MEMORANDUM

To: UNFCCC Cooperative Mechanisms Programme

From: Iliriana Mushkolaj, ICF Consulting

Date: October 7, 2004

Re: Call for inputs on AM0001

The purpose of this memorandum is to provide input on possible alternative approaches to assessing the baseline scenario for destruction of HFC 23 in the HCFC 22 industry, as discussed in the he methodology AM0001 "Incineration of HFC 23 waste streams."

Background

The HCFC-22 production process is relatively mature (over 30 years) and has been extensively researched. However, the optimum operating conditions dictated by business economics are not necessarily the same conditions that minimise HFC-23 production. The upper bound for HFC-23 emissions is on the order of 3 to 4 percent of HCFC-22 production, but the actual quantity of HFC-23 produced depends in part on how the process is operated and the degree of process optimisation that has been performed. There are a number of factors that affect halogen exchange of chlorine to fluorine and thus affect the generation of HFC-23 in the reactor, and significant reduction in HFC-23 formation can be achieved by adjusting process operating conditions, including modifications to process equipment.

Possible alternative approaches to assessing the baseline scenario for destruction of HFC-23 in the HCFC-22 industry

Regarding the sentence, “The value of w is set at the lowest actual value during the three years prior to the start of HFC 23 destruction to a maximum of the IPCC default value of 4% (0.04 tonnes of HFC 23 produced per tonne of HCFC 22 manufactured)” in the baseline section of the reference document, the 4% worst case default baseline should be eliminated in favor of baseline that rewards process optimization and investment in best available technology. Thus, all project baselines should require use of continuous emissions monitoring by methods such as approved monitoring methodology AM0001 or mass balance with cap of 2% or less.

Monitoring methodology is based on direct measurement of the amount of HFC-23 waste destroyed and of the energy used by the destruction process. This monitoring methodology provides for direct and continuous measurement of the actual quantity HFC-23 destroyed, as well as the quantities of electricity, steam and fossil fuel used by the destruction process.

In case of the absence of monitoring data, or in the case of new facilities, a mass balance cap of 2% or less should be used.

HFC-23 formation is dependent upon the conditions used in the manufacturing process and varies between 1.5 to 4.0 % of the production of HCFC-22. Use of the lowest IPCC Good

Practice default value of 4% represents a worst case baseline, not the scenario that is most likely in the absence of the CDM project. In fully optimized processes, the likely range of emissions is about 1.5 to 3 percent of production, with 2 percent being a reasonable average estimate. Current Best Available Technology has been documented to operate at below 1.4% (e.g. June 2004 DuPont submission to IPCC Emission Factor Database) of production of HCFC-22. Actual achievements vary depending on the age and design of the facility as well as the process management techniques applied. Providing a default value of 4%, thus, could be an incentive to maximize production of HFC-23 and to invest in less than state-of-the-art technology. Emission reduction credits based on 4% would provide potential windfall profits.

Common practices in this industry, complementing previously available information

Continuous or frequent measurements are critical to ensure HCFC-22 production process efficiency, and are, therefore, generally performed without regulation. Estimates based on default emission factors could include errors of several hundred percent, and no manufacturer should need to rely upon these to estimate emissions from its own plants.


ICF
CONSULTING