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EXECUTIVE COMMITTEE OF
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Twenty-eighth Meeting
Montreal, 14-16 July 1999

Addendum

PROJECT PROPOSALS: NIGERIA

Please insert the attached Annex I at the end of document UNEP/OzL.Pro/ExCom/28/39.

Annex I

JUSTIFICATION FOR THE USE OF HCFC-141B (Extracts from the Project Documents)

- (a) Replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the manufacture of domestic refrigeration at Onward Electrical Industry Ltd.
- (b) Replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the manufacture of domestic refrigeration at Soesons Ltd.
- (c) Replacement of refrigerant CFC-12 with HFC-134a and foam blowing agent CFC-11 with HCFC-141b in the manufacture of domestic refrigeration at United Technologies Ltd.

Justifications for the use of HCFC-141b are identical for the three companies. Therefore, only an extract from one project document (Onward Electrical Industries Ltd) is being submitted below as a sample.

Technology Selection for foaming agent

Alternative blowing agents to replace CFC-11:

Foaming agent	Ozone Depleting Potential (ODP)
HCFC-141b	0.11
HCFC-142b	0.065
HCFC-142b + HCFC-22	0.06
HFC-134a	0.00
Cyclopentane	0.00

Suitable generally for domestic refrigerator production, the use of Cyclopentane blown is less widespread in commercial equipment. All US and many Asian manufacturers still use HCFC 141b though a transitional substance under the terms of the Montreal Protocol ¹.

Cyclopentane would be a suitable foaming agent to replace CFC-11 at ONWARD were it not for its acute flammability. The use of this substance would require considerable investment in new foaming equipment since the company possesses only low pressure equipment (which would have to be entirely replaced). Rigorous training in handling this dangerous substance has to be carried out to ensure that its introduction in a factory where no dangerous substances have hitherto been

¹ Note that in November 1996 HCFC use in Article 5 countries was controlled for the first time under the Montreal Protocol. However, the relevant phase out date for HCFCs is 2040. Development of a zero ODS drop-in replacement for HCFC-141b is predicted for 1999.

used does not give rise to a tragic accident. The local authorities are reluctant to issue license for storage and application of cyclopentane. Thus ONWARD had decided to avoid cyclopentane technology and will adopt HCFC-141b as a replacement for foam blowing.

However, ONWARD expressed its commitment to bear the expenses of the conversion of the factory to a definitive solution (different from hydrocarbons) when available in the market.