

***How to Avoid a Climate Disaster*, Bill Gates, (Toronto: Alfred A. Knopf, 2021), 257**

Bill Gates in his book *How to Avoid a Climate Disaster* dispenses evidence of impending climate crisis and prescribes solutions to address it. His book factors in insight of researchers and academicians from varying environmental and energy disciplines. More importantly, Gates establishes a sense of urgency about the issues, his subtle humor, and his first-person direct address keeps the reader engaged throughout the book.

Bill has been increasingly investing in *Breakthrough Energy* ventures and *Antora Energy*. He aims to help decarbonize industries and transport sectors. However, such staunch advocacy of climate change has invited some negative feedback. His expertise on this subject is frequently questioned given that he is a wealthy business magnate who has previously invested in fossil fuel industry. He himself apologetically observes early in the book that "I'm an imperfect messenger on climate change. The world is not exactly lacking in rich men with big ideas about what other people should do." (p. 18) Nonetheless, he also claims that being a technophile, he believes in the potential of technology to tackle the most difficult issues.

Most credible environmental publications have been authored by academics and climate activists, so Gates' entrepreneurial approach is refreshing. Ironically, his lack of expertise in domain of climate change renders this book incredibly reader-friendly for anyone with an interest in the subject. Nevertheless, his professional and technological expertise lends credence to the remedies he prescribes. Furthermore, the fact that he sold off Gates Foundation's holdings and his personal stakes that were previously invested in fossil fuel industry, proves that the author is practicing what he preaches as opposed to reservations of some readers.

The write up takes into account the Anthropocene epoch where human activities such as industrialization and commercialization of energy have disrupted the natural Carbon-Dioxide cycle and jeopardized our environmental sustainability. The book falls under the genre of climate non-fiction and energy economics. Frequent natural disasters such as droughts, heatwaves, floods and convection storms are all indicators that

our environment is changing for the worse. With the probability that world population will reach 10 billion at the end of this century, the threat of climate crisis is drastically amplified. Global emissions are currently 66% greater as compared to 1990 levels which provide credibility to Gates claims about the magnitude and severity of the situation.

With adept use of explanatory and prescriptive research approach, the book has dissected the issue of global warming, elucidated the threat of climate apocalypse and has provided options of innovative technologies to answer the said issues. It concentrates on five industries— electricity, large scale manufacturing, transportation, agriculture and local heating and cooling systems—that produce the largest emissions. In each area, the book extensively discusses numerous technologies that are presently being used to cut emissions such as Carbon Capture and Sequestration Facilities, followed by Bill's own views on how the world may proceed further. Addressing the electric power issue might erase a significant portion of our overall emissions and has the potential to decarbonize the electricity grids.

The book takes into consideration professional opinion from climate and energy researchers at Rhodium Group and Evolved Energy Research to demonstrate how renewables— solar PV, off-shore wind and geothermal might be successfully deployed. To counter the challenge of intermittency, storage batteries and pumped hydropower can be used. Another interesting suggestion is to employ nuclear power, despite the fact that it is also a contentious issue. Venturing ahead, Bill Gates provides incentives to the largest Carbon emitting countries such as India, United States and Japan to curb their emissions. Cutting Carbon emissions cannot be viewed as a favor instead it should be regarded as a chance to come up with novel scientific innovations that can turn into large-scale competitive industries.

Bill Gates further discusses the steps individuals can undertake for the betterment of environment. "It's easy to feel powerless in the face of a problem as big as climate change. But you're not powerless." Efforts can be made by all of us, as citizens, consumers and employees. Citizens can participate in legislative processes by drafting letters and running for offices. As consumers, people can buy electric vehicles, use energy efficient appliances and reduce the demand for fossil fuels. These strategies, when combined, have the potential to reach the world's goal of net carbon zero.

The book presents striking facts about the havoc that anthropogenic activities have wreaked on mother nature. *How to Avoid a Climate Disaster* is a fascinating and well-researched examination of the current status of world's energy usage and its impact on climate change. In the backdrop of this information, the book provides options to change the way we create and consume energy so that we may achieve zero carbon dioxide emissions without harming our own socio-economic prospects. This is a fairly industry focused book that does a good job at instructing all parties about the future course of action. It is an instructive and digestible read. The book has often been criticized for being too optimistic nevertheless, keeping in view how the window for change is closing rapidly, this is the kind of optimism that is needed today.

I would recommend this book to all the academicians, climate activists and policy makers because all efforts need to be directed to avert the impending climate apocalypse. We need to bring a change because denial is no longer a viable policy.

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