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## SPIN Newsletter #2 - October 2010

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### SPIN Workshop "Commercial Refrigeration with Natural Refrigerants"



The Federal Environment Agency of Germany (UBA) hosted on the 14th of October 2010 a transnational workshop on Commercial Refrigeration with Natural Refrigerants in Nuremberg (Germany) during the Chillventa trade fair. The workshop was organized in the framework of the SPIN project financed by the Interreg IVB Baltic Sea Region Programme. Almost 50 participants representing mostly SMEs from the refrigeration sector attended the workshop. They listened to and discussed with speakers from Germany, Sweden and Denmark.

The refrigeration sector is of considerable economical and environmental importance: Up to 14% of the energy consumed in Germany is used for refrigeration and air conditioning purposes. While in fridges for private households and in refrigeration systems of large-scale industrial complexes already today almost only natural refrigerants are used, in commercial refrigeration (especially in the retailing and manufacturing sector) synthetic refrigerants based on HFC (Hydrofluorocarbon) still prevail. HFC-based refrigerants are potent greenhouse gases. The standard refrigerant in commercial refrigeration, HFC R404A, exhibits a global warming potential (GWP) of 3875, i.e. it is 3875 times as potent as CO<sub>2</sub> (GWP=1). Due to refrigerant leakage (direct emissions) and electrical power consumption (indirect emissions), HFC-based refrigeration systems show a significantly higher "total equivalent warming potential" (TEWI) compared to installations with natural refrigerants. This means that HFC refrigeration systems contribute much more to climate change than installations with natural refrigerants like ammonia (R717), CO<sub>2</sub> (R744) or propane (R290).

This calls for improvements both in the energy-efficiency of the refrigeration systems as well as in the use of refrigerants. Although huge territorial disparities exist in the development and application of innovative refrigeration systems throughout the Baltic Sea Region (BSR) there are many innovative SMEs in the refrigeration sector based in the BSR. Market leaders for equipment with natural refrigerants are found especially in Denmark, Sweden and Germany.

The speakers of the workshop provided an insight of innovative new refrigeration systems, challenges connected with the installation and servicing of new systems as well as examples of public incentives programmes supporting the installation of systems using natural refrigerants (LINK see agenda and presentations further down).

The presentations informed about technologies using natural refrigerants as well as providing features for heat recovery,

which further enhance the energy efficiency of the new refrigeration systems. The speakers see room for some 35% energy savings compared to standard refrigeration systems using HFC refrigerants. However, due to challenges on the servicing side and still higher investment costs, such systems have not yet been deployed on a broader scale in the BSR, yet. The incentive programmes presented in the workshop and reduced future investment costs due to economy of scale might already be an answer to some of these challenges.

This workshop has been a good example for the motto of the SPIN project: Private Profits and Public Benefits! SPIN is based on the simple but normally successful business equation of matching supply and demand. SPIN taps on innovations throughout the BSR, which lead to sustainable production in SMEs. It supports SMEs who have developed sustainable solutions to reach out to a larger market. At the same time it gives enterprises the technical and managerial solutions they need to make their production process more sustainable and to increase their profits.

## Programme

09:00 Registration

09:30 Welcome  
Rolf Engelhardt (BMU)

09:40 Natural refrigerants in commercial refrigeration – approaches in Europe and worldwide  
Jürgen Usinger (GTZ ProKlima) - DE

**Presentation**

Discussion

10:20 Refrigeration and air conditioning with natural refrigerants R723 and NH3 - installation concepts and project presentation  
Burkhard Dunst (Frigoteam Handelsgesellschaft mbH) - DE

**Presentation**

Discussion

11:00 Coffee break

11:20 Heat reclaim in CO2 systems  
Micael Antonsson (Green&Cool) - Sweden

**Presentation**

Discussion

12:00 The new GeoPack System from HM, operational experience of an all-encompassing energy concept for supermarkets  
Jan Kröger  
(Hafner-Muschler GmbH & Co. KG), DE

**Presentation**

Discussion

12:30 Lunch

13:30 Challenges for refrigeration craftsmen  
Frank Heuberger  
(Head of German Refrigeration Craftsmen Guild), DE

**Presentation**

Discussion



14:10 You invest and save energy – we finance: KfW!  
Jürgen Daamen (German Reconstruction Bank, KfW), DE

Presentation

14:50 Coffee break

15:10 ROBUR – EDEKA Bad Wiessee  
Mike Hotz. (Robur GmbH), DE

Presentation

Discussion

15:50 Maturing and dissemination of new refrigeration technologies  
Kim Christensen (Advansor), Denmark

Presentation

Discussion

16:30 Closing discussion

17:00 Conclusion  
Daniel de Graaf

17:15 End



For further information please contact the [National Contact Point Germany](#)

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