“Carbon footprint of the transport of refrigerated goods – comparison of air, land and sea transport under design conditions and in real operation”
Presentation by Dipl.-Ing. Clemens Aipperspach and Dr.-Ing. Yves Wild

As transport activities are an important contributor to global greenhouse gas (GHG) emissions, market based measures such as environmental indexing and carbon trading are more and more put in the limelight in order to reduce CO2 emissions. For example, the Energy Efficiency Design Index (EEDI) was developed by the International Maritime Organization (IMO) in 2008, designed to have a standardized and comparable evaluation value for new ships in regard to their energy efficiency and carbon emissions.
For transportation of reefer goods, however, not only the energy demand for the transport itself is relevant but also for the refrigeration system being used during transportation. In this context, a comparison between different transportation modes (air, land, sea) shall be provided as an overview. Furthermore, different parameters which can be used for emission measurement shall be explained.

In general, different methodologies can be applied for calculating the carbon footprint of transport activities. The core question always is whether design conditions or real operation figures are referred to in the analysis; however, there are still many other calculation options to be considered. As this variety of methodologies may lead to severely different calculation results even for similar cases, misunderstandings and disputes can be observed in current carbon footprint discussions. Therefore, this paper shall also create awareness that pure results of carbon footprint studies are nearly worthless without looking into the underlying calculation methodologies.

The paper abstains from presenting detailed calculation results; it is rather intended to provide common understanding about different approaches and methodologies. However, concrete figures may be calculated in example case studies during the following workshop (dependent on the participants).

About the speaker:

Dr.-Ing. Yves Wild
Managing Director
Dr.-Ing. Yves Wild Ingenieurbüro GmbH

Yves Wild, born 1964, is a specialist in ocean transport and reefer containers. He has an educational background in marine engineering and law and works as an independent consultant since 1993, often involved in the evaluation of causes of refrigerated cargo claims in ocean, air and road transport for insurance companies, courts or other parties. He also troubleshoots technical problems on any kind of refrigeration systems for A/C or industrial applications.
As an independent expert he participated in several research projects on the transport of reefer containers on board seagoing vessels. For insurance companies he carries out risk analyses on cold stores and refrigerated production plants. He is a member of the development team of the CCQI (Cool Chain Quality Indicator) standard which was developed in 2004/2005 and chairman of the Technical Committee Air Conditioning, Refrigeration and Ventilation of the German Society for Maritime Technology.
Since 2001 Dr. Wild is publicly certified as expert for Refrigeration by the Chamber of Commerce of Hamburg/Germany.

Dipl.-Ing. Clemens Aipperspach
Project Manager
Dr.-Ing. Yves Wild Ingenieurbüro GmbH
Clemens Aipperspach, born 1981, has finished his studies in industrial engineering in 2007. During his diploma thesis, he developed a simulation tool for the application of absorption refrigeration plants aboard cargo ships. Working with Dr. Wild Ingenieurbüro since 2002, he has often been involved in the evaluation of refrigerated cargo claims for insurance companies, courts or other parties. Furthermore, he was participating in the development of the CCQI standard in 2004.
Current professional main focus of Mr. Aipperspach is set on the carbon footprint analysis for different reefer cargo transportation activities (e.g. lecture given on this topic for the Technical Committee Air Conditioning, Refrigeration and Ventilation of the German Society for Maritime Technology in October 2009). Recently, he is carrying out a research project on greenhouse gas emissions caused by sea transportation of tropical fruits.

"Challenges in Perishable Logistics"
Presentation by Jürgen Klümpen, Managing Director of Bloomways

The Presentation of Mr. Klümpen will cover the following aspects and will give answers to arising question in regards of:

- Improvement of Just-In-time Deliveries
- Product vs. Logistic Quality
- Continuous Cool Chain
- Customers Expectations
- Air, sea road transport

SBH Straelener Blumenhandel, Danners Blumengroßhandel, Danners B.V. and, formerly, Florimex Germany have formed a group of companies together since December 2008. To ensure that the four companies maintain a uniform corporate image a new name was selected and Bloomways was established in July 2009. Founded more than forty years ago and run by their owners, all of the four companies forming Bloomways boast a long tradition.
Having 600 employees and more than 5,000 customers, Bloomways is among Germany's biggest vendors in the distribution areas of import/export and wholesale of cut flowers and foliage. Through their cash and carry stores and leading mobile sales they serve specialist florists at 32 locations in Germany as well as major branch offices outside Germany.
The customers appreciate the special emphasis Bloomways places on reliability and on maintaining the variety of its product range. Strict quality inspections of inbound and outbound deliveries are performed, partly in their own blossoming and testing rooms. Shipments are made promptly from own refrigerated warehouses to destinations within Germany and across Europe. In order to ensure that the chain of supply in cold storage is unbroken, deliveries are made using own fleet of refrigerated vehicles. The fleet consists of more than 140 modern vehicles.

About the speaker:

Jürgen Klümpen, born on 06. April 1965, married, two kids, is living in Krefeld, Germany. He started his business carrier as cook and worked more than 10 year in New York in the section of hotel management. Furthermore he studied Business Economics in the USA. He joined SBH Straelener Blumenhandel since 1997/ 98

“Road ahead of CCA and future plans on how quality matters and how to achieve and maintain quality”
Presentation by Christian Helms, CEO of CCG Cool Chain Group Holding AG and RUNGIS express AG, as well as Secretary General of the Cool Chain Association

Improving the cool chain means less waste and an extended shelf life. Less waste means a higher supply of nutrition to lower costs and better quality and possible improvements for the world‘s poor. By bringing all parts of the cool chain together to detect possible improvements and to make them achievable on a global scale, the CCA wants to contribute to making the world a better place. The world population has exploded to a total of 6.7 billion today and is estimated to reach a total of 9.1 billion people by 2050. This increase is equivalent to the world population by 1950 and will mostly be absorbed by the less developed regions, whose population is projected to rise from 5.4 billion in 2007 to 7.9 billion in 2050. Malnutrition is the largest contributor to disease in the world. In 2007, worldwide 923 million people (14% of the world population) were undernourished – while 1.3 billion people in the rich world suffer from overweight and obesity. The number of people in developing countries living on less than $1 a day was 980 million in 2004.
Let’s face it: Our Industry faces 30% waste from harvest to the consumer while real food prices rose by 64% between 2002 and 2008. Much remains to be done to eradicate the scandal of malnutrition in the context of a world that has seen global GDP double in real terms in the past 20 years. There is a future need to produce 34% more food as well as fresh water for an increasing population - and at the same time also eradicate the present poverty of 1.3 billion people. To meet present and future requirements we have to begin and change!

About the speaker

Christian Helms has spent over twenty years in successful management, development and turn-around of supply chain logistics industry operations. He has focused on the cool supply chain and perishable commodity market development for the past ten years. His perishable supply chain experience, knowledge and contacts has led him to become the industry recognized and respected leader. In March 2005 was the legal founding of the CCG Cool Chain Group Holding AG network (www.coolchaingroup.com), where he is the CEO. Christian Helms also serves as CEO at RUNGIS express AG (www.rungisexpress.com.)
Christian Helms is one of the founding members and is a current board member of the Cool Chain Association (CCA). The CCA is a non profit organisation dedicated to improving the cool supply chain industry. He has a working knowledge of what it takes to build the underlying infrastructure in the different legs of the total supply chain process, bridging production, financing, culture, logistics, and technology and marketing demands together.

“Protecting temperature sensitive cargo from temperature peaks using controlled respiration reflective covers”

It is a well-known obstacle that seasonal temperature peaks can create unexpected deviations in transit and thereby affect quality negatively. These peaks can be reduced as highly reflective surfaces significantly decrease sun heat. The first topic will cover this issue and will present trials with permeable protective covers in-transit and in-flight and the resulting benefits for temperature control.

About the speaker:

Malik Zeniti, New Business Development born on 17 November 1961 married, 3 kids joined DuPont in 1990 after 3 years in aeronautics. He worked in different business, marketing, sales and technical assignments in construction, specialities, medical packaging and apparel & home furnishings for DuPont for the last 20 years. A Chemical Engineer from University of Karlsruhe, he is currently responsible for New Business Development in new and emerging applications for DuPont Protective Technologies.