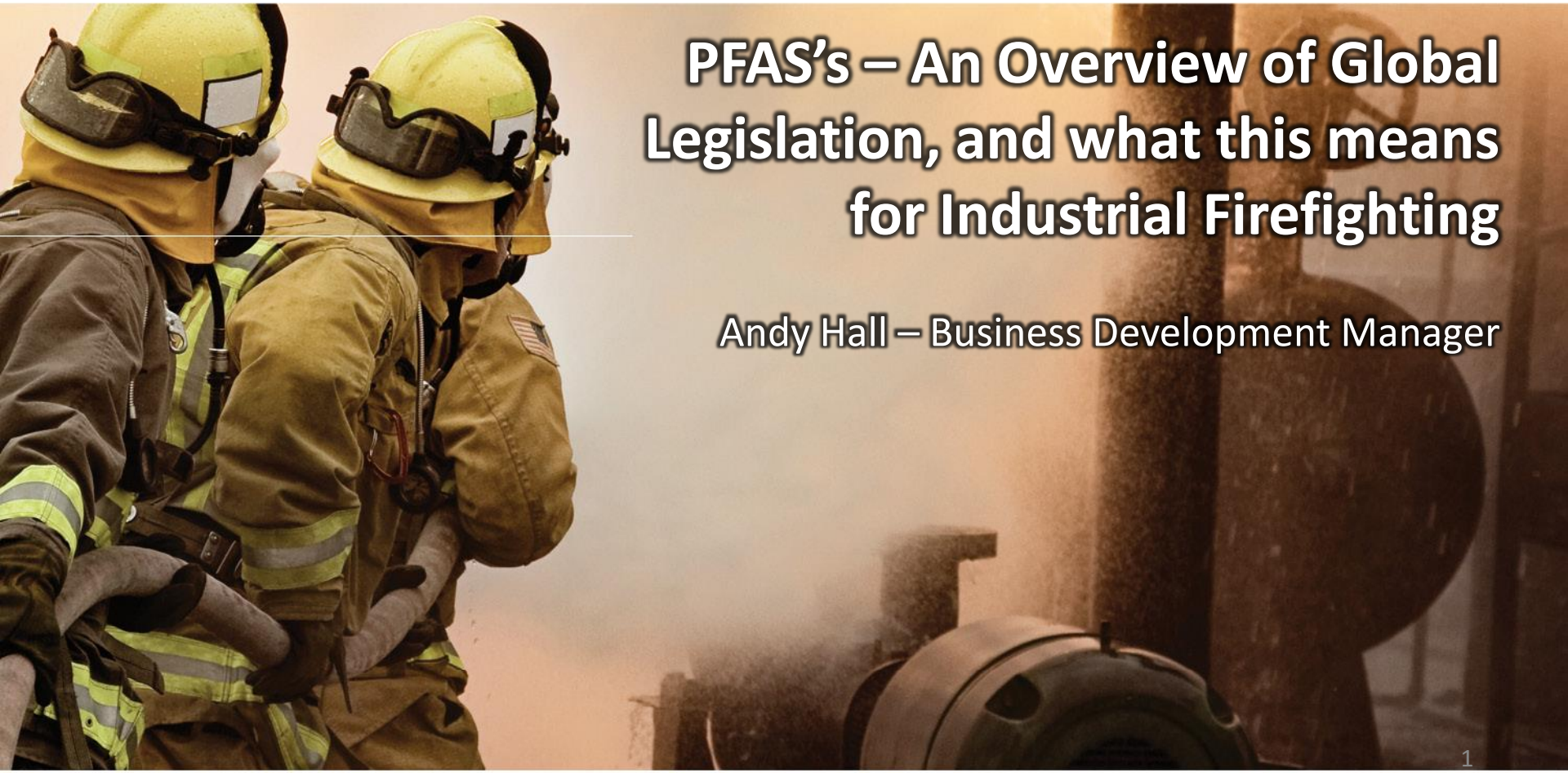
SOLBERG

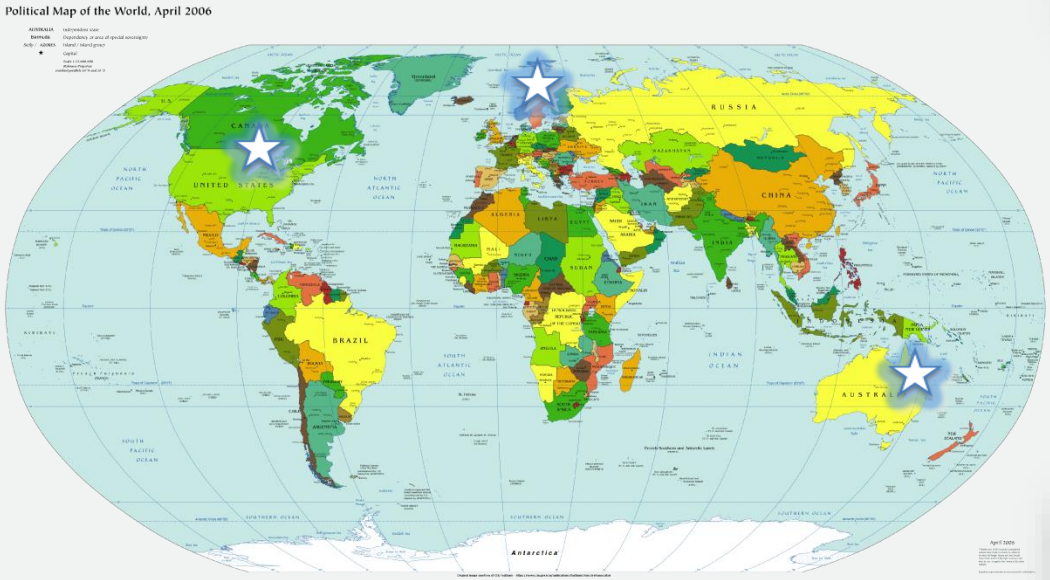
The new standard in firefighting foam technology — worldwide



PFAS's – An Overview of Global Legislation, and what this means for Industrial Firefighting

Andy Hall – Business Development Manager

Global Operations



Green Bay, WI

Bergen, Norway

Sydney, Australia

Definitions

- **PFAS's – Perfluoroalkyl and Polyfluoroalkyl substances**
- **Per – All hydrogen atoms attached to carbon atoms are replaced with fluorine atoms**
  - Examples are PFOS and PFOA
- **Poly – All hydrogen atoms on at least one of the carbon atoms are replaced by fluorine atoms**
  - Example 6:2 FTOH

Next generation fluoro compounds used in Fluroinated Firefighting foams are still PFAS's and scientific community is divided on availability of independent information on the uses, properties, environmental impact, bioaccumulation potential etc.

In 2000 the published papers relating to PFAS's were 3, whereas in the last 5 years over 100 a year.

2013: In EU ... as Hazardous Waste

2014: Canada, Australia and Norway ...

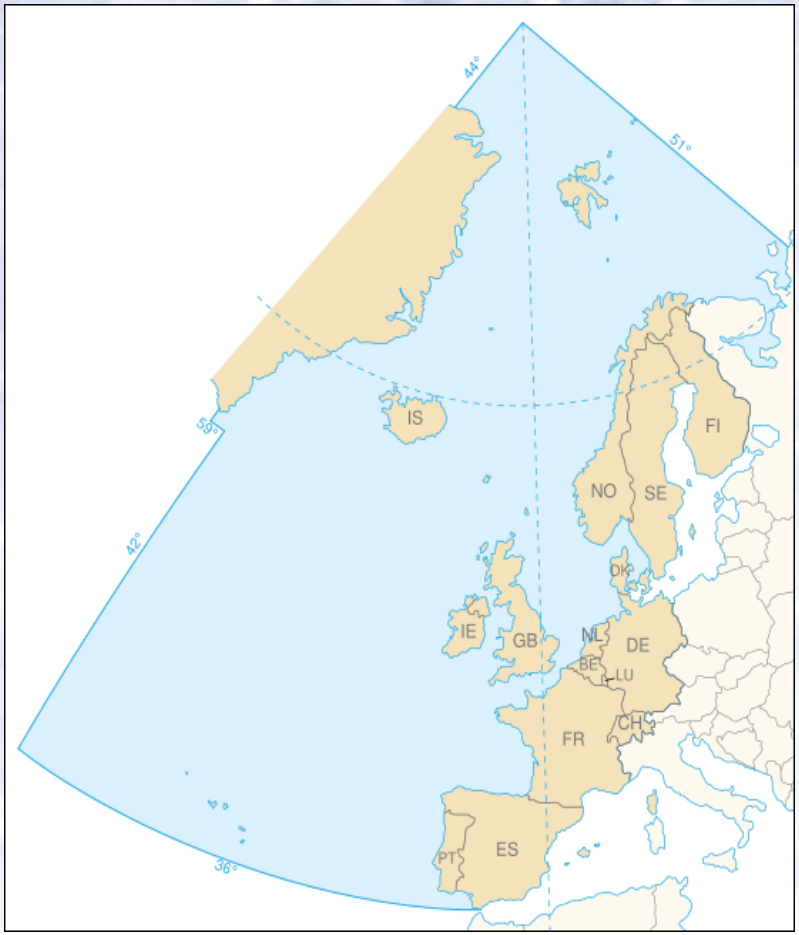
2015: Most North American & European manufactures will have completed transition to C_6 Chemistry

Use of Fluorinated Firefighting Foams

- **German UBA**
  - Don’t use for training / system testing
  - If there is suitable alternative / replacement for fluorinated firefighting foam this should be used
  - Collect any discharge
- **Queensland Department of Environmental & Heritage Protection**
- **Foam Policy Document – Second Draft 2015**
  - Adopted a “precautionary principle” regarding the use of C6 Fluorotelomer based firefighting foams
  - Restrictions on the usage of Fluorinated foams

OSPAR

OSlo/PARis convention for the Protection of the Marine Environment of the North-East Atlantic



HOCNF

Chemical / Substance	Rating
Water	Green
Chemicals on PLONOR List	Green
Hormone disturbing (1)	Black
Environmental Toxicant (2)	Black
BioDeg < 20% and logPow >= 5	Black
BioDeg < 20% and Tox LC/EC50 = 10 (mg/l, mg/kg)	Black
Chemicals on OSPAR Tainting List	Red
2 out of 3: BioDeg < 60%, logPow >= 3 or Tox LC/EC50 = 10 (mg/l, mg/kg)	Red
Inorganic and Tox LC/EC50 < 1 (mg/l, mg/kg)	Red
BioDeg < 20%	Red
OSPAR Convention, appendix 2	Red
Other Chemicals	Yellow

Green	Allowed to discharge without permission
Yellow	Need discharge permission. Acceptable environmental properties, so applications will usually go through.
Red	Need discharge permission. Chemicals to be phased out. Norwegian authorities are planning to not allow discharging from 2005.
Black	No discharge is permitted (in general)

ANNEX XV – PFOA Restrictions

- **December 2014 – Germany and Norway submit proposal to ECHA paper under Annex XV regarding PFOA**
  - 2 ppb for PFOA and its salts
- **Draft opinon from SEAC in September 2015**
  - 1,000 ppb for firefighting foams
- **Germany opinion (November 2015) in response to SEAC opinion**
    - Newly manufactured foams should meet the threshold of 5 ppb for PFOA
    - Derogation proposed, reviewable in 5 years, which would allow current firefighting foams already on the market to continue to be used

- **Can C6 manufacturers meet the purity level required to achieve ?**

2016 and beyond

- **Almost all fluorinated foams that you purchase in 2016 will be a different formulation to those purchased before !**
- **Is C6 the answer ?**
- **How do I get through all the “marketing spin” about Fluorine Free v Fluorinated Foams**
  - Fire Performance
    - Generic v Application specific testing
  - Environmental Information
- **Technologies to reduce the total foam solution used in a fire incident.**

Closing thoughts ! RISC²

- **R**esponsibility
- **I**nformation
- **S**……..
  - SOLBERG
- **C**hallenge and **C**ooperation

Thank you for your attention !