

# A Plan to Save the Planet

New climate change book | MEDIA KIT

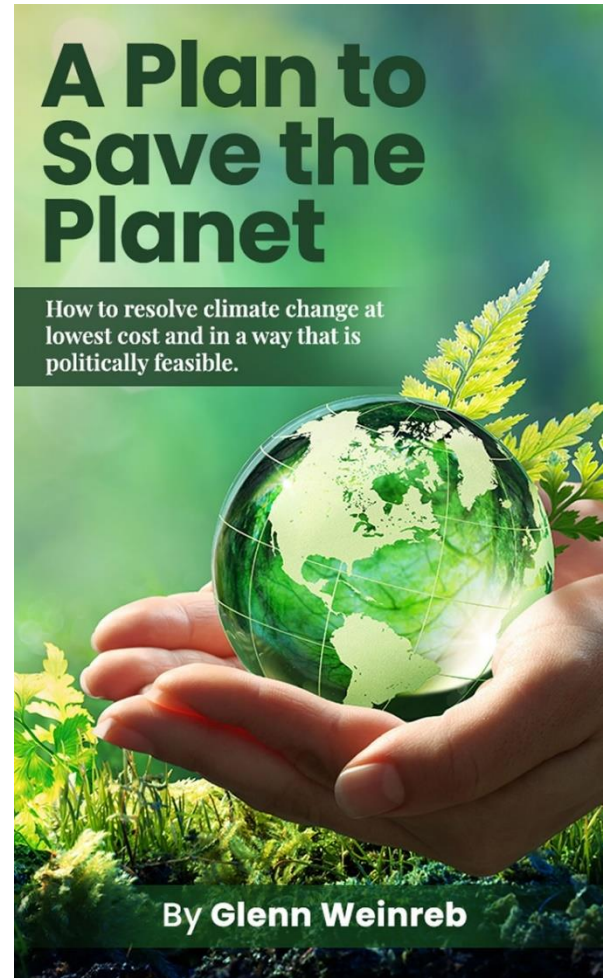
Cambridge, MA, USA. Dec 5, 2022... It was announced today the completion of three years of research by The Manhattan 2 Project, a non-profit that studies how to resolve climate change at lowest cost, and in a politically feasible way.

The results are consolidated into a new book entitled “A Plan to Save the Planet” by Director Glenn Weinreb. This is more than a book. It is a plan. And not just any plan. A plan to save the planet.

Weinreb has published over 30 articles on climate change solutions and is known as an expert in this field (Reference: [muckrack.com/glenn-weinreb/articles](http://muckrack.com/glenn-weinreb/articles)).

The world's *economic* strategy for resolving climate change is to encourage individuals, companies, cities, and regions to reduce CO<sub>2</sub> emissions. At first glance, this might seem reasonable. However, it is fundamentally flawed since these entities rarely have the physical ability to decarbonize at the lowest cost. Instead, we should task power companies with decarbonizing electricity at massive scales and at the lowest cost.

The USA's *political* strategy for resolving climate change is to work with a political coalition of environmentalists, labor unions, and the automobile industry. At first glance, this might seem reasonable too. However, it is fundamentally flawed since labor and auto must focus on their own financial interests, not getting to zero at the lowest cost. Instead, we should rely on a political coalition that benefits from lowest-cost decarbonization. This would be states that import carbon-based fuels.



The easiest path forward would be a federal law that does two things: (a) require electricity to be decarbonized at massive scales and at the lowest cost, and (b) increase R&D to further reduce decarbonization costs.

The first four chapters are available to the public for free:

[www.ma2life.org/g/A\\_Plan\\_to\\_Save\\_the\\_Planet\\_4chapters.pdf](http://www.ma2life.org/g/A_Plan_to_Save_the_Planet_4chapters.pdf)

This book is open source. Therefore, anyone can copy, modify, and rename the original Word file at no charge; and publish their own plan.

***You can save the planet too!***

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## Author Biography

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Glenn Weinreb is the Director of the Manhattan 2 Project, a non-profit that does research on how to resolve climate change at the lowest cost and in a way that is politically feasible. Also, he is the author of “A Plan to Save the Planet”, published in 2022.

In 1982, Glenn Weinreb founded GW Instruments, a company that designs and manufactures products that automate factories and research laboratories. And over forty years, almost every day, he interacted with manufacturing engineers and research scientists at thousands of different organizations.

One morning in 2019 Weinreb awoke with an epiphany. He felt his job was meaningless, and he wanted to do something different. He was tired of chasing money as an entrepreneur, and he instead wanted to help the planet. He thought about how his background was unique and gave him a different perspective on energy, manufacturing and R&D. So he formed The Manhattan 2 Project with some friends. And between 2019 and 2022 he sponsored and managed 25 university R&D students, and published 30 articles on climate change solutions.



For a CBS news segment that discusses some of his work, search “sesL3id7hba” at YouTube.com.

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## More Information

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## Free Book

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### Free first four chapters

PDF:	<a href="http://www.ma2life.org/g/A_Plan_to_Save_the_Planet_4chapters.pdf">www.ma2life.org/g/A_Plan_to_Save_the_Planet_4chapters.pdf</a>
EPUB:	<a href="http://drive.google.com/drive/folders/1bvl34l5QVcAIXt8d4qMSb7GiaU7rk5m9">drive.google.com/drive/folders/1bvl34l5QVcAIXt8d4qMSb7GiaU7rk5m9</a>

### Free entire book

For a free book, email gWeinreb (AT) manhattan2.org and request PDF, EPUB, or hard copy.

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## Sample Chapter

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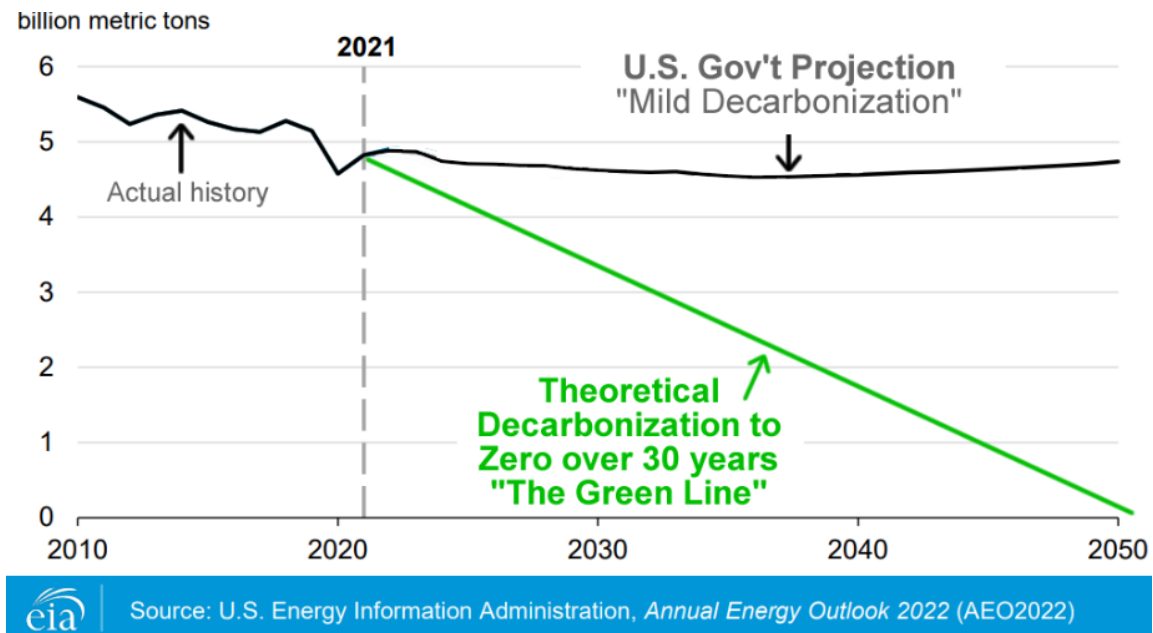
### Chapter 1: The Climate War

The climate war entails a battle between those who want to stop putting CO<sub>2</sub> into the atmosphere and those who don't. Those who want to stop are concerned about harm to the world's ecosystems, food shortages in a dryer world, more severe storms, and a rising sea level. Those who are against decarbonization either believe it is unimportant, or prefer

someone else be inconvenienced. Less convenience ranges from paying more for a green product to losing a carbon-based job.

## Decarbonization in the United States

In my opinion, the most interesting climate change graph is the U.S. government's official projection of CO<sub>2</sub> emissions over the next 30 years.



*Figure 1.1: U.S. government's official projection of CO<sub>2</sub> emissions from the U.S. over the next 30 years in units of billions of tons each year.*

This graph is updated every year, and as one can see, the U.S. is not decarbonizing. Our failure is due to the fact that our economic and political decarbonization strategies are fundamentally wrong. More about this later.

## The Green Line

A Green Line in the above graph is a projection of what it would look like to fully decarbonize over the next 30 years at a constant rate. This book is about the Green Line.

Chapter 3 explores how much this Line would cost consumers. Chapter 6 looks at who blocks this Line. Chapters 8 through 12 explore how to deal with them. And the cherry on top of our climate change solutions sundae is a new decarbonization R&D laboratory, which we cover in Chapter 4.

This book focuses on the United States; however, other countries have similar climate change issues.

## How much does the Green Line Cost?

The U.S. emits approximately 5 billion tons of CO<sub>2</sub> each year. If this dropped to zero emissions at a constant rate over the next 30 years, it would decrease by 170 million tons each year. This is because 5 billion divided by 30 is 170 million.

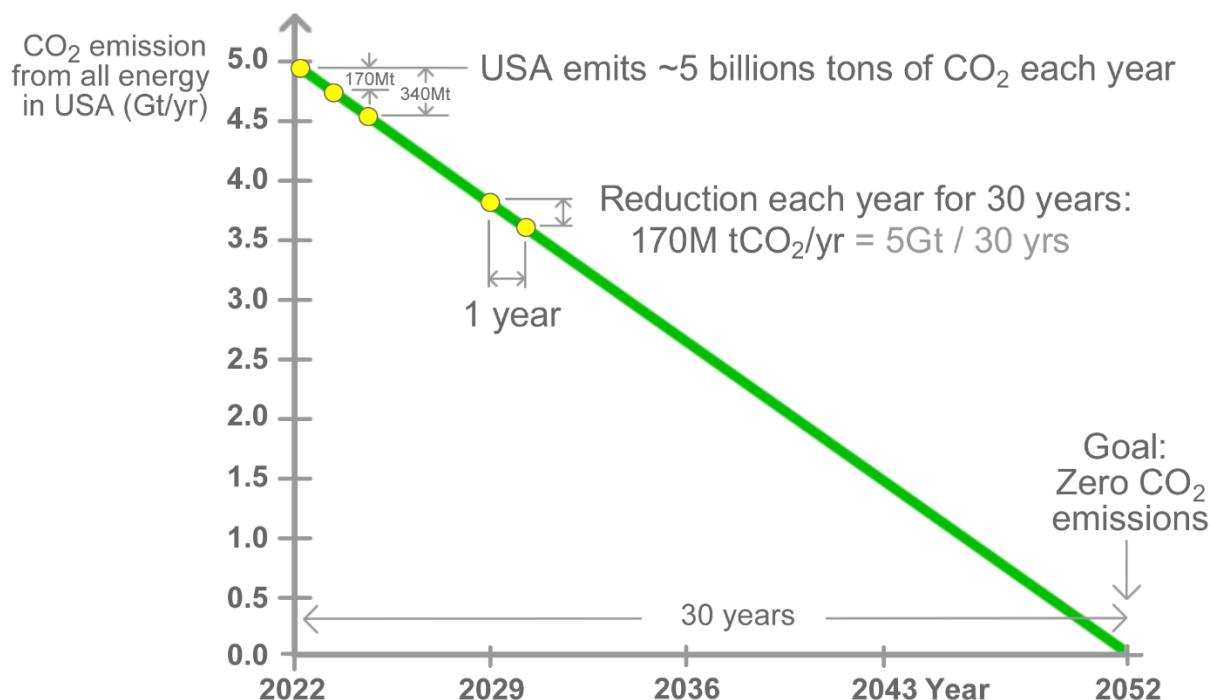


Figure 1.2: Theoretical U.S. decarbonization over 30 years.

If one decarbonizes at \$40-per-ton of CO<sub>2</sub>, for example, then 170M tons would cost \$7B in year #1 (170Mt x \$40), 340M tons would cost \$14B in year #2, etc. This would cost each U.S. citizen \$20 in year #1 (\$7B / 330M population), \$40 in year #2, etc. In the typical case, this would pay the mortgage on new solar farms, minus the cost of carbon-based fuel that was not burned due to being replaced with green electricity. Ultimately, these expenses would appear as an increase in the cost of goods and services.

	Year 1	Year 2	Year 3
Cost/Person/Yr	\$20	\$40	\$60
CO <sub>2</sub> Reduced	170M tons	340M tons	510M tons

## Federal Law That Does the Green Line

To implement the Green Line at the lowest cost, one would need a simple federal law with two provisions.

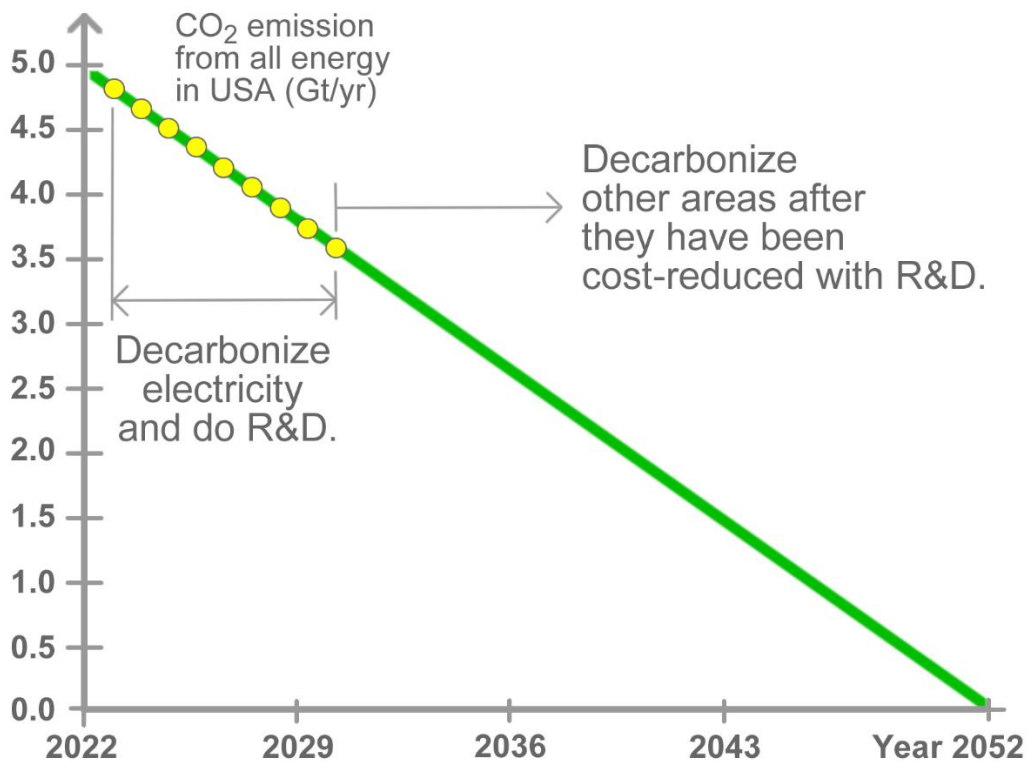
Require 6% of electricity to be decarbonized each year over a period of 9 years.



Set up an R&D laboratory tasked with further reducing decarbonization costs.

Approximately 38% of U.S. electricity is currently generated without emitting CO<sub>2</sub>. If this is increased by 6% each year, then 44% would be green after year #1, 50% would be green after year #2, etc.

To decarbonize at the lowest cost, power companies would need to replace carbon-based electricity with solar, wind, hydro and nuclear power.



*Figure 1.3: Decarbonize electricity first, while reducing other decarbonization costs with R&D.*

Our Green Line has two parts. The first 9 years are achieved mostly with electricity decarbonization. And the following 21 years are cost-reduced with R&D during the first 9 years.

## Our Current Economic Strategy is Fundamentally Wrong

The world's current economic decarbonization strategy is to encourage individuals, companies, cities, and states to reduce CO<sub>2</sub> emissions. At first glance, this seems reasonable. However, it is flawed since these entities rarely have the physical ability to do this at the lowest cost. This is like asking a city mayor to build a car from scratch in the local shop. Can he do it? Yes. However, it might cost him 100 times more than factory mass production.

Instead, the mayor should let the automobile industry handle mass production in the same way we should let power companies decarbonize at massive sales.

Here's another example. Imagine trying to place 20 solar panels onto a million different homes. One would incur project overhead cost a million times (e.g. customer acquisition, system design, permitting, inspection, etc.). Alternatively, if one installs 20 million panels at a large solar farm, they would not see overhead every 20 panels. This is why solar farm cost-per-unit-electricity is 3-times less than residential solar.

## Climate Change Politics in the U.S.

There are two kinds of regions -- those that produce and export carbon-based fuels, and those that import fuels. One might think of these as *fuel exporters* and *fuel importers*.

There is only one thing you need to know about climate change politics. Regions that produce a fuel will not politically support eliminating it. If one understands this, they will understand what is happening politically with climate change, and understand how to fix it.

For example, regions that produce natural gas will not support fully replacing natural gas-based electricity with green electricity. And the same is true with coal and oil.

The maps below indicate where fuels are produced in the U.S.

Fortunately, two-thirds of states do not produce natural gas or coal.

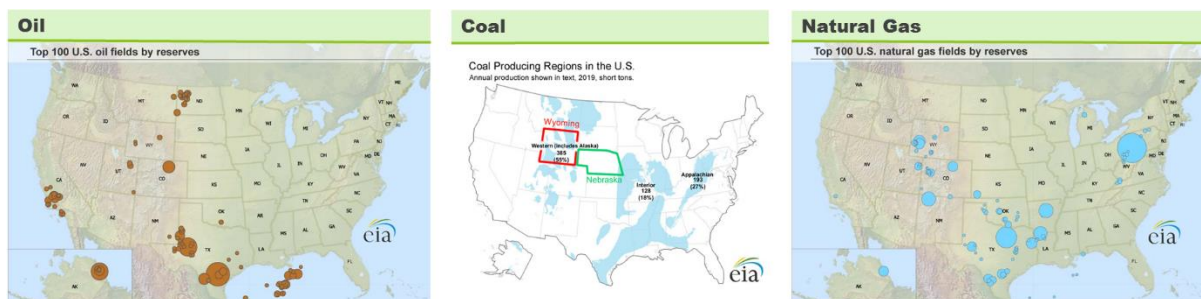


Figure 1.4: U.S. suppliers of oil, coal and natural gas.

## Importers of Carbon Fuel Benefit from Decarbonization

Fuel *exporters* are hurt by decarbonization. However, the opposite is true for *importers*. They benefit in two ways:

1. Local green jobs are created when nearby wind and solar farms are constructed. This occurs while carbon jobs are lost elsewhere.
2. Money is saved when decarbonization causes fuel prices to decrease, due to less fuel consumption, due to decarbonization.

## Our Current Political Strategy is Fundamentally Wrong

Existing decarbonization legislation in the U.S. was drafted by a political coalition of environmentalist, labor unions and the automobile industry. At first glance, this might seem reasonable. However, it is fundamentally flawed since labor and auto must focus on their own financial interests, not getting to zero at the lowest cost.

Alternatively, to decarbonize electricity at the lowest cost, one would need a coalition of lawmakers that benefit from exactly that, lowest-cost electricity decarbonization. This is not labor or auto. Instead, this would be the two-thirds of the U.S. states that import natural gas and coal.

## A Website to Save the Planet

Suppose a region is considering decarbonizing  $X\%$  of electricity each year over a period of  $Y$  years. To assess the impact, one would need to calculate: (a) lowest cost approach, (b) amount of  $\text{CO}_2$  reduced, (c) cost per ton of  $\text{CO}_2$  reduced, (d) cost per person per year, (e) savings due to lower fuel price, (f) number of jobs gained and lost, and (g) *locations* of jobs gained and lost.

Currently, this information is not easily obtained. Therefore, a website is needed that calculates it after the user specifies  $X$ ,  $Y$ , and region.

Doing detailed modeling for all nations, regions, and metropolitan areas worldwide might cost on the order of \$100 million. However, without this website, lowest-cost global decarbonization might be impossible.

## The Manhattan 2 Project

When there is a problem, someone is typically tasked with resolving it in some way. However, with climate change, no one seems to own the entire problem. And this is one reason why we formed The Manhattan 2 Project in 2019. CEO Victor Colantonio and I were convinced that someone needed to own the entire problem.

This might seem overly burdensome. However, that is not the case since it just means we do research on how to resolve climate change at the lowest cost, and in a way that is politically feasible.

In other words, develop a plan to save the planet.

This book is that plan.



## You Can Save the Planet Too!

Governments, foundations and researchers can develop plans to save the planet too. To make this easier for them, this book's original Microsoft Word file, spreadsheets, and illustrations are available to copy and modify for free at [APlanToSaveThePlanet.org](http://APlanToSaveThePlanet.org). To the author's knowledge, the concepts discussed in this book are public knowledge and no patents are pending.

You can save the planet too!

## Always Begin with Plan

Plan writing forces one to break down a problem into component parts, put together a solution for each, and make sure each solution is feasible. With climate change, this entails putting together an economic strategy, a political strategy, and a technical strategy. Economic strategy involves decarbonizing at the lowest cost. Political strategy involves groups that have at least 51% political support who benefit from lowest-cost decarbonization. And technical strategy involves reducing decarbonization costs with more R&D.

The world has not had a plan to tackle climate change in the past, and this has led to wasted time and money.

Business and engineering schools teach “Always begin with a plan”.

We should apply this to climate change.