Bill Gates Wrote “How to Avoid a Climate Disaster.” Is It Any Good? (Part 1), with Tom Campbell (Ep. 13)

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Nivien Saleh: How does one avoid a climate disaster?

I’m Nivien Saleh, with Houston and Nature.

A few months ago I came across a new book Microsoft founder Bill Gates had written. It was on climate change. Honestly, normally I don’t go for climate change books because I find them too depressing.

But this book’s title – “How to Avoid a Climate Disaster” – promised a solution to climate change. I am a sucker for good news. So I bought the book, read it, and the idea for this podcast episode was born. Is Bill Gates pulling this off? That’s what this interview is about.

My guest is Tom Campbell. For his day job, he is a partner at the Pillsbury Law Firm here in Houston. I met Tom a few months ago. Our first conversation revolved around what native flowers, shrubs, and grasses he should plant in his garden. I quickly figured out that he is an innovative, visionary thinker. Plus, environmental law is his specialty.

Now hat’s a great starting point for a conversation about climate policy. But it gets better. As you probably know by now, my world view tends to be liberal. Tom, on the other hand, describes himself as a conservative.

A visionary conservative environmentalist - I just had to discuss the Bill Gates book with him.

Our conversation ended up being an hour long. So I’ve decided to divide it into two episodes and post them at the same time.

This is part one.

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Nivien Saleh: All right, Tom. Welcome to the podcast.

Tom Campbell: A pleasure, Nivien. Always good to talk to you. Always enjoy our conversations.

Nivien Saleh: We have both read the Bill Gates book, "How to Avoid a Climate Disaster," approaching it from different backgrounds. Now you're an attorney who specializes in natural and environmental resources.

How does your background shape your perspective on the Bill Gates book?

Tell me how your background shapes your perspective of the book, how you would say it enables you to evaluate it, and perhaps also where your limitations lie.

Tom Campbell: Sure. My interest in the environment goes back to the Potomac River. I came from the Western states. And where I was raised originally you followed a stream until you got to a river, and then you found a bank that was promising, you got some worms and you went fishing.

This was back in the early seventies. And in Northern Virginia I got to the Potomac river, dug into the bank, and the worms that I found were green and blue and brown.

Nivien Saleh: Uuuh.

The Exxon Valdez oil spill of 1989

Tom Campbell: They smelled like Clorox. I saw outfalls where waste was being directly discharged into the Potomac river.

It's hard to believe these days, but it was being discharged directly into the river. I looked at the worms and the foam on the top of the river. That left a very lasting impression on me.

And always from that point forward, wanted to be involved in environmental issues and environmental law. That's what led me to, uh I was given the opportunity to be the general counsel of the National Oceanic and Atmospheric Administration in the first Bush administration back in the late eighties. Within three weeks of my arrival, the good captain Hazelwood ran his ship upon hard ground on Bligh Reef in the pristine waters of the Prince William Sound and discharged 11 million gallons of crude oil and forever changed the environmental world.

Nivien Saleh: And the name of the ship was?

Tom Campbell: The Exxon Valdez.

It was one of the largest environmental disasters in history. And I had the good fortune of being able to lead the federal natural resource damage assessment that quantified the injury done to the Prince William sound and the coastal waters of Alaska. And then I began to seek redress and recovery for the losses that occurred. That all resulted in a $1 billion settlement, which at that point in time was the largest environmental settlement in history.

A market perspective on climate change

Nivien Saleh: And afterwards you moved into private practice. So you also have the, I guess, market perspective.

Tom Campbell: Yes, I went to work as a senior environmental consultant and the general counsel of a private environmental consultant firm. My passion was really understanding how to measure the negative impacts associated with oil spills, chemical spills, and finding a way to not only recover money, but effectively restore the environment in the face of those disasters. And doing that, I, pioneered a couple of methods called natural resource damage assessment, habitat equivalency analysis, and net environmental benefits analysis, all of which is alphabet soup.

But it is how you know how much repair to place into the environment in light of an environmental catastrophe.

There are a lot of good people in corporate America who really do want to do the right thing. And like any other area of endeavor there are mistakes that are made and damages end up being done.

And something has to be done to address those damages and bring things back to where they need to be. That's a work that I enjoy very much these days.

Tom Campbell: I'd also say I have been directly involved in climate negotiations. I was the Commerce Department lead for the Earth Summit in 1992 in Rio de Janeiro. I was there and represented the Commerce Department in the first global climate conference, which proceeded Kyoto.

Nivien Saleh: That is a really impressive background. Now, We think of climate as the purview primarily of climate scientists. But the scope of the matter is so complex that you have to involve climate scientists, policy analysts. You have to involve diplomats because it's an international problem.

So you, Tom, have all kinds of interesting vantage points on the issue.

Tom Campbell: The National Oceanic and Atmospheric Administration (NOAA) is one of the best kept secrets in government. They are responsible for the ocean and also the atmosphere. And NOAA has some of the best, if not the best, climate scientists in the world.

Nivien Saleh: NOAA inspires a lot of confidence, absolutely.

I would say there is a bit of similarity between you and Gates. Gates is not a climate scientist, you are not a climate scientist. Gates does not have a background in environmental studies. But he is the co-chair of the influential – especially in the developing world – Bill and Melinda Gates Foundation. So he had access to the brightest minds in the world, and that enabled him to write this book. You, meanwhile, have spent decades working on environmental issues and you've built up a vast knowledge base. And that enables you to evaluate the book. So now my question for you is: Was it an interesting read?

Was "How to Avoid a Climate Disaster" an interesting read?

Tom Campbell: It was a very interesting read. He does a really good job of stating the problem. So he deserves a read and a good hard listen.

How the Bill Gates book starts out

Nivien Saleh: Let me give a summary of how he starts out. His starting point is 51 billion tons of CO2 equivalent. He says, that is the amount that humanity pumps into the atmosphere every single year by a specific group of gases, which include CO2, but also methane, nitrous oxide. These are the gases that are called greenhouse gases. And they include some very potent fluoridated gases, which he only mentions in passing.

And as these molecules trap the heat and hold it, the atmosphere warms. We're talking about small changes in the atmosphere, which have however a huge impact. He explains to us that there was a time when crocodiles lived on the north pole, and the difference between that time and the last Ice Age is a mere 10 degrees Celsius. That's really not a wide range. So, these small changes matter a great deal, and he lays out what global warming can do to us if we continue putting greenhouse gases into the atmosphere.

Sea levels will rise. And of course that concerns us directly because we're right next to the ocean. In fact, in a talk last year climate scientist Katharine Hayhoe of Texas Tech University recommended the website Climate Central, and on Climate Central, you can find that by 2050, 2050, about a third of Galveston Island will be submerged. One third. So rising sea levels are a big concern for us.

Then there is another impact Gates mentions that is potentially harmful our area specifically: He says that with hotter oceans, hurricanes will become more virulent. And of course our petrochemical complex lies in the direct path of those hurricanes.

So some of the things Gates describes are directly relevant to our experience.

In other countries, similar things will happen. And that can mean for us mass migration and civil strife. And of course, mass migration means people want to come to the richer countries like the U.S. because they want and need physical safety.

For those reasons Gates wants us to deal with climate change now, and he wants the world to get to net zero carbon emissions by the year 2050.

You might be inclined to despair, he acknowledges, but don't do it because I, Bill Gates, have some ideas on how to save your future, how to save the world, and the prescriptions are the subject matter of the book.

Tom Campbell: I think that's a pretty good summary of Bill Gates's statement of the problem. I do believe that we will have more frequent and intense storms. There are significant issues that Texas and other coastal states and nations will face.

There will be winners in the process as well. Areas that previously were dry will become wet. The challenge is that it's not going to happen over a century. It's going to happen over tens of years, and places that were preserved because they were wet and dry and had a particular type of species of plant or animal in it, are suddenly going to be devoid of the very species that the area was created to preserve. And other areas that did not have those plants and animals will suddenly be suitable habitat, and those could be in farming areas. So when you have that kind of disruption that results in species becoming endangered, you have essentially species migrations and crop migrations.

It is a huge challenge that we need to confront and we need to confront head on.

What are Bill Gates's foundational assumptions? Tom's take

Nivien Saleh: That's right.

There are all kinds of ways in which you can approach writing a book about climate change. There is a perspective that you can have on this topic, and t ere are foundational assumptions. What is your view of the foundational assumptions that Bill Gates brings into his book?

Tom Campbell: One of the foundational assumptions that he makes that I agree with wholeheartedly is something that economists call negative externalities. When a company operates or when people function, if there isn't a cost associated with using a common resource, then they will abuse that common resource. It's called the Tragedy of the Commons.

Nivien Saleh: You could put it in a different way. The cost to producing a certain item for the company that's producing it is lower than the cost that both it incurs and society. For example if you have an oil company and the oil company produces fossil fuels and these fossil fuels have a price, but that price does not include the damage that is done to the environment.

The discrepancy between the price to society and the price to a company.

Tom Campbell: And it's not just companies. It's individuals.

Nivien Saleh: Yes. Yes.

Tom Campbell: We need to pay the true cost. And the problem that we have with global warming is that the true cost of the discharge of carbon dioxide is not paid by the companies, and it's not paid by the consumer.

Nivien Saleh: Yes.

Tom Campbell: And we're both there as consumers. We cannot simply blame the companies ...

Nivien Saleh: Yeah.

Tom Campbell: ... because we have taken advantage of that essentially subsidized resource.

Nivien Saleh: Hmmm.

Tom Campbell: So I think that's a basic assumption.

Bill Gates's Foundational assumptions: Nivien's take

Nivien Saleh:

Thank you! Now let me share a few basic assumptions that I discovered and then you tell me if you think I got it right:

Gates says that tightening humanity's belt is not the answer. Environmentalists might say, well, we just consume too much. We need to be more frugal with resources that we use. We only should use what we really need. He says, that is not the answer. And he explains why he believes that is the case.

He also does not talk about population growth. The size of the world population has increased over the last decades and It continues to increase. And you could say, the more humans you have, the more pollution you will have. And that discussion is not part of the book.

He furthermore believes the solution has to be a market solution. He thinks that the government plays an important role in bringing it about.

And he thinks we can get to net carbon zero. Does this ring correct to you?

Tom Campbell: It does. It does.

Bill Gates uses the green premium as his measuring rod

Nivien Saleh: All right! We have stated how he approaches the topic, and then given a sense of how complex it is. The next question is: How do you evaluate possible solutions? He has one tool for that, and he calls it the green premium.

Tom Campbell: The green premium is Bill Gates' attempt to internalize the true costs of production. What he's trying to do is push the cost of CO2 emissions into the cost of goods.

Nivien Saleh: When you say "internalize", we're not talking about psychologically internalizing, but using a negative externality where society pays a higher price than the individual or the company and privatizing those costs.

Tom Campbell: That's correct. It's to make sure that the consumer sees the real cost of the good that the consumers is consuming.

Nivien Saleh: The fact that he says you have to have a tool with which you compare solutions... That I believe is important.

Tom Campbell: Right.

Nivien Saleh: And that is something he offers.

Tom Campbell: Yeah, it's a way for policymakers and industry to take an objective look at the role their industry plays in the problem and where to focus private and government efforts. I had not realized before reading the book the enormous impact the cement industry has ...

Nivien Saleh: Yeah!

Tom Campbell: ... on the production of carbon dioxide. Steel production as well.

Electricity is the fulcrum of the book on which everything hinges

Nivien Saleh: Yes. And the green premium allows you to compare an alternative way of producing steel with the one that's driven by fossil fuels and see if you've really got a viable alternative on your hand.

Now, the fulcrum of the book is electricity. He wants to make electricity production carbon neutral and then run all other sectors of the economy on electrical power. You just mentioned the cement industry. Gates wants to leverage clean electricity to reduce the carbon footprint of the cement industry, or the transport industry or the way we heat and cool our homes.

Tom Campbell: And he's absolutely, I believe, right on the issue of electricity. And we have the infrastructure to be able to deliver electricity in spite of what happened to us here in Texas about a month ago, two months ago, with that incredible freeze and utility grid failure.

Nivien Saleh: It happened in February of 2021.

Tom Campbell: Yes. The reality is that we can't deliver hydrogen to everybody's house. We can deliver electricity. We can't deliver hydrogen to every business or every car. We can deliver electricity to every house and every car. I think he's hit upon a real winner.

Nivien Saleh: The electrification of the economy?

Tom Campbell: Yeah. A big reason for that is that it's very hard to have an internal combustion engine that controls its emissions effectively because essentially you're putting a treatment technology on the tailpipe of every automobile that drives around. And sometimes it's well-maintained, and sometimes it's poorly maintained.

If you can electrify the automobile fleet, you can generate your energy in one location, and you can then develop the technology to be able to capture carbon dioxide at the source of its emission when the power is generated, instead of trying to capture it at the tailpipe or - more ridiculously - pull it out of the air. Pulling carbon dioxide out of the air in its fugitive form is I think going to be very difficult to do mechanically.

And Nivien there is a power plant directly south of Houston that captures most, if not all of its carbon.

Nivien Saleh: Are you serious?

I had no idea.

Tom Campbell: Yes. There are several plants around the planet that are able to do that.

It's still expensive, but they're developing and perfecting the technology, probably in anticipation of where the planet is going.

Nivien Saleh: Fascinating. That is cool.

Tom Campbell: And there are other facilities globally that are capturing the carbon and then sequestering it underground.

Nivien Saleh: And he talks about that. But the important thing is, he explains why fossil fuels are so attractive to us. And there are two big reasons. And any source that wants to provide alternative energy needs to contend with that. Those two reasons is number one, fossil fuels are very mobile.

So you get that energy out of the ground in liquid form or in gas form. And then you put it maybe on a tanker and then you move it wherever you need it. That's number one. And number two, it's a continuous source of electricity. Essentially it's stored energy. It's kind of like a battery, only it's not a battery, and you can use that energy whenever you want. So you have continuous access to electricity.

Tom Campbell: And number three, it's cheap.

How do renewable sources of electricity stack up to fossil fuels?

Nivien Saleh: Of course, yes. It's cheap.

And that is where the green premium comes in. You have to get alternative sources to get to the point where the green premium, which is the markup for using those energy sources, comes down to zero, so that people will want to embrace that technology. But the question is, how do renewable energy sources stack up in terms of number one, mobility, and number two, continuous usage.

Tom Campbell: I think we have watched an absolute revolution in the automobile industry. Elon Musk and Tesla have revolutionized the automobile industry from the standpoint of how cars operate and function. The mission statement of the company is to accelerate the world's transition to sustainable energy.

Nivien Saleh: But that is the auto industry. That is not the electricity industry. So we still have to answer the question, where does the electricity come from? Can we just get rid off our fossil fuels and replace them for example, with wind power?

Tom Campbell: Not all at once. We're going to have to transition from fossil fuels over to wind power and solar. Look, wind is wonderful. It is producing more and more of the electricity for countries like Denmark.

I think they're up to 25%, somewhere in that range, of their energies provided. The problem is that if you don't live in an area where the wind blows all the time, or as we discovered here in Texas, if you're not weatherized and you're having extreme fluctuations in climate, you have to turn off wind generation, and it creates a hole in the energy consumption needs that has to be filled somewhere.

Nivien Saleh: Yeah, so there is a hole in the electricity supply when the wind goes offline.

Tom Campbell: The same thing with regard to solar. I have solar panels on my house, and at night it goes to zero. And I have batteries that help me to last through that period of time. And if my house were used as an analogy for our total energy grid: If the sun isn't shining and the batteries aren't being filled, then as we go through the night you're not going to have lights or air conditioning or heat.

Bill Gates on the pitfalls of hydroelectric power

Nivien Saleh: So with intermittent sources, you do need some sort of battery. Now we have another continuous source where you could use perhaps batteries for capturing the surcharge, and that's hydroelectric power.

What does he say about hydroelectric power?

Tom Campbell: He mentions it as a good thing. I work oftentimes with Indian tribes that have been dramatically affected by hydroelectric power and dams, whose cultures have been severely debilitated by the presence of these hydroelectric facilities. You see species like salmon who are cut off from their breeding grounds.

We see a reduction in the abundance of salmon and other resources. But societally we made a choice. We said that the salmon and the tribal interests were less important than our ability to keep the lights on in San Francisco and other places. There are people that paid a disproportionate price. I would like those decisions re-evaluated. So while hydro is clean, it is not free of significant impacts.

Nivien Saleh: Yes. And I do know a little bit about us impacts not from the United States, but because my research focus as a political scientist for many years was the Middle East, especially Egypt. And Egypt has the Aswan Dam. And to build the Aswan Dam, the government had to move communities, which is of course harmful to them, but also entire Pharaonic temples.

Tom Campbell: Yes. Yes. Yes.

Nivien Saleh: Now, one thing that you just said is it is clean. Well, Gates says that depends on whether the reservoir will be built on soil that contains a lot of carbon. If yes, then the carbon will be released as methane.

And that will have to be drawn down over, I don't know, 50 years. So it is very possible that a hydroelectric plant will be carbon positive for decades before it is carbon neutral.

Tom Campbell: And there are a whole series of other issues associated with draw down that occurs around these large reservoirs. Mercury accumulation occurs in the reservoirs as well. So there are lots of challenges, but let me make absolutely clear: I don't think we're ready to abandon our existing hydro anytime soon, but on the other end, I think it will be extraordinarily difficult to permit new hydro for the reasons that I mentioned earlier.

So hydro is a significant portion of our existing energy portfolio, unlikely to be retired, but over time, I think we may see significant alteration in our hydroelectric dependency as well.

The Twitter battle between Bill Gates and Elon Musk (of Tesla)

Nivien Saleh: That's interesting. I had not thought of that possibility.

Earlier you had wanted to talk about the automobile industry, Elon Musk and Tesla, but I stopped you. Let's have a closer now. My understanding is that you admire Tesla, and you like Elon Musk, right? You think that he's a very visionary businessman. So the question that I want to broach is that of batteries.

Bill Gates thinks that batteries are fine, but they're very expensiv e to produce.

He also says they do not have the ability to hold charges indefinitely, so you can maybe charge it and discharge it for a number of times. And then the battery will fail. What do you say to that? Because of course, Tesla and Elon Musk is all about batteries.

Tom Campbell: Right. So this is where I begin to seriously question Bill Gates. Okay. So he's talked a lot about areas that I know something about. And I think focusing on having to internalize those negative aspects of our current energy production, I think he's spot on. He talks about the green premium.

I might quibble with the way he does the green premium. But he ventures into an area that I know a great deal about. I spent a lot of time focused on and fascinated by Tesla and what Elon Musk has been able to accomplish. And I find it extraordinary that Gates would intentionally bet against a company whose goal is to accelerate the world's transition to sustainable energy.

Nivien Saleh: What do you mean by "bet against"?

Tom Campbell: Tesla stock. There's a very notable Twitter battle that went on Elon Musk against Gates. And there's discussions in the media that have gone back and forth. And Gates has never denied it.

Folks that Elon Musk knows that are close to Gates say that he shorted the stock, which is essentially, um, he would have profited if Tesla had failed and gone out of business. And so not only did Bill Gates probably lose money on his short bet. But he - because of his personal animosities - was actually drawn into undercutting one of the most important renewable energy companies that we have seen in the past hundred years maybe ever.

I think Elon Musk has done more for renewable energy than Bill Gates has - by a long shot. The fact is I drive a Tesla. Teslas are wonderful products. They rely upon electric energy, which I think is the future. Tesla has developed an infrastructure. That is that you're able to travel throughout the United States and solve the problem that keeps people from buying electric cars in that you can't travel with them.

Yes, you can. Initially there wasn't sufficient range to be able to travel, and he's created the range. And in the process, by good hard science, he has been able to get the best and brightest engineers in the world together in his company. And they have brought the cost of energy storage down dramatically.

And over the next 10 years, it's going to go down dramatically yet again.

Nivien Saleh: So you think that Gates is wrong? Not only does he have an animosity against Elon Musk, who is an innovator, but you also think he is simply wrong about the future of the battery.

Tom Campbell: You know, I don't care whether he has an animosity for Elon or not. Elon is the type of personality that is sometimes hard to like. But he's brilliant. But he has allowed his personal feelings to get in the way of his judgment about a very important set of innovations in the global climate change area.

He financially bet against Tesla as a whole, but he has also spoken very negatively about the ability to run semi-trucks on batteries. And I believe in the next year that we'll see our first significant electric truck production.

Nivien Saleh: Okay.

Tom Campbell: We'll begin to see electric trucks going across the United States.

Nivien Saleh: That will be great.

Tom Campbell: And by the way, it's not the only solution. Hydrogen does also present promising aspects, particularly as it relates to large vehicles. But that's kind of a side trip and

a detour. Focusing back on batteries, batteries are the bridge that makes renewables possible.

Nivien Saleh: Yes.

Tom Campbell: Lithium ion batteries are being used. There are iron derivative batteries that are utilized as well by Tesla. They're coming up with a larger battery cell configuration. Essentially the configuration of the size of the batteries haven't changed for 20 years until this last year, when Tesla is coming up with a larger size of battery cell that they believe to be significantly more efficient.

Tesla is not only addressing the electric automobile, but they're also balancing power grids. In Australia they put in a large bank of these batteries, industrial- size. And when the power grid needs extra power, they're able to draw from these batteries .

And when the consumption goes down, it goes into battery storage, and then we're able to draw from that battery storage. Musk has targeted the electric power grid industry as a major area for their initiative. Just south of us here in Texas they're putting in a similar set of batteries.

It will be used as a test base for the grid here.

How to find part 2 of this interview

Nivien Saleh: This concludes part 1 of the interview. If you liked it, please share it with a friend. If you'd like to view the transcripts and show notes, you can do so at HoustonNature.com/13. That's HoustonNature.com, a slash, and the number 13 for episode 13.

And if you're keen to find out how exactly Gates would like to clean up our electricity supply, continue with part 2, where all will be revealed. You can find it at HoustonNature.com/14. That's HoustonNature.com, a slash, and the number 14 for episode 14. Hope to see you there!