PROPOSAL FOR A SCHEME TO PHASE DOWN HFCs

The European Fluorocarbons Technical Committee (EFCTC), a sector group of the European Chemical Industry Association (CEFIC), on behalf of Arkema, DuPont, Honeywell, Mexichem Fluor and Solvay, members of the Global Fluorocarbon Producers Forum (GFPF), would like to take the opportunity provided by the Parties to accredited observer organisations through Paragraph 84-86 of the Outcome of the Work of the Ad-Hoc Working Group on Long-term Cooperative Action under the Convention (document FCCC/AWGLCA/2010/L.7), to invite the parties to consider the establishment of one or more non-market-based mechanisms, as described in Paragraph 85, to reduce the future placing on the market of hydrofluorocarbons (HFCs) and, therefore, achieve a significant volume of potential emissions reductions.

General concept

This document notes, for the consideration of the Parties, a proposal for a scheme that would cap and reduce the quantity of HFCs that could be placed on the market. Such a scheme, using the expertise developed by the Montreal Protocol, would complement and strengthen the HFC emissions provisions of the UNFCCC and its Kyoto Protocol.

Fluorocarbon producers have successfully tackled in the past the environmental challenges, quickly adapting industry to the societal demands while ensuring business certainty for users and continued supply of services for consumers. This has mainly been carried out under the Montreal Protocol that has helped to control and reduce depletion of the ozone layer. Through accelerated research and development, the industry has been able within a few years to find alternatives with lower and finally no impact on ozone depletion. As the substances controlled under the Montreal Protocol have significant GWPs, these efforts have also reduced contributions to global climate change by 5 to 6 times as much as the reduction measures taken under the Kyoto Protocol at this time.

The fluorocarbon industry aims now at showing a similar level of commitment to further reduce contributions to future global climate change.

As in the past, there are three effective methods to reduce the carbon footprint either directly and/or through improved energy consumption: by developing new alternatives with lower effect on climate change; by developing product stewardship practices and; by actively working towards their introduction while avoiding costly business disruptions with little environmental effect.

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The objective:

To curb and reduce the placing in the market of high GWP HFCs by setting a cap and a stepwise reduction over subsequent years. The cap would be applicable to producers and importers in given territories and expressed in CO_2 equivalent. The cap does not entail a phase out: it is vital that high GWP HFCs shall remain available for use in future years, notably in applications and/or countries where they will remain the most effective alternative available or where they are required for service or quality of life.

Background

- HFC gases are mainly used for refrigeration, air conditioning and insulating foams with minor uses in other applications such as fire protection systems and medical inhalers.
- They were developed to replace CFCs and HCFCs, which were damaging the ozone layer. HFCs are not Ozone Depleting Substances (ODSs) but they are greenhouse gases.
- For this reason, HFCs are covered by the Kyoto Protocol but not by the Montreal Protocol.
- HFCs are the preferred solution for many societal needs because of their safety and performance advantages.
- The Global Warming Potentials (GWPs) of the most commonly used HFCs are in the range of 124 to 4470 using AR4 values
- It is estimated that the overall global warming impact of HFC emissions worldwide currently represents less than 2% of the total global greenhouse gases emissions. However, it has been predicted that demand for HFCs will grow due to the replacement of HCFCs and growing demand for refrigeration and air conditioning, especially in developing countries. This growth will result in HFCs becoming a more significant source of emissions in the future.

Technical development of alternatives

Encouraging progress is being made by HFC producers to find low GWP alternatives for a range of applications including mobile air-conditioning, insulating foams and commercial refrigeration. Already an alternative fluid has been developed for mobile air-conditioning; it has a GWP of about 4 compared to a GWP of 1430 for the HFC currently being used. A clear regulatory framework is needed for research and development to continue and for manufacturers of equipment and products to undertake the necessary programs to adopt these and other lower GWP alternatives. Current regulatory

provisions affecting F-Gases fall short of providing this necessary framework, and do not address the issue in a global, effective way.

Current Regulatory Background

- EU: *F-Gas Regulation* (842/2006), establishing measures to reduce emissions of fluorinated gases by means of leak prevention via equipment inspections and improved training of service and maintenance personnel.
- EU: *Mobile Air Conditioning Directive* (40/2006), established a GWP limit of 150 for refrigerant fluids to be used in new car models as of 2011
- US: *Several legislative initiatives* at the House of Representatives and the Senate, all foresaw HFCs being included under a separate scheme which phases down their placing on the market. Individual States have also started their own initiatives.
- International: Proposals to amend the Montreal Protocol to cap and reduce HFC consumption and production on a CO_2 equivalent basis.

Considering these regulatory trends and technological developments from industry, a global scheme aiming at limiting the placing on the market of HFCs is desirable and feasible under existing international environmental agreements.

Main characteristics of an HFC phase down scheme

- A specified (range of) year(s) in the past is taken as a reference by the Parties, defining the amount of HFCs and HCFCs that were placed on the market in a country.
    - HCFCs must be included in the reference because they are being replaced primarily by HFCs and many countries have not even started a phase down of HCFCs.
- This amount is then used by the Parties to set an appropriate limit for placing HFCs in the market as of the first year of the phase down scheme. The amount of HFCs placed on the market could start at 100% of market demand in the starting year, although Parties will want to ensure that the baseline is realistic, balanced and flexible, and fair.
- The amount is calculated on a CO_2 equivalent basis so that each country can chose which HFCs are used and which markets are served.
- The initial amount is then reduced by a given percentage, agreed by the Parties, over subsequent years of the scheme.
- If implemented in a similar way to the Montreal Protocol, importers and producers in every country would receive by the authorities annual CO_2 equivalent quotas for their consumption of HFCs. These quotas would be reduced as defined by the scheme until a flat line (also to be determined) is reached. The quotas then remain equal in following years.

Advantages:

- **It provides a long term, predictable scenario for governments, industry and other stakeholders** to adapt their strategies. This is valid for all industry participants: HFC and low GWP fluorocarbon producers and users, as well as Not-in-Kind alternatives like CO_2, ammonia or hydrocarbons. Consumers will have broader options for their mid- and long-term strategies.
- **Measurable CO_2 equivalent reductions with clear accountability** for Governments and NGOs. Unlike current controls on emissions under the Kyoto Protocol, the scheme aims at reducing over time what is placed on the market and not solely relying on enforcement of regulations limiting leaks in billions of pieces of equipment.
- **Enhanced Recovery, Recycling and Destruction** of available material driven by the limitations of supply of new material. Unrestricted availability of gases and their relatively low price has not helped customers to develop a sense of awareness and best practice when using the gases, resulting in frequent venting to the atmosphere. Reduced availability can only increase awareness and best practices, and should be complementary to other measures to improve the quality of service and maintenance, such as those introduced by the EU F-Gas Regulation.

- **Ensuring Replacements Have Equivalent Energy Efficiency** – markets would adapt to new alternatives without sacrificing energy efficiency in application. That energy consumption accounts for over 80% of the Climate impact in many applications.

The cap and allocation scheme within the UNFCCC process

The Montreal Protocol has developed and implemented a range of cap and phase-outs for ozone depleting substances. The expertise developed through this Protocol forms a solid basis for developing a consumption cap and phase-down for HFCs.

As described above, HFCs are included in the basket of gases of the Kyoto Protocol. However, no global action was undertaken during the six years that the Protocol has been in force, although the EU and its Member States, and Switzerland have implemented measures to reduce emissions of HFCs. This has prompted discussion about a possible amendment of the Montreal Protocol to effectively implement an international agreement on HFCs under its scope.

Industry recognises the important role played by the Montreal Protocol in successfully phasing down CFCs and HCFCs and acknowledges that this could provide the necessary expertise to effectively implement a similar system for HFCs.

However, any phase down approach should respect industrial product planning horizons, particularly for highly capital intensive and complex chemical plants. This

is possible to achieve, while maintaining a high level of environmental ambition due to the consumption cap.

Industry believes that including provisions of controlling the placing on the market of HFCs under the Montreal Protocol would complement and strengthen the HFC emissions provisions of the UNFCCC and its Kyoto Protocol.

Final remarks:

Several Parties have expressed support in different sessions of the UNFCCC process for a phase down agreement that would effectively deal with HFCs. Initial proposals for an amendment for a cap and phase-down of HFCs have been submitted by a number of Parties to the Montreal Protocol. This submission draws upon the HFC consumption cap and phase-down in those submissions by Parties to the Montreal Protocol and demonstrates EFCTC support to work towards such an agreement.

This first proposal is, of course, incomplete and subject to further elaboration, but expects to draw the attention of the Parties as to the need for the establishment of an international agreement on HFC consumption. Such an agreement could lead to a reduction of millions of tonnes of emissions and provide industry and users the necessary certainty to make their appropriate individual business decisions.

European Fluorocarbon Technical Committee at CEFIC would like to thank the Parties to the UNFCCC Secretariat for the opportunity to provide our views and remains at its disposal to further elaborate on this proposal.

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