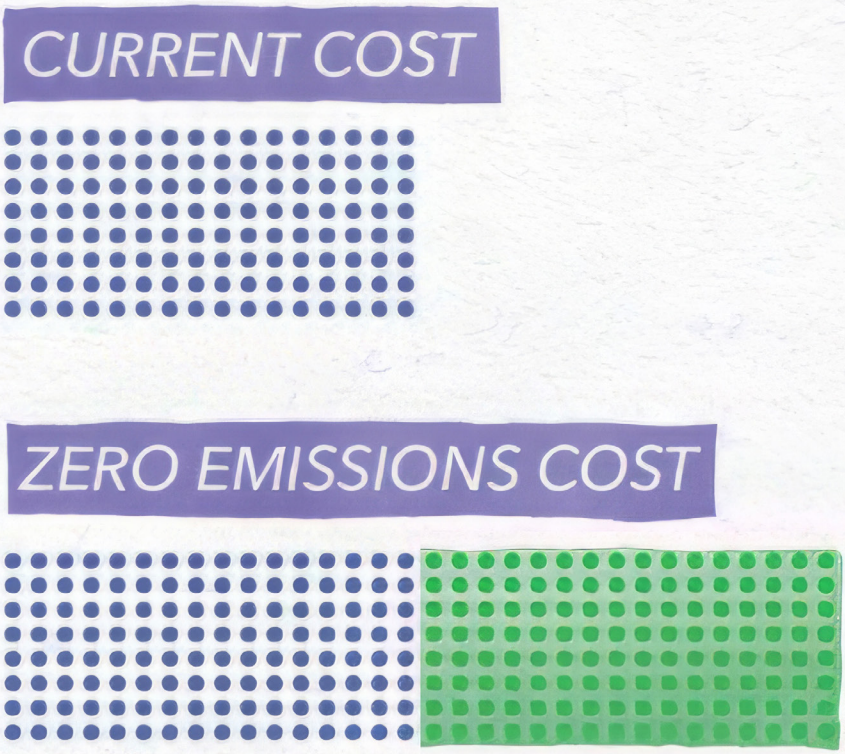


Understanding the Green Premium

By Trevor Getz

The green premium is the additional expense for low- or zero-carbon alternatives. Understanding the green premium can be a helpful way to evaluate climate solutions and focus our efforts. We need to focus right now on implementing and scaling clean solutions that have low green premiums. Solutions with high green premiums are where we need to focus our innovation development efforts and research.

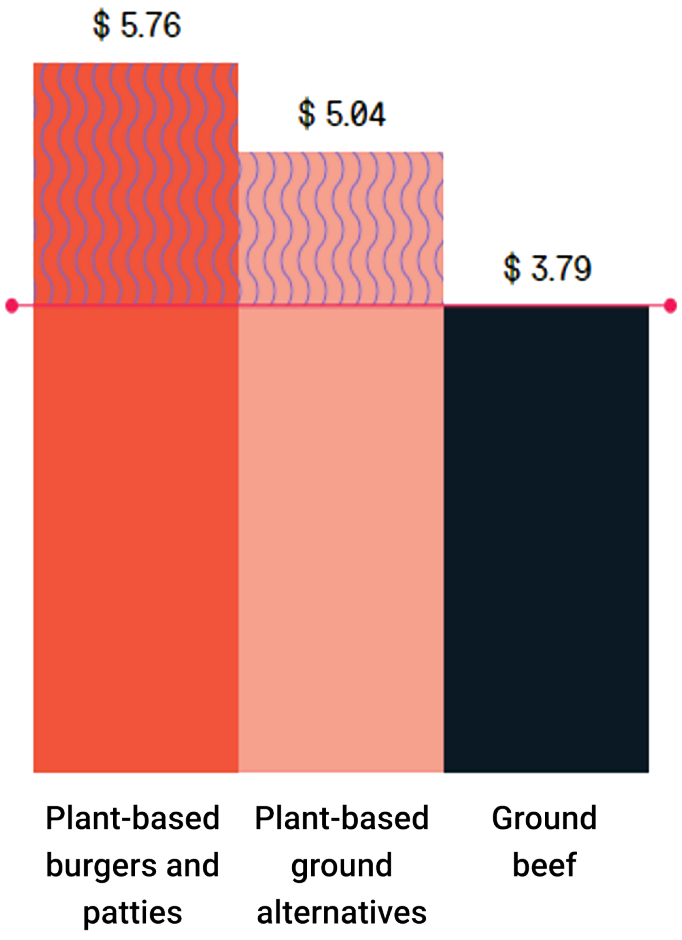
Why do we talk about money when we talk about climate change? Isn't it worth any cost to save humanity by negating the worst-case scenario effects of climate change? The truth is that the Earth has limited resources. And so do the governments, businesses, and individuals that live on it. We must therefore make choices about which policies and products we adopt, and yes, those choices are primarily driven by one thing: money.

You see, fossil fuels are cheap. As in, cheaper-than-a-soft-drink cheap. And it's no coincidence they cost so little. For more than two centuries, we've developed systems and policies to keep fossil fuels affordable and keep the great wheel of industry turning. That cheap energy has been good for global economic growth, but all that cheap energy has come at a great cost: greenhouse gas emissions. However, moving away from fossil fuels will mean moving to more-expensive sources of energy, at least in the short term. This additional expense for low- or zero-carbon alternatives is called the *green premium*.

Why does the green premium matter? As we work to adapt to climate change and reduce emissions, we need to ensure that zero-carbon options are accessible to everyone. That means that low- and middle-income countries don't have to choose between development and keeping emissions low. To ensure the faster and most equitable transition to net-zero emissions, the *cheapest* technologies also need to be the *low-carbon* technologies.

Calculating green premiums is not an exact science. For one thing, prices of different goods and services can fluctuate over time and vary from place to place. Calculating green premiums can also involve making predictions about future costs for new technologies. Even though it's an imperfect tool, the green premium can still be helpful for evaluating climate solutions and helping us decide where to focus our efforts. If the green premium is large, we know we need to innovate to make a low- or zero-carbon solution more cost competitive. If the green premium is small, we can see which solutions we should deploy now. A small green premium can indicate where something besides cost—for example, consumer awareness or outdated policy—is keeping a solution from being widely adopted.

Let's explore what we can do to lower the green premiums and increase accessibility of climate solutions.

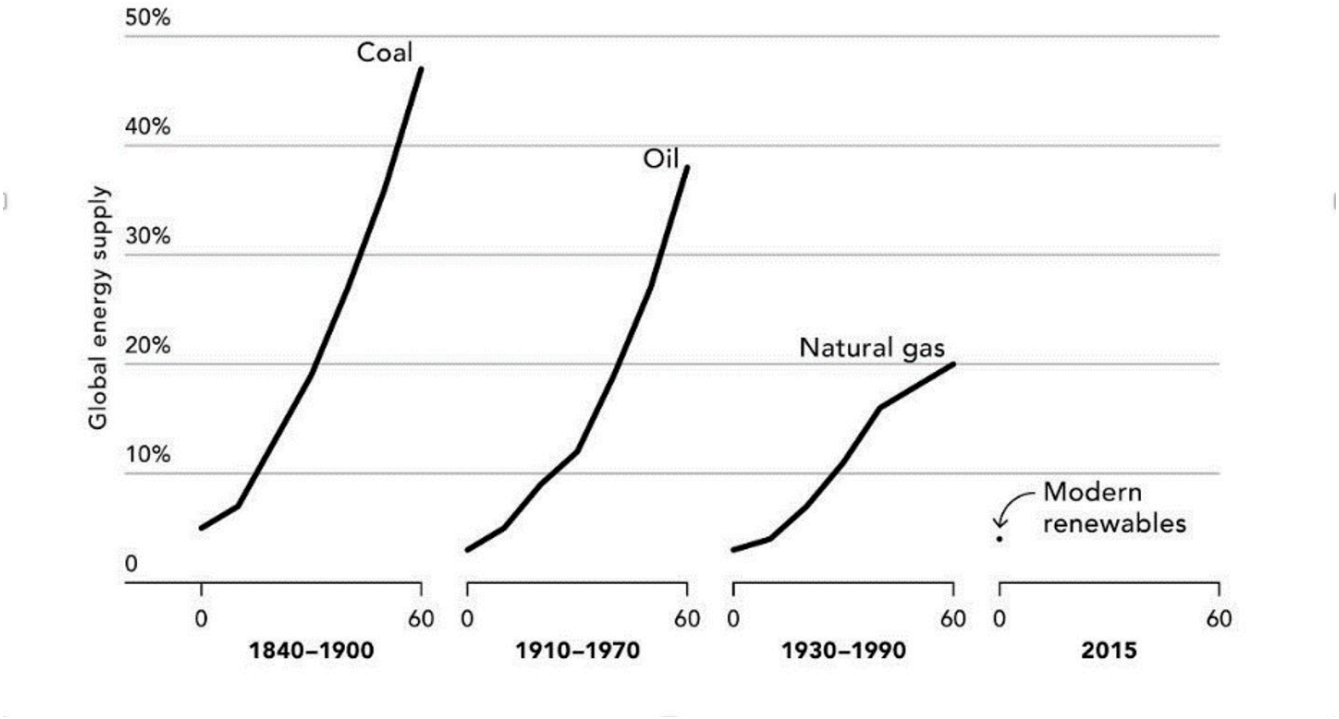


Hamburgers are a great example for understanding the concept of the green premium. If a pound of ground beef costs $3.79 and plant-based grounds cost $5.04, the green premium of making your own burgers with low-greenhouse gas meat is $1.25. Courtesy of Breakthrough Energy.

Reducing the green premium

We need to reduce the green premium so that zero-carbon solutions are as cheap or cheaper than their traditional counterparts. For some products, closing that gap is more challenging than for others. The green premium for zero-carbon electricity in the United States, for example, is about 15 percent higher than what most people pay now. But the green premium to swap out traditional jet fuel for zero-carbon biofuel alternatives? That would cost *140 percent* more. The bigger the green premium, the harder it will be to reduce that product's emissions.

Unfortunately, for many products, the green premium is much higher simply because they cost a lot more to make. Fossil fuels have a 200-year head start on most zero-carbon technologies. Historically, it takes a long time to develop, scale, and create demand for new products, all of which bring down prices. But we don't have a long time. We need to innovate and develop these new products at an unprecedented pace.



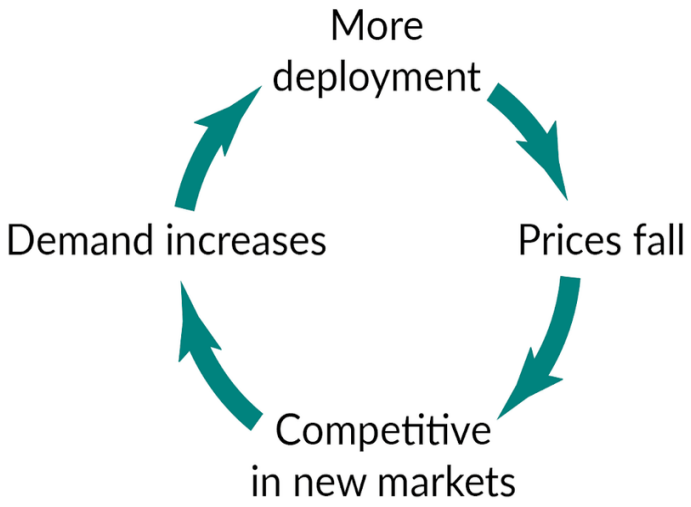
Historically, it takes a long time to transition to new energy sources. But to lower the green premium for carbon-neutral technologies such as modern renewables, as shown in this graph, we need to speed up the pace of innovation, development, and adoption.. From How to Avoid a Climate Disaster, by Bill Gates.

How do we drive this innovation? There are three levers of power to lower the green premium.

Governments

To start, we need governments to step in and help fund research and development for innovative ideas. Governments can take on risk that private companies are often wary of. From there, governments can use their power as consumers to buy the products or services—often at higher prices—to stimulate demand and create a space in the market.

Governments can also support low- or zero-carbon solutions through policy. They might provide *subsidies*, or money provided by the government to help make a product affordable. Where research either can't eliminate a green premium or would take a long time to reduce it, governments might step in and subsidize a carbon-neutral alternative to a conventional product, which would make it more affordable. They can also pass laws that require minimum standards for low-carbon technology use—for example, that a certain amount of electricity for a public utility be generated in a certain way.



This chart demonstrates the way that technologies become cheaper with increasing production in a positive feedback cycle. By Our World in Data, CC-BY.

Business

Private companies also have an important role to play in lowering the green premium. To start, businesses can be drivers of innovation, working to develop and scale new technologies so they are more affordable and more widely available. Because they can often work faster and be more flexible than governments, businesses are important drivers of research and development into new climate innovations.

Like governments, businesses can use their buying power to drive demand for low-carbon products. When companies consume a clean technology, they help build a competitive marketplace for that product. That, in turn, drives down cost and makes the product more affordable for everyone.

Individuals

Individuals can also help create markets for low- or zero-carbon products. Consumers are showing that they're increasingly willing to pay more for products that are climate friendly. Demand for products like alternative meat, energy-efficient appliances, and electric vehicles is increasing, despite the green premium they often carry. A recent Boston Consulting Group study found that that buying carbon-neutral soap or diapers would cost a consumer an additional 8 to 9 percent. They also found that more and more families are willing to pay a premium for low- or zero-carbon products. Of course, not all consumers are able to choose the more expensive option. But those who can are increasingly deciding it's worth spending more money to support products that have a lower carbon impact. These choices signal to the market that there's demand for these products. Increased demand stimulates more research and increased production, which can ultimately lower costs for everyone.

Conclusion

Moving toward net-zero emissions will be hard, and it will be expensive. We know it will cost the Earth a premium. Our societies have limited resources, and those resources are distributed unequally. But for the sake of our health, our environment, and our livelihoods, we to need to find innovative ways to overcome the obstacles presented by the green premium. Companies, individuals, and governments all have a role to play in ensuring the costs of climate change are distributed equitably and efficiently.

Trevor Getz

Trevor Getz is a content editor for the Climate Project and a Professor of African and World History and affiliated with the Education program at San Francisco State University. His work centers on history and social studies as a vehicle for helping students understand contemporary issues such as climate change.

Credit: "Understanding the Green Premium", Trevor Getz / OER Project, https://www.oerproject.com/

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Cover image: The green premium—the additional cost of choosing a clean technology over one that emits more greenhouse gases—can help inform decisions when it comes to climate action. Courtesy of The Gates Notes https://www.gatesnotes.com/Lowering-Green-Premiums.

Hamburgers are a great example to help understand the concept of the green premium. If a pound of ground beef costs $3.79 and plant-based grounds cost $5.04, the green premium of making your own burgers with low-greenhouse gas meat is $1.25. Courtesy of Breakthrough Energy. https://breakthroughenergy.org/our-approach/the-green-premium/

Historically, it takes a really long time to transition to new energy sources. But to lower the green premium for carbon-neutral technologies, like modern renewables shown in this graph, we need to speed up the pace of innovation, development, and adoption. From *How to Avoid a Climate Disaster*, by Bill Gates.

This chart demonstrates the way that technologies become cheaper with increasing production in a positive feedback cycle. By Our World in Data, CC-BY. https://ourworldindata.org/cheap-renewables-growth

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