

***MAXIMIZING THE CLIMATE BENEFITS OF ACTIONS  
TAKEN UNDER THE MONTREAL PROTOCOL ON  
SUBSTANCES THAT DEplete THE OZONE LAYER***

**Testimony of Allan Thornton  
President, Environmental Investigation Agency  
with support from the Institute for Governance & Sustainable Development**

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Mr. Chairman and Distinguished Members of the Committee on Oversight and Government Reform:

I would like to thank Chairman Waxman for the opportunity to address the committee today about the unprecedented climate benefits that can be realized through policy actions taken under international treaty to protect the ozone layer—the Montreal Protocol.

My organization, the Environmental Investigation Agency (EIA), is a nonprofit, non-governmental organization that investigates and exposes environmental crimes and promotes practical solutions to remedy such issues. Our work is focused on the illegal trade in ozone-depleting substances, illegal logging, and the illegal trade in wildlife.

Since the mid 1990s, EIA has instigated a series of successful actions to strengthen the Montreal Protocol, including exposing illegal trade in CFCs and halons, and generating major measures against this illicit trade. EIA instigated a European Union-wide ban on the sale of these two chemicals, eliminating a massive enforcement loophole in the existing law. EIA has provided details of illegal traders of these chemicals to governments around the world. EIA has provided the U.S. Department of Justice with evidence on many of the companies and individuals targeted in its high ranking customs alerts on illegal imports of CFCs. Recently, EIA exposed illegal CFC trade from China, generating a direct commitment from the Chinese government delegation to the Montreal Protocol to act quickly to curb that activity.

In recognition of these achievements, in June 2006, the U.S. EPA and a cross-sector, international panel awarded EIA the “2006 Stratospheric Ozone Protection Award,” – noting that “EIA is remarkably brave and successful in exposing illegal trade and in motivating policy makers to take action.”

**The World’s Most Successful Environmental Agreement**

The Montreal Protocol is widely, and aptly, regarded as the world’s most successful environmental agreement—having phased out 95 percent of ozone-depleting substances (“ODSs”) in developed countries and 50-75 percent of ODSs in developing countries—placing the ozone layer on a path to recover later this century.<sup>1</sup>

Because many ODSs are also potent greenhouse gases (“GHGs”) that contribute to climate change,<sup>2</sup> the Montreal Protocol’s successful phase-out of CFCs and other ozone-depleting substances (ODS) has also made it the world’s most effective climate treaty—reducing greenhouse gas emissions by approximately 11 gigatons of carbon dioxide equivalence per year between 1990 and 2010, thereby delaying the onset of climate change by up to 12 years.<sup>3</sup>

The Montreal Protocol’s success is based on its strict, flexible, and dynamic design, which has driven continuous technology innovations; its evolution through amendments, adjustments and decisions to reflect the most up-to-date scientific and technological developments; the commitment by developed countries to provide financial assistance to developing countries to ensure its successful implementation; and its attention to compliance from the outset.<sup>4</sup>

### **Mission Not Yet Accomplished**

Despite the Montreal Protocol’s success, and perhaps partly as a result of it, there is a public misconception that the problem of ozone depletion has been “solved.”

This, unfortunately, could not be further from the truth. Earth’s ozone layer is currently in its most fragile state in recorded history, leaving the people and ecosystems exposed to unprecedented levels of harmful ultraviolet radiation. The hole in the ozone layer over the Antarctic has reappeared each austral spring since its initial discovery, and has generally grown larger and lasted longer each year. The 2005 ozone hole was one of the deepest and largest ever recorded, nearly equaling the all-time record set in 2000.<sup>5</sup>

While significant progress has been made to reduce the atmospheric concentration of ozone layer destroying chemicals, there is no definitive evidence demonstrating that the ozone layer has started to recover. The most recent prediction by NASA delays recovery until 2068, nearly 20 years later than previous estimates.<sup>6</sup> These predictions do not take into account illegal trade nor the challenge of compliance,<sup>7</sup> especially in developing countries where the 2010 ban on chlorofluorocarbons (“CFCs”) is quickly approaching.<sup>8</sup> Without full compliance, the recovery will be delayed further.

The continuing impact of ODSs on the ozone layer, and the significant contribution the ODSs and some of their substitutes are making to climate change, demonstrate that the Parties’ commitment to protect the ozone layer has not yet been fulfilled, and that significant challenges remain.<sup>9</sup> These challenges to the future success of the Montreal Protocol come at a time when the impacts of climate change are becoming increasingly apparent.<sup>10</sup>

In 2002, a 3,350 square kilometer floating ice shelf in Antarctica, that has existed since the last Ice Age 12,000 years ago, collapsed due to record temperatures.<sup>11</sup> The number of Category 4 and 5 hurricanes has doubled in the last 35 years,<sup>12</sup> and the flow of ice from glaciers in Greenland has more than doubled over the past decade.<sup>13</sup> Last year, a report commissioned by the US Congress confirmed what the world’s leading scientists have known for years: the Earth was warmer in the late 20th Century than it had been in the last 400 or possibly 1,000 years, humans are largely responsible for this change—and it is only getting hotter.<sup>14</sup>

### **The Urgent Need for Action**

While it is true that the phase-out of CFCs has spared the atmosphere of billions of tons of carbon dioxide equivalent emissions, it also contains a cautionary tale of the consequences of not actively considering the impacts, particularly on the climate, of actions taken under the Montreal Protocol.

In the early 1990s, HCFCs became the first generation of substitute chemicals for CFCs and were added to the list of substances controlled by the Montreal Protocol. It was recognized by the Protocol that these chemicals were not the solution to the problem of ozone layer destruction, but had value as “transitional substances” to facilitate prompt phase out of CFCs. However, exponential growth in the demand for refrigerant gases worldwide has resulted in unchecked and excessive production of HCFCs.<sup>15</sup> As many HCFCs, notably HCFC-22, contribute significantly to global warming (HCFC-22 is 1,700 more effective at warming the planet than carbon dioxide), the Montreal Protocol has inadvertently created a significant source of greenhouse gases.<sup>16</sup>

With countries such as China and India set to produce millions of metric tons of HCFCs over the next 10-20 years and with the currently agreed Montreal Protocol phase out decades off, the unhindered and exponential growth in HCFCs will severely undermine the international community’s efforts to address climate change.

In addition, the excessive production of one particular HCFC, HCFC-22, is causing major problems for the international carbon market. A byproduct of the production of HCFC-22 is HFC-23—a greenhouse gas regulated by the Kyoto protocol because of its high global warming potential. HFC-23 is over 11,000 times more powerful than carbon dioxide at warming the planet. To date, the Parties to the Kyoto Protocol have spent billions of dollars to destroy HFC-23 under the Kyoto Protocol’s Clean Development Mechanism. The result is that the carbon credits from these projects have dominated the global carbon market at the expense of renewable energy projects. I will touch more on this later.

### **Opportunity Knocking**

The good news is that by adjusting the phase-out schedule for HCFCs under the Montreal Protocol to accelerate the elimination of HCFCs, the international community has the opportunity to make a significant contribution to the global effort to mitigate climate change.<sup>17</sup>

In fact, experts report that strengthening protection of the ozone layer could reduce emissions by approximately 1.2 gigatons of carbon equivalence per year by 2015. This compares favorably to the 1 gigatons carbon equivalence per year in emissions reductions mandated by the Kyoto Protocol by 2012<sup>18</sup> and the 2 gigatons carbon equivalence per year emissions reduction expected under Kyoto by 2012.<sup>19</sup> It can be argued that the Montreal Protocol has done more to mitigate climate change than the Kyoto Protocol and if an accelerated phase-out is agreed, it could continue to be the most effective climate treaty in the near-term.

Under the current phase-out schedule, HCFCs are set to be phased out in developed countries by 2030, and by 2040 in developing countries. However, having recognized the tremendous potential benefits to both the ozone layer and the climate, the Montreal Protocol Parties are considering speeding up the phase out of these chemicals.

Indeed, an unprecedented nine Parties,<sup>20</sup> the United States we are pleased to note, have proposed accelerating the HCFC phase-out to avoid the extremely high projected increase in HCFC production over the next decade. Many of these proposals came from developing nations which are most vulnerable to the impacts of a changing climate, including a joint proposal from Argentina and Brazil, as well as from small island nations, such as Mauritius, Palau and the Federated States of Micronesia.

Their concern is understandable. NASA scientist James Hansen warns that we may have as few as ten years left before positive feedbacks in the climate system could accelerate global warming and push the climate system across the threshold for non-linear change that would create “a different planet,” with an ice-free Arctic and coastlines obliterated by rising sea levels.<sup>21</sup> Abrupt non-linear changes to the climate, also known as Rapid Climate Change Events, include the melting of the Greenland ice sheet. A complete melting of the Greenland ice sheet would raise sea levels by 6.5 meters.<sup>22</sup>

In their submissions, most of the Parties have noted the significant climate benefits of an accelerated phase out of HCFCs. Several other noted that the greenhouse gas reductions achievable under the Montreal Protocol could offer critical low-cost insurance against abrupt changes to the climate, effectively buying the world more time to get the post-Kyoto regime in place and the global carbon market running effectively.

### **Maximizing the Potential Climate Benefits of the Montreal Protocol**

In order to achieve the benefits of an accelerated HCFC phase-out, it is critically important that any decision to adjust the phase out contain the following elements:

#### **(1) An Earlier Freeze Date:**

An earlier freeze, such as 2006 or 2007, prevents additional excessive production of HCFCs and it also: (a) prevents over-reliance on HCFC-based technology in developing world markets, (b) reduces the incentive to increase HCFC-22 production in order to receive Kyoto Protocol Clean Development Mechanism (CDM) credits, particularly at new facilities, (c) levels the playing field for alternatives, (d) provides justification for full replenishment of the Montreal Protocol’s funding mechanism - the Multilateral Fund, (e) mitigates issues of noncompliance, and (f) offers the greatest climate and ozone layer benefits by reducing the total production of HCFC-22 and its HFC-23 byproduct.

#### **(2) Additional reduction steps:**

Additional reduction steps are important because they: (a) offer greater climate and ozone layer benefits, (b) provide measurable benchmarks and compliance targets to guide and justify funding, (c) further level the playing field for alternatives, (d) make reduction targets more achievable thereby ensuring higher compliance rates, and (e) cause fewer disruptions in the market.

A phase-out that includes both an earlier freeze date and additional reduction steps will help developing countries avoid compliance problems in the future. Experts at funding institutions, who have worked closely with developing countries on Montreal Protocol implementation, have expressed serious concerns about the compliance implications of the HCFC phase-out as it currently stands. They suggest that current and planned production capacity will make it very difficult for some developing countries to meet the 2015 freeze. An advanced draft report by UNDP on their HCFC surveys states that “it is easy to imagine how difficult it will be for article 5(1) countries to freeze and continue at that level [e.g. 2015 levels] if no action to constrain this scenario is taken well before 2015.”<sup>23</sup>

In addition, the “brick wall” approach in the current phase-out plan risks triggering considerable illegal trade problems in HCFCs, similar to those problems experienced by the U.S. Government in

the mid-1990s in regard to CFCs. There are already some indications that HCFCs are being imported illegally into the US.<sup>24</sup>

**(3) Commitment for funding:**

An accelerated HCFC phase-out must be accompanied by funding commitments from developed countries. The 2009-2011 Multilateral Fund replenishment process will begin at the next Meeting of the Parties to the Montreal Protocol in September 2007, where the Terms of Reference for the study of the replenishment will be decided. It is essential that the Terms of Reference take into account the provision of funds for an accelerated phase-out of HCFCs.

A fully-funded phase-out of HCFCs ensures continuity of resources for the Multilateral Fund, allowing the Fund to complete its important and cost-effective work in protecting the ozone layer and the global climate. Without further phase-out commitments, there is a risk that the Multilateral Fund will not be fully replenished during the next funding cycle. This raises the concern that obtaining funding in later years, when existing phase-out commitments kick in, will be problematic. This could cause serious issues for developing countries as they attempt to comply with the phase-out schedule.

**(4) Ensure the Widespread Adoption of Climate-Friendly Replacements for HCFCs:**

Critically, any decision on an accelerated phase-out *must* provide the right measures to ensure that climate-friendly alternatives to HCFCs are adopted. While ozone layer-friendly substitutes exist for virtually all current uses of HCFCs, many of these gases are just as bad, if not worse, for the climate. Thus, in order to realize the above-mentioned climate benefits, any decision to adjust the phase-out schedule **MUST** include provisions that favor the adoption of environmentally-superior, and specifically, climate-friendly, alternatives to HCFCs.

Unfortunately, there has been reluctance on the part of some Parties. It seems they would prefer to keep ozone layer and climate change in their own separate boxes. This is, frankly, bad policy. Ozone layer depletion and climate change occur as a double assault on one atmosphere. Furthermore, many of the same gases contribute to both issues. These problems are, thus, inextricably linked and must be addressed in tandem. It would be an unforgivable mistake if, for jurisdictional or political reasons, the climate impacts of policies adopted under the ozone layer treaty were ignored.

Any Montreal Protocol adjustment decision must explicitly address both the ozone *and* the climate impacts, of ODS substitutes. As Parties develop programs to phase out HCFCs, they must incorporate climate considerations from the start. Failure to do so will result in a repeat of past mistakes and waste resources, as we yet again replace one problem with another. Specifically, the Multilateral Fund must be given express direction by the Parties to consider climate impacts in their support of replacements for HCFCs.

This can be accomplished by adopting principles within the text of the treaty that explicitly focusing on climate benefits in addition to ozone benefits, assessing the cumulative environmental impacts of ODS substitutes, by favoring the least harmful ODS substitutes, and promoting further technological innovations, including redesign of equipment, processes, substitutes, and products, as well as not-in-kind alternatives. It could also include the consideration of temporary exemptions to the HCFC phase-out for gases with superior climate benefits than the currently available non-HCFC alternatives—until superior alternatives emerge.

Replacing HCFCs with high-GWP HFC substitutes will undermine the Montreal Protocol's ability to deliver significant climate benefits. Low GWP substitutes, including "natural refrigerants" such as ammonia, hydrocarbons and, ironically, carbon dioxide are readily available. In addition, we know that chemical companies are fast at work researching other ozone- and climate-friendly chemical alternatives to HCFCs. For example, after the use of HCFCs and high GWP HFC alternatives were banned in Europe in automobile air conditioning systems, chemical companies quickly capitalized on the clear regulatory signal and introduced a low GWP alternative that is both technically and economically feasible.

Currently however, market penetration of alternatives is hampered by the relaxed phase-out schedule for HCFCs. Due to its artificially cheap price, HCFC-22, and the equipment designed to use it, dominate the global refrigeration and air conditioning market. The current phase-out schedule would not start limiting HCFC production in developing countries for nine more years – well after many countries have become "hooked" on this gas and the technology to support it. With appropriate regulatory signals, companies will have the incentive to introduce new low GWP substitutes that are comparable to HFCs in terms of technical and economic feasibility.

The United States, in particular, can assist in these efforts by re-evaluating its criteria for the importation of hydrocarbon-based small window air conditioning units and domestic refrigerators and any other restrictions that could prevent the safe use of this ozone- and climate-friendly technology.

If climate friendly alternatives, which are in a critical period of development, are effectively supported during the implementation of the HCFC phase-out, the climate benefits rivaling those of the Kyoto Protocol referred to earlier can be achieved.

#### **(5) Effective cooperation with the Kyoto Protocol**

Finally, concerted action to improve cooperation between the ozone layer and climate treaties is vital to the continued success of the Montreal Protocol our potential to maximize its climate benefits.

In addition to improving overall communications and coordination, Parties to these two treaties must act urgently to address the "perverse incentive" for the production of HCFC-22 which has been created through the Kyoto Protocol's Clean Development Mechanism.

As I noted earlier, HFC-23 is a potent global warming gas that is produced as a byproduct during the manufacture of HCFC-22. Along with all other HFCs, HFC-23 is regulated by the Kyoto Protocol for its significant global warming impact—it is over 11,000 times more effective than carbon dioxide in warming the planet.

Under Kyoto's Clean Development Mechanism, developing countries can earn Certified Emission Reduction Credits (CERs) for the capture and destruction of HFC-23, which can be sold on the global carbon market. Because of the low cost of the destruction technology and the high price of carbon credits, these HFC-23 destruction projects generate extraordinary profits for HCFC-22 producers. It is estimated that the cost of capturing and destroying all eligible HFC-23 emissions through 2012 is about \$135 million, but the value of the HFC-23 CERs on the carbon market through 2012 is about \$6.4 billion.<sup>25</sup>

This has generated windfall profits for HCFC-22 producers and has created an incentive for increasing the production of HCFC-22 in order to earn more credits, thereby subsidizing a potent global warming and ozone depleting gas.

In addition to undermining the work of the Montreal Protocol to phase out HCFCs, the HFC-23 destruction projects have dominated CDM, accounting for 52 percent of all project-based carbon volumes transacted in 2006 and 64 percent in 2005<sup>26</sup> and are squeezing out the less profitable (but far more important) CDM projects promoting renewable energy and greater energy efficiency.

They also compromise the credibility of the Clean Development Mechanism and the global carbon market by introducing questionable credits. Indeed, by our estimate, for every GWP ton of HFC-23 destroyed through these CDM projects, about 5 GWP tons of HCFC-22 eventually will be emitted into the atmosphere.

The Parties to the Montreal Protocol and the Kyoto Protocol must work together, on an urgent basis, to remedy this problem.

## **Conclusion**

Mr. Chairman and Distinguished Members of the Committee, last December, journalists reported that rising seas, caused by global warming, have for the first time washed an inhabited island off the face of the Earth. The obliteration of Lohachara island, in India's part of the Sundarbans, marked the moment when one of the most apocalyptic predictions of environmentalists and climate scientists started coming true.<sup>27</sup>

While concerted international action to address the emission of carbon dioxide is essential, we would be remiss, negligent even, not to seize upon all available opportunities to reduce the emission of greenhouse gases. With the Montreal Protocol, there is a proven track record of success. Through this agreement, the international community has phased out global production of 95% of ozone-depleting substances in less than 20 years—sparing the atmosphere billions of tons of carbon dioxide equivalence per year and delaying the onset of climate change by as much as 12 years. With critical policy adjustments now, notably an agreement to accelerate the phase out of HCFCs and the promotion of climate friendly alternatives in their place, this landmark agreement has the potential to deliver further critical and cost-effective climate protection.

On behalf of the Environmental Investigation Agency, I urge the U.S. government to immediately and aggressively pursue an adjustment to the Montreal protocol that includes measures to support the adoption of climate friendly alternatives to HCFCs in order to seize a historic opportunity to mitigate climate change. In the longer term, the U.S. should consider legislative and regulatory measures to promote climate friendly air-conditioning and refrigeration technologies to make the U.S. market a leader in this global effort.

Thank you.

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<sup>1</sup> World Meteorological Organization & U.N. Environmental. Programme, Science Assessment Panel of the Montreal Protocol on Substances that Deplete the Ozone Layer, *Scientific Assessment of Ozone Depletion: 2006, Executive Summary*, at 3 (Aug. 18, 2006), available at [http://www.wmo.ch/web/arep/ozone\\_2006/exec\\_sum\\_18aug.pdf](http://www.wmo.ch/web/arep/ozone_2006/exec_sum_18aug.pdf) (last visited Feb. 3, 2007) [hereinafter “Science Assessment of Ozone Depletion: 2006”]. See also Press Release, United Nations Environment Programme. Programme, New Report Projects Later Recovery of Ozone Layer (Aug. 18, 2006), available at <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=484&ArticleID=5335&l=en> (last visited Feb. 3, 2007).

<sup>2</sup> U.N. Environmental. Programme, Intergovernmental Panel on Climate Change, Technology and Economic Assessment Panel, *Special Report: Safeguarding the Ozone Layer and the Global Climate System: Issues Related to Hydrofluorocarbons and Perfluorocarbons*, at 3-4 (2005) [hereinafter “IPCC/TEAP Special Report”].

<sup>3</sup> Guus J. M. Velders, *et. al.*, *The importance of the Montreal Protocol in protecting climate*, 104 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 4814 (2007).

<sup>4</sup> RICHARD BENEDICK, *OZONE DIPLOMACY: NEW DIRECTIONS IN SAFEGUARDING THE PLANET* (Harvard University Press 1991). See also STEPHEN O. ANDERSEN & K. MADHAVA SARMA, *PROTECTING THE OZONE LAYER: THE UNITED NATIONS HISTORY* (Earthscan Publications Ltd. 2002); Hunter, Salzman, and Zaelke, *INTERNATIONAL ENVIRONMENTAL LAW & POLICY*, Ch. 9 (Foundation Press, 3<sup>rd</sup> ed. 2007).

<sup>5</sup> British Antarctic Survey Ozone Bulletin. December 2005. See also: NASA Science News. *Record Setting Ozone Hole*. September 2000.

<sup>6</sup> NASA, NOAA and NCAR Press Release: *Scientists Find Antarctic Ozone Hole to Recover Later than Expected*. June 29, 2006.

<sup>7</sup> World Meteorological Organization & U.N. Environmental. Programme, Science Assessment Panel of the Montreal Protocol on Substances that Deplete the Ozone Layer, *Scientific Assessment of Ozone Depletion: 2006, Executive Summary*, at 3 (Aug. 18, 2006), available at [http://www.wmo.ch/web/arep/ozone\\_2006/exec\\_sum\\_18aug.pdf](http://www.wmo.ch/web/arep/ozone_2006/exec_sum_18aug.pdf) (last visited Feb. 3, 2007) [hereinafter “Science Assessment of Ozone Depletion: 2006”]. See also Press Release, U.N. Environment. Programme, New Report Projects Later Recovery of Ozone Layer (Aug. 18, 2006), available at <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=484&ArticleID=5335&l=en> (last visited Feb. 3, 2007).

<sup>8</sup> Environmental Investigation Agency, *An Unwelcome Encore: The Illegal Trade in HCFCs*. October 2006. Noting that illegal trade in ODS began to grow after the 1999 freeze date for CFCs in developing countries.

<sup>9</sup> Science Assessment of Ozone Depletion: 2006, (noting that ozone depletion and climate change are further interrelated, with climate change likely obscuring or harming the recovery of the ozone layer.)

<sup>10</sup> See Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis Summary For Policy Makers*, 10 (2007) (“most of the observed increase in globally averaged temperatures since the mid-20<sup>th</sup> century is *very likely* due to the observed increase in anthropogenic increase in greenhouse gas concentrations. This is an advance since the TAR’s conclusion that ‘most of the observed warming over the last 50 years is *likely* to have been due to the increase in greenhouse gas concentrations’.”). See also *id.* at n.6 (explaining that “*Very likely* > 90%, *Likely* > 66%” in terms of the probability of occurrence).

<sup>11</sup> NASA Earth Observatory. *New Images: Breakup of Larsen Ice Shelf, Antarctica*. March 2002.

<sup>12</sup> National Science Foundation press release: *Number of Category 4 and 5 Hurricanes Has Doubled Over the past 35 Years*. September, 15, 2005.

<sup>13</sup> NASA Jet Propulsion Lab news release: *Greenland Ice Loss Doubles in Past Decade, Raising Sea Levels Faster*. February 16, 2006.

<sup>14</sup> Associated Press. *Study: Earth “likely” hottest in 2,000 years*. June 22, 2006.

<sup>15</sup> Experts have indicated that HCFC production could exceed 800,000 tons by 2010—far above the 1998 projection of 163,000 tons by 2015. See report and presentations from the February 2007 meeting of the “Stockholm Group” in The Hague.

<sup>16</sup> Climate Change 1995, the Science of Climate Change: *Summary for Policymakers and Technical Summary of the Working Group I Report*. Page 26.

<sup>17</sup> See Donald Kanariu, Raj Shende, Scott Stone & Durwood Zaelke, *Strengthening the Montreal Protocol: Insurance Against Abrupt Climate Change*, 7 SUSTAINABLE DEVELOPMENT LAW & POLICY 3 (2007). See also Guus J. M. Velders, *et. al.*, *The importance of the Montreal Protocol in protecting climate*, 104 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES 4814 (2007).

<sup>18</sup> UNFCCC, *Key GHG Data: Highlights from Greenhouse Gas Emissions Data for 1990-2003* (Nov. 2005). Kyoto’s actual emissions reductions will be closer to 2 GtCO<sub>2</sub>-eq. yr<sup>-1</sup> by 2012 if avoided emissions from business-as-usual projections over that timeframe are considered.

<sup>19</sup> *Id.*



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<sup>20</sup> Proposals were submitted by: Argentina and Brazil together; Mauritius; Mauritania; Switzerland, Norway and Iceland together; The Federated States of Micronesia; and Palau.

<sup>21</sup> Steve Connor, *If we fail to act, we will end up with a different planet*, THE INDEPENDENT, Jan. 1, 2007. See also James Hansen, *A Slippery Slope: How Much Global Warming Constitutes 'Dangerous Anthropogenic Interference'?* 68 CLIMATE CHANGE 269 (2005).

<sup>22</sup> U.S. Geological Survey, "Sea Level and Climate," at <http://pubs.usgs.gov/fs/fs2-00/> (last visited Feb 3, 2007).

<sup>23</sup> See report and presentations from the meeting of the "Stockholm Group" in The Hague in February 2007.

<sup>24</sup> Environmental Investigation Agency, *An Unwelcome Encore: The Illegal Trade in HCFCs*. October 2006.

<sup>25</sup> Michael Wara, *Is the Global Carbon Market Working?* NATURE, VOL. 445, February 8, 2007, 595-96 (discussing that cost to the developed world for installing technology to capture and destroy HFC-23 at the 17 production facilities in the developing world would be €100 million, compared to €4.7 billion in value for CERs generated under CDM through 2012, based on €10/ton price of carbon at time of author's calculations, and neglecting taxes).

<sup>26</sup> International Emissions Trading Association & World Bank, *State and Trends of the Global Carbon Market 2006 (Update: January 1 – September 30, 2006)*, at 11 (Oct. 2006)

<sup>27</sup> Disappearing world: Global warming claims tropical island . Environment Editor Geoffrey Lean reports. 24 December 2006.