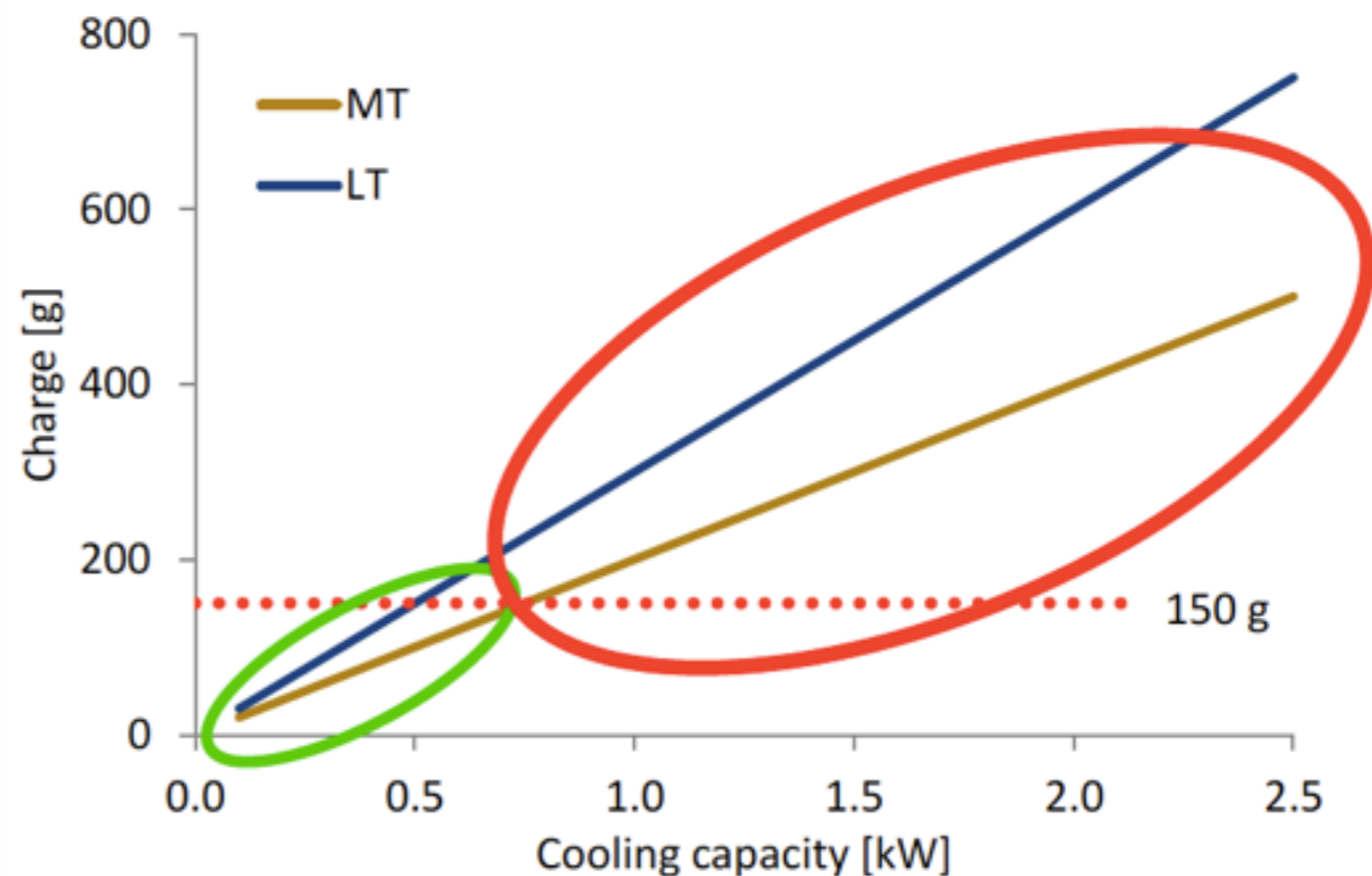
BACKGROUND

In 2016 the **EC** published a [report](#) indicating that:

- [...**standards** (at international, European and national level) regarding the use of **flammable refrigerants** appear to be an **important barrier** to the uptake of climate friendly alternatives to HFCs.]

In current standards – **charge limits** are not established on a basis of scientific assessment, the “worst case” assumptions do not reflect the reality in the field

The limit of 150g in commercial refrigeration **does not allow to fully exploit the potential of energy efficient HFC-free technology**



Source: GIZ Proklima, HEAT GmbH

OBJECTIVES

LIFE FRONT aims to **remove barriers** posed by standards for flammable refrigerants in HVAC&R.

Key objectives:

- **Support** the EU and international **standardisation process** for flammable refrigerants
- **Reduce safety risks** from improved system design for air-conditioning, refrigeration and heat pump applications using flammable refrigerants
- **Increase availability** of alternatives to replace HFCs
- Engage in **technology capacity-building** for EU equipment manufacturers
- **Remove** non-technological knowledge **barriers**
- **Improve Europe's competitiveness** for RACHP equipment using non-fluorinated refrigerant alternatives
- **Support** an effective and timely achievement of the **EU 2030 climate targets**

PROJECT ACTIONS

Literature Review & Market Study: Standards & Technology for Flammable Refrigerants

- Mapping and analysing the current state of relevant European and international standards
- Market study mapping available technology and product groups using hydrocarbon refrigerants, their expected future availability, and the impact of standards on such market development

Leak analysis, gas concentrations & consequences

- Field study of types/cause/size of leaks and an online leak hole size & leak simulation database
- Laboratory study of leak mass flow rates and gas concentration measurements

PROJECT ACTIONS

Improved product safety design & quantitative risk assessment

- Re-design of prototype models according to the "best practice" principles established
- Risk assessment to identify improvements in risk reduction associated with the implementation of new mitigation measures and sensitivity especially concerning incremental increase in charge sizes

Standardisation action & capacity-building

- Standards Action Group "Front", a voluntary group of stakeholders interested in the development of EU and international standards on product, environmental or safety requirements for flammable refrigerants
- Draft requirements for flammable refrigerant standards

THANK YOU!

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