

Preface

Al Gore's book and video, *An Inconvenient Truth*, has raised the public consciousness about the dangers of global warming and climate change. This book is intended to convey the message that there is a solution. A solution not only to global warming caused by anthropogenic emissions of carbon dioxide, but also to the depletion of fossil fuels and to the wars in the Middle East related to our dependence on their supply of oil.

The solution is the rapid development of hydrogen fusion energy. This energy source is inexhaustible (it is seawater); no greenhouse gases are emitted; and the dangers of nuclear power are avoided.

Most legislators and journalists have regarded fusion as a pipe dream with very little chance of success. They are misinformed, because times have changed. Achieving fusion energy is difficult, but the progress made in the past two decades has been remarkable. Mother Nature has actually been kind to us, giving us beneficial effects that were totally unexpected. The physics issues are now understood well enough that serious engineering can begin. An Apollo 11-type program can bring fusion online in time to stabilize climate change before it is too late.

Seven nations have joined together to form and share the cost of ITER, a large machine which is an important step in achieving fusion. These nations contain more than half the world's population. A community of international workers, as well as schools for their children, has been set up at the ITER site in Cadarache, France. More on ITER will come later. There is a plan and a timetable to pursue the ultimate solution to civilization's most pressing problems. There is no downside to fusion.

So much has been written about climate change and alternate energy sources that almost every magazine has an article on these topics. By repeating the data given by Al Gore, journalists have found an easy way to meet their deadlines. Readers are hard pressed to distinguish fact from conjecture and sensationalism. We therefore start with a summary of climate change and energy sources, trying to give a concise, impartial picture of the facts. Here, I am out of my depth; I am not an expert on these topics. I get my information from the same newspapers, magazines, and websites that you do. But I think it is important to put fusion in the proper context within the general scheme of the world's future.

However, that is not what this book is about; it is about controlled fusion. The physics of fusion is highly technical, but the difficult problems and ingenious solutions can be explained so that everyone can appreciate what has been done. This is a difficult task, and I ask you to be patient. Although our explanations are longer and gentler than the succinct language of scientific journals, you cannot flip through the pages as with an ordinary book. This book is written for a variety of readers, from “green” enthusiasts with no science background to Scientific American magazine subscribers. There is a lot of information contained in many new concepts, but they can be understood by anyone with a college, or even high school, education. If you get stuck, do not give up. You can skip ahead to more practical and less scientific material. The bottom line – what has yet to be done, how long it will take, and how much it will cost – may surprise you.

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An Indispensable Truth

How Fusion Power Can Save the Planet

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