

## **Cooling** without climate warming

Sources: DG Clima, PROZON

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### **Climate changes**

### - how EU deals with fluorinated greenhouse gases emission"

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### Agenda

- 1. What is a Global Warming
- 2. What causes it
- 3. What EU is doing to stop it
- 4. What are the acts
- 5. How thiese actions affects HVACR industry





### What is global warming?

Some gases in the Earth's atmosphere act a bit like the glass in a greenhouse, trapping the sun's heat and stopping it from leaking back into space.

You can imagine changing temperatures in a pot on a burner with and without the cover....

Greenhouse gases act as a cover for the earth!



Speach of prof. Hans Schelnhuber PIK



### **Greenhouse gases**

Many of these gases occur naturally, but human activity is increasing the concentrations of some of them in the atmosphere, in particular: carbon dioxide ( $CO_2$ ) Methane nitrous oxide fluorinated gases





### Why F-gases are subject of restrictions?

Fluorinated gases couse greenhouse effect Low emission but high GDP: 1 kg R134a equals to 1430 kg CO<sub>2</sub> (GWP 100= 1430)

- 1. refrigerants
- 2. fire protection systems
- 3. SF6 in energy sector

Reducing emissions and replacing refrigerants is an important target in front of HVACR, fire protection and energy distribution





### 2020 package

The 2020 package is a set of binding legislation to ensure the EU meets its climate and energy targets for the year 2020. The package sets three key targets:

- 1. 20% cut in greenhouse gas emissions (1990 levels)
- 2. 20% of EU energy from renewables
- 3. 20% improvement in energy efficiency

The targets were set by EU leaders in 2007 and enacted in legislation in 2009. They are also headline targets of the Europe 2020 strategy for smart, sustainable and inclusive growth.





### 2030 package

The 2030 climate and energy framework sets three key targets for the year 2030:

- 1. At least 40% cuts in greenhouse gas emissions (1990)
- 2. At least 27% share for renewable energy
- At least 27% improvement in energy efficiency
  The framework was adopted by EU leaders in October
  2014. It builds on the 2020 climate and energy package.





### **Tools to achive targets**

- 1. ETS emission trading system 'cap and trade'
- 2. National emission reduction targets
- 3. Renewable energy national targets
- 4. Innovation and financing low carbon technolog
- 5. Energy efficiency



#### ETS movie explanation



### **Main Acts affecting F-gases**

- 1. Kioto Protocol, Doha, Paris Agreement
- 2. EU 842/2006
- 3. EU 517/2014
- 4. Member countries acts





### How it affects HVACR industry

- 1. Cap on import  $CO_2$  equivalent F-gases 2015
- 2. Placing prohibitions
- 3. Deacreased placing quotas 21% in 2030
- 4. Leak controll (eqt  $\geq$  3kg or 5T CO<sub>2</sub> eq.)
- 5. Leak monitoring (eqt  $\ge$  300 kg or 500T CO<sub>2</sub> eq.)
- 6. Recovery, recycling, reclamation of F-gases
- 7. Certification system
- 8. Member country acts and penalties





### **Benefits**

Achieving the goals of the 2020 package should also help:

- increase the EU's energy security reducing dependence on imported energy and contributing to achieving a European Energy Union
- 2. create jobs, advance green growth and make Europe more competitive.





### **EC** action

The new EU F-Gas Regulation (517/2014) will drive a large reduction in the consumption of HFCs in the EU.

- 2030 there will be an 80% cut in the amount of HFCs that can be placed on the EU market. To achieve this reduction, users of HFC refrigerants will need to use alternative gases with much lower global warming potentials (GWPs). Using low GWP alternatives can create a range of issues related to properties such as flammability, pressure and toxicity. It is important that users of HFCs are able to select low GWP alternatives that can be used safely and without excessive extra costs.

The European Commission (DG Clima) are carrying out an important study to investigate challenges related to the uptake of low GWP alternatives to HFCs. One of the issues being investigated is:

**National codes, standards and legislation** related to HFC alternatives. In particular, what





### **Refrigerants action**

### **1. Recovery**

from the equipment to cylinder or tank

### 2. Recycling

1.recovery

2.recharge

### 3. Reclamation

Cleaning to te quality of virgin product







#### What are alternative refrigerants

CO<sub>2</sub>
 ammonia

#### hydrocarbons

- o izobutan
- o propan, propen

#### **HFC refrigerants**

• R32 (GWP = 675)

### HFO

- R1234ze (GWP = 3),
- R1234yf (MAC)









#### The Closed Cycle .....Driving Natural & Alternative Refrigerant Solutions





### **Our Mission**

PROZON is protecting earth's climate by limiting usage and emission of refrigerants.

For 20 years we have been running National Network od Reclamation of Refrigerants.

Promoting environment friendly best practices for work with refrigerants.





### About us

Founded by Termo Products and Praxair in 1996 as Foundation for the Protection of Ozone Layer In 2003 joined Linde Gaz Polska

W 2014 roku has change the name to PROZON Foundation for the Climate Protection.

Todays assembly of Founders:

Air Products, Linde Gaz Polska, Schiessl Polska





### About us

Foundation organized the 3-R network of recovery and reclamation of refrigerants

Currently, 3R Network brings together nearly 1,200 companies mainly engaged in servicing and installing refrigeration and air conditioning





Questions?

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# Thank you for your attention!

sources: DG Clima PROZON



### See you evening



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