Since the onset of the Industrial Revolution, the human race has been adding to the natural occurrence of greenhouse gases in the atmosphere, at first slowly but now at an alarming rate. Although CO_2 created in burning fossil fuels such as coal, oil and gas has been the principal concern, we now know that other gases from industrial and agricultural activities (notably methane, CFCs and nitrous oxide) contribute to the greenhouse effect. Ozone depleting substances such as CFCs, the subject of this report, are considered responsible for as much as one-quarter of the extra greenhouse effect.

Although these additional greenhouse gases are increasing the potential to elevate the average temperature of the atmosphere that is, to cause "man-made global warming"—scientists cannot yet predict with certainty at what point society's activities will cause an identifiable warming, nor can they accurately determine the rate of this induced warming. Climate and weather patterns change naturally and it is difficult to separate normal shifts from human induced changes.

It is only a question of time, however, until human induced effects become distinguishable from natural effects. Given the immensity of climatic systems, we can anticipate that once these changes are precipitated, there will be little that humanity can do but watch them unfold and try to adapt to them.

There is debate regarding how quickly society should respond to this threat and how far-reaching public policy initiatives should be at this time. There is little disagreement, however, that we are conducting a global experiment in atmospheric chemistry with little understanding of how it will turn out. Testifying before our Committee on the extent of scientific agreement about the reality of global warming, James Bruce, a leading Canadian authority on climate change, remarked:

> *. . . I think on any scientific topic you care to name you can probably find a few scientists who will dissent from the general view of the subject. I have chaired and participated in many meetings with the leading scientists of the world on this topic and I would say I have rarely seen such a consensus on what will happen with increased greenhouse gases in the world's atmosphere.*
> *(*House of Commons, Standing Committee on Environment, *Minutes of Proceedings and Evidence,* Issue No. 30, 25 January 1990, p. 45*)*

Society's emissions of greenhouse gases are changing the chemical composition of the atmosphere at a rate unparalleled in human history. We understand that altering the Earth's climate will have far-reaching impacts on the social, economic and natural systems of our world. The current scientific consensus is that we are already committed to an increase in average global temperature ranging from 1.5°C to 4.5°C in the first half of the 21st century. Warming is expected to be more pronounced at higher latitudes and