

European Commission  
Directorate-General of Climate Action  
Transport & Ozone  
Mr. Dr. Arno Kaschl  
BU - 24 -1/33  
1049 Brussels  
BELGIUM

25 September 2015

**Clima-FGas-Consultation-Forum according to Art. 23 of  
Regulation (EU) No 517/2014 on fluorinated greenhouse gases**

Dear Dr. Kaschl,

Please find our comments and input on the background papers which were produced by external consultants for the Clima-FGas-Consultation-Forum.

Topic A - barriers to standards and legislation:

- We agree that rules for higher flammability refrigerants are too conservative and charge limits should be increase.
- From our point of view there is no need for classification A2L. A2 is sufficient and A2L should be deleted from ISO 5149 as well instead of establishing this class also in EN 378.
- We agree that there are at the moment no unreasonable barriers on EU levels. Exception are national regulations, i.e. distances from inhabited areas to ammonia systems in France.
- However, the big barrier for CO<sub>2</sub> is the Eco Design Directive for heat pumps. The Directive is obviously tailored to HFCs and CO<sub>2</sub> cannot achieve the requirements for space heating even though the overall performance (space and water heating combined) is better.
- Other than mentioned above we agree that there are no unreasonable barriers for CO<sub>2</sub>.
- We support the idea to collect data and conduct research with the aim to increase charges of flammable substances, based on the installation (i.e. machinery room size, outdoor installation, etc.).
- It is important flammable refrigeration systems are absolutely tight and properly labelled, risk assesment has been conducted and the staff has sufficient training.

- We miss more focus on low GWP levels of the refrigerants in the current legislation process. A lot of thought is put to differentiate A2L refrigerants from A3, but so far even A3 refrigerants, like all other natural refrigerants, have a very good safety record, which is not worse than the current so called "safety" refrigerants HFCs. We get the impression that HFO should appear safer than natural refrigerants, although there is no good reason why this should be the case and missing out the fact that the impact on the environment of increased flour levels is not completely understood. Also it is overlooked that HFO show mostly higher GWP levels compared to natural refrigerants and should therefore be pushed forward.

#### Topic B - training

- We agree that in order to meet challenging phase-down targets will need rapid uptake of low GWP alternatives and lack of training could create a barrier.
- From our point of view legislation is sufficient.
- We disagree that ammonia training is widespread. At the moment only few installers are capable to design and install an ammonia system. More smaller installers are needed that can deal with ammonia.
- More training will be made available if there is a need to install systems with natural refrigerants. Encouraging more systems with natural refrigerants will result in more trained engineers.
- In order to support natural refrigerants more assistance and support (also financially) of training centers for natural refrigerants is needed.

#### Topic C - Green public procurement

- Energy efficiency within the expected life time of the refrigeration system should be the focus, not just initial investment costs.
- Many systems are calculated for i.e. 3 years operation and later are operated for decades. What is the real life expectance of the refrigeration system?
- Normally ammonia systems show the highest energy efficiency, particularly with refrigeration capacities > 500 kW. In such cases ammonia should be generally specified.
- Look at more centralised refrigeration systems rather than split systems. Central refrigeration systems show better performance and are less costly to maintain.
- Look for combined refrigeration/heating requirements - not just within the premise itself, but also in the neighborhood. Is it possible to sell the waste heat to near by industry? This should generally be considered.

Best regards,



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Chairperson

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