Natural Refrigerants

for a Cooler Planet

WEBINAR

Rita Tedesco
Programme Manager, ECOS

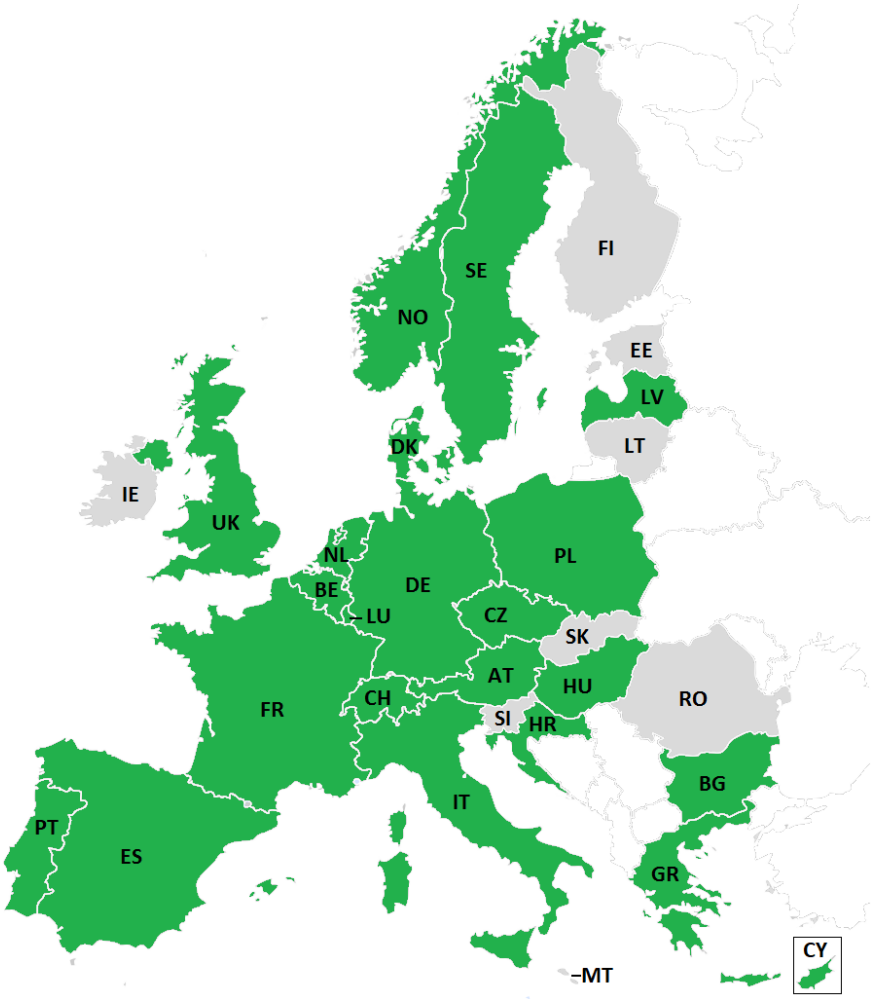
Kasia Koniecka
Communication Manager, ECOS

ECOS

28 March 2019

ecostandard.org

ECOS - European Environmental Citizens' Organisation for Standardisation



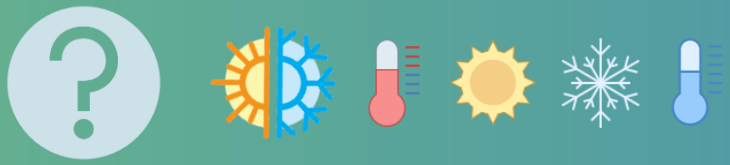
ECOS

TODAY ON THE AGENDA

Rita Tedesco
Programme Manager, ECOS

- **Hot or not?** The environmental impact of refrigerants
- **For more NatRefs:** the standards at play
- **Helping to keep things cool:** ECOS work on refrigerants
- Q&A

ECOS



TIME FOR
A QUIZ!

ECOS

ecostandard.org

PART 1

H O T O R N O T ?

The environmental impact of refrigerants

ECOS

ecostandard.org

What is a refrigerant?


From 1.6 billion today… to 5.6 billion by 2050

Fluorocarbons as powerful greenhouse gases

GWPs and ODPs of some common refrigerants			
Type	**Gas**	**GWP**	**ODP**
Ozone Depleting Substances	CFC-12	10900	1.0
	HCFC-22	1810	0.0555
HFCs	HFC-404A	3922	0
	HFC-32	675	0
HFOs	HFO-1234yf	4	0
Natural	Propane (R290)	3	0
	CO2	1	0

Fluorocarbons as powerful greenhouse gases

GWPs and ODPs of some common refrigerants			
Type	**Gas**	**GWP**	**ODP**
Ozone Depleting Substances	CFC-12	10900	1.0
	HCFC-22	1810	0.0555
HFCs	HFC-404A	3922	0
	HFC-32	675	0
HFOs	HFO-1234yf	4	0
Natural	Propane (R290)	3	0
	CO2	1	0

Montreal Protocol (1987)

Fluorocarbons as powerful greenhouse gases

GWPs and ODPs of some common refrigerants			
Type	**Gas**	**GWP**	**ODP**
Ozone Depleting Substances	CFC-12	10900	1.0
	HCFC-22	1810	0.0555
HFCs	HFC-404A	3922	0
	HFC-32	675	0
HFOs	HFO-1234yf	4	0
Natural	Propane (R290)	3	0
	CO2	1	0

Montreal Protocol (1987)

EU F-Gas Regulation (2014)
Kigali Amendment (2016)

Fluorocarbons as powerful greenhouse gases

EU F-Gas Regulation (2014)

By 2030, HFCs will be cut by two-thirds compared to 2014 levels.

Kigali Amendment (2016)

HFCs will be reduced by more than 80 percent over the next 30 years.

ASHRAE safety classification

Higher flammability	Propane
Flammable	R-152
Lower flammability	Most HFO's, R-32
No flame propagation	ODS and most HFCs

PART 2

FOR MORE NATREFS:
the standards at play

Barriers posed by standards to climate-friendly alternatives to high-GWP


EUROPEAN
COMMISSION

Brussels, 30.11.2016
COM(2016) 749 final

REPORT FROM THE COMMISSION

on barriers posed by codes, standards and legislation to using climate-friendly technologies in the refrigeration, air conditioning, heat pumps and foam sectors

"**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."

Main challenges in standardisation

- Limited information
- Narrow interests
- Limited stakeholder participation
- Lack of inclusiveness

Unsuitable standards

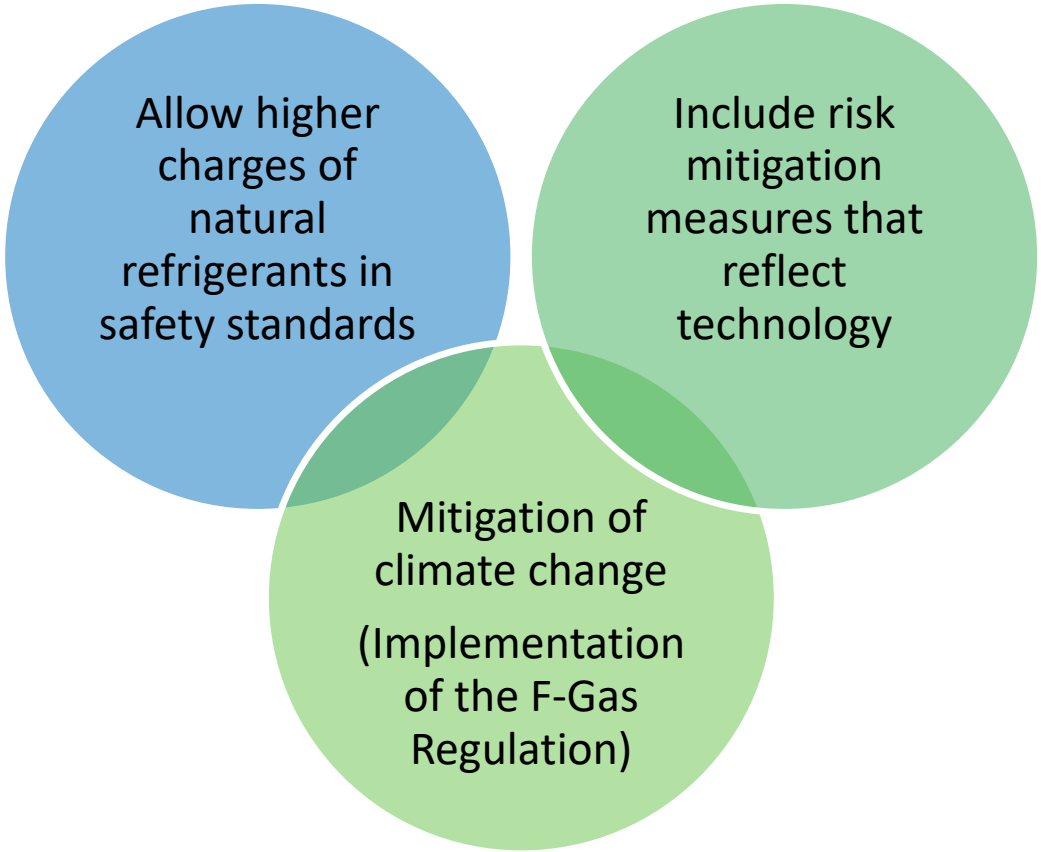
Part II | Overview of relevant standards to F-Gas Regulation and Kigali Amendment

EN 378	**Published**	Industrial systems, commercial refrigerators, air conditioners and heat pumps, transport refrigeration and chillers
ISO 5149	**Published**	Industrial systems, commercial refrigerators, air conditioners and heat pumps, transport refrigeration and chillers
IEC 60335-2-40	**Enquiry stage**	Air conditioners and heat pumps, chillers
IEC 60335-2-89	**Approval stage**	Commercial refrigerators
IEC 60335-2-24	**Published**	Domestic refrigerators

PART 3

Helping to keep things cool:
ECOS work on refrigerants

ECOS' objectives



Greater natural options in commercial refrigeration

IEC 60335-2-89	Approval stage	Increase charge sizes for all flammable refrigerants

EUROPEAN COMMISSION

M/555

Brussels, 14.11.2017
C(2017) 7284 final

COMMISSION IMPLEMENTING DECISION

of 14.11.2017

on a standardisation request to the European Committee for Standardisation and to the European Committee for Electrotechnical Standardisation as regards use of flammable refrigerants in refrigeration, air conditioning and heat pump equipment

Article 1
Requested standardisation activities

CEN and Cenelec are requested to draft a European standardisation deliverable with technical specifications for the use of **flammable refrigerants, in particular those classified as A3**, in RACHP equipment. […]

LifeFRONT project

Flammable Refrigerant Options for Natural Technologies

☞ www.lifefront.eu

Objectives

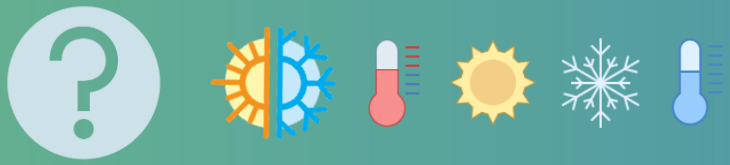
- Support standardisation development processes
- Reduce safety risks with improved system design
- Engage in technology capacity building
- Remove non-technological knowledge barriers

Literature review and market study

Field and laboratory studies

Product safety design and risk assessment

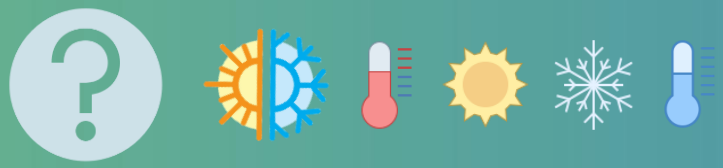
Capacity building



TIME FOR
A QUIZ!

ECOS

ecostandard.org



OVER TO YOU!

Q & A

Thank you!

Rita Tedesco
Programme Manager, ECOS
rita.tedesco@ecostandard.org

Kasia Koniecka
Communication Manager, ECOS
kasia.koniecka@ecostandard.org